Designing Emergent Business Process: The Case of the Foreign Procurement Process of Kuwait Ministry of Defence

A thesis submitted for the Degree of Doctor of Philosophy

By

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Procurement Process Abbreviations

Acronym	Term
AEPA	Actual Emergent Process Activity
BPDM	Business Process Design Methodologies
BPM	Business Process Management
CDs	Collaborating Departments/Concerning Departments
FPD	Foreign Procurement Division
PP	Procurement Process
GHQ	General Head Quarters (End User), Ministry of Defence
GTPC	General Tender and Practice Committee
IS	Information Systems
IT	Information Technology
KMOD	Kuwait Ministry of Defence
KMOD/FPD	Kuwait Ministry of Defence's Foreign Procurement Division
MAO	Military Attaché Offices
MEP	Military Engineering Projects
PPQG	Procurement Process Quality Group
PSO	Public Services Organisation
SAF	Small Ammunition Factory
SOW	Scope of Work
RD	Reflective Diary

Theoretical Abbreviations

Acronym	Term
AEPA	Actual Emergent Process Activity
AR	Action Research
BPM	Business Process Management
ASET	Activity, State, Event and Time point
CAS	Complex Adaptive Systems
DBP	Deferred Business Process
ToDa	The Theory of Deferred Action
DMR	Deferred Model of Reality
DDD	Deferred Design Decisions
PA	Planned Action
DA	Deferred Action
DP	Deferment Point
DPCA	Deferred Phase Change Adaptation
EBP	Emergent Business Process
BPMN	Business Process Model and Notation

Declaration

Some information contained in this thesis, arising from this research has been presented in the following publications, manuscripts and professional engineering seminars:

Al Sabah S A (2013) A Practice Oriented Perspective: Designing Emergent Business Processes For The Foreign Procurement Division Of The Kuwait Ministry Of Defence.

Al Sabah S A (IMESH2013) A Practice Oriented Perspective: Designing Emergent Business Processes for the Foreign Procurement Division of Kuwait Ministry of Defence. iMESH Abu Dhabi, Yas Island, 28 April. International & Middle East Conference on Sustainability and Human Development 2013 (iMESH 2013).

Al Sabah S A and Patel N V (2013) Explaining emergence in business process management through the deferred model of reality: Action research at the Kuwait Ministry of Defence. *In: Proceedings of British Academy of Management 23rd Annual Conference,* University of Liverpool, 10-12 September.

Al Sabah S A (2013) Designing emergent business processes: The deferred action perspective. Kuwait Maastricht Business School, KMBS Newsletter, March 2013.

Al Sabah S A (2012) Emergent Business Processes: The Case of the Foreign Procurement Division of Kuwait Ministry of Defence (KMOD/FPD) In: *Proceedings of PhD. Symposium,* Brunel Business School, Brunel University, London.

Al Sabah S A (2011) Enhancing Business Process Model in the Public Sector: The Case of the Foreign Procurement Division of Kuwait Ministry of Defence (KMOD/FPD) In: *Proceedings of PhD. Symposium,* Brunel Business School, Brunel University, London.

Al Sabah S A (2010) *National Security*: *The effect of emergence on FPD procurement process*. Internal KMOD/FPD Seminar Paper.

Al Sabah S A (2010) *Understanding the effect of emergence on FPD procurement process through Action Research*. Internal KMOD/FPD Presentation.

Abstract

Business processes can be divided into standardisable and non-standardisable processes. Such processes are characterised by their activities, events, states and time-points. The conditions in which process activities, events, states and time-points occur determines how they are observed, recorded and acted upon. Under predictable and stable conditions an observer can record them by predetermining them and this can be done using existing process design approaches and methodologies. Such processes are termed standardisable processes; for example a process for manufacturing cars. However, under unpredictable and unstable conditions an observer cannot record them by predetermining all the possible events, because uncertainty leads to unpredictable events occurring. Such processes are termed non-standardisable processes and in this thesis as emergent processes; for example special engineering projects like building the Channel Tunnel. Therefore, a new approach is required for designing non-standardisable processes.

Process events are significant because the observer notices and records them. Significantly, the observer of events also has to act on them. Whether process events occur in predictable and stable conditions or unpredictable and unstable conditions, makes a difference to how an observer notices, records and acts on them. This is highly significant for this thesis argument, because as non-standardisable process events can be unexpected and unpredictable or emergent a new approach is required to design them.

This thesis advances knowledge of designing non-standardisable processes by conceptualising them as *emergent business processes* (EBP) and contributing a new approach for designing them using action research and the deferred design approach as a process design methodology. Uncertain and unpredictable conditions is characterised here as *emergence*. The observer cannot predetermine all the possible process events for processes that operate in emergent conditions and cannot determine how to act upon unpredictable process events, because some events will be predictable and others unpredictable.

The pragmatist research methodology was used to research to identify and resolve the problem with EBP in the Foreign Procurement Division (FPD) of the Kuwait Ministry of Defence. It was also used an approach for designing EBP. The research contributes the new understanding of non-standardisable processes as emergent business processes. This is a significant contribution because it is conceptualisation that is not found in the literature. This conceptualisation recognises the need to find new approaches for designing and implementing EBP. Therefore, the research also contributes a new approach for designing EBP using the action research methodology as a process design methodology.

Chapter 1: Introduction

1.1 Introduction

There is a need for new approaches to design *emergent business processes* (EBP) (Marjanovic, 2005; Patel, 2011; Pilla, et al., 2012). EBP are unique business processes that are usually found in unique business processes, such as building the Euro Tunnel or High Speed 2 (HS2) that will link London and West Midlands. In this research, the EBP or 'non-standardisable process' studied is the small ammunition factory (SAF) procurement process of the Kuwait Ministry of Defence.

A critical activity in any organization, particularly one that engages in change and transformation of its processes, is the design of essential business processes. Whenever an organisation seeks to re-align its strategy, change its operations, or improve its current processes, it becomes necessary to model the resource and information flows comprising the relevant business processes. In modern business processes, such as large supply chains, encompassing extensive levels of material and information flow in many directions among many business entities, the challenge of modelling and designing processes is immense. Complexity in such processes arises primarily because of the relatively large number of many to many relationships between business entities, but also because of the phenomenon of *emergence*, which escapes attention in conventional approaches to business process design.

The essence of the problem for EBP is that emergent process events are unpredictable; emergent processes comprise uncertainty and the emergent event must be consequential to the process' goals. One approach to managing emergence is to remove uncertainty in the process so that all consequential events become predictable – however, this is not always possible, so an alternative way to cope with uncertainty is to build in resilience in the process design so that unpredictability of emergent events can be accommodated at the point of execution. This research is concerned with developing such an approach.

The literature has drawn attention to EBP as a new phenomenon and the need to develop appropriate process design methodologies (Choi et al., 2001; Jeong et al., 2012; Feldman, 2000; 2004; Rerun& Feldman, 2011;Pentland et al., 2012; Marjanovic, 2005, Marjanovic & Freeze, 2012;Patel, 2007; Patel, 2011; Alaa, 2009). Though Marjanovic (2005; 2009) and Marjanovic & Freeze (2012) have discussed the need for EBP process methodologies and

Patel (2007; 2011) conceptualised it as 'deferred action', there is a noticeable absence of research and practical approaches in the literature.

Emergence (e.g. Patel 2006) by its very nature challenges prediction, and therefore, conventional methods of process modelling [e.g. Business Process Model and Notation (BPMN)] cannot easily accommodate the unpredictability of emergent business processes. Marjanovic (2005) argues that knowledge-intensive business processes or EBP are: 'business processes that cannot be pre-defined as their models evolve during process execution from the accumulated experience' of actors. Where it is not possible to specify processes beforehand, it becomes necessary to develop ways to manage the uncertainty such that a process model can be produced yet the emergent characteristic of the process remains intact.'

A central problem with existing process design approaches such as BPMN, UML, PADM and the general business process reengineering effort (Ozcelik, 2010; Weerakkody et al., 2011; Altinkemer et al., 2011) is that they assume organisations are stable and predictable. Consequently, the modelling principles and techniques of such approaches reflect stability and they are unable to cope with business change and transformation. The principles lead to a mechanistic view and design of business processes. They do not consider the effect of the changing environment on designed process.

It is also apparent that theoretical approaches to EBP design are lacking in the literature. Melao and Pidd (2000) add: 'there are few significant attempts to develop theoretical positions on possible approaches to BPM'. Theory is needed because of a 'paucity of conceptual analysis and rigorous empirical research' (Smart et al., 2008:491). Although the concept of emergence is one that has received attention from theorists (e.g. Patel, 2006; Dooley, 1997; McKelvey, 1999), application of such theoretical works to the practical problem of designing EBP has not received similar attention. Accordingly, this research contributes the deferred theoretical position (Patel, 2006) to the problem of designing EBP. Given these practical modelling issues and need for firm theoretical base, there is a need for alternative approach that can better reflect emergence. Specifically, the research proposes the deferred design approach as a process design methodology to design EBP.

This chapter introduces the definitions and terminologies in Section 1.2. The problem by conceptualising business processes as complex systems is explained in Section 1.3. It outlines the challenge of designing for emergence in Section 1.4, and specifically, designing the procurement process to reflect emergence. An overview of the military context of the AR is

provided in Section 1.5, which sets the industry and organizational background to define the research questions, aim and objectives illustrated in Section 1.6, and the thesis chapter structure is detailed in 1.7.

1.2 Definitions

This section clarifies the various terms used in this thesis. All these terms suggest the idea that the procurement process needs to adapt to the changing environment.

Several terms are borrowed from the general theory of complexity. Complexity has deep roots in philosophy (Osberg, et al., 2008). Recently, mathematicians and scientists have begun to describe and label physical systems as complex (Testa and Keir, 2000; Huneman and Humphreys, 2008). Complexity is the idea that a system has a complex interconnected components that cannot be separated to understand the complex system. Rather, the complex system needs to be understood as a whole system (Alaa, 2009).The separate components of a complex system work together to produce an emergent order. In this context, emergence is the idea that a complex system arises or is defined by the interconnections of its components (Choi et al., 2001). The term uncertainty is used to mean the unobservable aspects of emergence.

Systems that can be explained in terms of cause-effect and as correlation between two variables are called linear systems (Beeson and Davis, 2000).Since a complex system is emergent; it cannot be reduced to its components in terms of such cause-effect relationship. So, complex systems are also called non-linear systems, meaning there is no linear or correlative relationship between variables in a complex system. The term uncertainty is used synonymously with the term complex systems.

Several terms from the theory of deferred action (Patel, 2006) are used to describe procurement processes. A system that can be explained in terms of cause-effect can be fully specified. Specifiable here means that the system can be designed by elaborating its features or specifying the requirements. This is the normal approach for designing procurement processes (Caron et al., 1994; Dijkman, et al., 2011). A system that is affected by its environment and needs to adapt accordingly is called a deferred system (Patel, 2007). A deferred system is a kind of complex system. In terms of designing, deferred means that features of the system become designed by local actors in the context of its operation, rather than all the system having been designed by professional designers (Patel et al., 2010).

Business processes that can be fully specified is termed a standardisable process; all its events, activities, sequence and time-points can be predetermined and specified for design purposes. Business processes whose events, activities, sequence and time-points cannot be predetermined and specified for design purposes are termed non-standardisable. In this context, predictable refers to the ability of designers to predetermine the events, activities, sequence and time-points of business processes. Unpredictable refers to their inability to do so.

1.3 Business Processes

Modern understanding of business processes is rooted in the original idea of producing goods by division of labour. Adam Smith recorded the significance of business processes in the efficient production of pins by division of labour (Sullivan and Sheffrin; 2003). He noted that division of labour resulted in very large productivity gains:

> 'One man draws out the wire, another straights it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving the head: to make the head requires two or three distinct operations: to put it on is a particular business, to whiten the pins is another and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which in some manufactories are all performed by distinct hands, though in others the same man will sometime perform two or three of them' (Smith, A. 1997)

In essence, a business process is such a division of labour, but the new concept of *business process* has other features which are discussed in the next sub-section.

Smith's description of process covers one function, the manufacture of the pin itself. Modern business processes are also cross-functional, encompassing the core domain manufacture or service function, management, and support functions. A business process has a start point, an end point and is reliably repeatable, and it organises how people and equipment, including information technology (IT), data and information, work together to achieve a specific production or service goal. The tasks and activities necessary to achieve a specific production or service goal are co-ordinated by a defined business process.

Hammer and Champy (1993) set out a manifesto to make American companies compete more effectively against Japanese companies, using such a cross-functional concept of business process. It resulted in the recognition that the production activities of business organisations, and its management and support activities, can be conceptualised as 'processes'. They define a business process as: 'a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer.' This definition focuses on the transformation of raw materials into a product or service of economic value to customers.

Davenport (1993) defines a business process as:

'a structured, measured set of activities designed to produce a specific output for a particular customer or market. It implies a strong emphasis on how work is done within an organization, in contrast to a product emphasis on what. A process is thus a specific ordering of work activities across time and space, with a beginning and an end, and clearly defined inputs and outputs: a structure for action. ... Taking a process approach implies adopting the customer's point of view. Processes are the structure by which an organization does what is necessary to produce value for its customers.'

The focus of this definition is on how work is done, the business logic and transformation of raw inputs into a product or service of economic value to customers. Rummler and Brache (1995) too focus on value creation for the 'external customer' by distinguishing between 'primary processes' and 'support processes':

'a business process is a series of steps designed to produce a product or service. Most processes (primary & support) are cross-functional, spanning the 'white space' between the boxes on the organization chart. Some processes result in a product or service that is received by an organization's external customer. We call these primary processes. Other processes produce products that are invisible to the external customer but essential to the effective management of the business. We call these support processes.'

1.4 Designing for Emergence

Design of such business processes assumes that processes are completely pre-specifiable, stable and predictable, which is here termed the specification approach. This AR evidences EBP that are not predictable for the purpose of complete pre-specification designing. Specified artefacts need to respond to systemic emergence, which even affects the design process itself. With reference to the design process, Simon (1988:52) argues:

'the artefacts do not exclusively emerge from a creator; rather, they evolve in response to a selective force'.

This 'selective force' is systemic emergence of the design process. Recently, it is also called 'emergent design' (Cavallo, 2000), where the actual design process is emergent. Systemic emergence also affects the designed artefact, where the changing environment forces a rationally designed artefact to continuously adapt; critically, designing continues *after* the initial design has been implemented.

This is the problem of reflecting emergence in designed artefacts, which is the problem in the SAF procurement process. Models of design should cater for evolutionary design by representing changing environment and enabling adaptation. Adaptation is the system's device to self-adjust to environmental conditions to sustain itself. Designing adaptive business processes is challenging because it is problematical to know how to represent the changing environment.

Designing for emergence is the new challenge for designers in disciplines as diverse as information systems (Truex et al. 1999; Patel, 2006; Kim and Kaplan, 2006), management (Stacey, 2000), production management (Grobler et al., 2006), service design (Stuart, 1998; Goldstein, Johnston & Duffy, 2002), operations and organizational learning (Van Eijnatten and Putnik, 2004), education and learning (Cavallo, 2000), and knowledge processes (Patel, 2005), which Markus et al. (2002) identify as 'emergent'. Changing environment creates temporal and spatial differences between what has been designed and what is practiced. This is also the challenge for designing EBP (Marjanovic, 2005).

Patel (2006) asks how designers can design systems with some measure of certainty for emergent contexts. Information and knowledge are affected by emergence, making specification design insufficient. That is, it is not possible to act according to some completely pre-specified design in emergent contexts. Designed action in a complex system should be responsive to changing environment. Pre-specified functions of organisation need to be modified by actors in context in response to emergence. AR is applied in cycles of problem diagnosis and resolution known as cycles. The issue of how to account for emergence in process design became the main research question in Action Research Cycle Two (ARC Two). ARC Two was the second cycle of the AR and deferred process methodology. ARC One was the first cycle to understand and define the problem. AR normally consists of repeated cycles of problem investigation and resolution.

1.5 SAF Procurement Process Problem

The researcher is the Controller of the SAF procurement process. This account of the problem is from the Practitioner's perspective as a practising manager and the evidence was recorded as problem diagnosis through reflective practice in the Reflective Diary (Appendix A, Dataset 2). The SAF procurement process was encountering delays and increased costs because of unexpected events emerging during the procurement process. Obtaining official approval to address unexpected events from several different sections and departments took three to six months or even more in some cases, prolonging the final stage of signing

contracts. Management and stakeholders think this is inefficient and unacceptable and they want to improve the procurement process.

The Practitioner began to reflect on this existing state of the SAF procurement process. She decided to consult the research literature. Initial literature search focused on project management, which suggested using project management methodologies like Prince 2 (Winter et al., 2006), but this did not answer the issue of unexpected events characterising the SAF procurement process. She chose AR because, as Somekh (1995:34) asserts that:

> 'Action research rejects the concept of a two stage process in which research is carried out first by researchers and then in a separate second stage the knowledge generated from the research is applied by practitioners. Instead, the two processes of research and action are integrated.'

Compared to practice, AR seeks to develop management knowledge through a systematic and deliberate process of research involving initial reflective practice, planning, taking action, observation and evaluating the outcomes of the intervention, done with more rigour than everyday business practice environment allows (French, 2009). This further reading resulted in articulating the research questions and aim of the research, which are stated next.

1.6 Research Aim

This research had the following research questions:

What is the effect of emergence on non-standardisable business processes?

How can the SAF procurement process be redesigned using the deferred design approach to enable local actors to take deferred action to manage emergent events?

The research applied the deferred approach through AR. It focused on how to design EBP using the deferred approach. Designing EBP is a challenge which requires better theoretical understanding. We need to understand how to recognise emergence and how to enable actors to respond locally to it when it occurs. This AR aims to resolve issues with the management of the FPD procurement process and to redesign it to reflect emergence.

Commenting on the AR methodology, Avison et al. (1999: 94) assert that 'researchers should try out their theories with practitioners in real situations and real organisations'. This research aims to contribute a process design methodology for EBP, by applying and assessing the

relevance of the deferred approach as a process design methodology. Hartley et al. (2008) state there is:

'need for evidence-based theories of the relationships between managerial and political leadership, organisational culture and structure and relevant outputs and outcomes.' (p.3).

Two layers of theory and theoretical reasoning are used to apply AR. Separate theory is used in each layer but both theories explain the phenomenon of emergence. The first problem, the first layer, conceptualises non-standardisable business processes. To conceptualise non-standardisable business processes the general theory of complexity is used. Complexity theory explains phenomena that cannot be reduced to cause-effect relationships and uses the term 'complex' such phenomena (Gell-Mann, 1995). A key feature of complexity is emergence. Lichtenstein (2000a) states four basic assumptions of emergence: change is a constant; emergent systems are not reducible to their parts; entities in a system are mutually dependent; and complex (*emergent*) systems behave in non-proportional ways. Non-standardisable business process is conceptualised as *emergent* business processes or EBP, because they meet these criteria of being complex phenomena characterised by emergence.

The second problem concerns how to design EBP. To design EBP the theory of deferred action, which itself is based on complexity theory, is used. Deferred action provides theoretical constructs and practical design principles that were applied to design EBP. Patel (2007) applied the theory to conceptualise non-standardisable business processes as EBP. He suggested that the design principle stemming from the theory, namely deferred design decisions, can be applied to design and implement EBP. However, it has not been applied yet by researchers, which is done for the first time in this research.

This AR proposes the deferred action theoretical framework to design EBP and provides a practice framework for designing. The AR is expected to resolve problems in the management of business processes at KMOD/FPD and to knowledge of how to design EBP in the public sector. This was done by applying the deferred action theoretical framework to design processes that reflect emergence and improve performance. Newly designed EBP was implemented and institutionalised.

1.6.1 Questions of Emergence

From the researcher's initial recorded observations of the SAF procurement process and reading of the literature on the theory of deferred action, complexity theory, business process

management and design, the first question on emergence, based on the theory of deferred action being applied to the problem, is framed as:

What is the effect of emergence on non-standardisable business processes?

Emergence has been identified as a management and organisation design problem (Stacey et al., 2000; Feldman, 2000; 2004; Styhre, 2002; VanEijnatten and Putnik, 2004). It is mentioned in the literature as affecting management and organisation, but the literature does not provide evidence of it. This research captured evidence of emergence on the SAF procurement process and on its effect on the procurement. This is used to help recognise emergence in non-standardisable processes and describe it.

The second question concerns the design problem:

How can the SAF procurement process be redesigned using the deferred approach to enable local actors to take deferred action to manage emergent events?

This question is approached by using deferred design decisions and deferment points. It suggests that actors encountering emergence should be enabled to design themselves locally, as they recognise emerging patterns. This is radically different from current process design approaches. Since emergence is not well understood, designing for emergence is currently based on a rational approach, which argues that unexpected events and processes can be predicted and therefore pre-planned centrally (Truex et al., 2000; Marjanovic, 2005). This approach sees emergence the same as other things that can be predetermined and planned centrally, but this is not the case because emergence is unpredictable. As VanEijnatten argues (2004), it is better to focus on change strategies under emergent influences because the future cannot be predicted. Emergence is a self-organising feature of complexity involving evolving and spontaneous patterns of interaction. Deferred action is such a change strategy.

This second question is dealt with in Action Research Cycle Two, it requires identifying a practical way to design for emergence. The design problem is framed in terms of the deferred approach process design approach, to implement deferred design decisions. Emergence design constructs and deferred design principles were operationalized through AR. This is expected to result in practical design and implementation of the EBP.

Management wanted to learn how to manage unexpected events (emergence) in the procurement process. Uncertainty is the basic feature of emergence, and uncertainty and emergence combined is 'emergent uncertainty'. Managing an EBP is a new challenge for the

researcher and Director of FPD. It requires understanding how an implemented process, when affected by unexpected events in a changing environment, can respond within formal constraints.

There are limitations of the theory of deferred action that need to be considered when adopting it as the basis of a design approach for emergent business process design. How to enable actors to design and provide them with the skills to do so and whether potential deferred design conflicts can occur between actors. This can be addressed by ensuring that deferred design decisions are not technical in nature by limiting them to managerial level – using KMOD/FPD examples: establishing end user requirements, finalising company's proposals and finalising draft contract and legal matters. These are the deferment points at which deferred decisions can be taken.

1.6.2 Research Aim and Objectives

The aim of this research is to explain the effect of emergence on non-standardisable business processes in order to develop a design EBP. To achieve the aim the objectives are:

- Determine the effectiveness of the planned FPD Guidelines for the non-standardisable process SAF procurement process.
- Identify the kinds of unexpected process events or emergence occurring in the SAF procurement process and how they affect the process flow.
- Assess the impact of emergence on the non-standardisable SAF procurement process.
- Detect how process owners and process workers deal with unexpected process events in the non-standardisable SAF procurement process.
- Design and implement the non-standardisable SAF procurement process as EBP.

In AR the researcher learns about the management problem while researching and then decides the task objectives. In AR, researcher learns about the problem in cycles of data gathering, and uses this data to decide what action to take to help solve the management problem by applying the chosen academic theory. By solving the management problem using the theory, the researcher contributes to process design approach and practice.

1.7 Dissertation Outline

This chapter discussed germination of the research thesis in the practice experience of the Practitioner, contextualised it within the BPM and emergence design literatures, and stated

the research problem, research aim, research questions and objectives. It set out the design research problem as the design of EBP through AR and the deferred design approach in the context of emergence. It explained why the Practitioner chose to do research because she wanted to make a robust, direct and immediate impact on management learning and BPM practice at the KMOD/FPD based on scientific research.

The next chapter critically reviews the literatures on current approaches to designing business processes and emergence organizations. It analytically discusses business process design methodologies in the context of complex systems, emergence, standardisable and non-standardisable business process literatures. It concludes that assumption of stable and predictable business processes operating in stable and predictable organisations is mistaken, because it does not account for systemic emergence. This is identified as the research gap on how to design EBP for emergent organisation.

Chapter 2 also sets out the deferred action theoretical framework formulated to study and design EBP. It invokes the theory of deferred action and details the relevance of the deferred model of reality (DMR), deferred action, deferred systems and six deferred systems design principles to design EBP. The framework is based on the DMR which is composed of the structure, emergence and agency variables, and incorporates deferred systems and six deferred systems design principles. This is then integrated into the then ongoing SAF procurement process to form the deployed theoretical framework of the AR.

Chapter 3 describes the case study to reflect the problem of unpredictable process events in the SAF procurements process under emergent. It details the management responsibility of the researcher and explains the context in which she, as Practitioner, began to reflect on problems being encountered in the SAF procurement process. Researchers' quest for management and organisational learning is elaborated, which led to the current doctoral AR, and resulting management learning and subsequent adoption of new practice based on the findings.

Chapter 4 discusses the research methodology and approaches used. It details the actual implementation of the AR in the KMOD/FPD organisation. It contextualises the AR methods used during practice and discusses the nature of knowledge and how theoretical knowledge can be acquired through one's reflective practice. Different types and methods of AR are outlined, and values, principles and concepts of AR adopted are discussed. The ethics of the AR are set out and the data collection and interpretation methods used are justified. The

actual deployment of the planned and emergent AR and deferred methodology is elaborated as the unfolding of ARC One and ARC Two, in the context of incremental change and programmatic change respectively to the procurement process.

Chapter 5 and 6 are the data interpretation. Data is interpreted in terms of the DMR's constructs of structure, emergence and agency. AR intervention in the SAF procurement process is demonstrated and the data on the redesign of the procurement process is discussed. Data leading to the emerging and resultant management and organisational learning is analysed.

Chapter 7 discusses the direct and immediate impact of the AR and deferred design methodology on the SAF procurement process and KMOD/FPD. The redesign of the EBP in KMOD/FPD resulting from the research is elaborated and discussed, and the implication for BPM practice is explained. Then, the application of the theory to practice and better theoretical understanding is discussed. The new AR based process design methodology is discussed as a new contribution to business process.

Finally, Chapter 8 concludes the research. It summaries the thesis argument and findings and details the theoretical and practical contributions made. It discusses the limitations of the research, thereby proposing further research necessary to advance understanding and knowledge of emergent organisation.

Chapter 2: Literature Analysis

2.1 Introduction

This chapter is a critical review of the literature on current approaches to designing business processes, emergence and the effect of emergence on organisation, and consequently on business processes. It also considered types of business processes and the relevance of the general complexity theory for non-standardisable business processes. It covers existing approaches to design for emergence, including 'emergent design' and theory of deferred action.

Marjanovic's (2005) classifies business processes into standardisable processes and non-standardisable processes. A standardisable business process is one where the requirements to design it are clear. Standardisable processes are predictable and specifiable. For example, the production of cars involves standardisable processes where the input, transformation and output activities are clear and can be modelled and implemented as planned. There may be irregular unexpected events even in standardisable processes, but on the whole these are routine business processes. Much of the literature on process design is on such standardisable processes. Standardisable processes can be specified. Hammer (2002:27) states that:

> 'All activities in a business process also should be guided by a design that specifies which activities are to be done when and by whom. A process design ensures repeatability and consistency.'

Consequently, methodologies, models and techniques have been devised to specify, design and implement standardisable processes.

However, a non-standardisable process is one where the requirements are not clear, usually because end users either do not know or because their requirements keep changing because of the complexity of the process. An example is the High Speed 2 (HS2). The purpose of this Chapter is to critically review research on process design and the related topics of emergence and complex adaptive systems as applied to organization studies, to identify the research gap and propose the contribution of this research concerning the design of non-standardisable processes. This will be done by finding the gap in knowledge on how to design non-standardisable business processes or *emergent business processes* (EBP) for *emergent organization*. Andriani and McKelvey (2009:1053) argue that where scale-free theories apply, researchers ignoring them 'risk drawing false conclusions and promulgating useless

advice to practitioners. This is because under many circumstances what is important to most managers are extremes they face, not averages'. EBP are required because of such non-average occurrences during the execution of a business process. Such 'extremes' in this thesis are termed 'unexpected events'. They are unpredictable process events because of emergent uncertainty, and they are termed *emergence* in this thesis.

Unexpected process events arise because of emergent uncertainty. The term emergence is used to cover such uncertain unexpected events or emergent uncertainty. Emergent uncertainty happens in systems that cannot be predicted. Emergent systems have emergent uncertainty in them. So, emergent uncertainty and emergence both describe the same unexpected events or emergent uncertainty.

The problem is how to design business processes capable of handling such unexpected process events or emergence, as well as the normal routine predictable events characteristic of processes. Specifically, how can EBP be designed in *emergent organisation*. EBP is the challenge of designing processes that are affected by emergent uncertainty, unexpected internal and external changes, or *emergence*. A business process can be pre-designed to the extent that the process events are predictable. This is true of standardisable processes according to Marjanovic's (2005) classification. However, non-standardisable processes, such as unique engineering projects, also face many unpredictable process events. The literature can be improved by developing better knowledge of how to design processes capable of dealing with emergence. Currently, as reviewed in Section 2.5, the literature focuses only on standardisable processes and predictable process events.

Main topic reviewed is relevant literature on process design and standardisable and non-standardisable processes. Literatures on related topics reviewed are emergence, emergent organization and complex adaptive systems. The topic of organization is related because it is in organizations that business processes are implemented. The topics of complex systems, and systems design are related, because how we conceptualize design of processes determines how they work in practice.This set of ideas reviewed here are used to make the theoretical framework for this study.

2.1.1 Relevance of Emergence to Process Design

There is theoretical argument for emergence and empirical evidence of *emergent organization* (See Section 2.7). Lichtenstein (2000b) found that it is through self-organisation that emergent behaviour occurs during significant change management in an organisation,

particularly when companies have major transformation programmes. He found three principals at work in the in-depth case studies: high self-reference, increased capacity and interdependent organising. These principals may be useful for how organisational order is created and self-organising processes in work groups and organisational change projects.

The principle of emergence is recognised in various business design problems. In environmental sustainability, Irwin (2011:47) notes:

> 'The principle of emergence ...is particularly relevant for designers because it posits that preconceived or designed change within open systems cannot be directed; the system can be perturbed, but the way in which it responds is self-determined. Therefore, designers cannot accurately predict how their design will "perturb" the system upon which it is imposed – they can only design as catalysts for change.'

Emergence is a key concept in the general complexity theory. Emergence occurs at the intersection of order and disorder and it is characterized as constant 'phase change' arising from emergence (Rosenhead, 1998). It requires social systems to adapt, resulting in them being characterized as *complex adaptive systems* (McMillan, 2004). Responses to emergence necessitate 'self-organizing systems'.

Lichtenstein (2000a) argues that new assumptions about emergent organisations 'generate key principles for a paradigm of self-organization that can be applied to organizational change and transformation. They also generate a new approach to change management for managers.' (p.527). In this literature review, it was found that the area of knowledge to improve concerns how to design business processes for emergent organization, or how to design EBP. There is little research in the literature on how to design processes to reflect emergence. Literature that does mention emergence does not provide solutions for designing for emergence, for example Marjanovic (2005).

In the literature, researchers assume that organizations are stable and predictable, with predictable structure, procedures, routines, policies and business processes. This is found in the literature on process techniques (Aguilar-Savén, 2004; Nurcan et al., 2005, Eikebrokk et al., 2010). Consequently, techniques and methodologies are proposed process design based on this assumption of stable and predictable organizations (Section 2.5.4 and 2.5.5). This assumption of stable and predictable organization is incorrect for all types of processes (Marjanovic, 2005; Patel, 2007) and leads to the view that processes are also stable and

predictable, and such process design is difficult to adjust in the face of emergence. So, when the organizational environment changes the designed business process are difficult to change.

There is evidence in the organization studies literature showing that organizations are emergent (Section 2.7.3). This means organizations need to *adapt* when their environment changes. Emergent organization is the idea that organizations change or emerge in response to the changing environment (Truex et al., 1999; Patel, 2006). The changes happen in the structure, procedures, policies and routines of the organization (Lichtenstein, 2000a; Feldman, 2003; 2004). The benefit of recognising emergent organisation is that it will help to design non-standardisable processes better. The literature does not currently recognise this and because practitioners continue to design non-standardisable processes by assuming organisations are stable, implemented processes are difficult to change. This is because designers and managers' thinking or 'paradigm' is that organisations and processes are stable and predictable, so they are not designed to change when the organisation's environment changes.

Process design aims to create efficient and effective organizational business processes to increase value for customers. It focuses on businesses competing to attract more customers by improving performance, through better performance measurement that process organization enables. Process organization is the idea that an organization can be identified by its processes like production process or service process, as well as management processes to control and manage a company (Hammer and Champy, 1993). Managers can improve operational efficiency by organising production or service work as business processes. However, process organization is claimed to be insufficient to help meet the challenge of competitiveness. Crucially for this thesis, Nurcan et al., (2005) says this is because of the *constantly changing environment* to which fixed processes cannot adjust in time. In another paper, Nurcan (2008) argues that current process modelling formalisms are inadequate for 'frequent changes and/or alternative choices ...based on human decisions instead of calculable arguments.' (p.2). This idea that the changing environment has an effect on designed business process needs more research attention. The literature does not cover it and focuses on designing 'fixed' business processes that are inflexible to changing environment (Section 2.3).

Understanding of how to design processes that can respond to changing environment needs improving. Current approaches, business process design techniques and methodologies do not consider this 'changing environment' (Nurcan et al., 2005).

Also, as current research focuses on better process design techniques and methodologies, there is little theory development. As discussed in Sections 2.7.2 and 2.7.5, complexity theory and the theory of deferred action provide a relevant theoretical perspective to understand changing environment and learning how to design EBP.

An accurate assessment of the success of Business Process Re-engineering (BPR) is not simple because of contradicting reports of successes (Teng et al., 1994; Clark and Stoddard 1996) and failures (Grint and Willcocks, 1995; Al-Mashari et al., 2001). However, the organisation of work as business processes is now a firm principle of management in most organisations. But designers of processes assume organisations as stable and designed processes do not change with the changing environment. This is because researchers have applied little theory or develop theory of business process theory. Current understanding of processes is discussed in Sections 2.3 and 2.5in terms of available theory, standard definitions, knowledge of process design, and techniques and methodologies for designing processes; process design is achieved through business process design methodologies, models and tools which are critically reviewed and analyzed. The research methods used by process design researchers are covered. Research on business processes, business process management and designing processes is covered in Section 2.3.2 and 2.5.2, and in Section 2.5.4 process design methodologies are critically compared. Section 2.6is on the idea of standardisable and non-standardisable business processes. Non-standardisable business processes are affected by emergence because of their large size and complexity. Consequently, complexity theory ideas used in this research, complex systems, emergence and theory of deferred action, are reviewed and their relevance to the study is discussed in 2.6.2, the Section also discusses emergence in processes. This provides the basis for identifying the research gap in Section 2.9, concerning the nature of emergence in business process and how to design EBP. The literature review concludes in Section 2.10by identifying the research gap in current understanding and knowledge of how to design EBP that lead to effective process design in emergent organization; namely, there is need for further empirical research on EBP and a need to understand how to design and implement *EBP in emergent organization*.

2.2 Logical Argument of the Literature Review

The literature reveals what is known about emergence and business process and what still needs to be researched to understand EBP and how to design EBP. Figure 2-1 is an illustration of logical reading of the literature. It has three levels. The bottom level shows

claims, which are arrived at logically by asserting claims and supporting them with the research evidence, shown in the Figure as the claim and description and the supporting literature below each claim. Where there was no research evidence, such a claim is conjectured to be a research gap. For each gap, the other claims are the rationale. This rationale is to justify the research gap claims.

Figure 2-1 The Logical Argument of the Literature Review
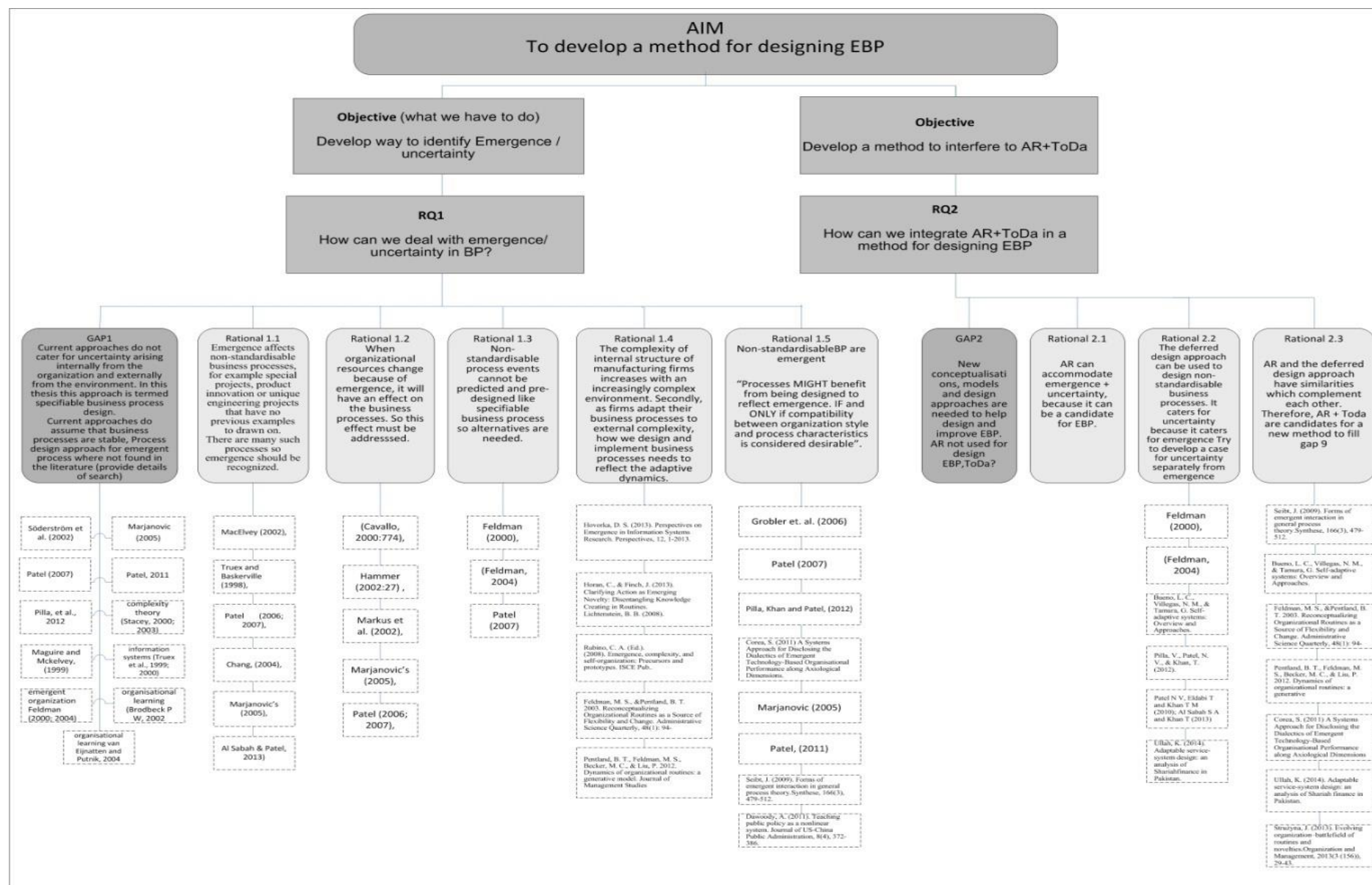
The middle level shows the research questions and objectives of the research which arise from discovering the research gap claims. The first research question is how to deal with emergent uncertainty in business processes. The second one is how to apply the deferred approach to design EBP. These research questions lead to the objectives shown and then overall aim of the research.

In this review the terms 'emergence' and 'emergent uncertainty' are the same. This is because emergence as defined in complexity theory causes emergent uncertainty. It means that the interaction of the system and its environment creates emergent uncertainty because the changes in the environment cannot be predicted (Savarimuthu, et al., 2008), and so their effect on process events, activities, states and time-points cannot be predicted. This is critical for designing EBP, because process designers normally need the full requirements to design business processes. Also, once implemented a design business process is expected to operate routinely as designed. It is argued through the literature review in the following sections that this is not possible in the case of certain type of business processes and therefore a new approach is needed to design such processes.

2.3 Specifiable Process Design

Current business processes and the methods used to design them are referred to in this review as 'specifiable', because process design begins when a complete set of requirements is available. Such requirement captures all the process events, activities, states and time-points and it is used to design the required process. Also, it is expected that the designed process will operate as designed when implemented. This is called specifiable in this review.

2.3.1 Business Process Theory

As noted in Chapter 1, Lichtenstein (2000a:527) propose four new assumptions to study 'emergent systems' capable of coping with emergent uncertainty and unpredictable events. The assumptions that change is a constant; that emergent systems are not reducible to their parts; that elements are mutually dependent and those complex systems behave in non-proportional ways. They form the basis of the theoretical framework for studying EBP design. These assumptions and their implications for EBP design are the focus of the present study.

McKelvey's research is significant in applying complexity theory and emergence to EBP design. Complexity, emergence, emergent order, and co-evolution are concepts that apply to

EBP design. The *process theory of organisation* in organisation science views organisations as processes that also have structural units in the background (McKelvey, 1995). Viewing organisation as a *process* is different from seeing it as only *structure*, because process suggests flow and movement. Currently, process design approaches view organisation as only structure. They also use reductionist epistemology like positivism – breaking down the process into units, such as events and activity. Process design methodologies covered in Section 2.5breakdown business process in this way. McKelvey (1999) states that process theory should turn to evolutionary to explain and predict. This means regarding process as *evolving* and *adapting* by considering the context, and regarding processes and organisations as 'complex adaptive systems' (CAS). McKelvey states that the study of CAS:

> '… has become the ultimate interdisciplinary science, focusing its modeling activities on how microstate events, whether particles, molecules, genes, neurons, human agents, or firms, self-organize into emergent aggregate structure.' (McKelvey, 1999:23)

Currently, the process design is highly stipulated and unresponsive to emergence. Mckelvey (2002) further notes that executives find it difficult to produce and manage 'emergent structure'.

A critical feature of CAS is self-organisation. Self-organisation helps to explain the structure and processes of organisations and determines whether they fail or succeed (McKelvey, 1999). CAS show 'emergent order' that comes from the CAS interacting with its environment and changing by adapting itself (McKelvey, 2002). He argues that emergent order is a 'theoretical tool' for explaining management and organisation. Emergent order is about how order emerges from interlinked entities, both the entities and their connections lead to emergent order. Organisational processes have such emergent order. Emergent order 'coevolves' with the evolution of the interlinked, connected and dependent entities, and rates of co-evolution have to be managed (McKelvey, 2002). These concepts of emergence and complexity are incorporated into the deferred theoretical framework of this study set out in Section 2.8.

There is little theory on process design that is directly linked to how to design EBP to take account of complexity, self-organization, co-evolution and emergent order. The literature on process design is mainly on process techniques and methodologies for designing stable business processes, where organizational order is predetermined or specified. This is because Hammer and Champy's (1993) original work was aimed at businesses to be more competitive

and gave reasons why companies should reorganize according to business process to be competitive. They gave the principles and techniques for business process re-engineering. Researchers have since focused on devising better process techniques for process design, covered in Section 2.5.

From the emergence perspective, assumptions about the nature of organizations made in process methodologies can be questioned. They assume that organization is stable and predictable and that organizational structure, procedures and policies can be predicted. So it is assumed that implemented processes remain stable. As shown in Section 2.7.3, there is evidence that organizational structure and procedures are not stable and predictable. They can be emergent, meaning unexpected events can happen to upset implemented business processes, and implemented business process needs to change. Current process design approaches also assume that the organization's environment has no effect on implemented processes (Marjanovic, 2005). Once implemented, the process will work as designed unaffected by its changing environment. However, the environment does affect organizations according to complexity theory (Section 2.7). Also, process design techniques and methodologies assume there is a cause-effect relationship. A process design methodology is the cause that can produce predictably the way the organization's process can be carried out, the effect. This is challenged by the general complexity theory that argues that micro events or very small changes cannot be traced in causal terms.

The need for full specification of requirements to design process or specification approach of process methodologies can be questioned. Organization scientists identify organizations not only as 'rational systems', but significantly as 'natural systems' and 'open systems' (Scott, 1998). The specification approach is difficult for practitioners to follow. Marjanovic (2005) points out the problems of obtaining full specification to design process. Specification assumes that all the business process requirements, its activities, state, events, time point and information, can be specified by managers in advance, to enable business process designers to design. But the evidence of emergent organization (Section 2.7.3) means that unexpected and unpredictable process events occur and emergent information is needed, that cannot be pre-specified for the purpose of designing.

From the perspective of complexity theory, these assumptions of cause-effect, stability, predictability and environment are questionable (Section 2.7). Process emergent uncertainty and unpredictability can be better explained by the ideas of emergence and self-organization

in complexity theory. Complexity theory has been applied to organization design (Stacey, 2000), management (Maguire and Mckelvey, 1999), and process design (Patel, 2007).

Using the theory of deferred action which is about how to design emergent systems, Patel (2007) applied the idea of emergence to explain unpredictable events in implemented processes. Heexplained that processes do not behave as designed because of emergence, and developed the deferred action model of EBP to manage emergence. The ideas of structure/process and plan/context in process theory are reflected in the theory of deferred action (Patel, 2006). It views organisation as consisting of both a structure and a process. Structure defines process and process defines structure. Structure is reflected in the theory's planned action dimension and process, and evolving and adapting, is reflected in its emergence dimension. So, the theory has an evolutionary aspect.

2.3.2 Research Methodologies

Researchers have used various research methods to research process design. Hammer and Champy (1993) began with the conceptual argument for businesses to reorganize companies' operations as business process. Previous work has explained the experiences of single organizations (Caron et al., 1994; Davidson, 1993) using exploratory and descriptive survey (Grover et al., 1995). Researchers also devise new techniques and methodologies for process design (Davidson, 1993). A common research method is conceptualization. Holtham (1994) developed a conceptual model of BPR management innovation and Patel (2007) developed a theoretical model of EBP. The AR methodology has been used by academic researchers (See Chapter 4).

2.3.3 Complete Specification of Requirements

The specifiable process design approach requires a complete specification of process events, activities, states and time-points. This means that process designers need to be told every aspect of the process to plan it. Crucially, it means that the designed process is expected to operate as designed. It can be concluded that the specification approach is suitable for designing processes that can be highly specifiable because they are predictable. They are predictable because little or no change occurs in how they operate once implemented.

2.4. Business Processes In Public Service Organisations

This AR focused on improving knowledge to apply business processes to PSO. There is a need for this research. Stemberger and Jaklic (2007) call for better knowledge of how to improve PSO. There are important theoretical, conceptual and practical questions to be answered in the field of public services improvements (Hartley et al., 2008). What is the agenda for public service improvement? What should be the goal and outcome of processes in public organisations? PSO have a variety of challenges to improve organizational performance and reduce internal organizational process complexity. PSO are now required to take austerity measures and improve performance and many have turned to business practices to learn about efficiency and performance improvements.

Riley and Brown (2001) argue that the limited research in PSO showed that BPM has resulted in the widespread propagation of the false impression that process-driven optimization is only applicable to large corporations. The UK government seeks efficiency improvement in PSO through better process management (Sprint, 2012). PSO face variety of challenges, including the need to improve organizational efficiency, minimize risks, enforce organizational policies, and reduces internal process complexity. They are required to respond faster, streamline operations, and automate manual tasks to provide better services. This can be achieved by applying BPM.BPM applies to PSO because it is about organising work. Hammer and Champy (1993:218) state that without doubt business process applies to government and 'any organisation in which work is performed.'

> 'As we say early in the book, reengineering is about organising work. Therefore, it applies to any organisation in which work is performed.'

However, they point out three distinct challenges of applying process to government: 'difficulty of measuring performance', 'breaking down departmental barriers', and 'most government agency heads have little experience with operations' and achieving operational excellence. Van De Walle (2007) argued that the difficulty of measuring PSO performance is finding what to measure, because PSO performance measurement is very different compared to businesses.

Understanding business process in PSO is also important. Inappropriate conceptualisation and aims of business process in PSO can make it ineffective. A government source defines business process as:

'A collection of related, structured activities - a chain of events - that produce a specific service or product for a particular customer or customers' (IPC Designs, 2012).

Lack of understanding of business process in PSO and appropriate performance measurement means that there is no real 're-engineering' of business processes in the public sector (Stemberger and Jaklic, 2007). It usually results in unification of processes, automation of some activities and elimination of unnecessary ones.

Similarly, Van De Walle (2007) argues that the main problem of measuring PSO performance is conceptual rather than a measurement problem. It is a conceptual problem because there is poor understanding of business process as applied to PSO, particularly in terms of measuring its performance. He contends that it is necessary first to define clearly PSO objectives. Failure to define those areas that need improving would reduce the measuring effort to technical problems and make it meaningless.

In PSO the driving force for applying process thinking is:

'the idea that improvements to the ways in which public services can be governed, managed and delivered will produce improved outcomes for citizens. This idea is driving different kinds of reform initiatives in different parts of the world' (Hartley et al., 2008:3).

Researchers comment on the differences between private and public organization missions, and argue that effective application of business process to PSO requires better understanding of the agenda of public service improvement (Hartley et al., 2008; Gil-Garcia and Pardo, 2005; Stemberger and Jaklic, 2007). Effective transfer of knowledge from the private sector is problematical, because PSO and private organizations are different in nature and purpose (Van De Walle, 2007).

Attempts to improve the performance of PSO have occurred, but there still remains a need to understand them better (Gil-Garcia and Pardo, 2005). Stemberger and Jaklic (2007) have also called for better knowledge of how to improve PSO. In particular, there is lack of practical models that can be applied (Gulledge and Sommer, 2002). Majority of procurement processes in PSO are not well managed and need improving and operational efficiencies applied.

However, the transfer of knowledge of how businesses apply business processes to PSO is not simple, because the two types of organization are different in nature (Van De Walle,

2007). Nevertheless, some best practices of businesses which appear to be generalisable, can be transferred to PSO. Action Researcher used AR to learn how the practice of business process design and implementation in business can be used to improve the procurement process of the FPD.

Similar to business process in businesses, the literature on business process in PSO is based on the idea that PSO are stable and predictable. In other words, apart from the political context, it assumes that organisations in the public sector are similar to the private sector. We argue in this research that all organisations are affected by unexpected events, they are all affected by emergence.

2.4.1 Public Services Procurement Life Cycle

Public procurement consists of the activities involved in the selection of suppliers and the purchase of goods, works or services for the benefit of citizens and businesses. They include planning, needs identification and assessment, supplier selection, contracting, monitoring and evaluation, and expediting (Kalubanga, 2012). It has to satisfy principles of good government like governance, transparency, accountability and integrity (Wittig, 2003; Callender and Schapper, 2003) and value for money.

Public procurement can be improved by developing standards such as the United Nations Conference on Trade and Development and World Trade Organisation development agenda UNCT&D (2013) and standards set by individual governments. Public procurement process can be viewed as a life cycle covering identification of needs, finding suppliers and appraising options, negotiating, monitoring quality and writing a works or services contract and maintaining it. In large procurements, it critically involves deciding whether to provide the goods or services in-house or to purchase them. These steps were considered in the SAF procurement process. But they did not happen according to the FPD Guidelines and expected timeline. This shows a difference between the literature and practical experience of the Action Researcher and her colleagues that needs to be investigated. It is argued that the difference between the literature and practice happened because of the occurrence of emergence in the FPD organisation, which is not accounted for in the literature on business processes in PSO.

Research on PSO procurement includes defining conceptual frameworks and models (Bovaird, 2006) and innovating new ways of procuring (Edler and Georghiou, 2007). The process can be manual or enabled with IT. e-procurement consists of the range of activities

that enable purchasing electronically, involving e-marketplace, e-auction and e-tenders (Davila et al., 2003; Puschmann and Alt, 2005; Teo et al., 2009). Interestingly, e-Procurement systems development reflects the emergence argument of this AR; Vaidya et. al., (2006) found that e-Procurement Processes in PSO rely less on rational design, traditional systematic development methods like the Systems Development Life Cycle, but make more use of incremental and component-driven systems development. In their paper they do not say this is because of emergence. But the incremental development can explained as emergence, because developers have limited information (Simon,1996) and information is emergent (Patel, 2012).

Kalubanga (2012) discusses the concept of sustainable public procurement process in the context of an African country, Uganda. He says that 'a clear understanding of the concept of sustainability and how it is related to the procurement process is still lacking' (p.1). Social and political issues, such as achieving social outcomes through public procurement (McCrudden, 2004) and corruption (Thai, 2001), are also covered by researchers.

2.4.2 Defence Procurement Process

Defence procurement is a complex decision-making process, which involves balancing requirements of end users, timely procurement, and compliance to governmental laws and guidelines, with aim of highly capable and effective defence forces. It requires writing detailed contracts. Contract-writing is legalistic and involves many rounds of negotiations with suppliers. Decisions on whether to buy the required capability or manufacture a required product have to be made. A typical set of defence procurement activities is:

- Establishing End User requirements
- Confirming the necessity
- Inviting tenders
- Evaluation of technical offers
- Auditing and investigations
- Negotiations
- Approval by finance
- Award of contract
- Contract administration and post-contract management

Complexity of the defence procurement process increases during each successive step. It involves the pre-acquisition step of preparing a budgeting. This involves government and

finance departments and the political nature of budgeting. Williams (1994) argues that defence procurement is cost-based regulation, which creates accounting problems. The flow of a typical procurement is set out in government guidelines, but can vary in practice because of process uncertainty (Tysseland, 2008). The drafting and reviewing of contracts involves collaboration among legal experts, technical experts and finance people. The decision to award the contract involves high-level governmental and military personnel. Procurement that involves high-technology and innovative technology involves patenting and secrecy. The literature recognises complexity and uncertainty in the defence procurement process, but it is not explained why it happens and what can be done to face it.

A critical difference between defence and other PSO procurement is the 'Technology Advantage' principle. This is the need to develop and maintain superior technology to defeat adversaries and to have independent capability, which means not depending on others or maintaining 'freedom of action' (MOD, 2012). Like the UK, most governments' defence procurement policy is 'open procurement':

> 'wherever possible, we will seek to fulfil the UK's defence and security requirements through open competition in the domestic and global market.' (Ministry of Defence, 2012:13).

An issue not covered in the literature is that defence procurement can involve innovation. Innovation means using available knowledge to make new products and requires creating new knowledge. Patel (2012) argues that like emergent information, there is emergent knowledge in complex systems, and he says emergent knowledge should be considered alongside tacit and explicit knowledge proposed by Polanyi (1966).

2.5 Current Process Design Approaches

As reviewed in Section 2.3, current specification approaches assume organisations to be stable entities. As stable entities they are further assumed to be predictable and therefore it is assumed that they can be planned. Consequently, current process design approaches assume that business processes are also stable, predictable and planable. Crucially, current approaches do not cater for emergent uncertainty arising internally from the organization and externally from the environment (Section 2.7). They assume that non-standardisable business processes or EBP, like the unique SAF procurement process studied in this research, have no emergent uncertainty are stable and predictable. Consequently, they do not cater for EBP design.

Business processes became popular in the early 1990s, as a way to reorganise production of goods and provision of services to be more competitive. Scholars argue that companies can be competitive when they organise their work as business processes. Hammer (2002:32) asserts that:

> 'Process management is the culmination of the movement to transform business operations. It provides a unifying theme for initiatives directed at improving organisational performance.'

A business process is a set of interrelated tasks that transform initial material into a product or service of value to customers; examples include order fulfilment, product development and post-sales support. The aim is to organise all activities in a business process to work together to serve customers (Hammer, 2002).

Davenport and Short (1990:28) define business process as:

> 'Logically related tasks performed to achieve a defined business outcome' and 'any activity or group of activities that take an input, add value to it, and provide an output to an internal or external customer.'

Hammer and Champy (1993:35) define business process:

> '...as a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer.'

Two key features define process: (1) transformation and (2) value. Process has inputs that are transformed into an output which is of value to customers. Process takes material inputs and transforms them into product or service for consumption by adding value during the transformation process. Remaining focused on customers, results in company success. Process focuses companies activities on value-adding transformation activities. However, there is absence of conclusive evidence on this, some showing success (Teng et al., 1994; Stoddard et al., 1996) and others failures (Grint and Willcocks, 1995; Al-Mashari et al., 2001). The issue for competitiveness and efficiency is that process remains focused on the needs of customers (Hammer and Champy, 1993), which creates value for customers who purchase the products or services. This radically new way of organising work is termed Business Process Reengineering.

2.5.1 Business Process Reengineering

Early opponents asserted that BPR is a management fad that will pass into insignificance (Knights and Willmott, 2000). The prediction of the founding fathers now seems to be true:

> 'For two hundred years people have founded and built companies around Adam Smith's brilliant discovery that industrial work should be broken down into its simplest and most basic tasks. In the post-industrial age we are now entering, corporations will be founded and built around the idea of reunifying those tasks into coherent business *processes.'* (Hammer and Champy, 1993:2)

Hammer and Champy (1993:50-64) characterise 'reengineered processes' with the following attributes:

> 'several jobs are combined into one', 'Workers make decisions', 'Processes have multiple versions', 'Work is performed where it makes the most sense', 'Checks and controls are reduced', 'Reconciliation is minimised', 'A case manager provides a single point of contact', 'Hybrid centralised/decentralised operations are prevalent.'

The idea of BPR was radical in the 1990s, involving the activities of the whole organisation comprehensively. BPR is cross-functional, business process focused, simultaneous change to organisation design, culture and information technology (IT), to enable radical performance improvements (Stoddard et al., 1996). The normal functions of goods-in, inventory management, scheduling and production are incorporated into a value-adding process. This process requires new organisation design and change in the culture of work and usage of IT.

The life cycle of the BPR management innovation is recorded by Holtham (1994), shown in Table 2.1. There is evidence that the first three stages happened, but these 'negative experiences' and 'conceptual problems' did not result in the abandonment of the idea, as stages 4 and 5 predict. Rather, the scale of reengineering processes, the expected benefits and methods to redesign processes all changed, becoming smaller in many cases.

BPR was intended to be 'radical' change to how work is organised.

> '...it means starting over. ... asking this question: 'If I were re-creating this company today, given what I know and given current technology, what would it look like?' Reengineering a company means tossing aside old systems and starting over. It involves

going back to the beginning and inventing a better way of doing work.' (Hammer and Champy, 1993:31).

Table 2-1 Life Cycle of BPR Innovations

Stage	BPR	
1	Initial research and conception	To 1990
2	Conversion of academic concepts into consulting-oriented products for enthusiastic mass-market promotion and consumption	1990-93
3	Idea gains momentum; negative experiences and conceptual problem begin to emerge	1993-95
4	Enthusiasts begin to run out of steam. Dramatic benefits fail to emerge consistently. New competitors emerge	1995-96
5	Falls into disrepute and disuse	-

Source: Holtham (1994)

Radical BPR as envisioned by Hammer and Champy (1993), is now being realised in companies with the aid of IT. The concept of process is now part of enterprise resource planning systems (ERP) and enterprise systems (Huq et al., 2006), and the application of IT to all the activities of a company is based on organising those activities, accounting, procurement, fulfilment (selling and delivering), production, inventory and warehouse and material planning, as *integrated processes.*

2.5.2 Business Process Management

Hammer (2002:26) argues that performance improvement initiatives like ERP, Balanced Scorecard, Supply-Chain Integration and Six Sigma need to be positioned under a 'process-management umbrella if they are to be successfully integrated.' The danger of not doing so is the risk that companies will have many unconnected programs, which:

'dissipates resources, engenders harmful internal competition among each type of specialist and fosters cynicism among employees who rightly believe that 'the managers cannot be serious about so many programmes' (p.26).

Hammer (2002:26-7) defines process management as:

'a structured approach to performance improvement that centres on the disciplined design and careful execution of a company's end-to-end business processes.'

He provides a six step guide for successful BPR: (a) identify five to ten company processes; (b) create awareness of processes among people; (c) develop performance measures of the processes; (d) designate process owners; (e) select two or three processes for redesign and improvement; and (f) align company's management systems with processes. Successful

business process management (BPM) results in better operational efficiency, an increase in profitability, better relations, shorter process cycle times, lower operating costs and improved market competitiveness (Hale and Cragg, 1996; Murphy and Ledwith, 2006).

This kind of prescription for process design extends to making strategy for business processes. Principally, the aim of process design is to centralize processes by developing corporate business process models. Business process modelling tools are used to design, implement and execute business processes, refining the process models from gathered data.

Theoretical understanding of process design is also proposed. Smart et al., (2009:504) argue that:

> 'Process management is no longer simply a 'take for granted' aspect of business activity': it is a phenomenon requiring dedicated analysis.'

They propose an integrated framework consisting of five 'application components' and three 'conceptual components'. Process strategy, Process architecture, Process ownership, Process measurement and Process improvement are the application components. Conscious Process Management, Macro Process Management and Process Centrality are the conceptual components. They distinguish between 'process as a universal activity' and 'conscious and sustained management of end-to-end processes', which characterise process design. But there is not much theory on process design in the literature, as noted in Section 2.3.

2.5.3 Modern Business Processes

Current understanding of process has moved on from the transformation model. The focus now is on creating value. *Primary processes* of an organisation directly create products or services of economic value to customers. *Management and support processes* are concerned with the organization's internal activities that are necessary to support the production of the product or service. A successful process-based organization does not have secondary activities in the primary value flow of the external customer oriented processes. Rummler and Brache's (1995) use of the term 'white space on the organisation chart' to define processes, means that processes fill the 'white space' of an organisation chart and lead to clearer understanding that cross-functional processes inherently define the organisation structure. Processes span the 'white space on the organization chart', indicates that processes intrinsically define the organizational structure.

The above definitions demonstrate that processes are concerned with creating value for customers. But this 'customer value' is the end point of the 'value chain' as defined by Porter (1996). A broader definition of business process encompassing the value-chain is given by Johansson et al. (1993) who define a process as:

> 'a set of linked activities that take an input and transform it to create an output. Ideally, the transformation that occurs in the process should add value to the input and create an output that is more useful and effective to the recipient either upstream or downstream.'

Activities that receive the inputs and transform them into products or services of economic value to customers constitute business processes. So, people who transform the inputs at various stages of the process in the organisation are the 'upstream' part of the value chain; such inputs may be the outputs of other parts of the process. The people who consume the output are the 'downstream' part of the value chain or customers.

Key feature of process is that it is owned by someone, group or department responsible for the performance and continuous improvement of the process. A *process owner* is responsible for the overall performance of the process and works with *process workers* to ensure successful completion of the process. There are other stakeholders who have an interest in the process and they all work together to achieve process goals.

Introducing processes into a company has an effect on the structure of the enterprise. Hammer (2002) provides a comparison between the 'traditional enterprise' and the 'process enterprise', shown in Table 2.2. The process enterprise differs from the traditional enterprise in nine elements. Hammer (2002) states that this is 'institutionalised process management' with aligned management systems to support the processes.

Table 2-2 Traditional and Process Enterprise

The Traditional Versus the Process Enterprise		
	Traditional Enterprise	Process Enterprise
Central Axis	Function	Process
Work Unit	Department	Team
Job Description	Limited	Broad
Measures	Narrow	End-to-end
Focus	Boss	Customer
Compensation	Activity-based	Results-based
Manager's Role	Supervisor	Process owner
Key Figures	Functional Executive	Collaborative
Culture	Conflict-oriented	Collaborative

Source (Hammer, 2002:28)

In the process enterprise, work is organised around the process rather than functions, the central axis of work. The work unit is the teams of process workers, cutting across departments, and their job description is broad to encompass process activities. Performance measures are 'end-to-end' or process based, rather than department or individual. The focus is centrally on the customer, not on internal operative like the boss. Compensation or reward for process workers, including managers or process owners, is results-based, and the manager's role is process owner who is responsible for the process. Other key figures are collaborators in the process and the culture too is collaborative, not conflict-oriented.

2.5.4 Business Process Methodologies

Business processes are systematically designed by using process design techniques and methodologies. They provide designers the tools to design, implement and execute business processes, refining the process models depending on gathered data, as well as the centralization of corporate business process models and execution metrics. To do this, understanding the nature of organisation and business processes is important. However, process design techniques and methodologies assume that the organisation is stable and predictable (Section 2.5), but evidence shows that organisations can be emergent (Section 2.7.3). (Feldman, 2004)

Research on business process covers non-standardisable business processes or EBP (Marjanovic, 2005), process management (Hammer, 1990); process design methodologies (Kettinger et al., 1997; Stemberger et al., 2007), process modelling (Hook, 2011; Aguilar-Savén, 2004; Nurcan et al., 2005; Eikebrokk et al., 2010) and process tools (Kettinger et al., 1997). A tag cloud provided by an international conference on BPM, shows the dominant topics and concepts in BPM include: 'process', 'model', 'business' 'activity', 'modelling', 'workflow', 'task', 'data', 'information' and 'service' (BPM, 2010). Eikebrokket. al., (2010) state that:

> 'BPM is an approach for visually depicting how businesses conduct their operations; defining and depicting business processes including entities, activities, enablers and the relationships between them'.

Through process design, information is gathered in relation to business processes and represented in process models. Process design is the activity of creating externalized representations of an organization's existing or planned business processes with the aim of improving them. Process design is distinct from systems development modelling because it targets the user organization rather than the planned system solution (Eikebrokk, 2010).

The term 'business process modelling' was coined in the 1960s in the field of systems engineering by Williams (Hook, 2011). Many business process models have been developed to improve competitiveness (Bandinelli et al., 1993; Bubenko, 1994; Decker et al., 1997; Jarzabek and Ling, 1996; Jacobson et al., 1992; Rumbaugh et al., 1991; Harel, 1990; Eriksson and Penker, 2000), but as noted above whether an organisation actually becomes more competitive by implementing business processes is contentious.

Dominant process design approaches in column four of Table 2.3 assume that organisational procedures, policies and structures are stable and predictable, consequently they assume the same for process design. This means that these dominant process design approaches do not consider the effect of the changing environment or unpredictable events on implemented processes. This assumption that organisations are stable and not affected by the environment is not true for non-standardisable business processes or EBP (Section 2.6).

Table 2-3 BMP Methodologies

Methods	Description	Proposers	Assumption
PADM (process analysis and design methodology) The PADM consists of four phases which	Intermingle and reciprocally interact. The four phases are (1) process definition; (2) baseline process capture and representation; (3) process evaluation; and (4) target process design.	Wastell et al. (1996)	Stable Organisation All process activities can be specified
PRLC (process reengineering life cycle)	The PRLC includes five stages: (1) envisioning process change; (2) inaugurating the reengineering processes; (3) diagnosing; (4) (re)designing; and (5) (re)structuring.	Kettinger et al. (1995)	Stable Organisation All process activities can be specified
BPR framework.	The fundamental structure of the proposed BPR framework contains three elements: (1) BPR principle; (2) BPR process; and (3) BPR methods and tools.	Mayer et al. (1995)	Stable Organisation All process activities can be specified
BPR stages.	A high-level approach to process innovation consists of the five stages: (1) identifying processes for innovation; (2) identifying change levers; (3) developing process visions; (4) understanding existing processes; and (5) designing and prototyping the new process.	Davenport (1993)	Stable Organisation All process activities can be specified
BPR stages.	A stage-activity (S-A) framework for reengineering was proposed, where BPR consists of six stages: (1) envision; (2) initiate; (3) diagnose; (4) redesign; (5) reconstruct; and (6) evaluate	Kettinger et al. (1997)	Stable Organisation All process activities can be specified

(Adapted from Lin et al., 2002)

Actual business processes are represented as process models for the purposes of designing. Process modelling is the activity of creating externalized representations of business

processes. Preliminary analysis of the literature in this area reveals that models of business processes play an important role in different phases of process design, regardless of the methodology used, and process owner and workers as experts describe the process which is modelled by professionals (Desel and Ervin, 2000; Stemberger, 2007). It is important to identify the uses or purposes of the models when undertaking modelling of any kind and this is done by creating a process master. Process improvements identified by management may or may not require IT involvement, although that is a common driver for the need to model business processes.

A significant theoretical issue with process design methodologies is whether they can be generalised or repeated in a different organisation. Some examples include SCOR (SCOR, 2013) Process standards like ISO 9000 (ISO, 2013); BPEL (BPEL, 2013); BPMN (BPMN, 2013); Strategic management methods like the Balanced Scorecard (Kaplan and Norton, 1996) and Six Sigma are also used integrally with BPDM, as are IT service techniques like ITIL Framework (ITIL, 2013) and systems design methods like CMM/CMMI (CMMI, 2013) and UML (UML, 2013).

It can be argued that this is evidence that process design is still not well understood theoretically, especially design of EBP. The existence of many methodologies itself indicates that no one design methodology can be applied universally. They lack theoretical base that would provide generalisability. There is a need for theoretical understanding of business process in emergent organisation and how to design EBP.

2.5.5 Business Process Modelling and Notation

The Charter of BPMN V 2.0 states:

> A standard Business Process Model and Notation (BPMN) will provide businesses with the capability of understanding their internal business procedures in a graphical notation and will give organizations the ability to communicate these procedures in a standard manner. Furthermore, the graphical notation will facilitate the understanding of the performance collaborations and business transactions between the organizations. This will ensure that businesses will understand themselves and participants in their business and will enable organizations to adjust to new internal and B2B business circumstances quickly (OMG, 2013).

The Charter aims to facilitate 'understanding' and communication of business procedures for the organisation and its business partners. Its notation reflects the standard four process modelling concepts: event, activity, state and time point that are common to process

modelling notations (Sodersstrom, Andersson, & Johannesson, 2001). It should be noted that it also states '…will enable organisations to adjust to new internal and B2B business circumstance quickly.' For this to happen, the modelling language should reflect internal and external business change, but it has no graphical notation to depict such change. This is significant in this research which seeks to design EBP, because constant change is a feature of emergent organisation.

BPMN is a process-oriented approach to modelling business processes and the UML is object-oriented approach (BPMN, 2013). The reason for choosing BPMN to compare with the deferred approach adopted in this research (Section 2.8.4) is because of its process orientation. Process modelling languages can map process and be compared using the basic four concepts event, activity, state and time point framework provided by Söderström et al., (2002).

It is argued by Patel (2007) that process design methodologies focus on specification. This is the idea that the required activities, states, events and time points needed in processes can be pre-specified for the purposes of designing. Specification approach requires complete pre-specification of the set of business processes required by an organisation to produce a product or provide a service. It assumes that these pre-specified business processes will remain constant during their execution and free from changing environment. However, processes are confronted with unexpected events or changing environment, and specified processes are difficult to change in response.

Example of emergence or unexpected events occurring in planning processes is Stoddard et al.'s (1996) study of the Pacific Bell Corporation. They examined the five assumptions of BPR stated by 'early writers on reengineering' from companies that successfully reengineered their order fulfilment process. The five assumptions of reengineering are that reengineering is: radical change, clean slate change, focus on end-to-end processes, top-down direction, and IT-enabled. This study developed a set of revised reengineering assumptions that reflect Pacific Bell's success. They found in Pacific Bell's case that these assumptions differed, as follows: implementation is incremental, implementation is 'limited by constraints that management cannot or will not remove', 'implementation often focuses on the perceived most broken pieces', 'implementation must be owned from the bottom-up' and 'implementation might initiate without much of the assumed IT capability. Stoddard et al. (1996)draw various implications of the revised assumptions for management, including management of expectations, end-to-end implementation of business process is unrealistic,

'bottom up buy in of a design' is necessary and plan for lead time associated with IT development.

Current process design methodologies are inadequate for designing EBP, because they assume organisations are stable and predictable and because they are based on the specification design approach. Complete specification of the process is needed before designing and the implemented process is expected to remain unchanged, even though evidence shows organisations do change and need to change because of the changing environment. Designing EBP requires radically different conceptualisation of business process and understanding emergence (See Section 2.9).

It can be concluded that current business process design methodologies and modelling notations assume that organisations and their business processes are stable and predictable. They assume that process events, activities, states and time-points as designed will remain stable when implemented. This is true of certain processes, for example production lines for manufacturing.

2.5.6 Designing Business Processes

The specification approach is the idea that systematic approach, composed of rational and logical thinking, is sufficient to design processes successfully. The core of process design methodologies is visual diagrammatic business process modelling, which includes data collection, data flow analysis, process flow diagrams and reporting facilities (Darton, 1997).

These techniques involve using software tools, for example, information and data modelling, organisational modelling environment, graphics tools like Visio, process modelling tool, business rules tool, repository, BPMS execution environment (workflow, EAI), simulation tool, BAM/Real-Time Process Monitoring tool, Performance Metrics tool/system. Visually oriented tools enable precise and detailed business process modelling and implementation. They enable process designers to model business processes, implement and execute those models, and refine the models based on as-executed data. Such collection of process execution data enables empirical assessment and evaluation to improve continually the processes. As a result, business process modelling tools can provide transparency of business processes, as well as the centralization of corporate business process models and execution metrics (Magal and Word, 2012).

Simon (1996) explained this kind of rational approach to design as 'bounded rationality', because it cannot consider all possible situations. Designers cannot consider all the possible options because of limited information and actors cannot provide a complete specification. To this we can add the idea of the effect of emergence on organisation and information. Patel (2012) argues that in emergent organisation information itself is also emergent. So, designers using the specification approach have to cope with limited and emergent information, but this is not accounted for in current methodologies. Flyvberg (2004) is critical of such detailed pre-planning because it relies on reason as the only source of knowledge and learning. He argues that experience, especially shared experience, is also a valid source of knowledge and learning.

2.5.7 Framework for Comparing Process Methodologies

The literature in this Section is reviewed from the perspective of AR, deferred action and process design for emergent organisation. The focus of comparison is on behaviour of actors in response to emergence. The literature that compares process design approaches in behavioural terms is highlighted. Process design methodologies reviewed in Section 2.3 earlier and principles for comparing process models reviewed in this Section all make the assumption that the organisation is stable and predictable. As discussed later in Section 2.6, this assumption applies to standardisable processes but not to non-standardisable processes or EBP, which assume emergent organisation.

Process design approaches can be compared quantitatively and qualitatively. Dijkman et al. (2011) use three principles to generate metrics to compare process models. The first is 'label' which exploits labelled nodes in process models. The second metric is structural and uses techniques for graph comparison based on graph-edit distance. The third metric is behavioural and accounts for the behavioural semantics of process models and the causal relations between activities in a process model. No other quantitative comparison techniques were found in the literature.

Söderström et al. (2002) provide a qualitative framework for comparing process design approaches. This framework consists of activity, state, event and time-point (ASET) and their relation, shown in Figure 2.2. These four concepts are common to process design approaches. A time -point is an instant in time, with no further decomposition. An activity is a performance of some kind. It could possibly change some thing's state, i.e. its set of properties. An event is a noteworthy occurrence. Process designers are interested in particular

events associated with changes of state, which involve activities. 'Activities, states and the running of time can be thought of as existing regardless of an observer but events are some facts about a thing that an observer notices and records by some means.'(Söderström et al., 2002: 602)

Figure 2-2 The intuitive relation between the event concept and other basic concepts
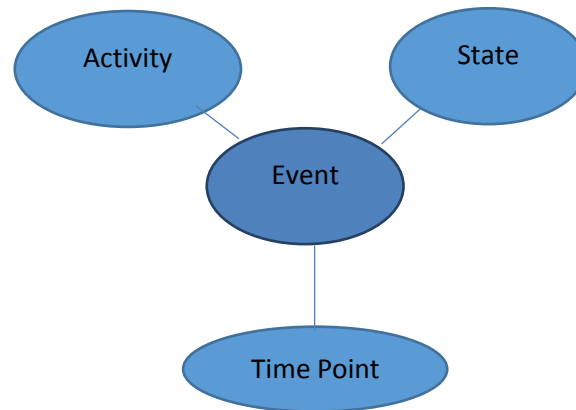
(Source: Söderström et al., 2002)

The issue in designing EBP is can these process concepts reflect emergence. They are integral to process design methodologies discussed in Section 2.3 but they do not reflect emergence. Each of these concepts has to reflect emergence to design EBP. For example, how can the event concept be conceptualized to reflect emergence? Currently, it is modelled as a predictable entity that is completely specified. From an emergence perspective, it can occur unexpectedly and in unpredictable ways. Similarly, how can the time-point entity be conceptualized to reflect emergence? Currently, time-points are predicted in processes, stating when some event will start or end. From the emergence perspective, time-points are unpredictable because emergence itself cannot be predicted.

ASET features of process comparison will be the framework used to compare critically the EBP designed in this research using the deferred design approach with current process design approaches. In the deferred approach, these four process concepts are seen from the emergence perspective and have different meaning. They are seen from the three design dimensions of the theory of deferred action that is planned action, emergence and deferred action (Section 2.8). For example, planned action reflects predictable process events (e.g. sourcing suppliers), emergence reflects unpredictable events (e.g. suppliers renegotiate contract details). Similarly, some time-points can be predicated and others are emergent. Deferred action is the action taken by actors when such unpredictable events occur.

The deferred approach implicitly recognizes the four process concepts (event, activity, state and time point) from an emergence perspective in its deferred design constructs, like deferment points and deferred design decisions (Patel, 2006). Deferment points are an example of time-point, but unlike predictable time-points in current process design approaches, deferment points represent events that are unexpected and unpredictable, or emergent. In particular, the deferred approach will be compared current process design approaches using the six deferred design principles (Section 2.8.2).

It can be concluded that the current process design approaches assumes organisations are stable and predictable, consequently business processes which are the core of organisations are too stable and predictable. They assume that process events, activities, states and time-point can all be specified exactly and that once the process is implemented these will happen as planned. This is truce of certain business process but not all. As shown in the next section, it is true of standardisable processes but not for non-standardisable processes.

2.6 Types of Business Processes

The specification design approach assumptions noted above in Section 2.3 about process are: (a) that it is stable and predictable, (b) it can be rationally designed and implemented, once implemented remains unchanged, (c) complete information to design is available, (d) organisations in which designed process run can be explained in terms of cause-effect and that (e) the environment of a process does not affect it. As shown in Section2.7, this set of assumptions can be questioned in the context of emergent organisation.

In terms of Marjanovic's (2005) classification, this set of specification assumptions divide business processes into two types: standardisable processes and non-standardisable processes. A standardisable process is one where the requirements to design it are clear. The set of assumptions above are true for standardisable processes. A non-standardisable process is one where the requirements are not clear, usually because end users either do not know or because their requirements keep changing. The set of assumptions above are not true for non-standardisable processes.

A new process design approach is needed because non-standardisable business processes are characterized by much emergent uncertainty, changing environment, changing requirements, and unpredictable events, all of which results in the need for the process to adapt and evolve. All activities in non-standardisable processes cannot be specified in terms of when and by whom the activities should be done. Non-standardisable process events cannot be predicted

and pre-designed like specifiable business process. This is the difference between specifiable and non-specifiable process that this research investigated.

Instead, the literature on non-standardisable business processes argues for evolving business processes. Non-standardisable business process are dynamic, evolving and knowledge-intensive and therefore are emergent (Marjanovic, 2005). Emergence affects non-standardisable business processes, for example special projects, product innovation or unique engineering projects processes that have no previous examples to drawn on. The process design approaches reviewed in Section 2.3 cannot be used to design non-standardisable processes. Current process design approaches require complete specification of requirements covering process activity, events, state and time-point. These are not fully predictable when designing non-standardisable or EBP. Also, once implemented an EBP adapts and evolves, which is not covered by current process design approaches. This means that non-standardisable processes cannot be designed and implemented the same as standardisable process.

A non-standardisable business process is one that evolves during its execution (Marjanovic, 2005). Non-standardisable processes are not predictable and cannot be pre-planned completely. The case of building the new factory for small ammunition factory studied in this research is an example of an emergent, non-standardisable procurement process. The evidence for this claim is presented in Chapter 3. It is a process because it requires the same transformation of input resources into a finished product. In this thesis the terms 'non-standardisable business processes' and EBP are used to mean the same kind of unpredictable process characterized by emergent uncertainty. In the context of knowledge-intensive processes, Markus et al. (2002), define EBP as:

- An emergent process of 'deliberations' with no best structure or sequence;
- Highly unpredictable potential users and work contexts; and
- Information requirements that include general, specific and tacit knowledge distributed across experts and non-experts.

Markus et al. (2002) cite strategic business planning, new product development, and organisation design as examples of EBP. This evidence of emergent organisation in the literature suggests that non-standardisable processes need to be emergent in response, as shown in Section 2.7.4.

Literature on non-standardisable process and how to design it does not consider emergence. It is argued here that it is affected by emergence. Specifically, the effect of emergence on the *operation* of EBP is not well understood and researched. The specification design assumptions may hold for limited time but EBP are essentially subject to emergence.

2.6.1 Standardisable Business Processes

Where the set of specification design assumptions are true, such a business process is standardisable and specification process design approaches can be used. As reviewed above in Section 2.3, process design literature focuses on standardisable business processes. Standardisable processes are predictable and can be specified or pre-planned completely. For example, the production of cars involves standardisable processes where the input, transformation and output activities are clear and can be modelled and implemented as planned. There may be irregular unexpected events even in standardisable processes, but on the whole these are routine business processes in which the activities, events, state and time-points can be specified. Much of the literature on process design is on such standardisable business processes. Hammer (2002:27) states that:

> 'All activities in a business process also should be guided by a design that specifies which activities are to be done when and by whom. A process design ensures repeatability and consistency.'

As noted above in Section 2.3, methodologies, models and techniques have been devised to specify, design and implement standardisable business processes. Patel (2006; 2007) argues that designing by specification does not apply in all situations, because non-standardisable business processes, are complex and subject to emergence, and need to be designed to respond to emergence. Emergence is not generally considered an issue in the design and implementation of non-standardisable business processes.

It can be concluded that standardisable business processes can be predicted in terms of the required process events, activities, states and time-points. Also, providing that the situation in which are implemented does not change, standardisable process can be expected to run as planned. In such cases the specification approach is relevant and standardisable process design approaches are effective.

2.6.2 Non-standardisable Business Processes

Where the specification design assumptions are not true, this is non-standardisable process or EBP. An EBP is dynamic, evolving and knowledge-intensive (Marjanovic, 2005). There is limited research on EBP and the effect of emergence on EBP once implemented. Non-standardisable processes are not predictable and cannot be pre-planned completely. The SAF procurement process is an example (Chapter 3). A non-standardisable business process is one that evolves during its execution (Marjanovic, 2005). The input, transformation and output activities are problematical to predict because of information and event uncertainties, and the environment has a greater effect on the implementation of the process. Such processes cannot be pre-planned completely and require what Cavallo (2000:768) terms 'emergent design':

'When the desired changes cannot be reliably foreseen, and particularly when the target domain is computationally too complex for automation and thus relies on the understanding and development of the people involved, then top-down, preplanned approaches have intrinsic shortcomings and an emergent approach is required.'

The phrase 'Emergent Design':

'...puts a spotlight on the need (which has not been recognised by education policy makers) to study the conceptual space where the purposeful stance implied by the word "design" mates with the openness implied by the word "emergent". This mating underlies modern approaches to organisational practice.' (Cavallo, 2000:774)

The choice of emergent design approach led to effective change in medical practice. It led to discover of latent expertise and creativity. The emergent approach does not mean the 'abrogation of all design and planning so that 'anything goes'. It is an alternative approach similar to Patel's (2006) 'deferred design', with the difference that Patel (2006; 2007) sets deferred design in the frame of specification design and provides principles and mechanisms for designing emergent systems.

Recognising emergence in business processes, Patel (2007) applied the theory of deferred action to propose the deferred action theoretical model of EBP. Its core components are specified design, emergence, deferred action, deferred design, and process architecture. He argues that the deferred action theoretical model provides the necessary practice framework to design EBP. As detailed in Section 2.6.6, the theoretical model contains three design dimensions of the theory of deferred action: planned action, emergence and deferred action.

By considering these three design dimensions, Patel (2007) argues that non-standardisable processes can be rationally designed to be more responsive to changing environment and adapt well through the local actions of actors in response to emergence. He provides three propositions. One, 'process architecture design is effective when based on sound e-business model.' Two, 'Organisational emergence affects process architecture design.' Three, 'The model of EBP (non-standardisable process evolves.' (p.14). The present action research builds on this body of work on EBP.

It is concluded that emergence occurs and that it needs to be better understood. It creates emergent uncertainty and in the case of non-standardisable processes results in unexpected process events, activities, states and time-points. Therefore, the next section is a discussion on emergence, complexity theory, and theories of design for emergence.

2.7 Emergence

The literature on emergence spans many disciplines including sociology, management, information systems and cognition (Loula, et al., 2010), and also art and design studies (Seevnick, 2008). As this research is in the flied of management, the literature reviewed will focus on the related disciplines of sociology and information systems.

2.7.1 Emergence

Mead's (1934) sociological theory of emergence focuses on conditional interactionism, where every social event or fact emerges through the interactions between an individual and their social and physical environment. This interaction is conditioned by patterns, processes and contents of the interaction (Chang, 2004). But these are mediated by other mechanisms like role-taking, self-regulation, rationality and symbolic and non-symbolic gestures. The interaction is dependent on pre-existing conditions of the individual and the environment in which the interaction takes place.

Mead's idea of emergence through interaction of the individual and the environment is relevant for understanding process. A business process consists of individuals performing tasks in predetermined conditions and set environment. But according to emergence, the interaction between the individual and this environment is not predictable, it is emergent.

Mead's fundamental concept is that when a living form interacts with its environment, a new object emerges. Specifically, implemented process involves actors undertaking tasks to achieve the process goal, but the process operates in a social and physical environment that

affects it in unpredictable ways that make a complete pre-specified design not possible. Which results in EBP that could vary from the pre-designed process. In Mead's terms emergence occurs in the 'fields of interaction.' The fields of interaction in process design would be individuals working on the process and the pre-specified process. Mead argues that during the interaction that occurs between these fields the actual event, in this case process, emerges.

Similarly, researchers argue that social phenomena, like organisations, management, and information systems are characterised by emergence (Stacey, 2000; Maguire and Mckelvey, 1999) and are better understood as CAS. Other examples of CAS are the scientific enterprise, economy, population and business processes. Complexity, as applied to management, focuses on multiple and multi-level interactions of a system's constituents and self-organisation (Fitzgerald and van Eijnatten, 2002).

So, organisations' environment affects business processes. The process configuration of manufacturing firms that operate in complex environments is more complex than firms which operate in less complex environments (Grobler et al., 2006). Grobler et al.'s quantitative study also showed that firms have different EBP to adapt to increases in external complexity. Manufacturing firms' adaptative processes has two implications. Since firms have to adapt to external complexity, how we conceptualise business process needs to change; business processes need to be conceptualised as dynamically emergent or EBP.

As Grobler et. al. (2006:255) note:

'...complexity increases the problems of making effective decisions and of designing sound policies. This is true in operations and production management with its highly interwoven arrangement of people, information, machines and material.'

They found that the complexity of internal structure of manufacturing firms increases with an increasingly complex environment. Secondly, as firms adapt their business processes to external complexity, how we design and implement business processes needs to reflect the adaptive dynamics. Complexity here means pre-specification of the process is not possible. The interactions among the elements of the process are too complex in themselves and, because they respond to the complex environment as and when required, they cannot be pre-specified or they do not have a 'predictable path' (Section 2.8.4).

Such empirical evidence of emergence in organisations is fundamentally supported with literature from complexity theory. Complex systems are 'non-linear', meaning that they do not have a definite predictable path. Four assumptions underpin complex systems according to Lichtenstein (2000a): change is constant in a complex system; the property of emergence means that complex systems, as emergent systems, cannot be reduced to their parts; the parts of the complex systems are interdependent and mutually dependent; and complex systems behave in non-proportional ways and are emergent.

This research sought to understand and re-design the SAF procurement process as emergent. This review has two layers. The first is the general complexity theory. Complexity theory was used to define and conceptualise non-standardisable business processes as EBP, and to help answer the first research question on the effect of emergence on processes. The second layer is the theory of deferred action. Deferred action was used because it provides principles for designing for emergence. It was used to help design EBP, and to help answer the second research question on how to design EBP. The research literature relevant to applying both these theories to design EBP therefore form the focus of this review.

2.7.2 Complexity & Emergence

It is argued by researchers that social phenomena, like organisations, management, and information systems are *complex adaptive systems* (Stacey, 2000; Maguire and Mckelvey, 1999). Other examples are the scientific enterprise, economy, population and business processes. In this research, non-standardisable business processes too are conceptualised as complex adaptive systems (CAS). The elements of processes are people, organisation of work and IT that interconnect to make a complex system. The complexity is reflected in the events, activity, state and time-points elements of processes, which can be both *predictable* and *unpredictable.* Their coming and staying together composes the CAS or EBP. First we need to understand systems.

'Systems are objects with varying degrees of complexity, although they are always acknowledged as containing elements that interact with one another.' (Bertuglia and Vaio, 2005:3). The staying together of the elements defines systems. A system that self-organizes to adapt in response to its environment is a complex adaptive system. Examples include cultural evolution, evolution of organizations and societies, evolution of economies and global economies. The system acquires information on its environment and on its own interaction with that environment. This information is structured into regularities and then condensed into a schema or model for acting in the real world.

Adaptation of the system to its environment occurs when the system changes itself and its schema when they are inappropriate for being in the real world (Gell-Mann, 1995). Systems become unstable because of environmental factors and they use self-organisation to stabilise themselves. Self-organisation is the response of a system to uncertain and random change in the environment that causes the system to become unstable. An existing order is disturbed by the environmental change. The stability is then restored by the system self-organizing without some external causative factor. The restored stability is an emergent order. Emergence is intrinsic to a self-organizing system. It results in a new structure that is intrinsic to the system and that is not caused by an external factor. The structure of the internal elements and their relations distinguish a CAS from its environment, and this structure and internal relations is called complexity.

This research took a *social* systems view of Non-standardisable business processes in PSO. A social systems view or systems thinking allows the problem to be modelled as a whole or system. Individual elements in a system are interconnected. The elements of a PSO are people, organisational structure, procedures and processes. Systems thinking has been applied by some researcher to PSO to reduce costs and improve efficiency, but has not been successful (Seddon, 2008; Seddon and Brand, 2008). A system is conceptualised as a composite of interconnected elements with a distinct boundary that separates the system from its environment (Hall and Fagen, 1956; Forrester, 1994). Systems in systems thinking are currently understood to mechanistic, composing interconnected elements that behave according to causes and their effects (Westell, 2011). But this cause and effect principle does not apply to complex systems. This research did not seek cause-effect relations in business process but used the complex systems ideas to understand and design EBP.

Social aspect of organisations, human activity of production or service provision, is recognised explicitly in the socio-technical systems approach (Mumford, 1983). Socio-technical system is the idea that the system is a composed of interconnected social and technical elements, not only the technical elements. Emphasis on the social aspect of the system requires analysis and understanding of human activity, as it interacts and connects with the technical aspect of the system (Mumford, 1987). Pavard and Dugdale (2006) discuss the contribution of complexity theory to the study of socio-technical cooperative systems, as integral and advancing socio-technical systems knowledge.

From a systems dynamic perspective, Senge (2006) favours double-loop learning because it questions underlying assumptions held by individuals and embedded in organisation. He

argues organisations should create a shared identity, to focus on unlearning anti-learning behaviours to enable organisational transformation.

2.7.3 Emergent Organization

This Section begins by reviewing important literature on organisation studies which explains organisation procedure, routines and structure as emergent and related literature on emergence in other fields. This provides the focus to examine the literature on 'emergent organisations' which discusses the effect of complexity on operations and business processes. Evidence of emergence has implications for non-standardisable business processes. Changes in resources, social emergence, complex interactions among elements and need for adaptation affect conceptualisation and design of EBP.

Emergence has been observed empirically in organisational routines, procedures and structure. Feldman's (2000) study of organizational routines reveals how routines are a source of continuous change or emergence. Feldman (2000) showed that management's perception that routines once designed should be stable did not match her data. Organisational routines were affected by other factors, such as knowledge, and resulted in them changing. This led Feldman to research whether organisational structure was subject to similar emergence. Her later study reveals that organizational structure itself is emergent (Feldman, 2004). She found that factors like management decisions, competitors' competitive actions, and knowledge resulted in emerging organisational structure. Such emergence affects organizational resource needs and therefore arguably business processes. When organisational resources change because of emergence, it is likely to affect processes.

Brodbeck (2002) investigated complexity in organizational procedure design and complex business processes. He states that the specification design approach is not adequate to design business processes. He identified communication, staff involvement and authority as issues for business processes and reward and penalty, fairness and consistency for organizational procedure design. He concluded that complexity theory has relevance for organizational and process design. Emergence also affects knowledge processes of organisations (Truex et al. 1999; Patel, 2005). Markus et al. (2002) showed that organisational knowledge processes as emergent.

Alaa (2009) identified factors of emergence using CAS and social autopoiesis theories. Social autopoiesis focuses on social elements such as communication, morale and trust, and their relation to social emergence. CAS focus on adaptive mechanisms that enable a complex

system to produce emergent behaviour and order, such as inter-relations, interactions and feedback. Two types of factors were identified, tangible or intangible and dynamic or enabling infrastructure. Dynamic factors realise emergent properties and enabling factors enable the dynamic factors to become effective. Dynamic factors have a controlling influence too, preventing instability by balancing excessive change.

Lichtenstein (2000b) found that it is through self-organisation that emergent behaviour occurs during significant change management, particularly when companies have major transformation programmes. He found three principals at work in the in-depth case studies: high self-reference, increased capacity and interdependent organising. These principals useful for how organisational order is created and self-organising processes in work groups and organisational change project.

Based on the above concepts and empirical evidence on emergence in organisation, this study conceptualises the SAF procurement process as an emergent organisation. Characterisation of business processes as emergent is found in Patel (2007). For business processes, Patel (2006:12) states:

> 'Emergence is an unpredictable effect of the interrelatedness of multifarious purposes and the means to achieve them that is characteristic of social action. By implication, emergence is the non-specifiable constraint on rational design because it cannot be determined as design objects, it is off-design.'

Emergence is characteristic of social systems. It is unpredictable and un-specifiable. It is the non-repeating patterns that arise from interactions and communications between actors, between actors and business processes as they actually happen, and located in various organizational settings over time.

Lichtenstein (2000a) states that researchers of complex systems have identified four basic assumptions: change is a constant; emergent systems are not reducible to their parts; entities in a system are mutually dependent; and complex systems behave in non-proportional ways. Lichtenstein applied these assumptions to explain why order emerges in organizations, and proposed a three-stage process model of CAS change. He studied examples from two entrepreneurial firms undergoing transformative shifts in their development and argues that they are useful for understanding order creation and self-organizing processes in work groups, project ventures, and organizations. These assumptions discovered by complexity researchers are assumed to be true of business processes in organisations.

Truex et al's. (1999) study identifies that organisations exhibit continuously changing characteristics which they characterise as 'emergent'. Truex et al. (1999:117) state that there are limited means to address 'emergent organisation' – 'a theory of social organisation that does not assume that stable structures underpin organisations' - including prototyping, end-user development, and open systems connectivity. They propose an alternative set of assumptions and goals to develop information systems for emergent organisation. The goals include 'always analyse', 'dynamic requirements negotiation', 'incomplete, usefully ambiguous specifications', and 'continuous redevelopment.' Similarly, Truex et al. (2000) develop a deeper understanding of 'method' and propose 'the deferred meaning of systems development methods'. But they only propose a 'hypothetical 'method-less' view of information systems development and do not provide instances.

Specification approaches begin by getting complete requirements of the value chain and assume that implemented process remains constant in actual operation. But the changing environment affects business processes and the actual enacted business process is not the one that was designed. In practice, it is confronted with emergence and copes by adapting to become an EBP. In the context of knowledge-intensive processes, Markus et al. (2002), define EBP as:

- An emergent process of 'deliberations' with no best structure or sequence;
- Highly unpredictable potential users and work contexts; and
- Information requirements that include general, specific and tacit knowledge distributed across experts and non-experts.

Markus et al. (2002) cite strategic business planning, new product development, and organisation design as examples of EBP.

This evidence of emergent organisation in the literature suggests that business processes need to be emergent. This understanding in the literature of complexity, emergence, people's involvement, adaptation, unpredictable events and emerging information requirements is used in for the deferred theoretical framework of this research (Section 2.8.4)

2.7.4 Emergence in Business Processes

Previous Sections detailed the research on emergence and complexity as applied to organisations, information systems and management and its effect on organisation design, organisation structure and procedures, and knowledge processes. In contrast to managing

static organisations, Clegg et al. (2005) identify issues that affect the management of emergent organisations. One of these issues is emergence. It is argued in this research that emergence also affects business processes.

As Grobler et. al. (2006) found that the complexity of internal structure of manufacturing firms increases with an increasingly complex environment. Secondly, as firms adapt their business processes to external complexity, how we design and implement business processes needs to reflect the adaptive dynamics. This is supported by Horan & Finch's (2013) study. They argue that action itself in an emerging context is emergent. Such adaptive dynamics involves organizational routines and how they change in response to the complex environment, and can be seen as a source of change and stability (Feldman and Pentland, 2003).Explaining what kind of action to take is critical in adaptive dynamics. Pentland et al., (2012) proposes a generative model of organizational routines and how they change over time. Their model shows how patterns of action depend on variation and selection and retention of patterns of action, that enable dynamic capabilities, such as 'formation', 'inertia', 'endogenous change', and 'learning'.

Hovorka (2013) defines emergence as 'the formation of complex wholes from parts' and argues that it is central for understanding the dynamics of relationships between people, technology, and organizations. Such emergence makes designing ongoing. Lichtenstein (2008) draws on complexity science to propose a scale free theory of emergence. He defines emergence as the "coming into being" of new processes, structures and entities' and emergence creates new levels of organizing. This suggests that in order to face emergence, entities self-organise, which is an important principle in emergence. Ramírez-Trejo and Van de Vijver (2010) argue that complex change leads to 'qualitative ruptures' and that change is constant. Similarly, Dawoody (2011) argues that such nonlinear studies range in the natural and social science, including public policy studies.

Seibt (2009) discusses General Process Theory (GPT) as new process ontology. In GPT practice is a configuration of 'goings-on' or 'dynamics'; these are concrete, dynamic, 'non-particular individuals called general processes.' It applies to process, interaction and emergence. He states that GPT can be applied to show differences between 'causal, mechanistic, functional, self-maintaining, and recursively self-maintaining interactions'; which all involve 'emergent phenomena'. Such emergent phenomena is evident in information systems.

Corea (2014) discusses the 'emergent nature of organizational action in the use of information technologies. It is contextual, evolutionary, and not easy to anticipate. He argues that research on organizational emergence as a property is needed. He proposed a theoretical framework to understand technology-based organizational action. Similarly, Lin and Cornford (2000) argue that design is not 'an isolated process of design ahead of implementation and use. They argues that information systems evolve technically and socially, and systems end up doing something else and something different from what their designers intended; which they say is the phenomena of emergence. Thus they say that 'design is not a distinct and separable prior activity'; rather it is on-going. Importantly, this means that the system in use and how it adapts and changes over time is important to understand.

The literature covered in this Section clearly shows that emergence affects many aspects of organisation. While the effect of emergence is researched by researchers in organisation studies, information systems and management, it has received little attention from business process researchers. Grobler et al.'s (2006) study is an exception and an important contribution, but they focused on decision-making and not business processes. This research focuses on the effect of emergence on non-standardisable business processes.

Emergence is characteristic of organisations and needs to be considered in process design approaches. Research reveals that organizational routines, processes, structures and resources all are emergent. Information necessary to design process, or the requirements of the processes is also emergent. As shown in the above in section 2.7.3, such information can itself be emergent.

As emergence is evident in organisations and non-standardised business processes are integral to organisations, it is concluded that there might be benefit in proposing a methodology to design EBP. The next section draws on the theory of deferred action as such a design theory. It is combined, in Chapter 4, with action research, to develop a methodology to design EBP.

2.7.5 CAS-based Procurement Process

In this Section the procurement process is conceptualized as a CAS. Choi et al. (2001) focus on the emergence property of supply chain management. They argue that purposeful design or rational design of supply chains underplays the emergent aspects of supply chain in

practice. They therefore characterise supply chains as complex adaptive systems exhibiting emergence, shown in Table 2.4.

Table 2-4 Supply Chains as Complex Adaptive Systems Exhibiting Emergence

Internal mechanism	Description of CAS
Agents and schema	Agents share interpretive and behavioural rules and fitness at different levels of scale
Self organisation and emergence	Patterns are created through simultaneous and parallel actions of multiple agents
Connectivity	Extensive inter-relationships are possible even at low levels of connectivity
Dimensionality	Negative feedback and controls reduce dimensionality, while autonomy and decentralisation increases dimensionality
Environment Dynamism	Changes are constant and inter-dependent
Rugged landscape	Global optimisation is simple when criteria are independent, but becomes very complex when criteria are inter-dependent
Co-evolution Quasi-equilibrium and state change	Attractors are sensitive to changes as the CAS is pulled away from quasi-equilibrium state to a far-from-equilibrium state
Non-linear changes	There is lack of linear correlation between causes and effects
Non-random future	Common patterns of behaviour are observable

Adapted from Choi et al., (2001:358)

Several significant emergent features of the SAF procurement process can be noted. One is that no one individual or department was central to organising and controlling the SAF procurement process. This is the central feature of self-organising of emergent organisation. Another significant feature is that there is an 'over-arching scheme' operating that controls the emergence. In the SAF procurement this was the FPD Guidelines. The most significant feature is that there were unexpected and unpredictable events always occurring. This made the process owners constantly reassess and reshuffle the process to try to achieve the process goal.

The actual operational features that reflect these emergent characteristics are discussed and illustrated in Section 3.4 below. They show that the SAF procurement process can be accurately described as a complex adaptive system.

Conceptualising the SAF procurement process as an emergent process has implications for how the process is designed and operated in actuality. The main point is that it is not possible to base the design on complete specification of requirements or completely detailing ASET, because it is not possible to determine what they would be in an emergent context. This is because emergence produces unexpected and unpredictable activities, events, states and time-points in the process. For example, the KMOD changed the size of the required ammunition and various tendering companies requested an extension to the deadline for tender submission. Further examples are in Appendix (A).

Patel (2006) recommends the underspecification principle to design complex adaptive systems. Only the structural and functional features of a social system should be designed and not the detailed pre-specification features. In EBP the structural and functional features include pre-specifiable process ASET. It is problematical to establish complete process requirements because they change even during the design process. This recognises the occurrence of emergence. These design issues are further discussed in Section 3.4.

The combined effect of all these emergent features is that the SAF procurement process actually operated as an EBP, whereas it was expected to operate as a standardisable process. This expectation from the process owners and stakeholders raised management problems and frustration with the process, because it was not behaving as expected.

Patel (2006) extends the self-organising principle to human activity systems. The self-organising principle is that reflective designers should enable actors interacting with a designed system to self-organise how it is used socio-technically. The designed system should be self-organizing and the self-organization should be done by local actors or active designers. In EBP this means that process owners should be able to take executive decisions when unexpected process events arise and engage in process activities that were not pre-designed. The Web is such an example of self-organising system in which all the users of the Web collectively define its structure and informational content.

As Mitleton-Kelly and Land (2012) state, in complexity as one system evolves it affects how other systems it is connected with also evolve. This is called co-evolution principle of complexity. A new order is the result of emergence and self-organisation, and the result is co-evolution. This is further shown and analysed in the next Section using the process comparison framework detailed in Section 2.5.7.

2.8 Theory of Deferred Action

It is necessary to focus on a theory that provides guidance on how to design for emergent organisation, therefore the theory of deferred action is invoked. It is elaborated in Patel (2006; 2007; 2010; 2012). It has been invoked to design systems by Elliman and Eatock (2005), who designed an e-arbitration system; Dron (2005) who designed an e-learning system; Ramrattan (2010) who designed a Web-based information system and Nyame-Asiamah and Patel (2010) who did an ethnographic study of organisational learning and knowledge management in healthcare organisation. The theory of deferred action is elaborated in Patel's work (2006;2007;2010;2012).The theory is recognised by researchers as a 'theory used in IS research' on the Association of Information Systems wiki (BYU, 2012).

The theory of deferred action is a design and action theory or Type V, as defined by Gregor (2006) in her article on theories. Theories that explain phenomena are explanatory theories. For example, management theory explains how managers manage companies. Theories that explain how to design are called 'design and action' theory and they are prescriptive. The theory of deferred action explains the type of design needed to reflect emergence and prescribes that specification design can be synthesised with social emergence to reflect emergence. Deferred action provides capability to actors to respond to changing environment. These responding actions facilitate emergence. Design and action theories explain how to design artefacts that enable human action. Simon's (2006) bounded rationality is an example.

Elliman and Eatock (2005) argue that the theory of deferred action provides the new principle of deferred design decisions (DDD) for designing evolving or emergent systems. They used this principle to design an e-arbitration system. They showed that by using the DDD principle, the e-arbitration system did not have to be designed using an exhaustive set of requirements. Dron (2005) argued that the notion of 'deferred action' describes well the way students learn, and he used the principle of deferred design decision to design an e-learning system.

Ramrattan (2010) used the theory's 'deferred model of reality' to explain how to design web-based information system. The deferred model of reality (DMR) is invoked in this research too (Section 2.8.4). Ramrattan (2010) also applied the DDD principle. He showed that the web-based information system based on the DMR and DDD, enabled the system to change according to organisational change. Nyame-Asiamah and Patel (2010) did an ethnographic study of organisational learning and knowledge management in a healthcare organisation using the DMR perspective. They proposed a model to explain how organisational learning

and knowledge management benefit from including emergent aspects. Al Sabah and Patel (2013) applied the DMR to design EBP. The researcher did not find literature critical of the theory of deferred action but suggests some critical of the theory in Section 2.8.4. The theory's use by researchers shows that it addresses the problem of designing for emergence - changing organisation, including their structure, processes, procedures and policies. This is the problem of designing 'emergent organisation'.

In the context of emergent organization, complex systems are a new class of design problem. The theory of deferred action provides an appropriate theoretical lens to research EBP. It proposes that organisation and systems design should cater for emergence by synthesising both rational design and emergent design. It supports purposeful action that is rationally designed and enables actors' local action to respond to emergence.

The principle of emergence is recognised in various business design problems. In environmental sustainability, Irwin (2011:47) notes:

'The principle of emergence ...is particularly relevant for designers because it posits that preconceived or designed change within open systems cannot be directed; the system can be perturbed, but the way in which it responds is self-determined. Therefore, designers cannot accurately predict how their design will "perturb" the system upon which it is imposed – they can only design as catalysts for change.'

As a design and action theory, the theory of deferred action explains the type of design needed to reflect emergent organisation. The deferred action theory is based on systems thinking. It proposes that rational design should be systemic and respond to changing environment by reflecting and enabling systemic emergence. It therefore proposes the DMR as a basis for rational design capable of reflecting systemic emergence. The theory is graphically depicted in Figure 2-3.

In contrast to rational design's single rationality design dimension, the theory of deferred action identifies three dimensions of design, planned action (p), emergent organisation (e) and deferred action (d). There are phenomena underpinning each dimension. Planned action is underpinned by rational design or rationalism, the belief that human purposeful action should be rationally determined. Emergent organisation is underpinned by emergence, recognising that, like natural and physical systems, organisations and their processes designed by humans, are subject to emergence. Deferred action is underpinned by natural

design, the natural propensity of humans to pursue their goal in any environment they encounter to survive (Patel, 2006: 30-31).

Any intersection in Figure 2-3 on these three design dimensions results in the space for controlled emergence. Four idealised types are shown Real Systems, Deferred Systems, Specified Systems and Autonomous Systems. At point A, a real system example is air traffic control, where the air traffic control has to be in real time. The rational design is done to achieve a purpose, control air traffic, and reality and the design are same. Any difference in the design and reality can be disastrous.

At point C, a specified system is purely rationally designed. The design relies on the power of rational thinking. Often, the design does not match reality; the system lags behind actual events in which the system operates. This is because rational design cannot meet the requirement of complete pre-planning and predict all future requirements. Future requirements are caused by internal and external factors or the environment. The changing environment, depicted on the Y axis as emergence, affects the designed specified systems and eventually causes it to change. It is argued here that business processes have been designed as such specified systems.

Figure 2-3 Graphical Illustration of the Theory of Deferred Action

Deferred action design space for controlled emergence of organisation and systems

(S=R)
A = Real models of reality. Achieving near 1-to-1 correspondence between model and the system it models in real time. Real systems reflect present time.

(S→R)
B = Deferred models of reality. Imposing purposive designed structure on reality but enabling actors to shape the design in the context of real situations to achieve some future state. Deferred systems are future-oriented.

(S < R)
C = Static models of reality. Imposing purposive design strucuture on reality but constraining actors to behave according to it regardless of the actual situation. Static systems reflect the past.

(S + R)
D = Autonomous models of reality. Human action is replaced by actions by intelligent agents designed to achieve desired results. Autonomous systems reflect present and future time.

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Source: Patel (2012)

Patel (2012) argues that in order to reflect emergence, designs need to move to the three dimensional space depicted by point B, which he calls deferred systems. The design accounts for rational thinking (purposeful action)along the X axis and emergence along the Y axis, and enables response to emergence as deferred action along the Z axis.

A deferred system is designed by identifying the appropriate structure and deferment points by applying principles of deferred systems design. A deferment point is a point at the intersection of two dimensions of design, planned action and emergence. Action Researcher had observed such emergence in the SAF procurement process prior to undertaking PhD research, therefore, decided to apply deferred systems to the problem of designing procurement process. (For explanations of the other ideal types See Patel, 2006; 2012).

2.8.1 Deferred Model of Reality

This AR applied the deferred model of reality (DMR) to study the ongoing SAF procurement process and redesign the FPD procurement process to reflect emergence, to improve other business performance measures, like cost and time reduction and increased efficiency to complete procurement contracts successfully.

Design is linked to the operations of an organisation. It is inseparable from the organisation's primary objectives:

> 'Design is typically associated with the products, communications, and complex built environment that arise out of the business arena as the physical components of commerce and service offers, which links design in a subordinate position to business.' (Irwin, 2011:41)

Design problems can be classed into 'wicked' design problems and 'tame' design problems. Wicked design problems are very complex because they involve emergence and complex interdependencies and interrelations which emerge (Irwin, 2011), which cannot be reduced to simple specifications. Wicked design problems have no complete and definite prior formulation or test for solution.

Tame design problems of the dominant paradigm for designing business processes assumes that rational design is sufficient. Current business process design approaches, methods and methodologies, involve systematic and detailed pre-planning of business process. The design and operation of the FPD procurement process fits this dominant rational approach. The procurement process has been rationally designed, involving government, its legal and

regulatory agencies and KMOD. Action Researcher had observed this rationally designed business process in operation and found that it did not work well in practice.

She observed five shortcomings of the rational design approach during the implementation of the SAF procurement process. First, it assumes rational thinking is sufficient to design and operate the process. When problems were encountered, like unexpected events, more rational effort was applied to comply with the process and make it even more systematic. Managers believed that more and better standards, methods and methodologies can resolve the problems. Second, the rational design did not account for the changing environment of the process. It assumed the environment has no effect on the process and did not consider how changes in it affected the procurement process. Third, it assumed that there is no change in the pre-planned process, once it was designed and implemented. Process owner, workers and stakeholders believed it should operate as designed. Fourth, it assumed that actors' purposes and perspectives do not change during the enactment of the process. Fifth, it assumed there is no need for local design, by actors in the situation or designing-in-action.

Therefore, Action Researcher decided that theoretical perspectives based on pure rationalism, such as the current process design methodologies, would be inappropriate because they make the same assumptions. She observed in her practice that these assumptions were unrealistic. She chose the deferred action theoretical perspective because it agreed with her observations and experiences as a practicing manager, observations of unexpected events occurring during process execution and emerging local action or designing-in-action in response. The theory of deferred action described the procurement process that she and her co-workers were experiencing in the SAF procurement process. Therefore, it was selected as a better explanation of the FPD procurement process.

In the right pane of Figure 3.1, Patel (2012) describes the deferred model of reality (DMR) underpinning deferred systems. He asserts that designed system (S) implies reality (R), or S $\rightarrow$ R. That is deferred design is:

> 'Imposing purposive designed structure on reality but enabling actors to shape the design in the context of real situations to achieve some future state. Deferred systems are future-oriented.'

Action researcher's interpretation of a deferred system as the DMR is shown in Figure 2-4. Reality in which human purpose is pursed, such as the FPD procurement process is reality in

which rational design should coexist with emergent reality. In the DMR, rational design coexists with emergent reality. Any design that reflects the DMR is termed deferred system.

The DMR is the theoretical model derived from the literature review to research the procurement process. It shows the key constructs and their relationships that were investigated. Emergence is a feature of complex systems which are emergent and adaptive. Structure is affected by emergence and it is itself emergent and adaptive. Peoples' action is affected by emergence which is called deferred action.

Figure2-4 shows the planned action dimension as the square object 'Structure'. Structure is created by agents purposefully to achieve goals and it embodies rational designs necessary to achieve the goals. Institutions, like the KMOD/FPD, are created by interaction of agents' actions and structure, which Giddens (1984) calls structuration theory. Barley and Tobert (1997) state: 'Actions and institutions are recursively related'. The interaction between action and structure also has an effect on rational design:

> 'Rather, institutions set bounds on rationality by restricting the opportunities and alternatives we perceive and, thereby, increase the probability of certain types of behaviour. However, just as perfect rationality is rare, so too is completely bounded rationality. Through choice and action, individuals and organizations can deliberately modify, and even eliminate, institutions (Barley and Tobert, 1997:2).

Another effect on structure is the emergence dimension, so structure is purposeful and emergent and determines the types of rational behaviour possible. Emergence is shown as the octagon object 'Emergence'. Emergence is a feature of complexity and complex systems, like organisations and their subsystems like procurement processes. Complex systems are emergent and adaptive (McMillan, 2004).

Emergence defines and drives agency and agency acts on structure. Agency is affected by emergence and responds accordingly. Agency or deferred action is shown as the circle. Agency is simply the actions of actors.

Figure 2-4 Differed Model of Reality
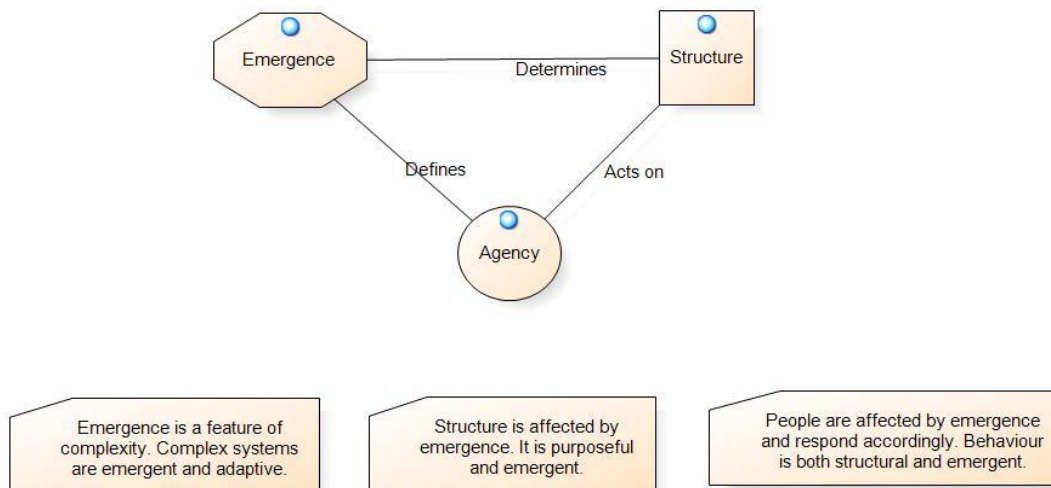
The DMR suggests that organised behaviour is both deliberate (structural) and encountered (emergent) and simultaneously so. This is the critical difference between deferred action and rational design. Rational design assumes that deliberate organised behaviour consists of only rational planning. The DMR assumes that deliberate organised behaviour, such as the procurement process, is both deliberate and emergent.

To empirically evidence this, data was collected on these three constructs of the DMR, structure, emergence and agency. Data on structure consisted of interviews with the process owner and process workers and reflection in the reflective diary of Action Researcher, on the governmental and regulatory structure of the procurement process. Data was also collected on the three design dimensions of the theory. Data on planned action consisted of interpretation of the FPD Guidelines and associated documents. Data on emergence and deferred action (agency) consisted of interviews with the process owner and process workers and reflection in the reflective diary.

2.8.2 Deferred Design Principles

The deferred design principles stem from the DMR. They have been proposed by Patel (2007) to conceptualize and design emergent systems. The principles reflect emergence by reconciling the need for specification design and the ability to respond to emergence. The qualitative framework for comparing process design approaches (Section 2.5.7) can be used. In non-standardisable most processes process ASET can be pre-specified, but because of the complexity and emergent uncertainty of the process many would arises unexpectedly. The six deferred design principles recognize the occurrence of such emergence in designed artifacts and seek to enable actors to respond to it in context (Patel, Eldabi, & Khan, 2010). The

principles prescribe that emergent systems should be designed along three dimensions of deferred design for emergent systems. The deferred design principles are:

Underspecification The underspecification principle is that 'reflective designers' should design only the structural and functional features of a social system, leaving actual operational design to 'active designers', or local actors. In non-standardisable processes the structural and functional features include pre-specifiable process activities, events, states and time-points. Emphasis on underspecification is because the DMR recognises that it is problematical to establish complete requirements and that requirements change even during the design process. Critically, this principle recognises the occurrence of unexpected events or emergence by not restricting behaviour through detailed specified design. So, certain process events in non-standardisable processes can arise unexpectedly. Examples of underspecified systems are the spreadsheet and the Web. The structure and computational means are specified in the spreadsheet design but the actual situational functionality, the application, is determined locally by users depending on their needs. The same is true for the Web.

Deferment Points The functional deferment point principle is that reflective designers should identify operational points in the social system, where deferred design by active designers is needed. This is a better way to finding emergent points. A deferment point is any recognisable pattern where unexpected events are likely to occur. In non-standardisable processes this includes process events and time-points that arise because of the changing environment. In the spreadsheet an example is the blank cell where users enter their own formulae and data. In the Web an example is the Web link connections or URL.

Self-organisation The self-organising principle is that reflective designers should enable actors using a designed system to self-organise how it is used socio-technically. The designed system should be self-organizing and the self-organization should be done by local actors or active designers. In non-standardisable processes this means that process owners should be able to take executive decisions when unexpected process events arise and engage in process activities that were not pre-designed. The Web is such an example of self-organising system in which all the users of the Web collectively define its structure and informational content.

Adaptation The adaptation principle is that reflective designers should design the social system to be adaptable. The system needs to react to its changing environment and it does this by adapting itself. This can be done by dividing design into structural design and

operational design. Also, deferment points need to be provided as points at which adaptation can happen. In non-standardisable processes deferment points can be provided as executive decisions at points of unexpected process events. In the Web adaptation is manifested by the changing structure and content of the Web, as new applications are made. The most recent is its application for social uses resulting in Web 2.0 and applications like Facebook and other social media.

Ethics The ethics principle is that active designers should be enabled to design a social system themselves, since they are live and experience it. Since people who do any actual work are aware of what to do and how to do it they should be empowered to design it too. Traditionally, work is designed top-down from managers to workers. The ethics principle is that scope should be given to workers to design for themselves through self-organisation and deferred design decisions, the next principle. The ethics principle is evident in the spreadsheet and the Web, as users determine the functionality themselves.

Deferred Design Decisions The DDD principle is that the actual design of a social system should be deferred to reflective designers, who respond to social systemic emergence by taking DDD. A system that operates in a changing environment needs to adapt to it. In social systems this adaptation can be best done by local actors. Therefore, the design decisions are deferred to such local actors over time and in space. However, only selected and competent local actors, such as process owners in process design, would be empowered to make DDD. Also, the level of expert design is minimal and does not require high technical capability. In non-standardisable processes this is the executive decisions by expert process owners.

DDD does not mean that local actors to technical design similar to a professional process modeller. As noted above, it means local response to social emergence. The theory makes the separation between the 'reflective designer', who is capable of technical design and 'active designer', who is enabled by technical designers with appropriate mechanisms to make DDD. Deferred decisions are also limited to significant actors such as managers who have expert knowledge of the process and can act with confidence. It is not expected that all emergent events can be addressed by deferred decision, thus limiting their effect.

These deferred design principles separate design into two distinct stages. The first stage is the design created by professional designers or 'reflective designers', who are detached from the actual work and have time to reflect on what to design. In this research, they the professional process designers who designed and stipulated the SAF procurement process guidelines. The

principles of underspecification and deferment points are used in this stage. Reflective designers get high level specification of the process concerning the events, activity, state and time-points. These concern what activities will be performed, the start and end events, states of activities if known, and when events and activities need to be performed. This is not the same as a detailed specification needed for example in BPMN. In this first stage, reflective designers rely on as much specification as they can obtain to begin designing. Critically, the process design is not considered incomplete because a full specification of process activities was not obtainable. During the business analysis phase, analysts would look for unpredictable events and group them into 'deferment points', and enable actors to respond to them by designing locally. These local designers are called 'active designers', and they are enabled to take 'deferred design decisions', as the second stage of design. They are called active designer because they are active in the process as it unfolds in real-time. The principles of self-organization, adaptation, ethics and deferred design decisions are used in this stage. Active designers respond to emergence by taking deferred design decisions.

2.8.3 Limitations of Deferred Action

Limitations of the theory need to be considered. How to enable actors to design and provide them with the skills to do so and whether potential deferred design conflicts can occur between actors. This can be addressed by ensuring that deferred design decisions are not technical in nature by limiting them to managerial level – using FPD examples: establishing end user requirements, finalising company's proposals and finalising draft contract and legal matters. These are the deferment points at which DDD can be taken competently by process owners. These issues lead to the following research questions that were investigated:

1. What scale of emergence can be managed using deferred action?
2. What expectations are made of end users who will make deferred decisions?
3. How can we limit the effects of deferred decisions on other parts of the system (i.e. side-effects)?
4. What criteria are to be used to define a deferment point?
5. How can we identify suitable actors to take responsibility for deferred design?

It can be concluded from the research on emergence above that emergence is evident in systems and organisations. As business processes, particularly non-standardisable processes, are part of organisations, it can be conjectured that emergence has an effect on such processes too. This conclusion is further possible because, as noted above, emergence affects resources. Consequently, it can be argued that pre-specified process events might have different, more

or less, resources available at the time point when they occur because of emergence. This is the case for non-standardisable processes, for which it can be concluded that resources affect EBP. It can be further concluded that current process design approaches do not cover such emergent situations and changing resources. This suggests the need for EBP to be regarded as complex adaptive systems, as discussed in the next section.

2.8.4 Complex Adaptive Systems and Theory of Deferred Action

Process has been insufficient in helping organizations meet the challenge of competitiveness in a constantly changing environment (Nurcan et al., 2005), which manifests as unpredictable events that affect process operation. This has been characterised in this review as emergence. Effective application of process to organisational work requires understanding how to design process to cope with emergence. Emergence is composed of information and knowledge communication to fulfil a complex organisational goal. In fulfilling complex organisational goals, the design and flows of information and knowledge needed is both unpredictable or emergent and predictable. It is unpredictable because of complexity.

Complex systems are 'non-linear'. They cannot be explained in cause-effect language because they do not have a definite predictable path. Four assumptions underpin complex systems Lichtenstein (2000a): change is constant in a complex system; the property of emergence means that complex systems, as emergent systems, cannot be reduced to their parts; the parts of the complex systems are interdependent and mutually dependent; and complex systems behave in non-proportional ways.

In chemical compounds, a complex system is formed by emergence of properties that do not exist in the components that make up the system (Testa and Keir, 2000). This idea is applied to social systems to understand emergent behaviour and emergent social systems like organisations. Individual components of an organisation, like functions, departments and business processes, interacting with each other and responding to their environment produce emergent social systems.

So, complexity is the idea that a system is composed of interconnecting elements defined by a boundary and the system interacts with other elements and systems in the environment and adapts itself. It is this adaptive aspect of complex systems that separates it from other types of systems thinking. Complex systems are emergent systems that adapt to their environment (Gell-Mann, 1995). Examples include weather systems, biological systems, cultural systems and language systems. These systems are complex because they sustain themselves by

adapting to their changing environments and cannot be explained by reducing them to simple cause-effect relations. The combination of the system's adaptation and its changing environment creates interactions between the system and its environment that is *complex*. This means that finding simple cause-effect relations is not possible in complex systems.

Andriani and McKelvey (2009) argue that quantitative investigations of emergence in organisational research are also valid characterisations of organisations. They say that scale-free theories are 'increasingly pervasive and valid characterisations of organisational dynamics' (p.1053). Order and adaptation are closely linked. McKelvey (2002) shows that the environment affects the relations between entities in an organisation. This is important for understanding how to design non-standardisable business processes that are responsive to emergence. Process design also needs to focus on 'emergent-order' that arises from the 'adaptive-tension' (McKelvey, 2002) that an organisation faces because of the changing environment.

Emergence is the cornerstone of complexity theory. Emergence occurs at the intersection of order and disorder in a system (Rosenhead, 1998). This means when the system is changing from a stable state to unstable state caused by external factors. Complexity is characterized as constant 'phase change' arising from this kind of emergence. Emergence requires social systems like organisations to adapt and this make them complex adaptive systems (McMillan, 2004). Responses to emergence necessitate 'self-organizing systems' that are CAS. The unexpected change occurring in the SAF procurement process described in Chapter3 is characterised better as this kind emergence. This conceptualisation of the SAF procurement process as a CAS is different from that found in the literature. Some unexpected events in the procurement process can be minor and others can be major leading to 'phase change', meaning a new radical turn in the process occur, as shown by the data presented in Chapter 5.

Emergence a key feature of complexity, has been applied to business and management studies. Grobler et al. (2006) argue that complexity of management is not well understood and that complexity makes decision-making and policy formulation problematical. The problems are more in operations and production management because of the 'highly interwoven arrangement of people, information, machines and material (p.255). In this context, Patel (2007) proposes the deferred action theoretical model of ebusiness systems. This deferred model is capable of catering for emergent factors that affect business processes and will be used to this research. It was detailed above in Section 2.8.4 as the theoretical framework of this research. By applying complexity to business processes, adaptability and

self-organisation become aspects of organizations that are normally not considered in process design methodologies.

Complexity as applied to management focuses on multiple and multi-level interactions of a system's constituents and self-organisation (Fitzgerald and van Eijnatten, 2002). In terms of learning, it focuses on individual and team learning, favouring a local-level or bottom up learning. This was the experience of the researcher and her colleagues.

It can be concluded that non-standardisable process or EBP need to adapt and that adaptation is necessary in designed processes. Non-standardisable processes encounter emergent uncertainty caused by emergent situations. Consequently, they need to adjust to the new situation or adapt. It is concluded that EBP need to be conceptualised as being adaptive complex systems because of emergence.

2.8.5 Applied Theoretical Framework

Application of the theoretical framework drew on the DMR, systems thinking and emergent design. The systems ideas used to frame the business process design problem and identify the solution consist of complex systems and Senge's (2006) systems ideas on the learning organisation. Specifically, the DMR focuses on positive feedback and action, rather than negative feedback. Positive feedback is a feature of systems thinking and has been applied to understand supply chain management:

> 'Most supply chain management literature emphasizes negative feedback for purposes of control; however, the emergent patterns in a supply network can much better be managed through positive feedback, which allows for autonomous action.' (Choi et al., 2001: 351)

The deferred approach incorporate this kind of positive feedback that recognises emergent patterns and enables 'autonomous action'. Positive feedback is obtained through the 'deferment point' mechanism and the autonomous action is facilitated as 'deferred design decisions.'

Emergent design is the idea that the desired change emerges rather than being preplanned. Cavallo (2000:768) comments:

> 'When the desired changes cannot be reliably foreseen, and particularly when the target domain is computationally too complex for automation and this relies on the

understanding and development of the people involved, then top-down, preplanned approaches have intrinsic shortcoming and an emergent approach is required.'

Cavallo (2000) has applied emergent design to process re-engineering. Emergent design is the 'practice of letting the design emerge from an interaction with the client.' (p.768). This type of emergent design compliments AR. Three characteristics of AR make it suitable for research and practice (Shah et. al., 2007). One, the active involvement of the researcher in the practice can influence the process to harvest learning from the research. Two, the research is conducted for explicit change and improvement in the practice. Three, there is emphasis on direct learning and immediate impact of the findings on practice.

Since this is AR, the applied theoretical framework is depicted as a timeline that actually transpired during the SAF procurement process and data was collected in actuality during the Action Researcher's practice. Figure 2-5 shows that upto January 2012, actors reacted to unexpected events (emergence) as interference in the procurement process. After the EBP had been designed and implemented, from April 2012, they controlled the impact of emergence by deferred action, as the EBP was designed as a deferred system. Figure X also details the research process, shown as 'AR methodology' and bracket items above the process timeline. The whole timeline, at the top, is divided into 'Specified Systems' up to April 2012 and 'Deferred System' after the Trial EBP implementation. This shows the distinction between pre-planned business process and deferred business process respectively.

The applied theoretical framework operationalised the idea of deferred systems, deferment points and principles of deferred design. An operational principle is 'any technique or frame of reference about a class of artifacts or its characteristics that facilitates creation, manipulation and modification of artifactual forms' (Dasgupta, 1996; Purao, 2002). These ideas enabled the AR to create or redesign the EBP in ARC Two.

Figure 2-5 Theoretical Framework of the Action Research
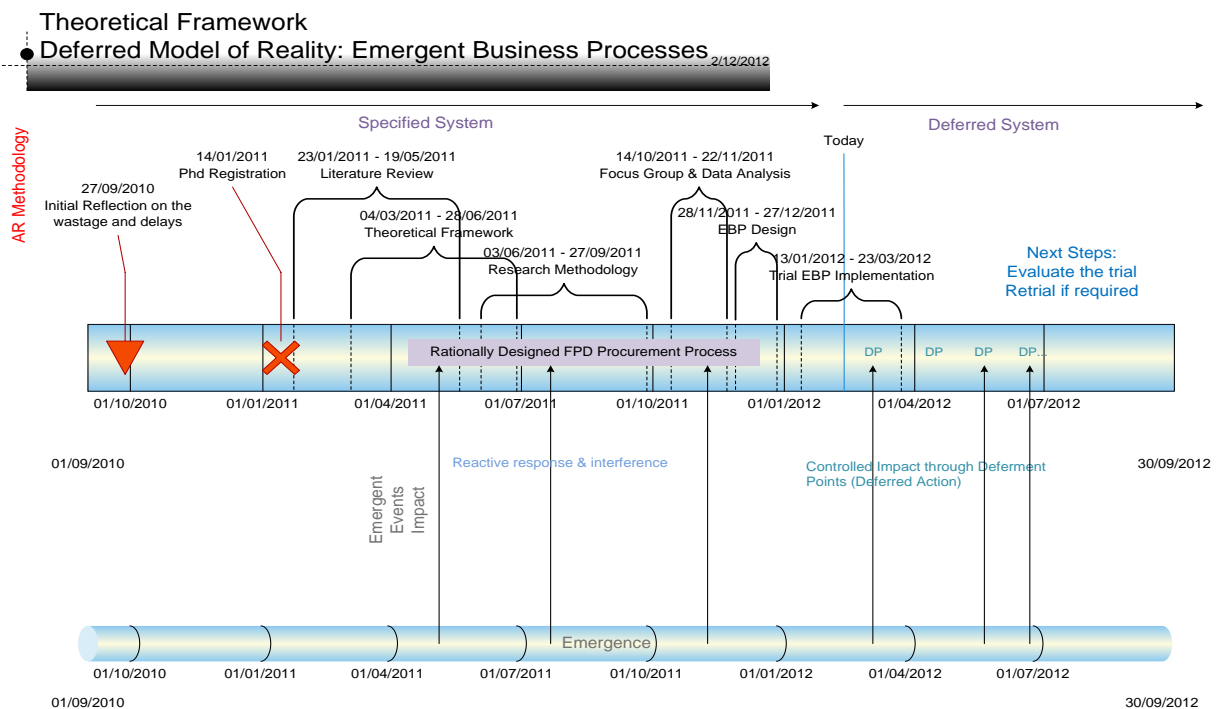
2.9 Designing Systems with Emergent Behaviour

Explanations of emergence above improve our understanding of emergent systems, but they do not provide guidance on *how* to design emergent systems. Emergence, self-organisation and adaptation are central attributes of systems that exhibit emergent behaviour. The challenge in process design is to enable or allow emergent behaviour, but at the same time achieve process goals. The process design should prevent the emergent behaviour from impeding the attainment of process goals. How such systems can be designed is a research programme in computing and artificial intelligence, information systems, management, and organisation design.

The literature on emergence also covers artificial intelligence (Savarimuthu et al., 2008). The Organic Computing (OC) endeavour aims to implement emergent behaviour in technical systems (Müller-Schloer and Sick, 2006), based on physical and biological self-organising and adaptive systems. The OC seeks to understand how to technically use the concepts of self-organisation and emergence, and set out research questions including: 'Can we control self-organisation and emergence without forcing their meaning?' 'Are there generic architectures generally applicable to technical systems serving this purpose?' Müller-Schloer and Sick's work has practical implications for designing technology-oriented emergence. This is 'controlled emergence', in which a system may be emergent for one objective but not

for others. The OC project, like the aim of this research, is to learn how 'emergence and self-organisation can be fostered or even designed in a technical system while, at the same time, they are kept under control' (p.82). This is termed 'controlled emergence'. In terms of Chaos Theory, designable emergence occurs in a narrow 'space between conditions that are too ordered and too disordered.' (Serugendo et al, 2004).

In information systems development, Truex and Baskerville (1998) ask a similar question, but more focused on human interpretation: 'Can we control self-organisation and emergence without forcing their meaning?' They draw on linguistics and the notion of 'deep and surface structures' of language to advocate 'architectural superstructures' which can keep emergent systems under control and focused on the desired objectives. Alaa (2009) developed a framework to apply to information systems development based on facilitating organisational emergence. As detailed in Section2.7.3, Alaa identified specific factors facilitating emergence.

To enable the design of such controlled emergence or EBP, the following section reviews literature that comments on emergence in organisations and business processes which provides directions for designing EBP. The main direction is based on the theory of deferred action detailed as the theoretical framework (Section 2.8), which provides for 'controlled emergence' in organisations through its three design dimensions planned action, emergence and deferred action.

2.9.1 Rational Design & Emergent Design

As noted above, scholars and researchers have proposed complexity-based design, but there is need to know *how* to implement it for non-standardisable process design. The value of this research is both theoretical and practical. This research synthesises the current rational approach to designing business process with the emergent approach. It does this practically for process design by applying the deferred model of reality and associated six deferred design principles to the live SAF procurement processes. It addresses practically the problem of unexpected process events in this procurement process and how to design them. The established design and action theory, namely the theory of deferred action, provides theoretical insights into understanding how to manage unexpected process ASET.

Specification design is unable to cope with emergence. Patel et al., (2010) argue that it is less problematical to design systems when designers face no design emergent uncertainty, in situations when what is required is known. In such situations designers have information

about the requirements and the situation in which the design is implemented is predictable, with little unexpected events happening. In this situation specification design can work well. But such situations of completely predictable information, knowledge and resource are impossible to find empirically. Patel (2012) states that this kind of simplicity is not available to designers of social systems because of design emergent uncertainty. This design emergent uncertainty arises because of emergent organizations that makes predicting and specifying operational requirements difficult.

'Designers do not have complete and perfect information and knowledge about the artefact they design because organizational members themselves lack the knowledge.' (p.38)

Therefore, designers are constrained to work with incomplete knowledge of what is required, imperfect information about what to design, as well as incomplete information on available resources and how to organize them. Also, their designs are implemented in changeable situations affected by changing environment. The cause of this design emergent uncertainty is complexity.

The predictive capacity of designers to design CAS is limited. Prior to design, the purpose of the organisation is knowable only to the extent of designers' rational capacity, but purpose, designed routines and structures do change unpredictably during and after the organisation has been set up, as the organisation interacts with its uncertain environment. Patel (2012) cites the example of companies whose initial purpose of maximizing shareholder value has changed in response to environmental damage and new information on carbon accounting. Bueno, et al., (2014) argue that IT systems also need to adapt because of complex and dynamic business environments.

Standardised process design is simpler in situations when the organisation and the information and knowledge required to manage it can be predetermined, when its design and development is also relatively simple. Emergent uncertainty about the information and knowledge required to manage the organisation arises when all possible process events cannot be predetermined, that is in emergent organisations. The core of this emergent uncertainty is highly unpredictable situations that arise in the course of organizational life and as the organisation interacts with its environment. The absence of the predictive capacity of designers is the essence of design complexity in emergent organisations, and further research is necessary to understand emergence in non-standardisable processes and how to design

EBP. Ullah, K. (2014) applied the deferred design principles to design Shariah finance services (SFS) and proposed a framework that responds and evolves to emergent market environments. He proposes the deferred service-system design (DSD) model, which conceptualises service-systems design that adapt to operational-level environments of SFS organisations in Pakistan.

The literature review too reveals two crucial gaps in our current understanding of business processes in terms of complexity and emergence. One, there is a need to improve our understanding of decision making and policy formulation in the context of complexity (Grobler et al., 2006). To this can be added better understanding of business processes. Two, as firms adapt their business processes to external complexity, there is a need to design and implement business processes that reflect the adaptive dynamics. There is not sufficient theoretical, conceptual and empirical understanding and practical technique to design adaptive business processes. There is also a need to improve upon current knowledge of how to design business processes for emergent organisations. Since not all business processes are specifiable, the gap in our understanding is how to design EBP, or in general terms how to design for emergence.

There is little firm theoretical foundation in the literature that accounts for emergence in business processes. We still do not know what to design as EBP and how to do it. As noted in above, the theory of deferred action has been applied to understand EBP. It characterises business processes as CAS that emerge through their interactions with the environment by self-organising. This deferred action theoretic is invoked here to explain how emergent change can be studied and accommodated when designing EBP.

By viewing business processes as operating in emergent organisation, the research questions from the literature review on process design and related topics are: *What is the effect of emergence on non-standardisable business processes? And how can emergent business processes be design?* These research questions are important for understanding emergence as it affects business process and to develop a methodology for designing EBP. Learning about the effect of emergence on business processes will help to explain how to design EBP. Current literature on process design does not cover the effect of emergence on business processes. It views organisations as stable instead of as emergent organisation. This research will contribute better knowledge and understanding of how to design business processes for emergent organisations. Such business processes are named Emergent Business Processes (EBP).

It can be concluded that new approaches for designing emergent non-standardisable processes are needed. This is the main conclusion drawn from the literature review and the research gap that this research fills. Current research focuses on standardisable processes, where it is possible to fully specify process events, activity, state and time-point. This is not possible in EBP because of emergence, which makes some process events, activities, states and time-points unpredictable. To cope with this emergent uncertainty it is necessary to design suitable approaches for designing EBP.

So, problem addressed in this research concerns designing EBP. Literature reviewed above recognises emergence as a feature of organisations and processes. It is argued that non-standardisable processes encounter emergence and we need to understand it and how to design EBP.

As noted in Section 2.7.4, process design approach is needed for non-standardisable processes. Designing for emergence is the new challenge for designers in diverse disciplines: information systems (Truex et al. 1999; Patel, 2006; Kim and Kaplan, 2006), management (Stacey, 2000), production management (Grobler et. al., 2006), service design (Stuart, 1998; Goldstein, Johnston & Duffy, 2002), operations and organizational learning (VanEijnatten and Putnik, 2004), education and learning (Cavallo, 2000), and knowledge processes Markus et al. (2002). Changing environment creates time and place differences between a design and what is practiced. This is the challenge in designing non-standardisable processes (Marjanovic, 2005).

It is necessary to design EBP, characterized by emergent uncertainty and unpredictable events, to respond to changing environment. This is called emergence in this thesis. Since evidence discussed above shows organisations are emergent (Section 2.6.3) and non-standardisable business process are characterized by emergent uncertainty (Section 2.5.2), it is argued in this thesis that such business processes should be designed to reflect emergence. So, emergent uncertainty in non-standardisable process is equated here with emergence.

This means there is a need for process design approach capable of reflecting emergence. The input, transformation and output activities of non-standardisable processes are problematical to predict because of uncertainties, and the environment has a significant effect on the implemented process. Such processes cannot be pre-planned completely and require what Cavallo (2000:768) terms 'emergent design':

'When the desired changes cannot be reliably foreseen, and particularly when the target domain is computationally too complex for automation and thus relies on the understanding and development of the people involved, then top-down, preplanned approaches have intrinsic shortcomings and an emergent approach is required.'

The term 'Emergent Design':

'...puts a spotlight on the need … to study the conceptual space where the purposeful stance implied by the word "design" mates with the openness implied by the word "emergent". This mating underlies modern approaches to organisational practice.' (Cavallo, 2000:774)

Cavallo asserts that the emergent approach does not mean the 'abrogation of all design and planning so that 'anything goes', but an alternative approach similar to Patel's (2006) 'deferred design', with the difference that Patel (2006; 2007) recognises deferred design in the frame of rational design, and provides design principles and mechanisms for designing emergent systems.

So, can the deferred design approach be used to design non-standardisable business processes? Recognising emergence in business processes, Patel (2007) applied deferred design as explained in the theory of deferred action to propose the deferred action theoretical model of EBP. Its core components are specified design, emergence, deferred action, deferred design, and process architecture. He argues that the deferred action theoretical model provides the necessary practice framework to design EBP. It contains three design dimensions planned action, emergence and deferred action. By considering these three design dimensions in design approaches, Patel (2007) argues that non-standardisable processes can be rationally designed to be more responsive to changing environment and emergent uncertainty, and adapt well through the local actions of actors. The present research builds on that research on EBP.

Another research question is can the deferred design principles of the deferred design approach reflect EBP? Since process events, activity, state and time-point cannot be completely predicted for non-standardisable processes, it is necessary to underspecify them. Underspecification is the first design principle of the deferred design approach. It is the principle that planned design should be specified in accordance with the level of emergent uncertainty and environmental effect on design. A deferred design should have two types of

specification, meta-level and operational. Meta-level specification is to design the structure of a system and operational-level is to design the operations it carries out. Patel (2012) states:

> 'Since detailed operational-level specification of the future functionality of the system cannot be obtained in dynamical environments, the system should be designed on the basis of meta-level specification supplemented with the knowable operational-level specification.' (p.142).

Meta-level and operational-level specification covers the design of the structure elements of an EBP, the knowable ASET of non-standardisable processes.

Consequently, to cater for emergent uncertainty, EBP require deferment points. Second principle is to identify deferment points and incorporate them in the EBP. A deferment point is both a 'structural feature' of the system, such as process activities and states, and contributes to the evolution of the structure by recognising unpredictable events. The unpredictable events of the EBP need to be catered for through such deferment points.

In terms of complexity theory, EBP need to be self-organising and adaptative to cope with emergent uncertainty. So, the third principle is to enable actors to self-organise. Emergent order is generated and preserved through self-organisation. Self-organisation is necessary because the actual prescribed activity of the system is underspecified to allow actors to respond to emergence locally.

> 'Underspecification enables people to interact, dispute, agree and manage their day-to-day situations, and relies on 'self-organising to flesh out the functioning' (Weick, 2004).'

So, the fourth principle is necessary to achieve self-organisation, namely DDD. DDD is to enable active designers to design-in-action. This enables actors to respond to the unexpected events and design for emergence as they experience it. In Cavallo's (2000) terms this is called 'emergent design'.

Finally, borrowing from the design of social systems, Banathy (1996), suggests it is unethical to design for someone else. This principle is the idea that people who use and compose the system, should also be its designers. Design that is imposed on them is unethical. Therefore, Patel (2012) distinguishes between 'reflective designers', who do the rational designing, and 'active designers', who respond to emergence in the actual situation by doing the emergent designing.

In this thesis the deferred design approach was applied to the SAF procurement process using AR. AR is applied research, where 'research informs practice and practice informs research synergistically'; its particular value is in 'explaining what goes on in organisations' (Avison et al., 1999:94). It 'sets out both to make scientific discoveries and to solve practical problems. It does this by acquiring, testing and using knowledge as part of a single process' (Clarke, 1980:152).

AR is an interactive inquiry process that balances problem-solving actions implemented in a collaborative context, with data-driven collaborative research to understand underlying causes and enabling future predictions about personal and organizational change (Reason and Bradbury, 2002). Avison et al. (1999:94) state that:

'Action research combines theory and practice (and researchers and practitioners) through change and reflection in an immediate problematic situation within a mutually acceptable ethical framework.'

AR and the deferred design approach have similarities which complement each other. There are four similarities that make AR a suitable process design approach. One, both the deferred design approach and AR are live action. Since AR is live action, it can cater for uncertain and unpredictable process events in real-time. EBP design needs an approach embedded in real-time analysis. AR embodies real time analysis. As the evidence in the literature cited above shows, EBP are unpredictable and the behaviour of the process reveals itself only during execution, i.e. in real time.

Two, similar to the deferred design approach, in AR actors participate in the research to explore, analyse and improve a practical problem. French (2009) notes that:

'most definitions of AR focus upon the themes of empowerment of participants... i.e. collaboration through participation, acquisition of knowledge, and social change.' (p.189).

Both AR and the deferred design approach place emphasis on the involvement on local actors. Participation of local actors in action research enables process activities, events, states, and time-points to be done in real time, similar to the deferred design approach.

Three, similar to the DDD, in AR local actors take executive decisions on defining and resolving the practical problem. This is the same as deferred design decisions but results in a process design decision.

'The nature of the (*action*) research embodies a multiplicity of views, commentaries and critiques, leading to multiple possible actions and interpretations. This plural structure of inquiry requires a plural text for reporting. This means that there will be many accounts made explicit, with commentaries on their contradictions, and a range of options for action presented. A report, therefore, acts as a support for ongoing discussion among collaborators, rather than a final conclusion of fact.' (Winter, 1989: 58)

Finally, both the deferred design approach and AR require consideration of ethics of design. In AR ethical consideration is necessary to ensure that actors are involved in the framing and resolution of the practical problem (Avison et al. 1999). In the deferred approach, ethical consideration is given to local actors because they are engaged with work, and not the reflective designers.

This research used the deferred design as an approach for designing EBP, by exploring, describing, analysing and improving the ongoing SAF procurement process and redesigning the FPD procurement process as an EBP.

In practice, the SAF procurement process faces the problem of emergent uncertainty and unpredictability. It has emergent and unexpected process events and time-points, such as changing requirements from end user, which caused delay in time. As unexpected process events arose, the designed process activities could not proceed because new approval was required from senior management to address the unexpected process events. The unexpected process events showed that following the designed process, FPD Guidelines, does not work in practice because it does not address how to deal with such unexpected events.

Processes owners tried to deal with unexpected process events through quick solutions, but this did not address the problem of emergence. It requires research to study the problem and seek a theoretical basis to handle it. The FPD Guidelines focus only on the predictable process ASET. The reviewed literature reveals that emergence (unpredictable events) occurs in organisations and that such emergence can be addressed theoretically as emergence, and requires an appropriate design theory, the theory of deferred action's three design dimensions. First is the planned action dimension, which accounts for predictable process ASET, as mapped in the FPD Guidelines, and can be done using process design methodologies. Second is emergence dimension, which is the unexpected process activities, events and time-points that occur during the execution of the process. For example, changing requirements from the end user in the beginning and sometimes in the late stages which causes more problems. The process design literature reviewed in Section 2.3 focuses on only

on the planned action dimension. The emergence literature reviewed in Section 2.7 recognises emergence but does not show how to design for emergent situations. The third dimension is the deferred action dimension. Unlike the process design literature and the emergence literature, this is the unique design dimension that shows a new paradigm that works by combining planned action and emergence to show how to act in emergent situations –that is a new way to think about designing EBP. The deferred action way is unique because it show how to design planned action that is affected by emergence.

The reason for using AR is to find a practical solution based on existing theory to the problem of emergence in the SAF procurement process. AR does not normally begin by identifying a research gap. Avison et al., (1999) say it begins with a concern by a practitioner or academic researcher to find a solution for a practical problem. But it is academic research because the practitioner or academic researcher has to apply an existing theory to practice, to identify and define a practical problem (Avison et al., 1999). Researcher experienced the practical problem of managing the SAF procurement process. SAF was encountering unexpected events which was causing unexpected event, times delays and cost increases. Researcher, working with the Senior Management, could not find a practical solution to the occurring unexpected events. The management team did not want to employ a consultant because they would provide a general solution and the management team wanted a solution relevant to KMOD/FPD. But this solution should be based on management theory. In adopting the AR approach, the researcher could identify a relevant theory that could explain the SAF procurement problem. Through this literature review, researcher identified AR to apply the theory of deferred action to find a practical solution based on theory.

Also, the literature reviewed above reveals a need for further research on the effect of emergence on non-standardisable processes. The specification approach makes two questionable assumptions. One, procurement processes are stable, but this is not supported by researcher's experience and the research data collected for this research. Specification design assumes that pre-planned process does not change and that it will work in actuality as planned. The literature on emergence clearly shows theoretically and empirically that emergence occurs in organisations. It conceptualises an organisation as an 'emergent organisation', one that continually adapts to the changing environment. This means that the process design approaches based on specification design are inadequate to design non-standardisable processes that can cope with emergence and adaptation.

The second assumption concerns the organisation's environment. Process design methodologies assume that an organisation's environment has no effect on the pre-planned procurement process. This means pre-planned procurement processes are unresponsive to change and do not adapt when the organisation's environment changes. The literature on emergence and complex systems shows that the environment changes and that this change has an effect on an organisation, including its business processes.

Researcher and her colleagues experienced unexpected process ASET arising from the environment of the SAF procurement process, and took emergent actions, contrary to the literature on the specification approach. Marshall (2009) notes that rational bias in planning results in cause and effect explanations of individual actions and underplays mutual organisation and evolution of action. Intentions embedded in plans do not account for individual or collective experiences. This is highly relevant to the actual experiences of the researcher and her colleagues working on the SAF procurement process. The FPD Guidelines have 'intentions embedded' in it that do not adequately recognise the actual unexpected events occurring during the execution of the SAF procurement process. It is necessary to understand how to design such unexpected events into an EBP.

2.9.2 How to Design EBP

How can design researchers in general include complexity in their designs? This general question has been researched by management researchers (Stacey, 2000; 2003), information systems researchers (Truex et al., 1999; 2000) and organisational learning researchers (Brodbeck P W, 2002; Van Eijnatten and Putnik, 2004), but it has not been raised by process design researchers. The kind of process design resulting from specification process approaches covered in Section 2.3 needs to incorporate complexity, emergence, self-organisation and adaptation. Complexity has been applied by researchers and scholars to understand management and they propose a complexity-based design agenda (Stacey 2000; Anderson et al., 1999; Brodbeck P W, 2002; Van Eijnatten and Putnik, 2004). This complexity-based design approach was combined with the theory of deferred action to understand the SAF procurement process and redesign it as EBP.

An organisation, management, business processes and information systems are examples of CAS that can be rationally designed. However, there is a limitation to what can be specified as requirements, and the remainder needs to be catered for as emergence. What is normally recognised in the design literature as 'emergent uncertainty', 'change' and 'changing

organisation' or 'transformation' is better explained as emergence or CAS. Much instability and emergent uncertainty pervades organizational behaviour, whether it is a charitable, governmental or business organisation. Such emergent uncertainty is termed emergence in CAS and is a central feature of it.

From the specification design perspective, capturing the functionality of a business process in terms of a complete and unchanging specification is difficult because of *design emergent uncertainty*, and also because the social system itself is complex and emergent, which means it is unpredictable creating further design emergent uncertainty. Reflecting emergence's interconnectivity and adaptability features requires local actors' contextual input (Benbya, 2005; Kim and Kaplan, 2006), which is termed 'deferred action' in Patel (2006). Patterns of communication between humans within the organization, and between humans working on business processes and supporting management processes, cannot completely be predicted and pre-specified. It is not simple to determine and predict the necessary activities to respond to emergent uncertainty. Patterns of information flows between the organisation and its environment are similarly not completely pre-determinable. These patterns are highly complex because of unpredictable events and emergent uncertainty or emergence. This is why Patel (2007) argues for 'deferred systems' and 'deferred action'. The researcher used the deferred action theory as the theoretical framework within AR, as detailed in above in Section 2.8.4.

This research on how to design EBP used the idea of emergence as covered in the above literature review on (a) management (Maguire and Mckelvey, 1999; Stacey, 2000), (b) sociology (Mead, 1934), organization theory (Feldman, 2003; 2004), (c) complexity theory (Gell-Mann, 1995; McKelvey, 2002; McMillan, 2004; Grobler etal.,2006), (d) information systems (Truex, et al., 1999 and (e) the theory of deferred action (Patel, 2006; 2007; Elliman and Eatock, 2005; Ramrattan, 2010; Nyame-Asiamah and Patel, 2010; Al Sabah and Patel, 2013) and deferred action applied to e-Learning (Dron, 2005). Though Marjanovic (2005) does refer to emergence, in his classification of business processes as standardisable and non-standardisable, the latter consists of unexpected process events similar to emergence.

The literature covered clearly identifies emergence theoretically and empirically. The management strand seeks to apply the general theory of complexity and in particular the idea of emergence to management, which in this thesis is argued, includes process design. Similarly, organisation researchers have found empirical evidence of emergence. However, this management and organisation studies literature has interpreted emergence in

management but not applied it to design management systems and there are no practical design approaches. Researchers in information systems have gone beyond interpretation to design emergent systems. In particular, the theory of deferred action has been used by researchers as a design framework, which this thesis adopts to design EBP.

This research aimed to understand how to design EBP and to implement an EBP. This literature reviewed reveals that there is further need to research the effect of emergence on business processes. As experienced by the Practitioner, unexpected events (emergence) arise in the planned procurement process, and actors use their intuition to create solutions emergently. This has limited recognition in the literature, for example by Stacey (2003) and van Eijnatten (2004) but not for business process design, and requires further research to develop better knowledge on how to design EBP.

From the perspective of designing, the ideas of complexity and emergence applied to processes needs further research to understand how change and adaptation can be rationally designed. Just like a CAS, a business organisation is self-organizing if no external influences do the self-organizing for it. The complexity of non-standardisable processes in organisations is not investigated and well understood. Complexity, self-organisation, emergence and adaptation are features of EBP that require better understanding in terms of how to incorporate them into process design approaches.

2.10 Conclusion and Summary

It is argued here that rational design or specification-based process design is inappropriate to design EBP, and it is problematical for effective process design in emergent organisation. This literature review was set in the context of complex systems, the idea that organisations are complex adaptive systems that adapt to their changing environment. To design such adaptation in business process, it was argued that it is necessary to have more sophisticated mechanisms than simple qualitative analysis of static diagrammatic models of process.

Researchers in business process have not yet found a way to design for emergence. Researchers who use the complexity framework to study organisations also do not identify how to practically apply it to design organisations as CAS. They show the shortcomings of rational design through complexity constructs such as emergence, self-organising and adaptation, and explain organisational behaviour through these constructs, but do not provide a practice framework, which this research seeks to do.

This research uses the Deferred Model of Reality (DMR) stemming from the theory of deferred action, the concept of deferred systems and the six deferred design principles. These ideas compose the deferred design approach suitable for designing EBP. As mentioned earlier, the deferred design approach has been 'tested' or applied previously by other researchers (see Section 2.8.4), and has been evaluated by them as a suitable methodology to design deferred or emergent systems. Also, as noted earlier, there is theoretical evidence of the deferred approach applied to thinking about business process, which suggests it could be a suitable methodology to design business process. Therefore, the deferred action theory is appropriate to be the basis of design methodology for business process. It has potential benefits that other approaches do not as discussed in Section 2.3. The deferred design theoretical framework is proposed as an approach for designing EBP, containing the ideas of the deferred action, DMR, deferred systems and the six deferred design principles. This deferred design framework combined with other theoretical work will be applied in the KMOD/FPD.

The next Chapter 3 details the SAF procurement process as set in the KMOD/FPD. This literature review reveals the need for further research on the effect of such emergence on process execution and better understanding of how to design EBP that reflect both dynamic and stable aspects of emergent organisations.

Chapter 3: Foreign Procurement Division Managing: Managing Emergent Business Processes

3.1 Introduction

The literature on complexity covered in Chapter 2 provides a framework for understanding the context of the study. Using that complexity literature, this Chapter illustrates that the Foreign Procurement Division (FPD) Guidelines were designed as a standardisable process but is actually an emergent process in the case of the small ammunition factory (SAF). The process management problem is that it has been designed as a standardised process and the FPD management view it as that too. The FPD management and the concerning departments deal with unexpected events in this context. This Chapter uses the complexity literature from Chapter 2 as a theoretical framework to illustrate that complexity principles apply to the case.

In complex systems and non-standardisable processes there is much uncertainty (Marjanovic, 2005; Andriani and McKelvey, 2009). The SAF procurement process actually occurred under much uncertainty that was not predicted in the pre-determined FPD Guidelines. The process owners and workers across various concerning departments had to interact and self-organise to respond to the unpredictable events. This uncertainty can be characterised as emergence using key principles of complexity.

Mitleton-Kelly and Land (2012) provide key principles of complexity: connectivity and interdependence, co-evolution, far-from-equilibrium, exploration-of-the-space-of-possibilities, self-organisation, emergence, and the creation of new order. The SAF procurement process can be described in these terms. This Chapter describes the problems with the FPD Guidelines as implemented in the SAF procurement process in terms of these principles of complexity and the theory of deferred action. These complexity principles can be illustrated in the case of the FPD Guidelines for the SAF procurement process. As the research was on business process, this is referred to as unpredictable process events or Emergent Business Process (EBP). The SAF procurement process encountered these aspects of complexity.

The current procurement process is the FPD Guidelines. The application of these Guidelines to the SAF procurement process is discussed. Specifically, the unexpected Activitiy, Event, State

and Time-point (ASET) features occurring in the SAF procurement process are highlighted, and the process is characterised as a non-standardisable procurement process according to the literature in Chapter 2, Section 2.6. However, this characterisation is insufficient because it does not account for emergence. Consequently, the issue of accounting for emergence for the purpose of re-designing the Guidelines to reflect emergence is then discussed. Since the redesign of the procurement process involved the practitioner as a researcher, the practitioner's role as a researcher is explained. Specifically, her individual experiences and the collective experience of the management in dealing with emergence is detailed. The military management in Kuwait Ministry of Defence (KMOD) and the civilian management in FPD, both were lacking knowledge of how to manage the SAF procurement process. Specifically, they had no understanding that the unexpected events occurring in the procurement process were *emergent* in the actual implemented SAF procurement process. The Chapter then draws conclusions on re-designing the SAF procurement process from this background and problem context of the research.

This Chapter describes the problems with the FPD Guidelines, the procurement process, as implemented in the SAF procurement process. It defines the problem which led to re-designing the procurement process as an EBP using AR as the methodology. The current procurement process is defined as the FPD Guidelines and it is described. The application of the FPD Guidelines to the SAF procurement process is then discussed. Specifically, the unexpected ASET features occurring in the SAF procurement process are highlighted, and the process is characterised as a non-standardisable procurement process according to the literature in Chapter 2, Section 2.6. However, this characterisation is insufficient because it does not account for emergence. Consequently, the issue of accounting for emergence for the purpose of re-designing the Guidelines to reflect emergence is then discussed. Since the redesign of the procurement process involved the practitioner as an action researcher, the practitioner's role as an action researcher is explained. Specifically, her individual experiences and the collective experience of management of emergence is detailed. As AR is concerned with contributing to theoretical understanding and improving practice, the latter is discussed in terms of the management learning arising from the AR. The military management in KMOD and the civilian management in FPD, both were lacking knowledge of how to manage the SAF procurement process. Specifically, they had no understanding that the unexpected events occurring in the procurement

process were emergence in the actual implemented SAF procurement process. Thus the need for the management to learn about emergence in the organisation is covered in terms of organisational learning too. The Chapter then draws conclusions on re-designing the SAF procurement process from this background and problem context of the research.

3.2 Foreign Procurement Division

The organisational structure of the KMOD/FPD is hierarchical. The Minister of Defence has direct responsibility for the FPD. The FPD has a hierarchical structure reflecting the command structure of the KMOD. All aspects of the procurement process need to comply with this authoritarian organisation. Figure 3-1 shows the organisation structure of the FPD.

Complex behaviour comes from the way different elements of a system inter-relate, interact, and inter-connect in a system and how a system relates to its environment (Mitleton-Kelly and Land, 2012). This is the connectivity and interdependence principle of complexity. The SAF procurement process was done with the involvement of many concerning departments (CDs) of the Kuwait Government and the military. The success of the process depended on these CDs interacting because they are interdependent.

FPD is under political control. Minister of Defence is responsible for the FPD but the daily operation is managed by the Assistant Undersecretary for FPD. He is responsible for all aspects of procuring and supplying military requirements from foreign markets in accordance with the decrees, laws, regulations and the ministerial decisions that monitoring this process.

Figure 3-1 Organisation Structure of FPD
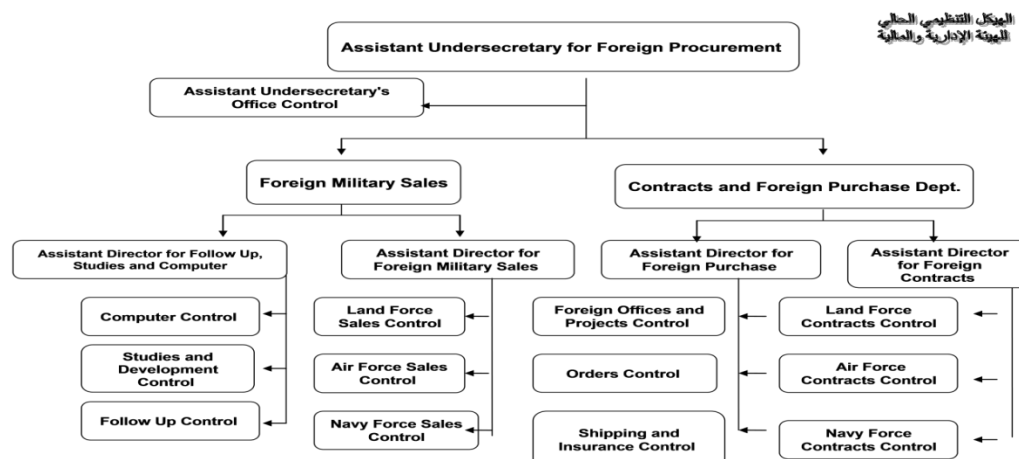
Assistant Undersecretary sets the administrative and the supervising regulations for all employees of the FPD. He assists Undersecretary to supervise, plan, coordinate, follow up and evaluate procurement work and is aided by the Technical Office. Assistant Undersecretary assists the Undersecretary to complete administrative work and supports with secretarial work. Technical Office provides consultation support on the requirements and supplies contracts of the different military arms of the KMOD.

Civilian management is under the Director of Contracts and Foreign Procurement Division(FPD), who is responsible for procuring and providing the military requirements from foreign markets. Director of the FPD is the coordinator and the general supervisor for all the works of the division. She is the authority on the relevant regulations and provides the directions that regulate the administrative, financial and technical works of the Controllers under his authority. The Director also stipulates their working techniques.

Director has a Controller for each of the land, air and navy military forces. The researcher is the Controller for Land Forces. The work of FPD is planning, directing, coordinating and carrying out all the activities related to the purchasing of the weapons and the spare parts from foreign markets, in cooperation with the CDs according to the decrees, laws, decisions and the regulations that monitoring this process.

Assistant Director of the FPD supports the director in the processes of planning, directing, coordinating and carrying out all the activities related to the purchasing of the weapons. He clarifies and communicates the requirements of the military forces of the spare parts and repairing works in coordination with the concerned sectors.

The following Supervisory is under his authority: Land Force Supervisory and Orders, Air Force Supervisory and Orders, Navy Force Supervisory and Orders, The Dependant Authorities' Contracts and Orders. Each supervisory carries out all the activities of studying, reviewing, writing contracts and the armament agreements for all the military it is responsible for in accordance with the decrees, laws, decisions, regulations and instructions that monitoring the process. The Dependent Authorities' Contracts and Orders also carries out all the activities of studying, reviewing, writing contracts and the armament agreements for the Dependant

Authorities as the Commandos and Amiri (Royal) Guard in accordance with the decrees, laws, decisions, regulations and instructions that monitoring the process.

The FPD and these supervisories and concerning departments found it difficult within the FPD guidelines to cope with the unexpected events. They had to get approvals whenever there was an unexpected ASET in the procurement process.

The Director Assistant of Tender and Registration Affairs supports the Director in the process of planning, directing, coordinating and carrying out all the activities of registering and qualifying the companies participating in the foreign procurement tenders. The following supervisories are under his authority:

Tenders Supervisory: Reviewing and revising the technical and contractual documents and ensuring the availability of the allocated funds for the Processes received by the FPD from the demanding sectors according to decrees, laws, decisions, regulations and instructions that control the process.

Companies' Registration and Qualification Supervisory: Registering the companies through an automated system and qualifying them in cooperation with the military committee in order to participate in the tenders announced by FPD.

Contracts' Programming Supervisory: Follows up the financial dues supervised by the other Supervisories in coordination with the financial affairs department and the Contracts' Programming Directorate.

3.2.1 FPD Guidelines

The FPD established the FPD Guidelines to procure military requirements in accordance with the laws and decrees of Kuwait. Process activities were designed which constitute the FPD Guidelines (See Appendix A, Dataset 1.5). FPD Guidelines and the work of the involved government departments and agencies make up the procurement process. As noted in Section 3.4, this set of process activities and events were predetermined as a standardisable procurement process, using Marjanovic O (2005) classification of types of processes. The activities, events,

states and time-points (ASET) were identified and written down as the predicated procurement process and it is expected to work for all the procurement dealt with by the FPD.

The current set of activities and events of the procurement process is depicted in Figure 3.2 Personnel raise indents for the procurement of military requirements, which must be approved by GHQ in concurrence with the Finance Division and CDs from the GTPC. The main activities of the procurement activities start with a request from GHQ for procurement of supplies from foreign suppliers. This set of activities is time-consuming because there are many formalities to be completed before proceeding. The blue bar contains, but not shown here, the full set of ASET process features necessary to complete a procurement process, which currently takes three years to finalise.

Figure 3-2 Existing KMOD/FPD Procurement Activities
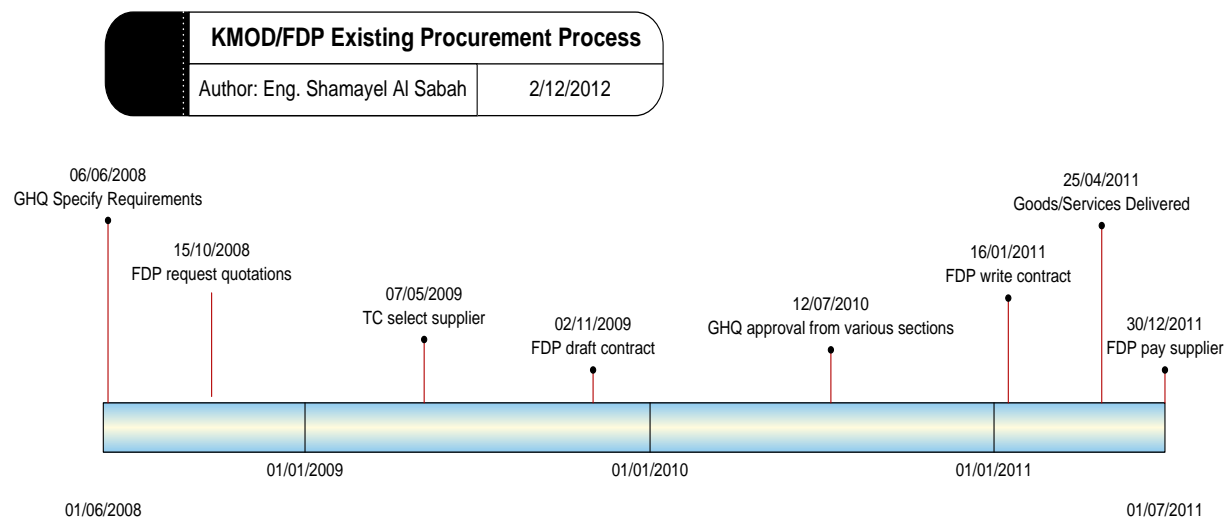
The detailed procurement activities involved in executing the FPD Guidelines are shown in Figure 3-3 as a flow. This flow is only beginning part of the flow.

Figure 3-3 FPD Guideline Process Activities
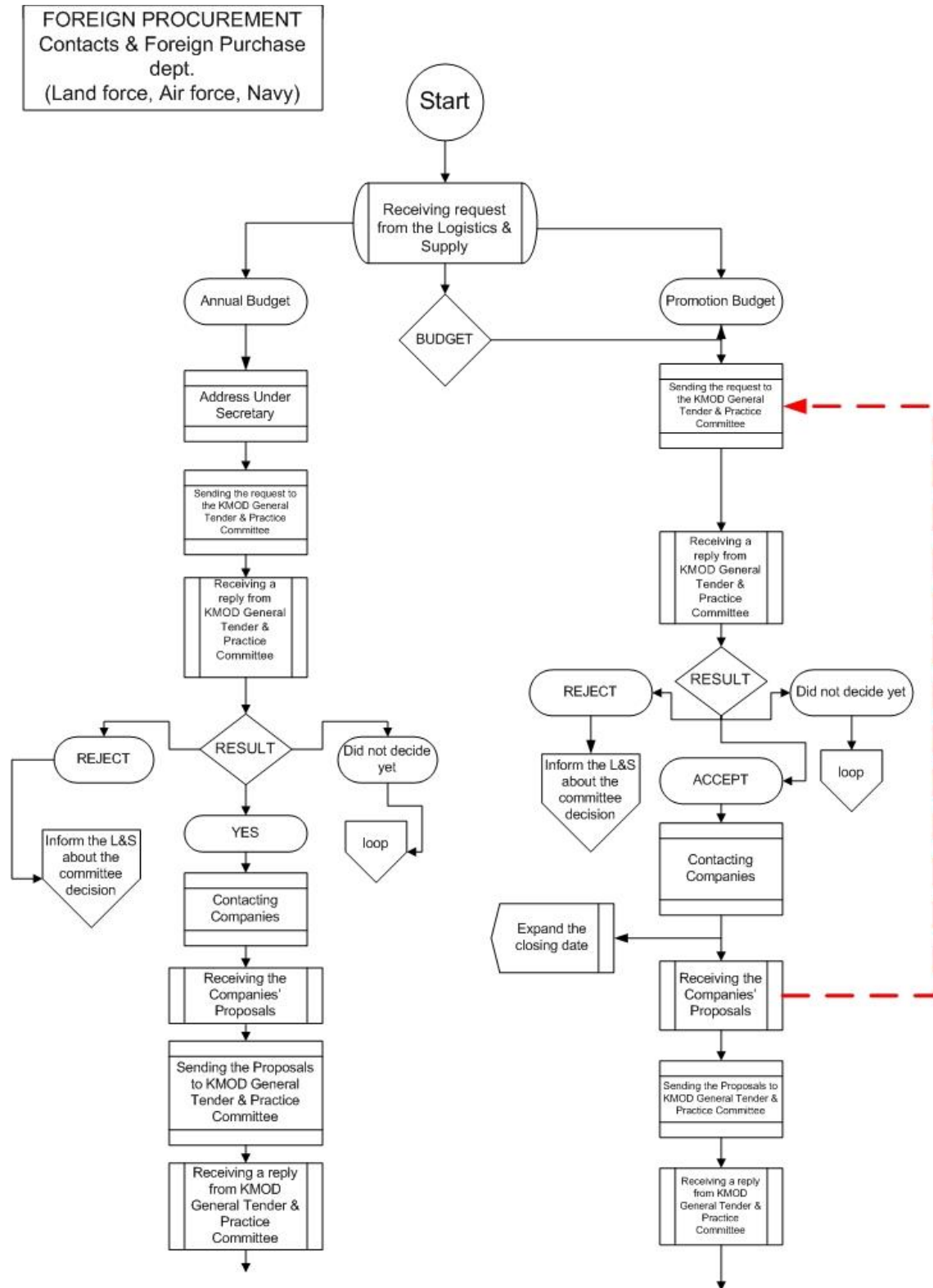
3.3 Small Ammunition Factory Procurement Process

The process to establish the small ammunition factory started in July 2007. Though the SAF procurement process is supposed to be standardised, the actual process activities, events, states and time-points to procure the SAF should be interpreted as non-standardisable process or emergent procurement process as described in sub-section 3.3.1. The main emergent features include changing user requirements and, as a consequence, continual renegotiation of contracts with the main supplier. This has implications for the other suppliers involved in the supply chain. Another feature was changing government and parliament edicts. This is done in the data analysis chapter.

Figure 3-4 SAF Actual Process Activities
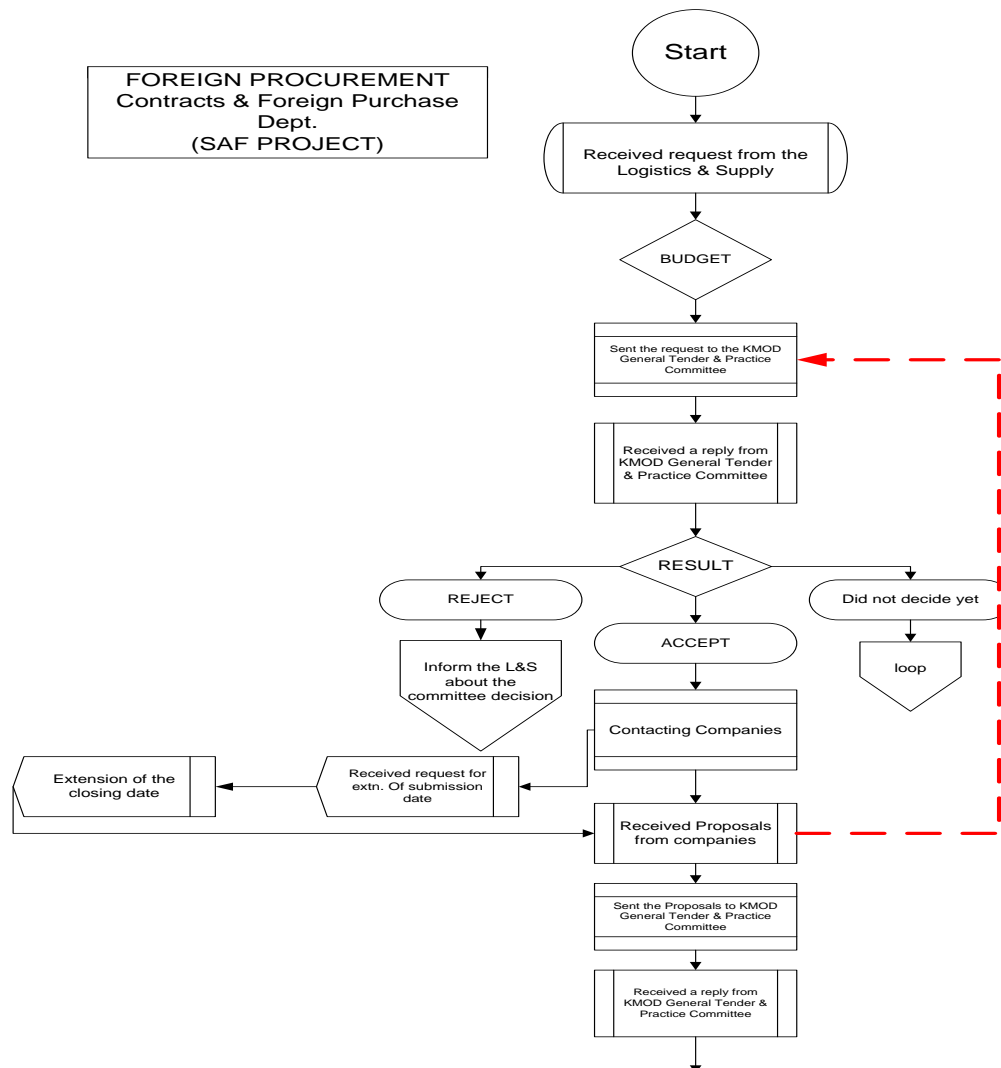
The procurement process started when the foreign procurement received a letter from the general headquarters, along with the scope of work to establish a light weapon (small and medium calibre) ammunition factory in Kuwait. The request was sent to the central committee to get their approval.

Letters of request for proposals (RFQ) were sent to various embassies and companies which were outsourced through the Internet (companies which had experience in relation to setting up ammunition factories) after receiving the approval from the committee, FPD contacted the concerned departments to discuss the requirements. Meanwhile, GHQ forwarded some amendments to the scope of work.

Only seven companies participated for the project. The proposals of the seven companies were sent to the general committee for review and selection. The technical proposals were sent to the general headquarters for their study and comments. After reviewing the proposals, GHQ requested the foreign procurement to contact the companies and arrange for meetings accordingly, and the companies were asked to modify their proposals. GHQ forwarded the results of the meeting and also concluded by selecting Company-X and the committee in turn approved Company-X for the project. The Company was informed about the winning bid by FPD and was requested to provide a fresh offer with changes as requested.

Foreign procurement prepared the draft contract for the project and forwarded the copies to the concerned departments (legal and GHQ) for review and comments. FPD also forwarded one copy to the Audit Bureau for their review and approval. The Audit Bureau in turn suggested splitting the project in two phases i.e. design and construction and production line. The suggestion was forwarded to the committee for approval. The GTPC approved the suggestion and instructed to split the project in two parts. Discussions were also held in relation to the construction work for the setup of the Ammunition Factory. FPD sent an official letter to Company-X to provide a fresh proposal for the construction work. General Head Quarters contacted the Military Engineering Project (MEP) for discussion in relation to the construction work of the ammunition factory. The construction proposal submitted by the company and forwarded to GHQ and MEP for their review.

In the meantime, meetings were held between the chosen company, GHQ and FPD to reduce the total value of the offer. Company-X was invited to discuss and negotiate the terms and conditions of the contract. The draft contract was sent to the Legal Department. A copy of the draft was sent to the Audit Bureau for their approval.

The Audit Bureau forwarded a letter to FPD with various questions related to the project, particularly the total value of the proposal (calculation errors). The questions were forwarded to the company, which in turn rectified the errors. Meanwhile, FPD contacted the committee for approval to contact Company-X for the design services proposal as phase-one of the project. The committee agreed and a letter was sent to Company-X requesting a proposal. The proposal was submitted to the committee and was sent to the concerned departments for their study. The proposal was approved from GHQ and MEP and was sent to the foreign procurement in a written report. Since the project was divided and not according to plan, FPD contacted the Finance Department to allocate the budget for the design services contract. The design services contract was sent to the Legal and Legislation Council for their approval. One copy was forwarded to the Audit Bureau for their approval as well. The Audit bureau forwarded some questions which were clarified by FPD immediately.

The approval from the Legal and Legislation Council as well from the Audit Bureau was received and the authorized representative of Company-X was invited to Kuwait to sign the contract in June, 2012.

Dataset 1.1 has the full details. Also the flow chart in Dataset 1.4 depicts these set of events.

Compares to the Guidelines, the actual procedures are longer and this affects the projects because of the unexpected events. This information shows that the actual procurement process does not follow the Guidelines because of the emergent uncertainty. This emergent uncertainty is the design problem that this research seeks to understand and propose a process design methodology for it.

3.3.1 Emergent SAF Procurement Process

The intention was to execute the SAF procurement project as rationally designed; a non-complex, standardised procurement process following the FPD Guidelines. KMOD has

Guidelines to procure military equipment from foreign suppliers, which are developed to purchase standard military hardware such as guns, armoured tanks and fighter aircraft. The Guidelines are a formal process and they are defined as a set of interrelated activities that transform a set of defined inputs into an output similar to a business process.

Actors were unaware that it was actually a complex, non-standardisable process that was unfolding, as depicted in Figure 3-4. Numerous categories of emergent events were occurring, which prevented the pre-planned process from being carried out, including international currency inflation, new end user requirements, splitting of project into Construction and Installation and Design Services, Audit Bureau inspection, new contract negotiations and delays between CDs.

This emergent process was being confounded by all the military and civilian actors involved for being a standard process in an authoritarian, command and control military organisation. The expected and unexpected activities transpiring fused the predictable with unpredictable in the assumption that a standard process was being followed, namely the FPD Guidelines, in a stable and predictable organisation.

During the early stages of the project, the Practitioner observed wastage and delays that were not being addressed by the Guidelines, with which the project manager had to comply. They include wastages, change in requirements which took nearly one month for approvals, investigations by the audit bureau which took nearly three months, splitting the project in two parts took more than three months because the procedures had to be repeated for each part, the company had to re-submit the proposals. Also, MEP decided to do the construction work and hence it took six months for them to review the construction proposal and submit a report.

The procurement process starts with a request from GHQ for procurement of supplies from foreign suppliers and involves various stages. The current process depicted in Figure 3.3 above, is time-consuming because there are many formalities to be completed. This procurement practice assumes a model of organization as stable and predictable. The blue bar contains, but not shown here, all the individual activities necessary to complete the procurement process, which normally takes three years to complete. Employees of FPD raise indents for the procurement of military requirements, which must be approved by GHQ, Finance Department,

CDs and other authorities, beginning with approval from GPTC. Presently, there are inordinate delays, unnecessary approvals, and financial mismanagement in the procurement process.

Current senior staff and management see the need to improve the process. It would be beneficial if the procedures were carried out simultaneously. This would save time and cut costs. Obtaining approval from several different sections/departments, for example, can take three to six months or even more in some cases, meaning the process takes several years to reach the final stage of signing contract. This is perceived by management and stakeholders to be inefficient and unacceptable.

The Practitioner wanted to learn how to redesign the process based on the model of emergent organization, rather than the current model of stable organization. She undertook the AR to improve understanding of designing business process that reflect emergence and resolve issues with the management of business processes at KMOD/FPD.

These observations were being mentally recorded and discussed by the Practitioner with the FPD Director. The Practitioner's engineering qualifications and experience suggested that the SAF procurement project needed a scientific approach. Her observations of wastage and delays formed the evidential basis for taking action to improve the situation and she concluded that management action that should be taken should be based on scientific knowledge, as opposed to the normal experiential managerial action. She decided to register as a doctoral student to research the problem. At that time, her observations began to be formally recorded as participatory observation data (See Appendix A, Dataset 2).

The actual, emergent procurement process thus had characteristics which could not be managed using the expected rational management approach. These characteristics can be summarised as:

- Emergent events change the process and the user requirements which affects the flow of the process, including retracing completed steps.

- Emergent events lead to unexpected states. A state is a position of an activity at any one time – for example the activity of Writing Contract can have the following state: Begin Writing; Wait for Costing Details; Determine Legal Jurisdiction.

- Emergent events can occur at unexpected Time-Points. FPD Guidelines has specific time periods for events to be completed. As emergent events occur randomly they need to be managed in their context of occurrence.

When a system loses equilibrium through chance occurrence such as these emergent events it is able to create a new order or structure (Mitleton-Kelly and Land, 2012). This is the complexity principle of far-from-equilibrium. The emergent events occurring in the SAF procurement process resulted in creating such new order – the emergent business process.

Actors were unaware that it was actually a complex, non-standardisable process that was unfolding. Numerous categories of unexpected events were occurring, which prevented the pre-planned process from being carried out, including international currency inflation, new end user requirements, splitting of project into Design and Construction and Production line, Audit Bureau inspection, new contract negotiations and delays between CDs.

In designed systems new order needs to be facilitated. Patel (2006) proposes the deferment points mechanism. When a system reaches far-from-equilibrium, actors need to correct it. This can be done through the functional deferment point principle, where deferred design by active designers is needed to create a new order. A deferment point is any recognisable pattern where unexpected events are likely to occur. In non-standardisable processes this includes process events and time-points that arise by chance.

This non-standardisable process was being confused by all the military and civilian actors involved for being a standard process in an authoritarian, command and control military organisation. The expected and unexpected activities transpiring fused the predictable with unpredictable in the assumption that a standard process was being followed, namely the FPD Guidelines, in a stable and predictable organisation.

During the early stages of the project, the Practitioner observed wastage and delays that were not being addressed by the Guidelines, with which the project manager had to comply. They include wastages, change in requirements which took nearly one month for approvals, investigations by the audit bureau which took nearly three months, splitting the project in two parts took more than

three months because the procedures had to be repeated for each part, the company had to re-submit the proposals.

The procurement process starts with a request from GHQ for procurement of supplies from foreign suppliers and involves various stages. The current process depicted in Figure 3.4 above, is time-consuming because there are many formalities to be completed. This procurement practice assumes a model of organization as stable and predictable. The blue bar contains, but not shown here, all the individual activities necessary to complete the procurement process, which normally takes three years to complete. Employees of FPD raise indents for the procurement of military requirements, which must be approved by GHQ, Finance Department, CDs and other authorities, beginning with approval from GPTC. Presently, there are inordinate delays, unnecessary approvals, and financial mismanagement in the procurement process.

The actual Guidelines can be summarised as steps:

1. The CTC (mention in full) studies the requirements and decides whether to approve.
2. Foreign Procurement Department then studies the requirement and requests General Head Quarters to suggest the names of potential supplier companies.
3. General Head Quarters contacts the CD for the names of potential supplier companies, which can take around 10 to 12 weeks. In some of the case there are modifications of the SOW and the whole procedure has to be followed again. If there are queries from the companies related to the Scheme of Work it takes around 10 weeks to receive a clarification from General Head Quarters.

Another example is the Allocation of funds. The funds for the project are allocated at the initial stage of the project, but the allocation has to be renewed every financial year and this renewal takes around two months. Since, the approvals are to be taken through official letters (hard copies) it takes around two months or more to receive approvals from CDs. If, the contract is sent to the legal department for their approval, it will study the draft and then it will write official letters for clarifications on any doubts or information required. This applies to all the CDs and hence the projects get delayed.

Current senior staff and management see the need to improve the process. It would be beneficial if the procedures were carried out simultaneously. This would save time and cut costs. Obtaining approval from several different sections/departments, for example, can take three to six months or even more in some cases, meaning the process takes several years to reach the final stage of signing contract. This is perceived by management and stakeholders to be inefficient and unacceptable.

The Practitioner wanted to learn how to redesign the process based on the model of emergent organization, rather than the current model of stable organization. She undertook the AR to improve understanding of designing business process that reflect emergence and resolve issues with the management of business processes at KMOD/FPD.

These observations were being mentally recorded and discussed by the Practitioner with the FPD Director. The Practitioner's engineering qualifications and experience suggested that the SAF procurement project needed a scientific approach. Her observations of wastage and delays formed the evidential basis for taking action to improve the situation and she concluded that management action that should be taken should be based on scientific knowledge, as opposed to the normal experiential managerial action. She decided to register as a doctoral student to research the problem. At that time, her observations began to be formally recorded as participatory observation data (See Appendix A, Dataset 2).

3.4 Background and Problem Context

FPD is one of the civilian divisions of KMOD, established to raise the combat readiness of land, air and naval armed forces of Kuwait. Its purpose is to procure military equipment specifically from foreign markets, according to the decrees, laws, regulations, and ministerial decisions that govern military procurement. The Researcher is Controller of Land Forces Contracts and was Controller of the SAF procurement process, which was the subject of the first cycle of action research (ARC One data collection). She is responsible for supervising and coordinating the including writing reports, coordinating meetings with all concerning department and tracking the process.

The FPD Guidelines are designed to manage a standardisable process. However, without management realizing it, the Guideline was being using to manage the non-standardisable SAF procurement process, which created substantial process management problems. This Chapter is an account of the SAF procurement process management and operational problems, and because of this research its re-conceptualisation as a non-standardisable process. This is, in essence, the fundamental problem with the current situation in FPD: the management policies intended to govern the SAF process are incompatible with the processes involved in the process. The management problems include cost overruns and significant time delays, wastage of manpower, lack of responsibility, none use of IT technology and lack of communication. The operational problems include reacting to unexpected process events occurring. The management and operational problems combined needed to be resolved to complete the process successfully and for management to learn how to manage non-standardisable process better. Using Söderström et al.'s(2002) process comparison framework, it was found that significant actual process activities, events, states and time-points were emergent. Thus the SAF procurement process was re-conceptualised as a non-standardisable process composing *emergent* process activities, events, states and time-points. In this Chapter, the SAF procurement process emergent process features are illustrated. The non-standardisable process conceptualisation then forms the basis to redesign the FPD Guidelines to reflect the operation of the non-standardisable process SAF procurement process or the EBP.

The FPD Guidelines is the procurement process that the FPD is expected to deploy when procuring military supplies from foreign markets. The Guidelines constitute the procurement business process. This procurement process is based on the assumption that the organisation of procuring supplies is stable and predictable.

KMOD is encountering challenges in its various divisions, including the FPD. FPD is required to improve its efficiency and effectiveness, but this proved to be very difficult in the multi-million KD (Kuwait Dinar) SAF procurement process. Inefficiencies in this process acted as the starting point for rethinking the management of the procurement activities.

The management problems include cost overruns and significant time delays, wastage of manpower, lack of responsibility, non-use of IT technology and lack of communication. The

operational problems include reacting to unexpected process events occurring. The management and operational problems combined needed to be resolved to complete the process successfully and for management to learn how to manage non-standardisable process better. Using Söderström et al.'s(2002) process comparison framework, it was found that significant actual process activities, events, states and time-points were emergent. Thus the SAF procurement process was re-conceptualised as a non-standardisable process composing emergent process activities, events, states and time-points. In this Chapter, the SAF procurement process emergent process features are illustrated. The non-standardisable process conceptualisation then forms the basis to redesign the FPD Guidelines to reflect the operation of the non-standardisable process SAF procurement process or the EBP.

The question of how efficient the FPD Guidelines are arose during the SAF procurement process's numerous problems. The process was expected to be completed in three years but took five years to start only the first phase, Design Services, of the contract. It is expected that it will take another five years to complete the whole process. It was also expected to cost $288 million, but costs currently exceed triple that amount and could eventually be much greater. FPD experienced problems and delays in finalizing contracts and was pressured by KMOD to secure the necessary military supplies and hardware speedily. During this time the main issues affecting progress included (a) changing end user requirements, (b) obtaining official approvals, (c) delays in CDs, (d) contract issues and (e) process workers' task and knowledge capability.

FPD management continued to use the FPD Guidelines throughout the SAF procurement, as required by the law and regulations. The FPD Guidelines are legally constituted set of documents. The policies, procedures and approvals contained in them form the procurement activities of the FPD. Historically, all the activities have been manual and replete with traditional steps and procedures required by government departments and agencies.

The cause of the problems was not poor process management capability, as noted in Sheet 2 of the Reflective Diary(see Appendix A). The FPD Director has twenty years of experience of completing procurement processes. She also has the respect of the Undersecretary and Supervisory staff. The Researcher too has extensive experience and respect of her staff. Staff capability was not the issue either, because most senior staff involved had several years of

experience. Organisational knowledge about the FPD procurement activities is also good but can be improved, with the FPD Director and senior staff possessing very good operational knowledge of the FPD Guidelines. This is formally recognised through the promotion procedures of the KMOD/FPD.

In this context, the Practitioner began to think about the problem. Issues that arose in her mind included inexperience of new employees and, more critically, the length of time taken to learn the FPD Guidelines. She had encountered similar problems in previous procurement Processes. Reflecting on this experience, she wanted to understand the causes of the poor performance of the SAF procurement process.

When the Practitioner discussed the problem with the FPD Director, she too became interested in learning what was causing it. As a practicing manager, she was interested in learning how to make the procurement process efficient, by understanding the issues which were causing the delays and hurdles. She acknowledged that the SAF process was a problem that should be researched to find a resolution.

3.4.1 The SAF Procurement Process: Emergent Business Process

Many aspects of the SAF procurement process can be characterised as emergent and self-organising. Self-organisation is the way a system achieves spontaneous order, through its own activities. A new order is created by itself, not directed by an external entity. 'In an organisational context, self-organisation may be described as the spontaneous coming together of a group to perform a task (or for some other purpose); the group decides what to do, how and when to do it; and no one outside the group directs those activities.' (Mitleton-Kelly and Land, 2012: 6)

The specific emergent aspects of the SAF procurement process are detailed in Table 3.1, based on Choi et al., (2001) descriptive properties of emergence. In the context of such emergence, individuals and the Concerned Departments (CDs) worked together to achieve the process goal to acquire the small ammunition factory.

Table 3-1 Emergent SAF Procurement Process Illustration

Internal mechanism	Emergent Procurement SAF Procurement Process Illustration
Agents and schema	Individuals and departments work together through FPD Guidelines. They share interpretive and behavioural rules and fitness at different levels – units, sections, departments and inter-organisationally.
Self-organisation and emergence	The procurement process emerges with no one individual or department organising and controlling it. Agents respond to emergent events locally, which through interconnectivity, stimulates other agents to react and take appropriate action.
Connectivity	Individuals and Concerning Departments connect and compete for attention and resources. Inter-relationships develop in existing and new contexts which are the outcomes of emergence. Emergence affects procurement process ASET which ripples through the process because of connectivity.
Dimensionality	Procurement process variation is minimised by over-arching schemes (FPD Guidelines), whereas procurement process creativity and adaptation is enhanced by autonomy and decentralization. The FPD Guidelines act as the governor of the mechanism ensuring achievement of process goals.
Environment Dynamism	Unexpected and unpredictable events constantly occur and the procurement process is reassessed and reshuffled, but this is done in the context of the over-arching FPD Guidelines scheme. The changing environment affects what process ASET happen and how they are implemented.
Rugged landscape	The SAF procurement process involved several 'Concerning Departments' (CD), whose actions were necessary to complete activities. This made the whole process highly dependent on various actors. Each CD has its own sub-goal or criteria to achieve, which makes the global optimisation of the procurement process problematical.
Co-evolution Quasi-equilibrium and state change	Events like change in contractors' terms initiated by suppliers created significant change, upsetting the 'normal process' and requiring 'approvals' from higher scale authorities to determine the next steps. Through interconnectivity and dependence, different CDs and the FPD undergo state changes and co-evolve.
Non-linear changes	The FPD Guidelines should have been the basis (cause) of a smooth procurement process (effect). However, implementation of the Guidelines encountered unexpected events that made simple cause-effect determination problematical. Rather, the process ASET were determined by 'environmental dynamism' and 'rugged landscape' resulting in the complex system, with non-traceable causes and effects linear relationships.
Non-random future	The procurement process was not entirely random. The FPD Guidelines provided a framework around which patterns of behaviour were observable and predictable. The goal of procurement the SAF was predetermined and unwavering, but how it was achieved was highly dependent on the above variables.

Source: based on Choi et al., (2001)

Several significant emergent features of the SAF procurement process can be noted. One is that no one individual or department was central to organising and controlling the SAF procurement process. This is the central feature of self-organising of emergent organisation. Another

significant feature is that there is an 'over-arching scheme' operating that controls the emergence. In the SAF procurement this was the FPD Guidelines. The most significant feature is that there were unexpected and unpredictable events always occurring. This made the process owners constantly reassess and reshuffle the process to try to achieve the process goal.

The actual operational features that reflect these emergence characteristics are discussed and illustrated in Section 3.3 below. They show that the SAF procurement process can be accurately described as a complex adaptive system, as detailed in Chapter 2, Section 2.8.4.

Conceptualising the SAF procurement process as an emergent process has implications for how the process is designed and operated in actuality. The main point is that it is not possible to base the design on specification of requirements because it is not possible to establish them. This is because of emergence which produces unexpected and unpredictable activities, events, states and time-points in the process. For example, the KMOD changed the size of the required ammunition and various tendering companies requested an extension to the deadline for tender submission. Further examples are in Appendix (A).

Patel (2006) mentions the underspecification principle to design for complex adaptive systems. Only the structural and functional features of a social system should be designed and not the detailed pre-specification. In non-standardisable processes the structural and functional features include pre-specifiable process activities, events, states and time-points. In emergent organisation it is problematical to establish complete requirements and requirements change even during the design process. This recognises the occurrence of unexpected events or emergence. These design issues are further discussed in Section 3.3.The combined effect of all these emergent features is that the SAF procurement process actually operated as a non-standardisable process or EBP, whereas it was expected to operate as a standardisable process. This expectation from the process owners and stakeholders raised management problems and frustration with the process, because it was not behaving as expected.

Patel (2006) extends the self-organising principle to human activity systems. The self-organising principle is that reflective designers should enable actors using a designed system to self-organise how it is used socio-technically. The designed system should be self-organizing and the self-organization should be done by local actors or active designers. In non-standardisable

processes this means that process owners should be able to take executive decisions when unexpected process events arise and engage in process activities that were not pre-designed. The Web is such an example of self-organising system in which all the users of the Web collectively define its structure and informational content.

As Mitleton-Kelly and Land (2012) state, in complexity as one system evolves it affects how other systems it is connected with also evolve. This is called co-evolution principle of complexity. A new order is the result of emergence and self-organisation, and the result is co-evolution. This is further shown and analysed in the next Section using the process comparison framework detailed in Chapter 2, Section 2.5.7.

3.4.2 Process Comparison Framework

The essential feature of the SAF procurement process context is emergence. Emergence is the situation where pre-determined design is affected by unexpected change and in which local actors need to design. This is called self-determined. 'Therefore, designers cannot accurately predict how their design will "perturb" the system upon which it is imposed – they can only design as catalysts for change' (Irwin, 2011:47).

To understand the design problem in the context of existing approaches for designing processes, the framework for comparing processes developed by Söderström et al.'s(2002) will be used. This framework was detailed in Chapter 2, Section 2.5.7. Processes are characterised by Activitiy, Event, State And Time-Point (ASET). Whether this set of features of processes occurs in predictable and stable conditions or unpredictable and unstable conditions makes a difference to how they can be recorded and acted upon.

A highly relevant point made by Söderström et al. is: 'Activities, states and the running of time can be thought of as existing regardless of an observer but events are some facts about a thing that an observer notices and records by some means'(Söderström et al., 2002: 602). Events are significant because the observer notices and records them. However, Söderström et al. do not go on to write that the observer also has to act on them. Whether events occur in predictable and stable conditions or unpredictable and unstable conditions makes a difference to how an observer notices, records and acts on them. This is highly significant for this thesis argument, because as

non-standardisable process events can be unexpected and unpredictable, a new approach is required to design them.

Events are predictable in standardisable processes, therefore the way an observer observers, records and acts on them can be predetermined or the specification approach. This is the assumption made by process design methodologies reviewed in Chapter 2 (Section 2.5.4). The specification approach assumes that all ASET aspects of processes can be predetermined. However, not all events are predictable in non-standardisable processes. The observer can predetermine certain events and pre-design the action to take as a process. Other events are unpredictable and the observer cannot predetermine them as designed process events. Since they are emergent events, unexpected and unpredictable, they need to be observed and acted on as they occur. The characteristics of the actual SAF procurement process, as opposed to the FPD Guidelines, was expected and unexpected process events. The unexpected process events reflected the full aspects of ASET. Many activities, events, states and time-points of the SAF procurement process were emergent. They were not covered in the FPD Guidelines. The FPD management and concerning department had to respond to them and they did it by adapting. Patel (2006) shows that social systems have to adapt in emergent organisations. The adaptation principle is that reflective designers should design the social system to be adaptable. The system needs to react to its changing environment and it does this by adapting itself. In non-standardisable processes deferment points can be provided as executive decisions at points of unexpected process events. This is the deferred design decisions (DDD) principle. The DDD principle is that the actual design of a social system should be deferred to selected and competent reflective designers, who respond to social systemic emergence by taking DDD. A system needs to adapt to the changing environment. In social systems this adaptation can be best done by capable local actors. Therefore, the design decisions are deferred to such local actors. However, only selected and competent local actors, such as process owners in process design, would be empowered to make DDD. Also, the level of expert design is minimal and does not require high technical capability. In non-standardisable processes this is the executive decisions by expert process owners.

3.5 The Practitioner

The role of the researcher as Practitioner in FPD is practicing manager. She is the Controller of Land Forces Contracts, and at the time of the AR was working on the SAF procurement process. Her responsibilities include planning and organising the procurement process of the Land Forces Division, reporting to the Director of the FPD and the Assistant Undersecretary with the updates of the current projects, and managing and guiding sub-ordinates in accomplishing the tasks assigned to them.

The Practitioner has avoided 'quick-fix solutions' similar to those offered by consultancies. Rather, she is interested in discovering reasons and causes of problems and generating organic solutions to management practice problems. Recently, she began to think about making the working environment friendlier and obtained the support of the FPD Director to start investigating, but postponed the project to complete the doctoral research. This original approach to management resulted in her reflecting on the varied problems encountered in the SAF procurement project.

Also, she promotes ethical management. Patel (2006) argues that the people involved in a system should also be involved in its design. The ethics principle is that active designers should be enabled to design a social system themselves, because they are involved in it. Traditionally, work is designed top-down from managers to workers. The ethics principle is that scope should be given to workers to design for themselves through self-organisation, as enabled by deferred design decisions.

3.5.1 Reflective Practice

The Practitioner saw the SAF procurement process as an opportunity for in-depth reflection on the procurement process problem. Brown et al., (1988) assert that the preliminary period before the AR can begin is reflective practice, when the practitioner takes a critical look at her practice. French (2009) refers to this as the 'notion in the practitioner's mind' that current practice can be improved.

It was this 'notion' in the Practitioner's mind that the SAF procurement project provided magnifying glass to understand FPD's procurement process properly. In previous procurement Processes, Practitioner had noted how unexpected events disrupted the normal FPD procurement activities. Such unexpected events seemed to be magnified in the SAF process. The researcher

thought, rather than struggle against unexpected events they should be acknowledged in the procurement process. This was against the idea of systematic planned action or rational design used in the FPD and the Practitioner did not know how to design and implement it. Also, she did not have confidence in the normal management solutions that were being applied. As noted in Chapter 1, Practitioner then decided to consult the literature. This literature suggested better project management techniques were needed, but Practitioner believed this was not the answer because of the deep project management experience already in FPD.

3.5.2 Researching the Management Problem

In this context, Practitioner decided to undertake doctoral research to research the issue. She wanted systematically to seek better management knowledge on the FPD procurement process. In contrast, when discussing researching the problem with colleagues, they wanted to find an immediate answer, something they could apply instantly.

The Practitioner wanted to investigate the problem to find a robust solution, one which would be based on theoretical understanding. She wanted to develop her own learning and contribute to organisational learning, particularly management learning. Through this she sought to achieve the necessary organisational change to resolve the procurement process problems.

During the early stages of the SAF process, the Practitioner who was then not a doctoral student researching, was not satisfied with the fixes being adopted by management, which she had to accept and incorporate into her practice too. Reflecting on the fixes she could see that the problem itself remained. As the fixes did not remove the problem, they were not robust. Reflecting on this situation, the Practitioner sought a solution that could identify the problem and provide a robust solution.

3.5.3 Adopting New Practice

The intention of the Practitioner was to adopt new practice that would improve the current SAF procurement process. Drawing on reflective practice, subsequent literature review and research findings of the practitioner-turned-researcher, the Practitioner as the Controller of Land Forces Contracts intended to champion and promote adoption of new practice that reflect systemic emergence in the SAF procurement process.

The AR began as an investigation of the SAF procurement process but expanded wider as the Action Researcher's line manager began to appreciate the value of the research. Two significant events led to the expansion and significant organisational learning. First, the Action Researcher's line manager wanted to use the research to resolve the SAF procurement problems. This is the transition from individual learning to organisational learning. This organisational learning took firmer and deeper institutional hold, when the Assistant Undersecretary of KMOD decided to setup the PPQG to formalise the redesign of the procurement process as an EBP. These events raised the AR from individual learning, the Action Researcher, to organisational/institutional learning, the KMOD/FPD.

In retrospect, ARC Two was more successful for practice than the Action Researcher had expected because of this expansion of the research. The extant of organisational change and adoption of findings of the AR by KMOD/FPD was much more than expected and better institutionalised than expected (See Section 8.2).

To survive a system needs to generate variety by exploring its space of possibilities (Mitleton-Kelly and Land, 2012). This is the complexity principle of exploration-of-the-space-of-possibilities. The AR began as an investigation of the SAF procurement project but expanded wider as the researcher's line manager began to appreciate the value of the research. Two significant events led to the expansion and significant organisational learning. First, the researcher's line manager wanted to use the research to resolve the SAF procurement problems. This is the transition from individual learning to organisational learning. This organisational learning took firmer and deeper institutional hold, when the Assistant Undersecretary of KMOD decided to setup the Procurement Process Quality Group(PPQG) to formalise the redesign of the procurement process as an EBP. These events raised the AR from individual learning, the researcher, to organisational/institutional learning, the KMOD/FPD.

In retrospect, ARC TWO was more successful for practice than the researcher had expected because of this expansion of the research. The extant of organisational change and adoption of findings of the AR by KMOD/FPD was much more than expected and better institutionalised than expected (See Section 8.2).

A key change the Practitioner wanted to realise through her doctoral research concerned learning how to manage her responsibilities better. She wanted to manage emergent and unexpected issues which occur during the procurement process. Specifically, she wanted to solve emergence problems and deal with them practically by differentiating between academic and managers' approaches to contributing to knowledge. The issue was how to deal with emergent and unexpected issues that occur in the middle of any process, the difference between a manager and an academic in solving problems and dealing with emergence.

She wanted to extend this learning to the KMOD/FPD organisation. Her line manager, the FPD Director, too has a keen interest in management learning. The importance of the action researcher's research was realised by the Director and the political and military stakeholders, who together supported the AR during ACR Two. This support transpired into the successful adoption and institutionalisation of the EBP and associated management learning. (See Section 8.2)

3.6 Conclusion

The AR arose out of problems experienced on the SAF process by the Practitioner. The Practitioner was not satisfied with the understanding on how to manage unexpected events in the SAF procurement process and with the normal suggestions that better project management technique was required. After reflecting on practice and these problems, she thought that unexpected events should be catered for in the procurement process but did not know how to design and implement such a solution. This was a 'notion' in her mind. The Practitioner decided to pursue the issue further by doing doctoral research. She expected the doctoral research to help her identify better scientific and theoretical understanding of the problem.

The actual operation of the SAF procurement process as a non-standardisable process or EBP, as detailed in this Chapter, posed the problem of re-designing the FPD Guidelines to reflect emergence. The approach taken was to engage with the actual design of the process while doing research and the suitable research approach to do this is action research. The remaining Chapters of this thesis detail how action research was designed and carried out to redesign the SAF procurement process as an EBP.

Chapter 4: Research Methodology

4.1 Introduction

Kettinger et al. (1997) define research methodology as a collection of problem-solving methods governed by a set of principles and a common philosophy for solving target problems. It is governed by the principle of empiricism. Managers may believe they know how to manage a company and they routinely identify and resolve strategic and operational problems successfully. But research knowledge seeks to base such belief on empirical data. The researcher sought to develop such justified true knowledge empirically.

The action research (AR) methodology was used to achieve the research aim. The planned aspects included the first AR cycle, selecting and detailing the type of AR method, data collection and interpretation methods, and deciding the probing reflective questions needed. The emerging aspects included the number of AR cycles used and the eventual nature and scope of the intervention. Whereas other research methodologies explain the observed phenomenon, the aim of this AR was to improve the SAF procurement process based on theory.

The research approach therefore involves utilising action research as a method within the philosophical perspective set out by the theory of deferred action. We find that assumptions encased in the theory of deferred action are especially suitable for an investigation involving emergent business processes, and that the principles of action research lend themselves well to guiding the investigation. Compatibility between the two constructs has been assured, so the investigation is designed to comply with both as part of a broader research framework.

The critical literature review showed that there is a gap in understanding how to design EBP for non-standardisable business processes. Therefore, the main hypothesis is that non-standardisable business process can benefit from a process design approach that reflects emergence.

The research questions are:

What is the effect of emergence on non-standardisable business processes?

How can the SAF procurement process be redesigned using the deferred design approach to enable local actors to take deferred action to manage emergent events?

The aim of this research is to explain the effect of emergence on non-standardisable business processes in order to design EBP. To achieve the aim the objectives are:

- Determine the effectiveness of the planned FPD Guidelines for the non-standardisable process SAF procurement process.
- Identify the kinds of unexpected process events or emergence occurring in the SAF procurement process and how they affect the process flow.
- Assess the impact of emergence on the non-standardisable SAF procurement process.
- Detect how process owners and process workers deal with unexpected process events in the non-standardisable SAF procurement process.
- Design and implement the non-standardisable SAF procurement process as EBP.

4.2 Research Paradigm

Research philosophy is concerned with studying how knowledge is made. It examines and evaluates the belief in the methods and the tools used to generate empirical knowledge. The individual researcher chooses (a) the appropriate epistemology or the method for making knowledge; (b) the ontology or the belief in the nature of something; and (c) axiology or values. Saunders et al. (2012: 127) state that research philosophy is "the development of knowledge and the nature of that knowledge". The researcher's epistemological and ontological choices and values or axiological basis is the starting point of making knowledge.

The research paradigm or epistemology of this research is pragmatism. It is chosen because it values knowledge that is of practical use. This is also the value or axiology of the researcher. As the aim of this research is to develop a new approach for designing EBP, a research philosophy that values practical knowledge is relevant. Research can either seek to understand phenomenon or to change a particular situation (Haneef, 2013). This research sought to do both. By understanding EBP it sought to discover a methodology for designing EBP.

4.2.1 Epistemology and Ontology

Ontology is the nature of reality (Saunders et al., 2012). Bryman (2004) argues it is: "concerned with the nature of social entities…the question of whether social entities can and should be considered objective entities that have a reality external to social actors, or whether they can and should be considered social constructions built up from the perceptions and actions of social actors. These positions are frequently referred to respectively as objectivism and constructionism" (p.32). Researchers adopt one of two different positions on ontology. One, the objectivism position which states that there is an independent reality. Two, constructionism position which states that reality is socially constructed. Epistemology is the philosophy of how new knowledge is created. And it is concerned with generating valid knowledge (Saunders et al., 2011). As there are different epistemologies, Easterby-Smith et al. (2012) argue that researchers should decide which to use and justify it based on the kind of data to be collected.

4.2.2 Research philosophy approach

A chosen research philosophy determines the research results; it is how the researcher chooses to generate new knowledge. The pragmatism research philosophy was chosen for this research because it serves the purpose of generating practical knowledge and making a difference to practice. Crucially, each research philosophy leads to particular choices of research methods to address research questions (Saunders et al., 2011) and these choices determine how the research aim and objectives are achieved.

Easterby-Smith et. al (2012) state that pragmatism was developed by the American philosopher C.S. Peirce. Pragmatism is the idea that true knowledge and understanding is only achieved when one knows how to use the knowledge for professional practice. Peirce focused on the difference that knowledge makes to professional practice from an epistemological perspective. This is central to the aim of this research, which seeks to make a difference to practice of designing EBP and therefore pragmatism was chosen.

From the perspective of action research, practice, knowledge and context are significant and they are central in this research. It is from the experience of the context while performing practice that practical knowledge is generated. Thus experience is the basis of generating knowledge in pragmatism, where 'truth is a set of relations within the human experience.' (Cone, 2010:

108).There is a theory-practice link in pragmatism (Lalonde et. el., 2010), which not only seeks to understand the world but also to transform it. Therefore, practice, knowledge and context are essential aspects of the pragmatist epistemology (Cook and Wagenaar, 2012).

Pragmatism is not simply *applied* knowledge. In pragmatism the focus is on understanding the relation between knowledge and practice. Pragmatists hold that practical consequences indicate the truth of knowledge (Powell, 2002; Tsoukas and Cummings, 1997; Wicks and Freeman, 1998) in Cone article. Stolcis (2004)states 'Experience is active and engaged participation in events or activities that lead to the accumulation of applicable knowledge and skills."

Other researchers have developed different schools of thought on pragmatism. Kelemen & Rumens (2008) state that more than one viewpoint is needed to approach the truth. So one research method or several methods could be used in a particular research project, depending on their relevance. Multiple methods may be necessary to make the research credible and reliable. Multiple methods of observation would produce varied datasets or versions of reality. The resulting interpretation would lead to generalisations about 'multiple realities'.

Pragmatism was chosen for a three of reasons. First, it focuses on the research question. Saunders et al. (2011) state that pragmatism should be used when the research question is considered as the focus of the research project. Second, it values practical knowledge. In pragmatism it is the practical consequences of the idea or the research findings that is important. Finally, in pragmatism multiple methods are used to achieve greater reliability through valid datasets that yield better results.

4.3 Research Approaches

Process research proposes business process methodologies (see Section 2.4.4). This involves conceptualising process design problems, identifying and designing process notations and mapping exemplar business process models. However, research should draw on theory and make a contribution. This is usually done by using non-experimental, experimental and action research designs (Collis and Hussey, 2003).The aim of this research is to learn how to design EBP, so both non-experimental and experimental approaches are unsuitable. Field studies and surveys are used in non-experimental research design. Field study involves a literature review and case studies (Saunders et al, 2009) but no intervention. The experimental approach involves

hypothesis testing using surveys (Field, 2009) but no practice intervention. Surveys require a questionnaire to be designed to measure the magnitude of the study variables and the effect of a particular variable. The researcher chose the AR approach because she wanted to study the actual SAF practical problem theoretically and intervene to improve the process improvement based on theory and to use the evaluation of the intervention to draw conclusions about the efficacy of the methodological approaches applied here.

These research was achieved through research tasks shown in Figure 4-1. The tasks shown in the Gantt chart are aligned with the research objectives and were done mostly as scheduled, but because of the nature of the EBP being studied some tasks were done earlier or later. The tasks did depend on each other as shown by the sequence in which they were done in the Gantt chart.

Figure 4-1 Gantt Chart

Researcher: Shamayel Al-Sabah

Supervisor: Dr. Tariq Khan

Designing Emergent Business Process: Action Research on the Small Ammunition Factory of the Foreign Procurement Division of the Kuwait Ministry of Defence

S.No.	Task Descriptions	2011/Year 1	2011/2012 (Year 2)	2012/2013 (Year3)	2013/2014 (Year4)
	Years	1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12
	Meeting with supervisor	X X X X X X	X X X X X X X X X	X X X X X X X X X X X	X X X X X X X X X
Task-1	**Literature Review**				
1.1	Indentify key journals and articles				
1.2	Understand & define Emergent Business Processes				
1.3	Develop theoretical framework				
1.4	Define the Research Question				
1.5	Define Aim & Objectives				
Task-2	**Identifying the research methodology**				
2.1	Define Action Research Methodology				
2.2	Determine AR phases				
2.3	Examine the utilization of methodology impact on KMOD/FPD				
2.4	Determine sources for data collection				
2.6	Determine data analysis techniques (Nvivo)				
Task-3	**AR Cycle 1 Exploratory investigation**				
3.1	Explore the current process in KMOD/FPD				
3.2	Determine the effectiveness of the planned FPD Guidelines for the non-standardisable process SAF procurement process				
3.3	Investigate the problem of current process in KMOD/FPD				
3.4	Identify the kinds of unexpected process events or emergence occurring in the SAF procurement process and how they affect the process flow				
3.5	Collect the research data through reflective forms &interviews				
3.6	Examine different approaches to solve the problem& implement deferment point				
3.7	Study the process in practice				
Task-4	**Analyzing data**				
4.1	Enter data intoNVivo				
4.2	Create codes and code data				
Task-5	**AR Cycle 2Institutionalization of Emergent SAF Business Process**				
5.1	Utilize the data collected to improve the current procedure				
5.2	Approve the right approach to solve to the problem (EBP group) PPQG				
5.3	Investigate to implement the solution through EBP group				
5.4	Creating Model: Building the method & implementation (SAF Emergent business process Group)				
5.5	Implementation & Evaluation Interviews to assess if the model improves the problem				
5.6	Assemble categories from data analysis categories into process model				
Task-6	**Analyzing data**				
6.1	As above in Task 4				
Task7	**Writing up the dissertation**				
7.1	Ch 1,2,3				
7.2	Ch 4,5				
7.3	Ch 6, 7				
Task-8	**Revision and Amendments on Final draft**				
	Ch1				
	Ch2: Amending LR: updating literature and restructure it according to the logical diagram				
	Ch3: set up the case study to reflect the problem of unpredictable events				
	Ch4: add more details on the methodology,				
	Ch5: restructured				
	Ch6,7: add more details to contribution to methodology and knowledge				
Task-9	**Final submission & approvals**				
	Ch 1,2,3 submission				
	Ch 1,2,3, Approvals				
	Ch 4,5 Submission				
	Ch 4,5 Approvals				
	Ch 6,7 Submission				
	Ch 6, 7 Approvals				
	FINAL THESIS SUBMISSION				

Note: This project map outlines the activities of the PhD project that should be undertaken and completed within 4years.

4.3.1 Practice and Knowledge

Researcher believes that practice is a source of enduring knowledge (Collis and Hussey, 2003) and the selection of research methodology is influenced by what the researcher believes is management (ontology) and how to obtain knowledge about it (epistemology). Aristotle stated Praxis is the art of acting upon the conditions one faces in order to change them (Kolb, 2011). He contrasted it with Theoria - sciences that are concerned with knowing for its own sake.

Researchers do not claim researcher neutrality because research has a stake in resolving a practical problem. This AR adopted interpretivism which is common in AR (Avison et al., 2009). Interpretivism was used to understand 'meaning' of a phenomenon (Gough et al., 2013). To understand the meaning that process owners and process workers attach to their actions. Therefore, the research's own understanding and interpretations are brought to bear on the practice under investigation deliberately, with the view that the system is disturbed as a direct result of the researcher's intervention. Of interest to the wider research community, though, is what form that disturbance takes and what of general interest can be learned from the researcher's experience of reflecting, enacting, observing and evaluating their intervention. The purpose behind adopting action research as a method of investigation was to determine its suitability for a future role in the design of emergent business processes. As such, action research as an instrument of investigation and design was under scrutiny in this project, every bit as much as the theory of deferred action and the particular case study.

Reflective learning is a feature of AR (Shah et al., 2007; Avison et al., 1999), which flows from reflexive critique of practice (Winter, 1989). Through AR the social system is enabled to become a learning system 'that can adapt to changing circumstances by taking an active role in shaping its own future' (Clarke, 1980: 152). This AR study sought to make a significant contribution to organisational learning at the KMOD/FPD. Emergence and deferred action were accepted as new ways to create order in the procurement process that supplemented the existing rational design.

4.3.2 Action Research Values and Principles

Researcher acted as a critic. This role may be played out based on inadequate knowledge and creating resistance among the people who have to carry out change. French (2009) notes that:

'most definitions of AR focus upon the themes of empowerment of participants... i.e. collaboration through participation, acquisition of knowledge, and social change.' (p.189).

The researcher accepted values of humanism, democracy and scientific investigation. Primary aim was to contribute collaboratively to process owner's and workers' satisfaction and work experience, to preserve their dignity and worth. AR was conducted democratically by ensuring that each group and individual had a say in decisions being made. To ensure scientific impartiality, researcher maintained the reflective diary where procurement process events were recorded objectively (See Appendix A, Dataset 2) and analysed systematically using qualitative data interpretation software.

The key principles guiding the AR are drawn from Winter (1989). Researcher wanted to make a difference to practice based on theory (reflexive critique). People had different views but she wanted to create a consensus (dialectical critique). Process is collaborative which is similar to regarding participants as co-researchers (collaborative resource) in AR. Related to this is the multiple perspectives of the process stakeholders (plural structure). Finally, she wanted to ensure that any resulting change to the SAF process is based on sound theory (theory, practice, transformation.)

Reflexive critique: The researcher made an account of a situation by collecting data. This data is factual and true, relative to the researcher. Researcher reflected on issues and processes and made 'explicit the interpretations, biases, assumptions and concerns upon which judgments are made.' Following assumptions are currently made (1) FPD guidelines for procurement work in actuality and (2) plans can be drawn in committees and executed in actuality.

Dialectical critique: People held different views but researcher sought a consensus about the situation through reasoned arguments based on data. The different view in the SAF procurement process primarily concerned the operability of the procurement Guidelines. The Ministry of Defence air, land and sea forces believed that their procurement demands can be fulfilled by the Guidelines provided. The FPD, however, found the guidelines difficult to implement in practice to obtain the SAF procurement within the required time. Consensus was reached through dialogue, resulting in redesigning the procurement process in ARC Two.

Collaborative Resource: The collaborative nature of business processes (Hammer, 2002) lends itself to this collaborative resource feature of AR. Researcher had taken the initiative to

do AR and consulted with her line manager about the SAF procurement process problems. As the findings of the research were being successfully applied to the emergent SAF procurement process during ARC One, the Assistant Undersecretary at KMOD wanted to learn more about the research. This led to widening the scope of the AR to include setting up the PPQG and the beginning of ARC Two. PPQG become the main instrument of the collaborative resource emerging from the AR.

Risk: The SAF procurement process was already delayed and costing more than expected, when the AR project commenced. Any intervention was deemed highly risky by the researcher and the process owner, potentially resulting in further delays and cost. This was set in the context of threatening moves to national defence by neighbouring countries. Risk was mitigated by making small interventions in ARC One. In ARC Two the change in the procurement process, redesign to reflect emergence, was led by the PPQG with high level political and management representation.

Plural Structure: There were multiple perspectives on the intervention. The process owner began to realize the potential valuable contribution of the AR during the interview data collection from her. She commented that the interview questions reflected exactly her experience of the SAF procurement process. The primary stakeholder, KMOD, was represented in the research by the Assistant Undersecretary who began to appreciate the AR effort and supported setting up the PPQG.

Incorporation of these multiple perspective was facilitated by the unique collaborative culture of the KMOD/FPD. Meetings were arranged with the process owner, key stakeholders and researcher to discuss the issues being raised in ARC One, and the outcomes formed the basis of ongoing discussion (See Appendix A, Dataset 2).MacDermott and Scholfield (2011) assert that reports and outcomes of meetings should be the basis of ongoing discussion rather than final conclusion of fact.

Researcher wanted a systems view of the procurement process and, by soliciting the plural perspectives, learnt that this was also the view of the process owner and stakeholders. They wanted the change to robust and interconnected. This was the beginnings of ARC Two when the concepts, constructs and mechanisms of deferred systems were to be formally incorporated into the procurement process, which was being recognized as emergent by the process owner and stakeholders.

Theory, Practice, Transformation: The researcher's actions in collaboration with the process owner in ARC One and with the KMOD and CDs in ARC Two, were based on the tenants of the theory of deferred action. The core assumption of the theory is that any planned action should incorporate deferred action to cater for unpredictable emergence. As the actual practice did not cater for deferred action, the process owner, process workers and the stakeholders struggled to execute the FPD Guidelines (planned action) in the SAF procurement process. Principle of deferred action was incorporated into the procurement process to enable actors to respond to emergence. Its use by actors confirmed the theory's proposition that it is necessary to incorporate deferred action in the procurement process. This is done in section 4.4

4.3.3 Action Research

This AR study applied the theory of deferred action to the SAF procurement process problem, by exploring, describing, analysing and improving it and redesigning it as an EBP. It was an interactive inquiry that balanced problem-solving implemented in a collaborative context, with data-driven collaborative research to understand underlying causes and enabling future predictions about personal and organizational change (Reason and Bradbury, 2002). It 'sets out both to make scientific discoveries and to solve practical problems, by acquiring, testing and using knowledge as part of a single process' (Clarke, 1980:152).

Avison et al. (1999:94) state that:

  'Action research combines theory and practice (and researchers and practitioners) through change and reflection in an immediate problematic situation within a mutually acceptable ethical framework.'

Researcher wanted to study and change a system collaboratively with members of the system in the desired direction resulting in co-learning.

AR methodology is cyclic (Cassell and Johnson, 2006). The phases of AR are: (a) diagnosis of the problem or issues (b) planning the action or intervention (c) implementing or taking action and (d) evaluation of the effects of the action. It is a 'systematic inquiry' requiring 'critical reflection and strategic action' (French, 2009:189).

Researcher developed and applied process knowledge. It involved understanding the needs of KMOD, functions of FPD, and collecting data on the actual experiences of process owners,

process workers and stakeholders. It aimed to understand conditions required to redesign of the procurement process, to deliver successful process and process outcomes.

4.4 Action Research Methodology Deployed

The research design sought to answer: (a) What is the effect of emergence on non-standardisable business processes? (b) How can the SAF procurement process be redesigned using the deferred design approach to enable local actors to take deferred action to manage emergent events?? This is done in the Discussion Chapter. These process aims were done with AR as a systematic framework. Figure 3.2 in Chapter 3 illustrates that the actual AR project unfolded during the SAF procurement process. It unfolded as ARC One and ARC Two detailed below in Sections 4.4.4 and 4.4.5.

AR can be done in two ways. One defines AR in terms of the underlying assumptions and views of the participants and the other differentiates the actual execution of AR in terms of technical practice. Avison et al., (2009) detail four types of AR with different assumptions: (a) AR focusing on change and reflection; (b) AR trying to resolve conflicts between espoused and applied theory; (c) Participatory AR emphasizing participant collaboration; (d) and action learning for programmed instruction and experiential learning. The actual method and stages of doing AR varies among studies. Papas et al., (2012) describe a five-stage canonical AR: (1) problem diagnosis, (2) action planning, (3) action taking, (4) evaluation and (5) learning.

Deployment of AR itself resulted in an emergent process as noted by MacDermott and Scholfield (2011). The SAF procurement process research consisted of two pre-planned AR Cycles, but the breadth and scope of the research were determined emergently, as the organisational change was pursued (action) and better understanding gained (research). These AR cycles are depicted in Figure 4.1. AR involves problem identification and framing, which occurred in ARC One and redesign of process model and its application, which occurred in ARC Two. ARC One included review of research aim in terms of practicality, and refinement and evaluation of the research questions based on systematic review of the literature, which formed the input into ARC Two.

The AR methodology deployed in this research is based on Perry and Zuber-Skerritt (1991), who recommend a specific methodology for Masters and PhD theses in business management. Their core AR processes are similar to those suggested by other recent

methodologists (Reason, 2001; Williamson and Prosser, 2002; French, 2009). Perry and Zuber-Skerritt (1991:70) assert that the practitioner's situation is appropriate for AR if:

'people reflect and improve (or develop) their own work and their own situation by tightly interlinking their reflection and action and also making their experience public not only to other participants but also other persons interested in and concerned about the work and the situation, i.e. their (public) theories and practices of work and the situation...'.

This is the situation at KMOD/FPD. Practices and ideas about new practice are shared among colleagues in a collaborative culture. Relationship between the FPD and KMOD is good, particularly with Assistant Undersecretary to Minister of KMOD. Communication has flowed well between FPD and KMOD. This is reflected particularly in ARC Two, when Procurement Process Quality Group (PPQG) was setup formally with KMOD's approval and participation to facilitate the AR.

Perry and Zuber-Skerritt (1991:70) state that the practitioner should look for the following evidence to determine whether the AR methodology is applicable:

'(1) data gathering by participants themselves (or with the help of others) in relation to their own questions;

(2) participation (in problem posing and in answering questions) in decision making;

(3) power-sharing and the relative suspension of hierarchical ways of working towards industrial democracy;

(4) collaboration among members of the group as a 'critical community': self-reflection, self-evaluation, and self-management by autonomous and responsible persons and groups learning progressively (and publicly) by doing and making mistakes in a 'self-reflective spiral' of planning, acting, observing, reflecting, re-planning, etc.

(5) reflection, which supports the idea of the '(self-)reflective practitioner...'.

In this AR, the only point that did not occur is (1). FPD Director and KMOD officials participated in the AR and suspended hierarchy in ARC Two to redesign the procurement process. FPD Director and researcher formed a critical community supported by Assistant Undersecretary. Finally, as noted in Chapter 1, Practitioner's reflection instigated the AR.

Having determined that Practitioner's situation is amenable to AR, Perry and Zuber-Skerritt (1991) stipulate necessary phases of the AR, as the 'Theses Research' and 'Theses Writing', as shown in Figure 4.1.

Figure4-2 AR Cycle and Thesis-Writing

REFLECTING
conceptualising,
writing final draft

OBSERVING
evaluating
the action

*Thesis
Research*

PLANNING THE
THESIS
research problem,
design & rationale

ACTING

Core AR Project

plan

reflect   ①   act

observe

plan

reflect   ②   act

observe

③

etc.

REFLECTING
on thesis

OBSERVING
evaluating,
revising & proof
reading

*Thesis
Writing*

PLANNING
final draft

ACT
WRITING
final draft(s)

**FURTHER
RESEARCH**

Source: Perry and Zuber-Skerritt (1991, p. 76)

The 'core AR project' in Figure 4.1 is the field work, which is composed of the two or more AR research cycles underneath. Above the core AR project is the 'Thesis Research', the Practitioner's intention to research the management problem, which requires the initial observation of the management problem and intention to pursue AR. This requires planning the thesis, acting to undertake it, observing and reflecting. Once the AR Cycles have been

completed the 'Thesis Writing' begins with planning the draft, writing, evaluating and revising and reflecting on it.

All the above activities were undertaken by the researcher, as recorded in this dissertation. Perry and Zuber-Skerritt's model cannot be undertaken without the support of the PhD Supervisor. Researcher benefited from direction given by her Supervisor on how to formulate the management problem in terms of scientific research, methodological issues and actual execution of the field research in the context of being manager. The two AR cycles composing the field research are elaborated in sub-sections 4.5.2 and 4.3.3.

4.4.1 Applying Theory to Practice

The deferred design approach is applied to the SAF procurement process. Using the pragmatism research approach detailed in Section 4.2, the main concern is to study the actual procurement process and to identify the relevance of the theory's constructs and design principles, discussed in Chapter 2, to practice.

The design constructs and design principles of the theory are applied to practice through AR. As mentioned in Chapter 2, AR and the deferred approach have similarities, which make them suitable to be combined and applied in real-time. These include live action, actor participation, actor decision-making and an ethical approach.

4.4.2 Action Research Applied to the procurement process

Researcher sought to improve the procurement process. The researcher reflected on the purpose of the intervention by posing reflective questions for observation and analysis concerning the problem situation. Papas et al., (2012) suggest the type of reflective questions a researcher may ask before undertaking AR intervention. These have been adapted for this AR in Table 4.1.

Three themes were explored: The process and research cycles, the role of knowledge and learning and the focus of evaluation. Three questions concerning AR cycles were the nature of the process management problem, how the AR cycle would be executed and the extent of the redesign of the procurement process. As noted by Avison et al. (2009), the problem diagnosis was explicit and took about 55 days to understand, and the two AR Cycles proceeded with the agreement of the process owner and stakeholders. Activities which led to clear definition of the problem included re-collecting previous mental reflections and

recording new reflections in the reflective diary, discussing initial ideas with the line manager, and reading previous documents. ARC Two began with formal recognition by management and KMOD of emergent procurement process and need for deferred action. The two AR cycles transpired as expected and planned, but ARC Two was significantly enhanced by the official PPQG. Since the SAF procurement process is a multi-million dollars investment executed over three years, it was not feasible that researcher would redesign the whole SAF procurement process, but was able to introduce deferred design decisions and deferment points in the process.

An objective of the research was to contribute to theoretical knowledge of EBP design through AR. The role of knowledge and learning was significant and considerable. Three questions were posed. First, what new knowledge and learning would ensue? Researcher had discussed her intention of undertaking doctoral research to improve the work of the FPD with her line manager. The line manager had expressed that she, KMOD and the other process workers needed to develop better knowledge of the SAF procurement process in order to ensure the project was successful. Researcher herself wanted to develop better insights into the process to generally improve the FPD procurement process. Both line manager and researcher were keen to find better techniques to manage the procurement process.

Table 4-1 Asking Reflective Questions before SAF Procurement Process Intervention

Questions	Action Research
The process and research cycle	
How is the research problem going to be determined and agreed?	Problem diagnosis is explicit, and may be time consuming. Research cycles then proceed by agreement with collaborators.
Is a predetermined cycle of activity going to be followed?	Canonical AR is flexible, and a focus on practical action in the problem setting is more important than specific cycles. The AR composed the AR ARC One and ARC Two. These emerged naturally consistent with the canons of AR.
Will the entire procurement process be redesigned?	Since the SAF procurement process had begun and was ongoing, and its emergent nature explicitly recognised, the redesign concerned short-burst interventions, mainly inserting process deferment points to enable deferred action in response to emergence.
The role of knowledge and learning	
What expectations are there with regard to learning?	Collaborative learning can be put at the heart of the research approach.
Will learning occur from the redesign of the procurement process or the actions undertaken by the researcher and collaborators?	Shared actions will lead to learning, and redesign of the procurement process might also give rise to knowledge.
Is actionable knowledge a realistic goal of the research?	Yes, as practical action is at the heart of the research approach. Specific techniques to cope with emergence were sought based on the DMR.
The focus of evaluation	
Can evaluation be a by-product of the research cycle, or must explicit evaluation activities be used?	An inclusive and emergent evaluation approach was used, consistent with the deferred ontology of the theory in use – the theory of deferred action. This consisted of milestones of management's formal recognition of the actions of the researcher and the relevance of knowledge ensuing from the theory of deferred action. The formal recognition composed changes in the knowledge state of the process owner and official approval from the KMOD of the EBP.
How can process owner's and workers' satisfaction be assessed?	The researcher's contribution to SAF procurement process was recognised by the process owner. The researcher suggested setting up formal groups of process workers to explore and discuss satisfaction issues, which the process owner agreed.
Developing theoretical knowledge	
To what extent is informing theory an objective?	AR can accommodate theoretical frameworks, and should inform theory. Practical outcome is important. This was done by invoking the theory of deferred action.
To what extent will conclusions reached through the AR be applicable to other organisational settings?	As the epistemological position of this AR is interpretive, the quest for generalizable knowledge is not applicable, but meta-understanding of the problem of designing for emergence is sought. Such understanding should lead to general propositions applicable to other emergent organisational settings.

Adapted from Papas et al., (2012)

The core tenant of AR is that people learn effectively while working on real problems in their own settings. They need to achieve specific management goals for which they systematically collect data to understand the problem and use the data to generate improvements. The second question concerned how the learning would occur, through collaborative actions of the researcher and redesign of the procurement process. In actuality, it occurred through both these modes. The researcher, as a controller of SAF, had a close professional working relationship with the primary process owner, her line manager, which necessitated frequent meetings and consultations on the progress of the SAF process. Line manager acknowledged that she was gaining significant learning and insight into the processes of the SAF process because of the AR. Similarly, process workers expressed that they understood their individual work and work related to others working on the procurement process better because of the actions of the researcher. These action learning points were recorded (See Appendix A, Dataset 2 and Appendix A, Dataset 3).

Concerning the question on acquisition of actionable knowledge through the AR, it was intended that such knowledge would be a primary outcome of the AR. The AR set out to apply elements of the theory of deferred action to practice, particularly discovery of emergence and responding to it with process deferment points and deferred action. This was done during both the AR Cycles. During ARC One significant episodes of emergence were identified and deferred action taken(See Appendix A, Dataset 1.2). The EBP was formally recognised during ARC Two. During this cycle, official approval from the KMOD was obtained to formally define the FPD procurement process as an EBP, or in terms of the theory of deferred action a deferred business process (See Appendix B, Dataset 5).

The question on actionable knowledge from the AR has implications for contribution to knowledge. Since the AR sought to apply the theory of deferred action and seek verifying data of its relevance to practice, the resulting actionable knowledge makes a significant contribution to understanding the application of the theory(See Section 7.5).

Use of theory was central to the final question concerning the role of knowledge and learning. As noted in Section 1.4, during initial consultations with the doctoral Supervisor, the theory of deferred action was identified. It explained well the Practitioner's description of the problematic of the SAF process. The Practitioner's objective was to apply the theory to better understand the problem and redesign the procurement process.

The penultimate set of reflective questions concerned evaluating the AR outcomes. An inclusive and emergent evaluation approach was used. This consisted of milestones of management's formal recognition of the actions of the researcher and the relevance of knowledge ensuing from the application of the theory of deferred action. The formal recognition was knowledge gained by the process owner and official approval from the KMOD of the EBP. The researcher's contribution to SAF procurement process was recognised by the process owner, who acknowledged that she realised and learnt about the nature of the emergent SAF procurement process (See Appendix A, Dataset 2).The researcher suggested setting up group of process workers to explore and discuss satisfaction issues, which the process owner agreed. This will occur after the AR has been completed and will be one of the indicators of the enduring impact of the AR on procurement process management. Related to this impact is enduring internalisation of learning by the KMOD/FPD arising from the AR. Kumar (2012) argues that such internalisation begins with experiential learning facilitated by the use of AR methodology.

The final set of reflective questions concern theoretical knowledge. Specific lessons were learnt and techniques adopted to manage EBP, such as the deferment point analysis technique to enable deferred action. Since the researcher adopted interpretivism, understanding of the problem of designing for emergence was sought for FPD. This concurs with Gummesson (2000), who argues that organisations now are challenged with change and in this context it is more important to show that a theory works in a specific context. A theory can be modified rather than generalised by its application and validity in subsequent actions (Kumar, 2012). Such understanding provides general propositions applicable to other emergent organisational settings.

4.4.3 Management Initiative: Programmatic Change

An important objective of the research was to improve the communicative relationships between the Kuwait Ministry of Defence and FPD management, FPD and CDs, and between the process owner management and process worker staff. The programme of change was not pre-planned but emerged during the AR, a feature of emergent design (See Section 2.7). An important aspect of any organisational change is not to increase the risk of failure, generate additional employee problems, create communication problems or resistance to change, and lack of sustainable process management.

The researcher wanted to avoid failure and drew on her professionalism, communicative skills and tact to introduce the idea of doing AR to her line manager. Acceptance by line manager of the AR focused it in ARC One on the difficult SAF procurement process, but the significance of the research was fully realised in ARC Two, when KMOD broadened the scope of the research into deliberate programmatic organisational change, redesign of the procurement process, which included other KMOD divisions and government agencies. As noted in Chapter 3, KMOD wanted to improve the procurement process to equip the defence forces' capability.

Principles of AR require its use when flexibility is necessary, other people are involved in the research and the expected change is systemic or holistic (O'Brien, 2001). The setting at KMOD/FPD involved all these elements. There was no explicit statement of holistic change by the process owner and stakeholders when the researcher began researching. ARC One involved changing elements of the SAF procurement process in accordance with the data and theory of deferred action. It was during this Cycle, based on the data evidence, that KMOD's and management's initiative to make programmatic change occurred. This involved redesigning the procurement process in ARC Two.

Exploratory discussions to establish the process management issues and data collection interviews with the process owner and process workers, and the resulting AR interventions detailed in Dataset 3 (See Appendix A), all had an impact on the process owner's view of managing the procurement process. FPD Director, as the process owner decided to initiate programmatic change in the procurement process beyond the contribution already made in ARC One. KMOD too recognised the results of ARC One and potential of the AR. Together, they initiated larger programmatic change by setting-up PPQG, which set-off ARC Two which aimed to redesign the procurement process, which was achieved.

The emerging programme of organisational change covered the whole FPD procurement process. KMOD and management of FPD wanted to redesign the procurement process to add new details and to ensure it reflected emergence, revealed in ARC One.

4.4.4 Action Research Cycle One

An objective of this research was, through the reflective diary and structured interviews, identify emergence and develop a complete picture of the procurement process needs and current operation, including an in-depth description of efficient business elements to be

retained. This was achieved in ARC One, which focused on the current SAF procurement process to explore the nature of the problem, and with management actively contribute to make it work well within the FPD Guidelines. Through the researcher's reflective diary data (Appendix A, Dataset 2 and Appendix B, Dataset 6), the problem was diagnosed as occurrence of unexpected events or emergence that could not be responded adequately to by management within the FPD Guidelines. The observed SAF procurement process essentially was emergent in nature or an EBP. Drawing on the theory of deferred action, the proposed solution was to include process deferment points and deferred design to enable effective management response.

ARC One composed designing process deferment points in the SAF procurement process. This is deferred design, the process of designing in context to respond to emergence, where actors can design locally but within predetermined bounds. This is to be distinguished from 'design-in-action' which refers to designing during enactment but does not have an explicit predetermined rational design or deferred action perspective (Bødker et al., 1991).

Essential prerequisite of ARC One were the respondents involved from government and different management levels and process workers. Purpose of the discussions and interviews was to assess how different levels of process workers perceive capabilities of the process within changing environment. Researcher's involvement in management meant that she helped develop questions posed by managers who wanted to seize the opportunity to experience and develop methods that would positively work to improve procurement.

It made sense to include the diagnosis of problems as reflection in the reflective diary, since the Practitioner had initially decided to undertake research and begun to record her thoughts on the problem of the SAF procurement process reflectively. Discussions and meetings she had with her line manager were captured as reflective accounts of the SAF procurement problems. This was done by analysing researcher's reflective field notes and discussions with process owner and process workers. This analysis included structuring the data according to the deferred theoretical framework and researcher's experiential analysis.

As researcher learnt more from process owner and process workers, it enabled focusing on relevant procedures used in the process. There were specific knowledge and methodological learning outcomes from ARC One, as discussed in Chapter 5, which were input into ARC Two.

4.4.5 Action Research Cycle Two

An objective of the research is to redesign and implement elements of the procurement process to reflect emergence, based on the deferred action theoretical framework, and evaluate its impact. Hammer's (2002) refers to this as 'institutionalised process management' with aligned management systems to support the processes, which occurs when the organisation engages with process management. ARC Two focused on KMOD/FPD initiative to institutionalise process management based on findings and learning gained from ARC One.

ARC Two emerged from top management's assessment of contribution made by ARC One. They realised that the AR revealed new conceptual understanding of problems experienced in the procurement process, which led KMOD, the Undersecretary, and management initiatives to formalise findings of ARC One. This formalisation included setting up Procurement Process Quality Group (PPGQ), consisting of government officials, process owner, process co-workers and researcher, sanctioned by KMOD, and the recognition of an internal technical consultancy role for the researcher.

PPQG emerged during ARC One. FPD Director became interested in the AR because it mirrored her experience of procuring supplies. This led her to discuss the AR with the Assistant Undersecretary and other colleagues, and they resolved to set up the PPQG to investigate and understand the issues beginning to be raised by the AR.

PPQG effectively moved the research from researcher learning individually to team learning and organisational learning. Kayes and Burnett (2006:2) state that:

> 'Organisations rely on team learning to solve complex problems, create new knowledge, and to improve the performance of ad-hoc or task specific project teams.'

Senge (2006:238) notes that there is need for comprehensive understanding of team learning:

> '...teaming learning remains poorly understood. Until we can describe the phenomenon better, it will remain mysterious... mastering team learning will be a critical step in building learning organisations.'

Another objective was to redesign the structure of the supporting organization necessary to implement the redesigned EBP. This involved allocating new responsibilities for the Director of the FPD, such as the ability to take decisions when unexpected events occurs

and team learning. Team learning involves psychological safety, cooperation, cognitive ability (Kayes and Burnett, 2006). FPD has employees from different cultures. Team learning is problematical, especially across cultures (Borredon, et al., 2011), but the PPQG wanted to learn how to manage emergence and it became the cornerstone of the organisational learning that enabled the redesign of the EBP.

4.4.6 Ethical Framework

As data was collected from human participants, the Research Ethics Application was submitted to the Research Ethics Committee, and after making the necessary amendments suggested by the Committee, approval received (See Appendix D). To ensure that participants acted voluntarily an Information Sheet was provided detailing the aim of the research and its application to improve the procurement process. Participants were also asked for their voluntary informed consent and only then was the data collected. This also ensured that data was not collected from individuals who could not give consent.

4.5 Data Collection: ARC 1

Data collection was guided by the deferred action theoretical framework, and actual practice because AR emerges in the field through interactions of actors' and their problems. DMR detailed in Chapter 2, determined that data should be collected on: (a) structure, (b) planned action, (c) emergence and (d) deferred action. The three methods of data collection were structured interviews, reflective diary (participant observation) and meetings and discussions of managers which were recorded in the reflective field notes. This data was used to verify whether the DMR explained the actual procurement practice and to redesign the process.

Data collection methods had to match the data required to evidence the DMR and was based on Friedland and Folt's (2000:107) questions:

> 'Are these the correct and best methods for the specific questions? Are the methods proven and properly cited? Are the methods feasible given the time and support available? Is the precision or extent of the study appropriate and sufficient to answer questions, hypotheses or objectives?'

Data collection methods range from low to high personal involvement (Saunders et al, 2009). In-depth interviews and participant observation involve the researcher in the field. Data collection methods had to gather data on the practice of researcher and her colleagues, based

on following questions: What exactly is the current procurement process? How can the current business process be described in language that reflects emergence? What factors need to be considered in designing the new emergent procurement process? What are the problems of implementing EBP? How will KMOD/FPD respond to EBP implementation? What data is required to know the learning and knowledge outcomes of AR? What data is required to assess KMOD/FPD performance? What data is required to evaluate the AR?

Data collection and interpretation served dual purposes. One, data was collected on the SAF procurement process. This constituted the research data required to study and redesign the EBP. Two, the same data was used from management perspective to understand the procurement problem and think about the necessary management action to improve the situation. To achieve this dual purpose, use was made of existing documented models of the procurement process. These were scrutinised in the context of the collected data by the researcher and her manager to learn what could be done to improve the procurement process's responsiveness to emergence.

In AR, data collection occurs during the occurrence of problem being studied. Data collection occurred during the actual SAF procurement process. AR data collection requires more time because it is data collected when the action is happening in the organisation. Interview data was collected when it was mutually suitable for the subjects during their busy job responsibilities.

As detailed below, qualitative research methods were used to understand the management issues and collect appropriate data for redesign of the procurement process. Data were collected through structured interviews, archival documents, reviews of administrative documentation, and supplementary materials obtained from government publication in KMOD. The purpose of the interviews was to assess how stakeholders and different levels of process owner and workers perceive the capabilities of the process.

The AR data was collected from the process owner, including managers and executives of government, process workers who participate in the procurement process, directly or indirectly and the reflective field notes of the researcher as participant observer. Data was also collected from practice as experiential data of the researcher and recorded in the reflective diary. Data was organised into datasets (See Appendix A).

4.5.1 Reflective Field Diary

Datasets 2 and 6 compose the reflective field diary. This is participant observation data (See Appendix A and B). It was structured to capture data and interpret the SAF procurement process as it was occurring in terms of the deferred action theoretical framework. Dataset 1 is the initial diagnose of the SAF procurement problem (See Appendix A).

ARC 1 was the cycle that helped to determine the actual problem with the SAF procurement process. Central to this determination was the action researcher's field notes in the form of the reflective field diary. The reflective field diary captured the action researcher's experiences of the SAF procurement process as an active and central participant of it. As the project controller she was central to the process and was responsible for its successful completion.

The reflective field diary was designed to capture the participant's observation of the SAF procurement process. Researcher designed the field diary to record her reflections on the SAF procurement process, the problems, events and actions taken. As well as expected FPD procurement events, the diary is a record of the many unexpected events and details of what the researcher contributed to solving emergent events in her managerial capacity. Since she adopted the theory of deferred action, her contributions drew on its deferment points and deferred design constructs, to conceptualise the procurement process as a EBP. Some of these unexpected events become defined as actual deferment points which resulted in deferred design, the AR intervention.

4.5.2 Structured Interviews

Dataset 3 & 8 are the structured interviews. The interview questions were derived from researcher's experience as a manager and the deferred action theoretical framework. Ten structured interviews were conducted in two stages. Interviews were done to gather data on the ongoing SAF procurement process and respondents' experiences of other procurement projects. This was factual data directly informed by the theoretical framework. Interviewees were instructed to answer the questions by reflecting on their experience of working on procurement process and provide examples where they could.

This method was used to gather breath of data comprehensively. The ten interviewees were from different parts of the procurement process. They included the process owner, the FPD Director, and process workers. Interviewees were chosen on the basis of researcher's

knowledge of the FPD, its personnel and procurement process, to ensure a representative group were selected.

4.6 Data Collection: ARC 2

The primary method of collecting data for ARC 2 was the reflective field diary. Since ARC 2 was designed to find a solution to the emergence problem it required the involvement of all levels of the KMOD/FPD organisational structure. An effective way to collect the data of such participants was by reflecting on the practice and recording it. The reflective diary for ARC 2 is presented in Appendix B, Dataset 6.

The ARC 2 consisted of 12 meetings. The meetings were attended by senior government official including the Under Secretary, Assistant Under Secretary, and FPD Director, the Controller of Land Forces and other assistants.

The initial meetings were exploratory because the senior government officers and FPD Director did not fully comprehend the notion of emergence, though during ARC 1 they had acknowledged its relevance to the SAF procurement process. Subsequent meetings were constructive – developing the EBP solution to the problem.

4.6.1 Reflective Field Diary

The researcher noted in the reflective diary the issues and problems in the actual SAF process activities and, as Controller of the SAF procurement process, contributed to their resolutions. The reflective diary was structured to record observations predicted by the theory of deferred action. Observations focused on recording data on the core constructs of the DMR: structure, emergence and agency.

This was done as participant observation. Researcher as an observer participated in the ongoing SAF procurement process and recorded her observations in the reflective diary, resulting in 27 event observations in ARC One and 11 event observations in ARC Two. Following Perry and Zuber-Skerritt (1991) direction for reflecting (See Figure 4.1), each event observation in ACR One was structured to record and name the process event and details of the process activities provide short description, description of the issues and problems; diagnosis of the process enactment problem, emerging issues (planning action) and emergent action (taking action). This was to record how FPD, KMOD and CDs collaborated to understand and resolve procurement problems. Researcher experience, reflection and

interpretation of these events and what action she and management took were recorded; this action was then evaluated and assessed in terms of agreement, disagreement and learning emerging from the experience. The whole event was then recorded in terms of experiencing, reflecting, interpreting and taking action. This whole event observation was then compared to the DMR to understand the problem, in terms of confirming and anomalous data.

In ARC Two each event observation was structured to record the redesign of the EBP. The record consisted of naming the EBP design activity, primary and secondary actors, resources used, and duration. The EBP was referred to as 'model' design and its features, attributes and methods and emerging design issues were recorded. The resultant organisational change was named. Experiencing, reflecting, interpreting and taking action on the whole event observation and evaluation of it and the learning points emerging were all recorded.

As well as studying the procurement process, researcher was the subject through reflective practice (Kawulich, 2005). Participant observation enabled researcher direct access to the culture, behaviours and intentions of the FPD and its workers and managers (de Munck and Sobo, 1998). Being a female, though considered a disadvantage by some (DeWalt and DeWalt, 1998) because they argue femininity gains access to data not available to male researchers, the Action Research gained direct access to information from her line manager who is also female and senior male political figures and military actors.

4.7 Data Interpretation Methods

Data analysis and interpretation follows Miles and Huberman (1994). They argue that qualitative data is able to deliver knowledge of 'some lawful and reasonably stable relationships' of social action. This they call 'realism' or the realist epistemology. They argue:

'Human relationships and societies have peculiarities that make a realist approach to understanding them more complex – but not impossible. Unlike researchers in physics, we must contend with institutions, structures, practices, and conventions that people reproduce and transform. Human meanings and intentions are worked out within the framework of these structures – structures that are invisible but nonetheless real.' (p.4)

The qualitative data analysis here sought to account for how actors acted in the context of the institutional and process structures. It sought to link the events and processes that flow from

the embedded structures of human action. As Erickson (1977) frames the qualitative approach:

'…by hanging around and watching people carefully and asking them why they do what they do… this orientation toward social meaning as embedded in the concrete. Particular doings of people, qualitative researchers are reluctant to see attributes of the doing abstracted from the scene of social action and counted out of context. (p.58)

4.7.1 Document Interpretation

Dew (2005) asserts that document analysis is a standard research method. It probes organisational documents to provide socio-cultural understanding. It identifies people who can be interviewed (Ezer, 2005).

Documents were studied and analysed to develop researcher's knowledge of the procurement process comprehensively (For national security reasons they cannot be produced as evidence). This informed and helped in making sense of the other datasets and the actual events unfolding in the SAF procurement process. It also informed the redesign of the procurement process.

4.7.2 Data Interpretation Strategy

AR is evaluated in terms of theoretical contribution and its ability to explain practice (Avison et al., 2009).Coghlan and Brannick (2014) view direct participation as essential to the discovery of the different types of problems that occur in practice. This AR was evaluated by reflecting on the contribution it made to improve the procurement process and to improve the validity and applicability of the theory of deferred action.

Researcher's learning, organisational learning and institutionalised change were evaluated for practice contribution. Avison et. al., (2009) note that researchers rarely have full control of the environment to make institutional change, but such change was achieved in this AR. Application of the theory of deferred action, by operationalizing its design constructs and principles, obtaining evidence of it, and gathering new evidence previously not available were evaluated for theoretical contribution.

Collected data was interpreted in the context of the practice experience and the deferred action theoretical framework. It was coded and interpreted using the NVivo software package.

As the researcher had applied the theory of deferred action to understand and redesign the procurement process to reflect emergence, data reduction was straightforward because the theory's constructs formed the basis for identifying relevant coding categories. This was done by applying structural coding.

> 'Structural coding applies a content based or conceptual phrase representing a topic of inquiry to a segment of data that relates to a specific research question used to frame the interview' (Saldana, 2013: 84). 'Structural coding generally results in the identification of large segments of text on broad topics; these segments can then form the basis for an in-depth analysis within and across topics.' (MacQueen, et. al., 2008: 125).

Nvivo's 'models' facility was used to visualise the data and to enable the researcher to apply the structural codes to draw conceptual models to explain data. The theoretical model is the DMR, whose constructs, rational planning, emergence and deferred action, formed the 'broad topics' for data reduction. Supporting conceptual models were generated from the coded data. All these models are labelled as 'Figure' in the analysis and discussion Chapter 5, 6 and 7.

Three types of connectors are depicted between nodes in the NVivo models, structural codes or data categories. An associative relationship, which is a simple line connector, is used to depict fundamental structural relationships. This represents the inherent structure of the procurement process and the theoretical relationship between the constructs in the DMR. A unidirectional line arrow is used to depict a causal relationship, where one structural code is observed to cause or influence another structural code. A symmetrical line arrow is used to depict bidirectional causal relationships, where each of the connected structural codes is a cause of the other structural code. This represents systemic emergence.

As noted above, MacQueen et. al. (2008:125) assert that the 'segments (of data) can then form the basis for an in-depth analysis within and across topics.' This was achieved using NVivo's 'Queries' facility, to enable researcher to 'Explore' the data using 'Text Search', 'Word Tree', 'Coding', 'Tag Cloud' and 'Word Frequency'. The grammar, phrases and style of English of respondents is in the original to preserve the interpreted context.

NVivo coding techniques and data visualisation methods that provide the context of the data being analysed, such as 'Word Tree' and 'Tag Cloud', were preferred over those that detached the data from the context, such as 'Word Frequency' counts. This is significant because researcher adopted the interpretive account of knowledge and practice perspective,

where context and subjective meanings of actors is significant to understand the problem. Excerpts of the data are also used to evidence the structural coding of the informing DMR.

4.8 Limitation of the Research Methodology

Business and management research seeks to define and change the current situation in favour of creating value, efficiency and effectiveness in business enterprises. The pragmatist epistemology is focused on such change. Wicks and Freeman (1998) state that pragmatism permits purposeful research that serves human purposes, accounts for ethics and is useful to organizations. However, the validity, reliability and generalisability claims arising from pragmatism need to be thoroughly verified (Shipman, 2014).

The pragmatist approach focuses on knowledge of practical value and applicability. This is useful for generating generalizable knowledge. But it is limited because it does not recognise the 'meaning' that people have in their minds when acting. This is important for this research because business process are designed and used by process owners and workers who attach meaning to the events, states and time-points in processes.

To understand such meanings interpretivism is used too (Avison et al., 2009). Williams (2000) argues that generalisations can be drawn from interpretivism. Such generalisation is characterised as *moderatum*. Interpretivist research results in thick descriptions or accounts of the subject of the study. Interpretivists draw conclusions from such specifically contextual accounts and it is such conclusions that form the generalisations of interpretivist research.

4.9 Conclusion

This Chapter detailed the Pragmatist methodology deployed in this AR. It was used because Practitioner was experiencing SAF procurement problem, for which she wanted a robust solution based on theory. Researcher believes that through reflexive critique, practice can be a source of knowledge. She adopted humanism and democratic values of AR to resolve the problem. The procurement problem was conceptualised as a systems problem and researcher wanted to learn how to manage systemic emergence and contribute to organisational learning. AR methodology consisted of researcher's reflective diary, structured interviews and document analysis data collection methods and structured data interpretation, and evaluation criteria, and was executed in two AR Cycles.

Chapter 5: ARC1: framing the problem in the context of the SAF procurement process

5.1 Introduction

The data sampling strategy used in this research is 'theory based', as defined in Miles and Huberman (1994). This involves empirical observation of theoretical constructs, which in this research is the deferred model of reality (DMR) derived from the theory of deferred action. Data interpretation consisted of coding the data according to the apriori thematic code list based on the DMR. The data is also presented as NVivo thematic analysis.

The actual small ammunition factory (SAF) procurement process involved 300 steps (See Appendix (A) Dataset 1.1: SAF Emergent) compared to the Guidelines planned action 140 steps (See Appendix A Dataset 1.2 – showing only Planned Action – Guidelines). What is the reason for this difference or unexpected events? Unexpected events are normal in non-standardisable processes like the SAF process (See Chapter 2, Section 2.6), but explanation for them in terms of contingency planning or risk analysis is not sufficient, as the data interpretation in this Chapter reveals. The Deferred Model of Reality (DMR) was proposed in Chapter 2 (Section 2.9) to explain unexpected events as emergence and deferred action as response to emergence. First the supporting data for the validated DMR model is presented. Then Action Research Cycle One (ARC ONE) data interpretation shows design lessons learnt about the SAF procurement process, and finally the data on the design, implementation and evaluation of the Emergent Business Process (EBP) in Action Research Cycle Two (ARC Two) is presented.

Detailed data interpretation begins by evidencing the rational management approach of the procurement process, as observed in the data collected by the researcher in ARC ONE, which confirms the DMR. Outcomes of ARC ONE, management learning and deferred systems designing lessons, were input into ARC TWO, to design and implement the new EBP based on the confirmed DMR. Actors involved and data on the redesign and the trails is presented. Then the evaluation of the new EBP is discussed. Finally, the resulting management and organisational learning is detailed.

5.1.1 Management Issues

The researcher applied the DMR to demonstrate its suitable to design EBP. As noted in Chapter 1, researcher initiated the research to understand management and procurement process problems and to resolve them by applying the action research and deferred design as a process design methodology. She captured management issues encountered by FPD management and CDs, such as legal department and Audit Bureau, to understand the context of the problem. Briefly, operational problems concerning unexpected process events occurring. Significant actual process activities, events, states and time-points were emergent (See Chapter 3 for details).

Figure 5-1 is the DMR theoretical model derived from the literature review (Chapter 2) to research the procurement process. It shows the key constructs and their relationships that were investigated. Emergence is a feature of complex systems which are emergent and adaptive. Structure is affected by emergence and it is itself emergent and adaptive. Peoples' action is affected by emergence which is called deferred action.

Figure 5-1 The Deferred Model of Reality
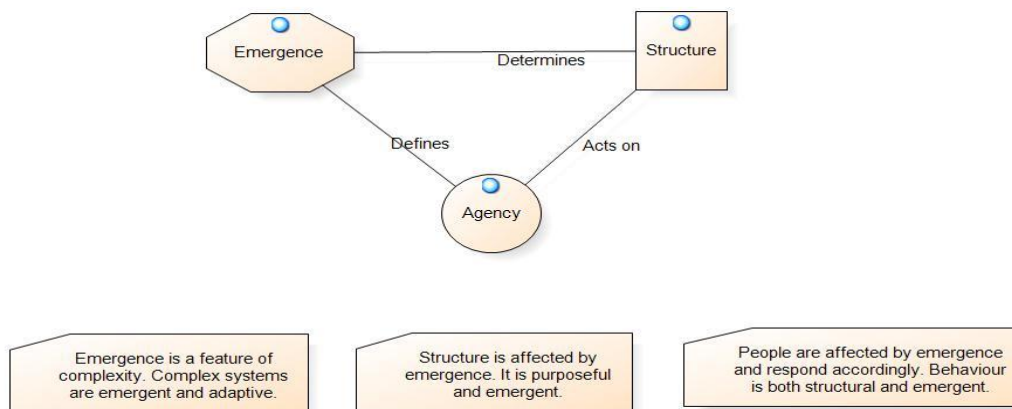
These theoretical constructs of the DMR were validated in ARC ONE. This data was gathered from the ongoing small ammunition factory (SAF) procurement process.

Miles and Huberman (1994) recommend the creation of a code list before starting the fieldwork and that the code list stems from the conceptual framework or theoretical model. They identify the major steps in data analysis as first-level coding, second-level coding (pattern codes), and general themes or memoing.

The list of codes used to analyse the collected data is given in Table 5-1 stems from the DMR theoretical model in Figure 5-1 above. The main codes are planned action, structure, emergence, agency, complexity and deferred action.

The 'Structure' contains institutional aspects such as governmental bodies and agencies, such as the Ministry of Defence and Foreign Procurement Division. The master code for this is PA to indicate the construction of planned action from the theory of deferred action. Planned action is stated in the theory to be the rationally determined actions expected of actors. The master code for Emergence is EM. Emergence is stated in the theory to be the becoming of the actual situation that actors have to interact with. Actors themselves will be coded as Ac, and through their agency they need to interact with the actual situation, as opposed to the planned situation. Complexity is the non-causal interrelationship among elements of the system and deferred action is the change strategy necessary to adapt to the complexity.

Table 5-1 List of Codes

Planned Action	PA	Planned action is stated in the theory to be the rationally determined actions expected of actors. Planned action is the specific, rationally designed goal-directed action that an organisation follows and structure is the underlying supporting infrastructure within which such planned action is possible (Patel, 2006).
Business Process	BP	A business process consists of activities, events, states and time-points serially connected to create value for customers in terms of a product or service.
Guidelines	GU	The Guidelines is the formal process that the FPD is required to follow to procure military equipment and services.
Procurement Process Quality Group	PPQG	Procurement Process Quality Group(PPQG) to formalise the redesign of the procurement process as an EBP.
Structure	ST	Structure is the basis for planned action to occur. It contains institutions and regulatory framework within which actors are required to enact planned action.
Kuwait Ministry of Defence	KMOD	This is the 'user'.
Military Attaché Offices	MAO	This is the agency responsible for special liaison with FPD.
Military Engineering Projects	MEP	This is the military unit responsible for military engineering.
Concerning Departments	CD	The CD are departments of government such the Legal Office, Audit Bureau etc.
Foreign Procurement Process	FPD	The FPD is the civilian division responsible for purchasing military equipment and services.

General Head Quarters (End User), Ministry of Defence	GHQ	The GHQ is the body responsible for dealing with the procurement requirements of the Ministry of Defence.
General Tender and Practice Committee	GTPC	The GTPC is the body responsible for tendering standards and quality.
Knowledge	KN	The structure is operationalised by relevant knowledge.
Organisational transformation	OT	The effect of changing environment and emergence is organisational transformation – changing procedures and structure, as well as EBP.
Emergence	EM	Emergence is a self-organising feature of complexity involving evolving and spontaneous patterns of interaction.
Environment	EN	It happens where disorder and order again. The environment consists of activities and events beyond the boundary of the system under consideration. For the procurement process this consists of actors such as the government, suppliers etc.
Context	CO	Context is the unique situation consisting of the particular actors, activities and events that effect particular decisions.
Actual Emergent Process Activity	AEPA	The AEPA is the actual process activity that arises as the composite effect of the environment and context.
Emergent Business Process	EBP	The EBP is the actual whole procurement process that arises as the composite effect of the environment and context.
Agency	AG	Agency is the live, active feature of the system. It consists of the actors responsible for enacting the actions required to complete tasks.
Actors	AC	Actors are the people who are involved in the procurement process, consisting of the end users, process owners, process workers and suppliers, as well as the stakeholders.
Complexity	CO	The complexity is reflected in the events, activity, state and time-points elements of processes, which can be both predictable and unpredictable. Their coming and staying together composes the CAS or EBP.
Complex Adaptive System	CAS	CAS is the idea that a system is composed of interconnecting elements defined by a boundary and the system interacts with other elements and systems in the environment and adapts itself.
Internal	IN	Activities and events occurring within the system of interest composes the internal complexity of the system.
External	EX	Activities and events occurring outside of the system of interest composes the external complexity of the system.
Deferred Action	DA	Deferred action is the action taken by actors when such unpredictable events occur. Deferred action is a change strategy to respond to emerging issues.
Deferred Design Decisions	DDD	
Deferred Business Process	DBP	The DDD principle is that the actual design of a social system should be deferred to reflective designers, who respond to social systemic emergence by taking DDD.
Deferment Point	DP	DBP is an EBP that is enacted on by DA.

Deferred Phase Change Adaptation	DPCA	A deferment point is a point at the intersection of the two dimensions of design, namely planned action and emergence. It is a 'structural feature' of the system, such as process activities and states, and contributes to the evolution of the structure by recognising unpredictable events. It is an emergent event that occurs in the process. DPCA is the significant change in requirements that split the SAF procurement process into the construction process and the design services process. The combined effect of the changing environment and context results in emergence which results in major change that changes the structure and process.

Miles and Huberman (1994) state that a code list can have twelve to 60 codes. It should have a clear structure and rationale in order to be memorable.

'Whether codes are created and revised early or late is basically less important than whether they have some conceptual and structural order. Codes should related to one another is coherent, study-important ways; they should be part of a governing structure.' (p.62)

The code list above has twenty-eight codes. Since the study uses AR to apply the theory of deferred action, this code list is generated prior to beginning the field study from the conceptual framework, and the purpose of the data collection is to determine whether data is observable to validate the items. The definitions of the codes are given in the final column of Table 5-1. These codes are used in the data analysis presented here to indicate there occurrence in the various datasets.

The data confirmed the core constructs of structure, emergence and agency of the DMR as 'pattern codes'. They data for these constructs were of the type described by Miles and Huberman (1994) as 'pattern codes'. A pattern code identifies the regularities that can be observed to be repeating, a kind of generalisation from the study. Pattern codes usually provide an explanation of the phenomenon of interest. In response to the question on formal and regulatory requirements of procurement, Interviewee 06 stated that:

Because we are following the rules. And we are forced to follow it. If the contract is above 100 thousand Kuwaiti dinar we have to go to them. The legislation office also we have to go to them for their approval if the contract value is above 75 thousands. Also we go for Ministry Of Finance if the contract period is above 3 years.

Other interviewees gave similar responses. Interview 02 stated:

We have to comply with the governmental laws and with the GHQ. When we deal with new things happening that is not part of the Guidelines, we must always seek permission from CDs or GHQ or other involved people.

This pattern indicates the structure, the institutional and regulatory structure in which the procurement guidelines need to be followed.

Similar pattern is observable for the emergence construct of the DMR. Interviewee 01 referred to the environment (EN) and the complexity (CO), classified as internal (IN) and external (EX) complexity:

As a fact the environmental circumstance could be divided to external and eternal circumstance, and in my opinion the internal the circumstances are the easier because they can be handled and vies versa. The SAF process shows there is much change. Approvals take longer because of it.

Interviewee 11 widened the environment (EN) and external (EX) factors to the political system:

Some of the procurement process has a political situation, these kind of procurement process gets affected of the politics in the country, otherwise and in the usual they don't be affected, the only thing that might be effected is the signature of the contracts itself since it is must be signed by the minister himself. By delaying the process if there is any absence. We experienced it in SAF procurement process. The supplier companies too delay. They don't agree with the details, and change of requirements.

From such data, confirmed by all the other Interviewees and the action researcher's reflective diary, it is inferred that the environment leads to emerging issues and problems with the enactment of the procurement Guidelines as planned action. These emergent events required local, contextual action. This too was confirmed as the agency construct.

Agency in the context of the changing environment arose in the interviewees. Actors had to respond to the emergent events. Interviewee 08, a process worker who believed she had a clear idea of the routine tasks she had to perfume in the procurement process said:

Working in the PP and following its steps have a direct influence on it, moving it faster or making it slow. In the SAF process, they made me change my tasks many time because End User requirements changed.

In contrast, another process worker (Interviewee 10) who has a major coordinating role seemed to downplay their role, but recognised the important agency role they had in keeping the procurement process flowing:

I do the correspondence with the supplier companies, maintain proper records, and coordinate between the end user, GHQ and supplier companies. I do not have direct influence, but I make sure that all these coordinating activates are done well. I guess my role is important because if I do not coordinate it well especially when unexpected events arise then it could halt the process.

All the Interviewees observed similar agency roles. Although their roles were clear to them from the responsibilities allocated to them by the Guidelines, they were also required to be flexible to respond to the changing environment. These confirmed structure, emergence and agency theoretical constructs are also shown by the oval nodes in Figure 5-2from the NVivo thematic analysis. DMR represents actuality of FPD's procurement process, not the espoused process detailed in the FPD Guidelines. Each dot within the oblong shapes depicts theme from confirmatory data that emerged from the data (termed 'node' in NVivo).

The 'Emergence' (octagon), 'Agency' (rounded square) and 'Structure' (rounded rectangle) compose the DMR, the theoretical framework arising from the literature review (See Chapter 2) used to investigate the SAF procurement process and apply the deferred design approach as a process methodology to redesign the EBP. The data collected and input into NVivo is represented as the first layer of oval shapes pointing to each theoretical construct of the DMR to confirm it empirically. The second layer of ovals are data which compose the first layer. For example, 'Emergence' was evidenced with data about the 'Environment' of the SAF procurement process that creates the EBP. This environment composed 'Factors' such as the change in government which affected the SAF process. Similarly, 'Structure' was evidenced with data about the 'FPD Guidelines', 'Primary goal of PP', 'What is the business of KMOD FPD' etc.

Figure 5-2 Deferred Model of Reality of the SAF procurement process
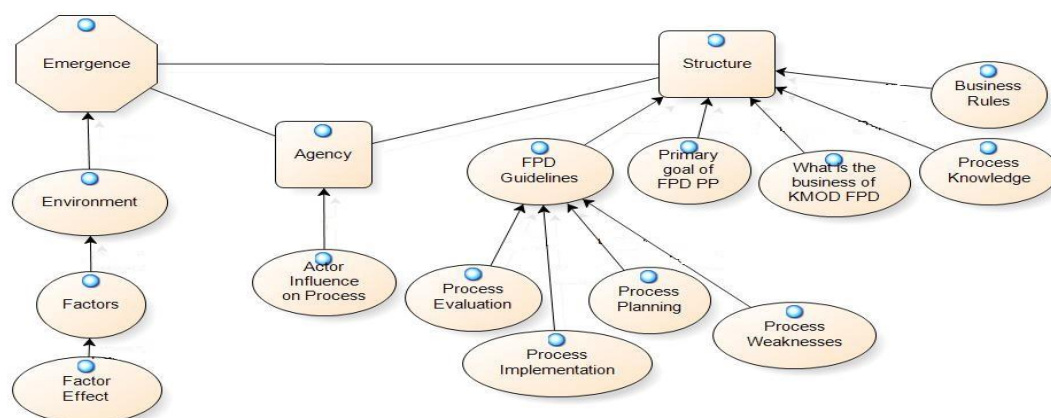
The purpose of ARC One was to establish the issues challenging management in dealing with the emergent events. Management of the FPD, end users and stakeholders, particularly the political agency, had the planned action or rational mind set when encountering these emergent events. They dealt with them by referring to the Guidelines to determine what form action needed to be taken next. For instance, the action research noted in the reflective diary the actual emergent process activity (AEPA) as:

The Director of GHQ did not provide the list of companies that FPD had to contact for the Proposals. It was unexpected because usually GHQ provides FPD with the list of companies to contact for the proposals. Hence, it was the task of FPD to establish the list of companies. Meetings were held between the Director of contract (FPD), Controller of land force division, Assistant Undersecretary to find a proper solution for the issue. It was decided to use the internet to source the list of companies and also to contact the embassies.

Following two reflective diary entries record similar issues arising from the environment of the procurement process:

Change of Ammunition size. In short change of requirement. This change in requirement immediately after the opening of the SAF procurement process was unexpected. (1)

Extension of the submission date. In short once again meaning change in requirements. To study the SOW it was essential to do a site survey and clarification of various technical issues was a must. Hence the companies requested for an extension in submission date. The Director of Contract (FPD) had to contact the Director of GHQ and the Chairman of the tender committee to request an approval to extend the submission date by one month. Even the reasons for the extension request were to be sent to the concerned departments. It was also necessary to contact and obtain approval from the Director of GHQ and the Chairman of the tender committee in a very short time. (2)

All the 27 sheets of the reflective diary reveal similar actual emergent process activity (AEPA), rather than the expected process activities and events stated in the procurement Guidelines. This emerges as a patter code – that management did not expect these emergent events and could only deal with them with reference to the stipulated procurement Guidelines. Hence, they emerge in the ARC One diagnosis of the problem as management issues that needed to be resolved to improve the procurement process.

Management issues were also confirmed in the NVivo thematic analysis as the 'Issues& Problems in SAF'. Issues emerging during the enactment of the SAF procurement were noted in the researcher's reflective diary and coded in NVivo as the 'Emerging Issues, which required planning to address. Problems encountered in executing the procurement process to acquisition the SAF were noted in the reflective diary as 'Process Enactment Problems' and coded the same in NVivo. Both were reflected upon by researcher.

Two data extracts are produced below to illustrate the contents of the reflective diary and illustrate and comment on the emerging issues affecting the SAF procurement process. The first text is researcher's note on the unprecedented break from procedure, where the GHQ did not provide a list of potential suppliers, which it normally does as indicated in the FPD Guidelines. So, this is an emerging issue because normally GHQ provides a list, and it resulted in halting the procurement process until the FPD Director and CDs' heads decided appropriate action. GHQ did not follow normal procedure resulting in an unexpected event that had to be dealt.

The Director of contracts (FPD) raised an issue saying that it was the duty of GHQ to provide the list of companies. It was very essential to prepare the list of companies before obtaining the approval from the tender committee. Hence, without wasting time discussion were held between the department heads. Various options were discussed such as, requesting the lists from the embassies, contacting the Kuwait military attaché based in different countries, surfing the net, etc. (EN)

Ultimately, it was decided that the best source for the information of the companies was through the Internet. Contacting the embassies of various countries was taken into consideration. The information was collected through the use of internet and going back to Director of GHQ for the list was not considered because Director of GHQ would have sent the list if they had it. Even the embassies were contacted because it was the best way to reach the companies which we couldn't reach through internet. (DA).

Another entry below is the note on receiving and processing the report from the potential supplier of SAF. This became an emerging issue because the potential supplier had delayed submitting the report and time savings had to be found urgently. (The format of the reflective diary is explained in Appendix A, Dataset 2 and sample data is provided).

The Director of contract (FPD) wanted to send the documents by mail. I suggested that if the proposal is hand delivered then Director of GHQ can start reviewing the proposal immediately and would save time and meanwhile the normal procedure of sending the proposal by mail can be followed. Also, I had requested the director to assign a person to contact GHQ regularly to know the status of the report. The reason for this kind of action was due to the fact that there was no time limit set for the submission of the report. (EN)

Emerging Issues node and Process Enactment Problems node each contains 55 such references to emerging issues in the SAF procurement process. These issues and problems concerned actual enactment of the FPD Guidelines by process owner and workers. These are unexpected events because they are not part of the FPD Guidelines or any possible contingency planning. They are not simply operational problems because they characteristic of a pattern of emergence – the idea that the events cannot be traced to a specific cause (See Chapter 2.Section 2.6.1). Before interpreting the nature of the problems and proposing an explanation to base the redesign of the alternative EBP, the espoused rational management

approach of the FPD is evidenced in the next Section. Was done in literature review and Chapter 3.

5.2 Arc One: Framing the Problem in the Context of the SAF Process

The purpose of ARC One was to learn how actual procurement process unfolds in practice. This initial data gathering was to diagnose the problem and plan subsequent phases of the AR. The lessons learnt were used to redesign the improved procurement process in ARC Two.

As presented above, the researcher noted issues and problems in actual process activities in the reflective diary and, as Controller of the SAF procurement process, contributed to their resolutions as required by her position. The reflective diary was structured to record observations predicted by the theory of deferred action. Rather than focus on predicting specific problems, as seen in Figure 5-1 above these predictions focused on emergence, agency and structure. This is reflected in the Deferred Model of Reality (DMR) derived from the literature review in Chapter 2 (See Section 2.8.1). So, observations focused on recording data on the core constructs of the DMR: structure, emergence and agency.

Details of the structure within which the FPD operates and the planned action it attempts to execute within this structure were revealed during ARC ONE. Researcher observed the focus stakeholders, process owner and process workers put on compliance to the FPD Guidelines. Implementation of the Guidelines in the SAF process, or actual process activities, differed from planned process activities stipulated in the FPD Guidelines. They differed because of emerging new requirements, changed requirements, supplier, government edicts and policies, changing parliament and differences in views of actors(See Section 5.4 for supporting data).

5.2.1 Procuring the SAF

Many process activities in the SAF procurement process were emergent. These actual process activities (AEPA) together indicate a pattern code. A pattern code such as AEPA suggests that emergent activities have a regularities in the procurement process. For examples, Interviewee 11 in a senior position in the procurement process observed:

There was much variation in the process compared to the stipulated Guidelines. This variation happened because of changing requirements which happened many times. We are unable to deal with these changes in the current process and they delay the completion of the process.

Similarly, Interviewee 02 though is a junior position as a process worker, was concerned about the emergent events and felt helpless. She commented:

When we deal with new things happening that is not part of the Guidelines, we must always seek permission from CDs or GHQ or other involved people. My role is junior but I know that there is much delay because of these unexpected changes and that management have to make changes to the procurement process. We cannot dismiss these unexpected events. (IN)

An Assistant Manager, Interviewee 05, in the procurement process suggested that the unexpected changes must become part of the procurement process. He revealed that the procurement Guidelines lacked responsiveness to the environment. He said:

But not always according plan. We still have to get the approvals. This happens each time something surprising happens that is not part of the Guidelines. We had several changes by the end users, they keep changing the requirement. SAF process was delayed by many such unexpected events, but we still need the approvals to take next step. (EX)

Interviewee 05 noted that each such unexpected change requires 'approvals' in order to proceed with the process. This means letters to relevant authorities in the structure explaining the situation and justifying the required action. Such a letter can take several months to be approved, as GHQ or GTPC seek clarifications. Many such letters have resulted in severe delays in the SAF procurement process.

The emergent events have a significant impact on the resources required to complete the procurement process. The procurement of the SAF was allocated predetermined resources but they become depleted in the face of the emergent events. Interview 06 is in a senior position and she observed the effect on resources:

There are major consequences for the resources available to complete the process. The significant unexpected events have meant time – a very important resource often not recognized, I have to allocate new personnel to deal with approvals and our chief coordinator is tied up with managing the approvals letters. All the time, the cost keep rising. All these resources are limited and I have to account for them.

Suppliers, once engaged in the procurement process, change their conditions and terms of supply as they learn more about the process of writing the contract and the contract itself. A process worker Interviewee 09 made this comment about suppliers and contracts:

We had to write the contract several times, make changes too many times in the SAF procurement process. Initial suppliers could not endure our procurement process and withdrew. The current supplier has made several changes to the terms and conditions; this has required letters of approval to be generated, and these letters usually go back and forth for clarification. This makes much delay in the procurement process.

A senior process worker, Interviewee 10, also responsible for coordinating approval letters, noted:

It's been good working in FPD. However things are not same always, many unexpected events occur which affects the work of FPD, the contracts are delayed due to delay in approvals. The suppliers are learning about our procurement process, but they should know it before they agree. So, they take their time and make changes.

The SAF process took five years to fulfil only phase one. Actors were required to follow the FPD Guidelines, but the actual process activities differed, as evidence above. This data suggests procurement process was both planned and emergent, as depicted in Figure 5-2. The three nodes, Resources, Changing Supplier Conditions and New Requirements are indicative of the changing environment that affected the procurement of SAF, which is characterised as 'Emergence in SAF PP' in Figure 5-3.

Figure 5-3 The SAF Process and Emergence
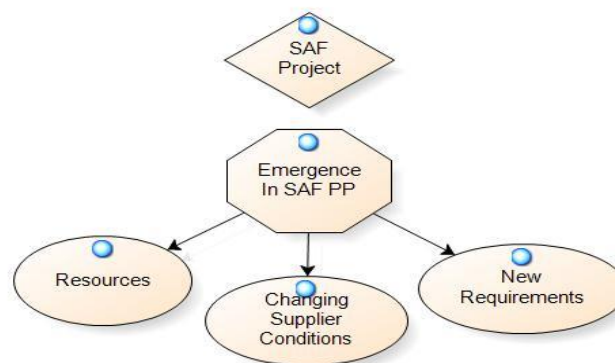
This emergence required additional and different procurement process steps than stipulated in the FPD Guidelines, which are depicted as 'PA as Implemented in SAF' in Figure 5.5. The data suggests an appropriate characterisation of the SAF process as composing 'Planned Action FPD Guidelines', 'PA as Implemented in SAF' and 'Emergence in SAF PP'. Plans and contingency plans can be set out before any action because process events can be predicted and mapped out. However, process events that cannot be predetermined either as plans or contingency plans are called emergent. As noted in Chapter 2 (see Section 2.6.1) every social event or fact emerges through the interactions between an individual and their social and physical environment and requires contextual action or 'emergent design', as discussed in Section 2.9.1.

Figure 5-4 Unplanned Action in the SAF Process
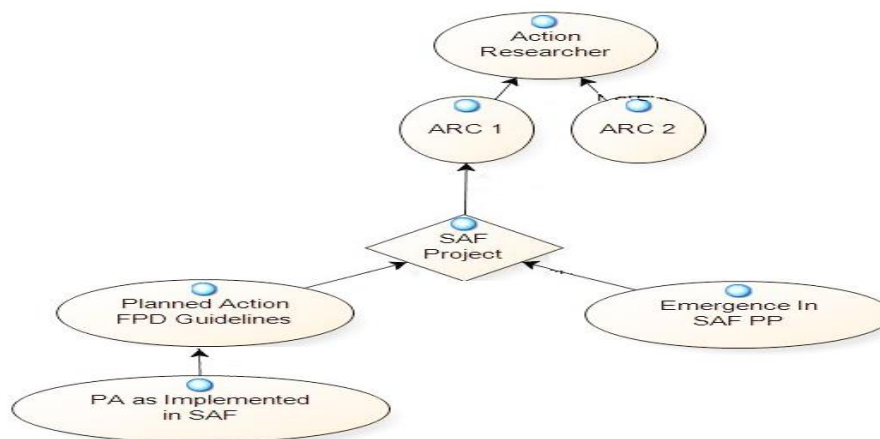
The following Significant words by interviewees are 'process', 'procurement' of SAF and 'procurement process', around which the interviewees described SAF procurement process. Actors mentioned 'long delays', 'because Concerning Departments resisted', 'has worked well' and 'helped us' when responding to process activities. When responding on SAF procurement they mentioned 'change' several times, 'change, sometimes many times', 'Undersecretary for his approval', 'All the changes' and 'they change their mind.' The effect of this change is on the procurement of SAF: 'Some rules are imposed', 'External environment we cannot (*control*)', 'taken much longer' and 'which caused much' (*delay*). The changes in the SAF procurement process, made actors acknowledge the limitations of the FPD Guidelines in practice: 'change we faced in the SAF Process. The Guidelines are limited'.

The action researcher observed the actual procurement process in its actual context. The actual action taken by actors in the context was not the same as predicted and stipulated by the Guidelines.

The Guideline process events, activities, states and time-points layout the expected context in which the procurement process should happen. However, the actual context changed when the names of potential suppliers was not provided at the start of the procurement process. Any new context would need new understanding and actions.(CO)

Another reflective diary entry recorded:

Change of Ammunition size. In short change of requirement. This change in requirement immediately after the opening of the SAF procurement process was unexpected. This is change added to the changing context. It was unclear why the military decided to change the ammunition size, but it added to the developing new context. (CO)

These unexpected changes meant that the process owners and workers had to deal with the new context. Each unexpected event required action, but as the required action was not stipulated in the Guidelines, special letters of approval had to be written and needed authorisation. The resulting action is the deferred action predicted by the theory of deferred action. This kind of deferred action was recorded in the researcher's reflective diary.

The Director of GHQ sent a letter to the Director of contracts (FPD) informing them about the change in requirement. It was sudden and unexpected because FPD had received the approval from the tender committee to contact the companies. The asst. undersecretary of FPD contacted the chairman of the tender committee over phone and informed him about the change in requirement. (DA)

The extant of the deferred action depended on the unfolding nature of the actual process activities. On occasions the actual process activity resulting from an environmental change, would lead to multiple other new actual process activities different from the Guidelines. The researcher recorded for example:

The Tender Committee was already requested for approval to contact the companies for proposal. The change in the requirement meant, the Tender Committee had to be contacted for approval once again before sending RFQs to the companies and embassies. Hence, we again sent a letter to the Tender Committee for approval. Sending the RFQs along with the fresh SOW without informing the Tender Committee was not advisable because the Tender Committee would have made an issue after receiving the proposals from companies. Getting approval from the tender committee within a short notice period was also an issue, hence FPD had to contact the chairman of the tender committee to obtain the approval. Also tender committee meetings are not held daily, they are arranged twice in a month.

As there are multiple such entries in the reflective diary, they are better illustrated. Significant words from the NVivo analysis of the data are 'planned action as implemented', 'events', 'action in the context' and 'deferred action'. The researcher observed that the FPD Guidelines were problematical to implement in the actual context of the SAF procurement because of 'events' that occurred unexpectedly, and which resulted in action being taken in the new context − different from the assumed context of the FPD Guidelines. These unexpected events could not be regarded as risks, because risks can be assessed and mitigated. Managing risk involves reducing the likelihood of the event occurring. However, an emergent event cannot be prevented. It is inherent in the system and is one that takes shape through the complex interactions of the elements of the system. There is not simple cause-effect explanation for emergence (See Chapter 2,Section2.9.1).

Similar to the volume of data in the researcher's reflective diary about the changing environment and the consequent deferred action, Interviewees also mentioned the changing

environment, as detailed above. It is also better presented in the NVivo analysis generated. Unexpected events mentioned by interviewees include 'uncertainty', 'when things change', 'sudden' and 'unpredictable.' The subjects of these terms include suppliers, contract, Guidelines and managing. Process owner, the Director of FPD, and process workers endeavoured to overcome unexpected events, but requirement to adhere strictly to the Guidelines was a constraint. As noted above, an emergent event cannot be prevented from occurring or managed through contingency planning. Making the Guidelines flexible is simply more planning and means staying only on the 'planned action' dimension of deferred action. It would meaning adding more conditional steps to the Guidelines resulting in a complicated set of Guidelines. Also, this would not resolve the real problem of facing the emergent events because it cannot be prevented, as it is intrinsic to the system.

A critical feature of the researcher's reflective diary was to enable the researcher to reflect on the unfolding of the procurement process. This reflection consisted of thinking about the process enactment problem or diagnosing the problem, emerging issues and planning the required action to address the emerging issue, and the emergent action or the actual action taken. This is the description of how the process owners determined the action necessary to respond to the emergent events, and they are coded as AEPA. An example of the process enactment problem, used to diagnose the situation when the required names of potential suppliers was not provided to the FPD:

Difficulty in actually assessing whether the companies are really efficient to approach for the tender and the capability of the X-Company for this type of a SAF procurement process. Controller of land forces division instructed the staff to collect and verify the names of companies through the use of the Internet. The Director of contracts (FPD) for contracts for Foreign Procurement Department argued that before starting with the information collection it is better to contact Director of GHQ and ask them for the list of companies. (AEPA)

This diagnosis was followed by planning the required action to respond to the situation:

The Director of contracts (FPD) raised an issue saying that it was the duty of GHQ to provide the list of companies. It was very essential to prepare the list of companies before obtaining the approval from the tender committee. Hence, without wasting time discussion were held between the department heads. Various options were discussed such as, requesting the lists from the embassies, contacting the Kuwait military attaché based in different countries, surfing the net, etc. Ultimately, it was decided that the best source for the information of the companies was through the Internet. Contacting the embassies of various countries was taken into consideration. The information was collected through the use of internet and going back to Director of GHQ for the list was not considered because Director of GHQ would have sent the list if they had it. Even the embassies were contacted because it was the best way to reach the companies which we couldn't reach through internet. (AEPA)

The deferred action or emergent action taken for this actual process event is coded at DA and it was recorded as:

The history of the companies was minutely studied before short listing. Even the embassies of those countries were approached which had a reputation in the manufacturing of ammunitions.(DA)

Another exceptionally speedy emergent action concerned the government Tender Committee. They responded quickly to facilitate the procurement process.

The Tender Committee was contacted immediately and approval was taken within a week. Most of the communication was done by telephone and a representative attended the meeting, hence the result was quick response from the Tender Committee. There is no specific point of contact, who can take immediate action and delays can occur. However, the Director of FPD contacted the Chairman of the Tender Committee and clarified the reason for the approval which resulted in quick action.(DA)

Further details of this emergent action was coded too in the following two examples:

Director of GHQ and the Tender Committee were contacted immediately and approvals were taken within a short period. Most of the communication was done by telephone and a representative attended the meeting and hence the result was quick response from the Tender Committee. The reasons for the extension of submission date were very well clarified to the concerned departments so that they could decide easy.(DA)

Official letters were sent to the companies informing them about the dates for the meeting. However, only three companies attended the meetings and the rest couldn't due the fact that there was not enough time given to them. After the meetings were held Director of GHQ shortlisted X-Company for the SAF procurement process and submitted a report to FPD. FPD immediately forwarded the report to the Tender Committee for approval. After receiving the approval FPD informed the winning X-X-Company.(DA)

This large volume of data was processed in NVivo. Researcher's equivalent key words focused on the word 'issue' because of her managerial position, which meant the issue was difficult to manage because of the requirement to adhere strictly to the FPD Guidelines. Significant issues are 'contract', 'emergent events', 'time', financial', 'X-Company', 'MEP', 'KMOD' and 'Procurement Guidelines'. These issues and others required many meetings with CDs and Letters of Approval from Ministries and the Audit Bureau to resolve.

The major issue was that KMOD changed its requirements of the SAF process. Initial requirement was for a supplier to design, build and construct the small ammunition factory. After the procurement process had begun, this requirement was changed by GHQ to a supplier who could provide the design of the factory, because MEP had decided that it could construct the factory. This effectively resulted in two separate procurement process 'Design Service' and 'Construction', and, as noted above, required many meetings and Letters of

Approval to set in motion. The SAF procurement process is a non-standardisable process following the FPD Guidelines, but the MEP's decision to build the factory themselves mean that it now had two parts – design and construction, both of which were non-standardisable processes (See Chapter 2, Section 2.6.2).

The change in requirements lead to emergence in the procurement process. A major kind of change was coded as Deferred Phase Change Adaptation (DPCA). Such change would result in a Emergent Business Process (EBP) by definition. For example:

This set of SAF procurement events were significant change. Arguably, the whole procurement process changed into two separate projects construction of the small arms factory and production of the small arms. This can be viewed as a phase change in terms of complexity theory, were systems make a radical change as they adapt to their environment. Phase change is not the same as deferment points (103) of the theory of deferred action. The theory of differed action does not account for phase change. This set of SAF procurement events show that the theory of deferred action needs to account for phase change in systems. The action researcher terms this deferred phase change adaptation. The significant observation concerns deferred phase change adaptation of systems, as detailed above. Such adaptation should be facilitated in social systems.(DPCA)

5.3 Institutions, Ministries and the Procurement Process

As noted in Section 5.2, procurement of SAF occurred by strict adherence to the FPD Guidelines, but in the context of unexpected events and changing End User requirements. This adherence is attributable to the rational structure of institutions, ministries and other governmental bodies within which the procurement process is required to operate. This rationalism underpins the actions of FPD.

'Structure' and planned action of the deferred theoretical framework were confirmed by data. The constructs of 'planned action' and 'structure' are related. Planned action is the specific, rationally designed goal-directed action that an organisation follows and structure is the underlying supporting infrastructure within which such planned action is possible (Patel, 2006). Structures are created to enable planned action. The term structure is used because it reflects well the purposeful setup or organisation within which actors are expected to behave or carry out their job roles.

Language of the procurement process indicates the actual planned action and structure within which the procurement process unfolds. Figure 5-5 depicts a tag cloud of the words used by process actors. A tag cloud depicts most commonly used words in alphabetical order by the

source, in this case process owner and process workers. The size of font and boldness indicate highest frequency of usage.

Figure5-5 Tag Cloud of Process Activity Words Used by Actors

about action affect agency all also an any approvals because better between business can cannot change changes concerned contract could deal decisions deferred department departments describe do does each ebp employees end environment environmental events external follow fpd from goal guidelines had has have how i improve its kmod knowledge lack legal like made management many meetings more my need new occur other our plan planned problem problems procedures process procurement project projects quality questions requirements rules saf set should since so some structure take them think time unexpected up use we what when which who why work would you

The data for this tag cloud was coded using the codes PA, BP and GU. As examples, several examples of Interviewee data are:

A specific structure "procurement process" was established as the FPD Guideline for quite a while, and most of FPD employee are in peaceful agreement with it.(PA)

We at FPD have a Guideline it's the procurement process procedures contains lots of steps that all follows starting from step one which is receiving a letter from end users passing through all steps reaching signing the contract until accomplishing the whole requirements of the contract.(PA)

The aim is trying to facilitate all the process involving purchasing the weapons and spare parts that are needed, as contracts with suppliers. We source and cooperate with the foreign markets and attached to the concerned sectors according to decrees of laws and regulations.(BP)

The goal of this department aims at planning, directing, coordinating and carrying out all the activities related to the purchasing of the weapons and the spare parts from the foreign markets in cooperation with the concerned sectors according to the decrees, laws, decisions and the regulations that monitoring this process.(BP)

We use the Guidelines to accomplish the goals, i.e. procure supplies. This is going through the right channels, approvals etc., monitored by the Director and Senior Managers. They emphasise low cost and speed. End Users want speed. (GU)

These are rules followed by the organisation to improve productivity and performance, keep customers. As FPD is involved with contracts, it should have rules about saving money, getting value, etc. We have to comply with the governmental laws and with the GHQ. When we deal with new things happening that is not part of the Guidelines, we must always seek permission from CDs or GHQ or other involved people. My role is junior but I know that there is much delay because of these unexpected changes and that management have to make changes to the procurement process. We cannot dismiss these unexpected events.(GU)

From figure 5-5, it can be seen that 'process', 'procurement', 'we', and 'what' are most commonly used. In the SAF procurement process, this indicates the emphasis on the process, procurement and issues concerning what needs to be done. The use of the 'we' word indicates a separation by FPD respondents of themselves from their collaborators in the process in the CDs. This is significant because actors, although referring to the 'process', tend to separate themselves into the various departments involved in procurement, which is a problem in the procurement process. The language signifies a perceived and real structure of the procurement process which is explained next.

5.3.1 Structure

A significant pattern revealed by the data was 'structure', coded as ST. The researcher had recorded in the theoretical section of the reflective diary:

These earlier SAF Process Events point to structural emergence of organisation. Patel (2007) proposes a theoretical model to account for emergent procedure and emergent structure. Actors said they were bound by the rules, regulations and procedure of government departments and other agencies – this is the structure which governs actors' behaviour in the procurement process.(ST)

A critical aspect of this structure is rational planning, as reflected in the FPD Guidelines. Most Interviewees mentioned the requirement to adhere to the Guidelines. An Interviewee said:

According to my experience working for 15 years in my position, a plan was set before I came and we follow its procedures ever since. According to that I made it my duty to keep all my employees acquainted to the procurement process so they could monitor how far does each stage takes to be named successfully accomplished. (ST)

Structure is also reflected in goal-oriented behaviour. Interviewees mentioned the primary goal. Goal is an intangible feature of structure. Several Interviewees noticed the importance of goal-oriented behaviour:

The goal of this department aims at planning, directing, coordinating and carrying out all the activities related to the purchasing of the weapons and the spare parts from the foreign markets in cooperation with the concerned sectors according to the decrees, laws, decisions and the regulations that monitoring this process.(ST)

Another Interviewee mentioned budget as an aspect of goal-orientation:

The objective of this procedure is to ensure expeditious procurement of the approved requirements of the Armed Forces in terms of capabilities sought and time frame prescribed by optimally utilising the allocated budgetary resources(ST)

Another feature of structure revealed by the data was 'business rules'. Interviewees stated that:

We could consider that there are rules followed by the organisation to improve productivity and performance, keep customers. As FPD is involved with contracts, it should have rules about saving money, getting value, establishing a cooperative comprehensive atmosphere among employees, in order to provide a common core, that would be used to avoid imposed rules, in my opinion should be the aim of accomplishing a successful process. (ST)

There is only one rule i.e. to follow the Guidelines by taking approval from all concerned depts. before signing the contract. This involves proper legal procedures and financial standards. These have to be met in any procurement contract we set up. (ST)

These are rules followed by the organisation to improve productivity and performance, keep customers. As FPD is involved with contracts, it should have rules about saving money, getting value, etc. We have to comply with the governmental laws and with the GHQ. When we deal with new things happening that is not part of the Guidelines, we must always seek permission from CDs or GHQ or other involved people. My role is junior but I know that there is much delay because of these unexpected changes and that management have to make changes to the procurement process. We cannot dismiss these unexpected events.(ST)

Similar to goal-oriented behaviour, another subtle feature of structure is knowledge. Knowledge as a structural feature is interesting because knowledge is the glue that binds the structure together. Knowledge provides the rationale for actors' behaviour. Interviewees mentioned it in the context of the procurement process as:

Employees try to do their best, each in their various sections, but at the end all Depts. agree upon one thing and that is recruiting their employees with the best of knowledge, reaching for perfection. We need better knowledge. My part in the SAF procurement process shows we need more knowledge, especially when Guidelines do not help. Things happen suddenly and we need to fix it.(ST)

To plan the procurement process we use the FPD Guidelines and find that the procurement process varies according to the materials and equipment being purchased for the armed forces. Our knowledge has improved since we were set up. Senior people have become very knowledgeable. Many of our employees start with no knowledge, whatsoever in the procurements business. Their experience in this field accumulates with years. They learn that they need to comply by the business rules, as I

said earlier, but sometimes this is difficult. Also, the army does not have proper knowledge of the procurement process. If they appreciate it then we can do our part better because they will supply us with the right information and not keep changing their minds.(ST)

Unfortunately there is no any training course, or negotiation skills but these are thing that we need to improve in the system. People here need to be bilingual, need to have negotiation skills, need to have good communication skills with the end user and with all the outside departments that we are dealing with. These are skills need to be improved. There are no employees with knowledge, but they improve it by experience. (ST)

The volume of this data was coded in NVivo too and it is illustrated in Figure 5-6. It depicts the structure model of the procurement process. Structure is the underlying supporting infrastructure that enables planned action. Structure encompasses institutions of government, the Ministry of Defence, the FPD, as well as other involved Ministries and departments of government such as the Audit Bureau. In particular, the data revealed Guidelines, goal orientation, business rules, process knowledge and the business of FPD. The espoused procurement process, the FPD Guidelines, functioned within this structure as planned action.

The structure model is derived from interview data. It is the structure within which the procurement process takes place. The structural coding technique applied is represented in the level one node 'Structure'.

Figure 5-6 Structure Model
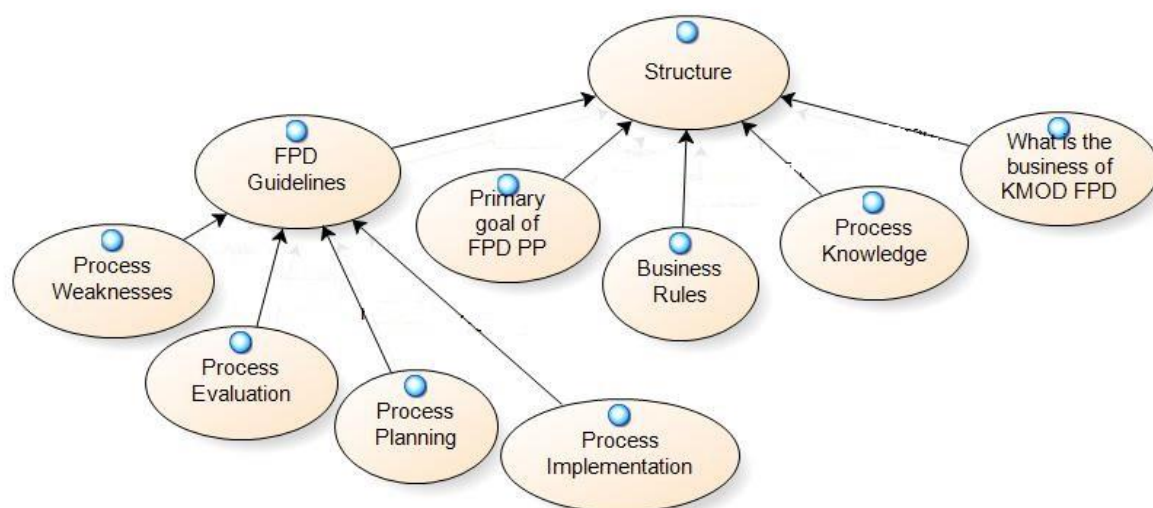
Each node of the structure model has data underpinning. The five ovals pointing to the 'Structure' node represent the data collected from participants and participant observation. This data was thematically analysed resulting in the five NVivo nodes (ovals with dots) or

themes. The FPD Guidelines theme itself has four sub-themes. The five themes of the 'Structure' node are enduring or stables organisational behaviour and form the 'Structure' of the KMOD/FPD. For example, the 'Business Rules' theme are the rules by which the FPD agrees, signs and operates contracts with suppliers. As an example of coding, the far right node, 'What is the business of KMOD FPD' was coded based on the data and illustrated in the longer example below. This data reveals actors discussing their understanding of the role of FPD, indicating that it is to improve the 'level of combat readiness for Kuwait's' various forces' and 'procure materials, equipment, technical supports, training, spare parts...'. Other actors, mainly process workers further down in the chain of responsibility, have common general understanding but are unable to be specific.

It provides the artilleries to land, air and marine forces, enhancing the level of combats readiness for Kuwaitis' various forces, in benefit of securing and protecting the homeland by raising the all armed needs. By buying all equipment and supplies they need. (ST)

FPD is one of the civilian division of Kuwait ministry of defence that procure materials, equipment, technical supports, training, spare parts as per the requirements of the stakeholders in an effective and efficient manner taking into consideration the time and flexibility of the Processes. The objective is effectively met but there are many ways to reduce the time and cost involved to meet the procurement process. We are currently working on the SAF process. (ST)

The business of foreign procurement, they are responsible on providing Kuwait forces, naval, air force and land forces procuring their needs from all military suppliers by contracting with foreign companies. (ST)

Procure and provide the materials, equipment's, technical support, spare parts etc. to the Military Armed forces i.e. land air and naval force. (ST)

Enhancing the procurement of defence equipment, artilleries, etc. to strengthen the defence system through procuring supplies/materials etc. from local and foreign vendors/suppliers for the Kuwait armed forces monitored by law, regulations, and the ministerial decisions that monitor such processes. (ST)

I personally like to think of FPD as a place where the army's dreams come true. FPD is the final gate to military side and the first door to the civilian side. Many steps are to be taken and many departments to be addressed before getting any contract to signature. Our vision is to be the efficient commercial arm of the armed forces. (ST)

Procuring goods, materials, spare parts etc. from local and foreign suppliers in favour of the Kuwait armed forces. By signing a contract with foreign companies for supplies. (ST)

The business of the KMOD/FPD is procuring materials, equipment, technical supports, training, spare parts for the Kuwait arm forces in all theirs divisions by tenders with foreign companies through contracts as per the requirements of the stakeholders in an effective and efficient manner. (ST)

Improving the procurement of defence equipment and upgrading and enhancing the abilities of land, air and Navy forces. (ST)

FPD deals in procuring defence related equipment's, machinery, ammunitions, technical support maintenance support for the armed forces (air, land and naval). (ST)

A particular date segment whose length is nearly three thousand words. It reveals actors use of the FPD Guidelines to enact the procurement process. The first two extracts indicates that the procurement process is systematic, following designed steps. In terms of the DMR, this is planned action. It also indicates that the SAF process encountered '...changes, some very difficult one to work on'. This is emergence in terms of the DMR. The third example appears to contradict the first two, indicating that the procurement process is 'not actually fixed, but certain basic procedures that should be done for all processes...' The Interviewee adds: 'In SAF, we used many special cases of the procedure.' This is reference to the many changes that affected procurement process of the SAF process, indicating emergence in terms of the DMR. These 'special cases' are emergent. As described in Chapters 2 and 3 earlier, SAF process was non-standardisable. The special cases could not be dealt by contingency planning because they could not be anticipated, as explained earlier in Section 5.2.1. Also, they are objects that emerge and process owners dealt with it as 'special case' because they had no knowledge of emergence paradigm.

The first step is receiving the request of what's needed by one of the military forces, followed by the request of logistic and supply; translated in the end in a contract, that will go through approval processes, till its finalized. It is not always like that. The SAF process has had changes, some very difficult one to work on. We wait for management to decide what to do. It is wasting time.

The procurement process begins with the receipt of requirement from the armed forces and then the procurement is carried out as per the Guidelines. The Director of FPD receives a letter and begins the process. The work is allocated to the section heads. There are meetings to discuss how it should be done. The main landmarks are the approvals. We progress to the next step only after approval is obtained from the concerning Departments. Every step of the guideline has to be followed.

It's not actually fixed, but certain basic procedures that should be done for all processes, some procedures can interfere with this line throughout the process, each procurement process has its special case, but there is a common procedure for all procurement process. In SAF, we used many special cases of the procedure.

Actors referred to the FPD guidelines, as 'guideline' or 'guidelines' 181 times, including mention in the researcher's reflective diary. A different query to understand the context in which the FPD Guidelines were invoked by actors is shown in Figure 5.13. This query is more interesting than the simple word frequency count, because it reveals the context in which actors referred to the FPD Guidelines, or the structure in which they attempted to implement it. These contexts were than categorised to reveal that six categories mattered to actors: to 'incorporate' actions into the Guidelines, comply by the Guidelines, FPD,

knowledge of the Guidelines, no change in the Guidelines since 2002, the procurement process and the SAF process. This indicates actors' attempt to comply with the planned action and structure even when they encountered unexpected events.

5.3.2 FPD Procurement Process

Rational approaches to management are termed 'planned action' in the theory of deferred action. Rational management approaches assume that well-defined goals and processes result in the expected organisational performance. Such an approach is reflected in the FPD Guidelines. This Section details the data on the FPD Guidelines in the context of the rational structure of the procurement process described above in Section 5.3. Data reveals a struggle by process owner, FPD Director, process workers and collaborating CDs, to implement planned action as prescribed in the FPD Guidelines for the SAF procurement process. Such problems occurred because process owners and workers had no knowledge of emergence and even if they did emergence could not be foreseen because it is unpredictable. Instead, they saw the process through a rational perspective:

The establishment of FPD plan is considered recent, but it all follows the details of the process. Yet in consideration of a new plan must be put in mind to be developed through years to come. The Guidelines are followed and have to be followed, as well as the legal requirement to follow it. We follow the Guidelines but many problems occur. The Guideline plan is detailed and needs to be strictly followed. We do our best. (PA)

Another Interviewee commented:

Since the establishment of the foreign procurement department, a plan was set by a supervision committee who were composed of various members of departments such as (military headquarters, legal department, financial department, Audit Bureau) and were in-concern of contributing to formalize procurement process. The result is the Guidelines. It is a step by step process we must use for procurement. All procurement must to done this way. It is the plan.(PA)

I don't think we have a huge role in that, all the Departments have certain rules, certain auditing process and we are actually following that. So, let's say why do we go for audit bureau. Because we are following the rules. And we are forced to follow it. If the contract is above 100 thousand Kuwaiti dinar we have to go to them. The legislation office also we have to go to them for their approval if the contract value is above 75 thousands. Also we go for Ministry Of Finance if the contract period is above 3 years. (PA)

Again, the volume of such data can be better understood through illustration. To understand the role of the plan and adherence to it, a query was set up and run on NVivo using the term 'planned'. The following are significant observations which confirm the DMR. One, enactment of the FPG Guidelines encounters environmental changes. Some actors think such changes can be predicted and suggested how to plan for them, while others thought it was

'impossible'. These different actors had different paradigms of belief – one saying the unexpected events being experienced in the SAF process could be predicted and others saying they could not. However, the theory and empirical data of other researchers covered in the literature review (Chapter 2, Sections 2.7.3 & 2.5.6) confirms emergence is unpredictable. Two, the SAF procurement process was implemented as planned action, but critically, with variation, because of environment changes, which lead some actors to say that the 'procurement process' was not planned. Three, this perception had another source, internal unpredictable events. These include 'refusal' from CDs like legal department. Fourth, the perception of an unplanned procurement process can also be attributed to the age of the FPD Guidelines, which were planned 'years ago'.

Rational management is adopted by actors because of the requirement to comply with the planned action and structure. Actors attempt to enact the FPD Guidelines as planned action within this structure, even when they encounter unexpected events, events not predicted in the FPD Guidelines for which no prescribed action is available to them. Such unexpected events resulted in a very different actual SAF procurement process, as evidenced next. Because of unexpected events, the planned action unfolds or was enacted differently in the rational structure in practice. There are events that are not possible to know these would be emergent events – this is the emergence dimension of the theory of deferred action. Other events that can be known can be predetermined and can be designed as process events – this is the planned action dimension of the theory.

An analysis of words used by researcher in the reflective diary to understand the procurement process problem, revealed that adherence to the plan was important for actors, particularly senior management. Figure 5-7 depicts the tag cloud of the words used by the researcher. It shows frequent occurrence of the following words: 'contract', 'company', 'action', 'approve', 'committee', 'department', director', 'fpd', 'from', 'letter', 'manager', 'meeting', 'official', and 'process'.

Figure5-7 SAF Word Tag of Procurement Process Problems

1 2 3 action advance after all also an approval approve arrange assistant asst audit because between bureau charge committee companies company computer construction contact contacted contract copy could cross date department departments design director division documents draft employee experiencing fax finance force forwarded fpd from functional ghq guarantee had head holding interpreting issues kmod land legal letter letters manager meeting meetings mep official payment pen pins prepare process procurement project proposal proposals provide receive received reflecting request saf secretary section send sent should so stapler stationery tacking taken tender them time under undersecretary were which work worker workers x

5.4 Procurement Process as Implemented in SAF

The planned action data above is the expected way in which the FPD is supposed to procure for the Kuwaitee armed forces. Interviewee data also revealed what actually happens during the procurement process. This data reveals that emergence is a significant feature of the procurement process.

A feature of such emergence is the environment of the procurement process:

Some of the procurement process has a political situation, these kind of procurement process gets affected of the politics in the country, otherwise and in the usual they don't be affected, the only thing that might be effected is the signature of the contracts itself since it is must be signed by the minister himself. By delaying the process if there is any absence. We experienced it in SAF procurement process. The supplier companies too delay. They don't agree with the details, and change of requirements.(EN)

Similarly, another Interviewee provides details of the environment that affects the procurement process:

The short time requested to accomplish any of the procurement process which is considered the aim that we are trying to achieve, is jeopardized because it could be effected by the change of the minister required in KMOD, not to mention that sometimes we confront the gap of interval of composing a new governmental ministries that have to be chosen by the prime minister and wait to fulfil their oath, so there signature could be determined on a contract. In addition, there is the involvement of employees' sequence which is considered as an unstable environment. This kind of unstable environment is the

main problem in the SAF procurement process and our process is not flexible to cope with it. Our research group is investigating how we can manage this unstable environment.(EN)

Interestingly, the change in the procurement process because of emergence happens because of change in the context itself. The changing context seems a natural consequence of the emergence An Interviewee said:

As we said we're not an individual sector that works by themselves we're dependent on a lot of sectors so any changes that touches any sectors around us may effect on the process of the procurement process because u need the end user and the finance department and the leg department, so these sectors if they have any changes in their structure or own positions.
Many things change, I mean the circumstances change. This means the context changes and this means the procurement process itself changes. (CO)

Another Interviewee commented:
Any factor either inside or outside the environment can effect on the procurement process causing delay in signing the contract. We had to have many special meetings in the SAF procurement process because of this kind of change. This kind of change also changes the setting, I mean the context of the procurement process.(CO)

The combination of changing environment, which causes emergence and the changing context, results in the actual emergent process activity (AEPA). This was detailed above in the Introduction section 5.1. All the date relating to emergence was also analysed in NVivo. Unexpected events and change affected how FPD Guidelines (planned action) were actually carried out in practice. Figure 5-8 shows change featuring in the SAF procurement process. Is reveals that change featured centrally in the implementation of the FPD Guidelines.

Figure 5-8 Changes in The SAF Process

The unfolding of planned action in the changing context of unexpected events and changes was observed as planned action as implemented in SAF, or the label 'emergence' in the DMR. Figure 5-9 depicts this emergence arises from the Environment, as noted above, and it is attributable to various factors. These factors have an effect on the espoused, rational planned action or the execution of the FPD Guidelines.

Figure5-9 Emergence
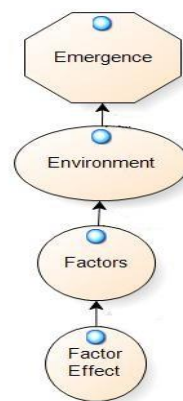
Data relating to the Environment was analysed in NVivo, as illustrated below. Actors mention 'external' and 'internal' 'circumstances', requirements, political and supplier change affecting the SAF process, issues arising concerning 'efficiency', inability to 'predict', 'supplier could not agree on the details' and their ability to 'deliver the change' in requirements. The significance of them all and other mentioned in the data, is that they are factors affecting the procurement process. These factors are not considered in the rational structure and planned action.

FPD Director had supported researcher's research and began to appreciate the new management knowledge being created through the data of ARC ONE. She wanted to incorporate this knowledge formally into the procurement process. The final reference in below 5 mentions the research group setup by the FPD Director to improve the quality of the procurement process, as a direct result of the findings of ARC ONE.

As a fact the environmental circumstance could be divided to external and eternal circumstance, and in my opinion the internal the circumstances are the easier because they can be handled and vies versa. The SAF process shows there is much change. Approvals take longer because of it. (EN)

The process has to confront a lot of external sectors, companies, markets, and our concerning Departments each has its opinion upon how to accomplish efficiency, the disagreements that rises as a result of that is the obstacle to finishing the process in a short time; in addition to the legal

legislative departments procedures and financial department needs, observing the contract steps. (EN)

Things arise we cannot predict, and so we seek changes. The Director and Senior managers had many, many meetings in the SAF process to handle change. We had a big problem when we got two procurement processes instead of one, because they split it early into two separate requirements. Then, there was delay in the Service Design contract because the supplier could not agree on the details. There are many changes. (EN)

KMOD requirements change, new minister of defence, suppliers' ability to deliver changes, government wants efficiency, and any other things that affect the procurement process. We have all this in the current SAF process. (EN)

SAF process has many such factors. The approval of some of the contract procedures that is supposed to be monitored by the Legal Legislative Department as well as the Auditing Bureau delay is a matter that could not be controlled because of the constant mobility of procedures issued by legislation institution. (EN)

Changes! I have not heard of any changes since the time I have joined the FPD. We have not changed the Guidelines. But if you mean changes we would like, then yes there are many. In SAF, I had to coordinate with everyone when unexpected changes happened. I think this kind of action that we take is important, but we must still stick to the Guidelines. The Director has set up research groups to find out what needs to be changed. I think the SAF process has been a good case example of the kinds of changes we need to make.(EN)

This changing environment and consequent changed context have an effect on the actual process events, activity, states and time-points. The relevant data was coded as AEPA or actual emergent process activities of the SAF process, which differed from stipulated activities of Guidelines (planned action) because of unexpected events (emergence). Unexpected events would 'halt the process' and require 'regular follow ups', and actors would attempt to 'follow instructions', 'influence it', and try to 'restrict time lose'.

The data below shows a sample of the actual emergent process activities, or the planned action as actually implemented, which included changed requirements, MEP decision to construct the factory and extension of submission date. Forty eight such events were recorded during the diagnosis of the problem.

The Assistant Undersecretary of FPD received the approval from the Chairman of the Central Tender Committee to extend the submission date by another month. The Assistant Undersecretary of FPD then notified the embassies and companies about the extension of the submission date(AEPA).

The following are the key words of researcher recorded in the reflective diary. Significant words and phrases include 'randomness', 'local action', 'structural', 'suppliers and contract drawing', 'MEPs decision to construct'. To respond to emergence, researcher thought about how to 'formalise' emergence and noted the need for 'deferment points' and 'deferred action'.

Causes of difference between planned action and planned action as implemented were found in the environment of FPD and procurement process. This was then cross-referenced with the Guidelines, which showed that it could not be the cause of the difference because the Guidelines stipulate sequence of process events. Therefore, the causes would be from the unstable environment. The following are key words of Environment, which shows that process owner and process workers experienced various environmental factors affecting the procurement process. One interviewee reported that internal environment of FPD is 'easy to be dealt', compared to the external, which 'sometimes we deal with it' and 'There are no special rules'. The environmental factors mentioned include, 'Bureau', 'contract', 'department', 'institution', 'officers' and 'steps'. 'unstable' is a word key meaning that the environment is a source of instability for the procurement process; it 'is the main problem' and said to 'make it difficult' to execute the planned action. Another word key 'we cannot control'; meaning environmental factors are not in the control of FPD.

This interpretive analysis was done by coding the data in NVivo using themes to reduce the data. This results in the themes shown in figures and data texts shown in these Chapters. Themes such 'Change', 'Issues', 'Environment' and 'Emergence' are called 'nodes' in NVivo. The Researcher read the data to identify the emerging themes.

5.4.1 Emerging Issues And Taking Action

As senior management team, researcher was required to perform her normal duties and contribute to resolving differences between planned action and actual process activities. As a researcher, she reflected on the differences, as evidenced in the reflective diary(Appendix A, Dataset 2).

Researcher reflected on emerging issues, indicated by the emergence construct of the DMR, what actions were suggested by actors and what was actually done. Figure 5-10 depicts a model of the reflective process. The five items of reflection, depicted as nodes of ARC ONE were: Issues & Problems in SAF, Emerging Issues (Planning Action), Process Enactment Problems (Diagnosing), Evaluating Action, Emergent Action (Taking Action). (The final node, Input to ARC Two, are the lessons learnt to inform redesign of the procurement process, discussed in Section 5.3.

Figure5-10 Model of the Reflective Process.
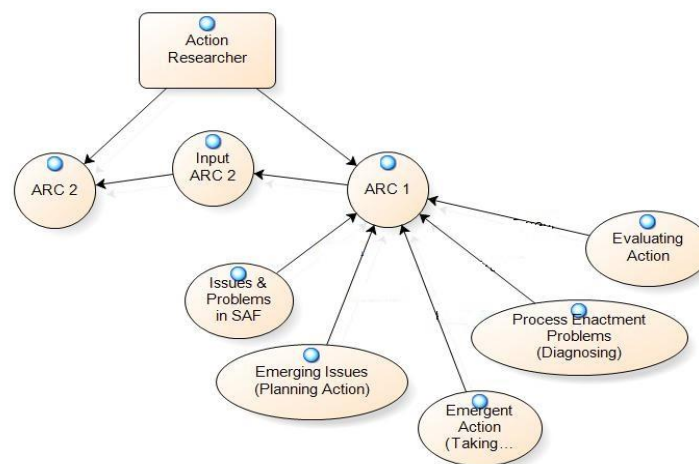
Researcher's experience and thinking during SAF events was recorded as data presented below. It shows the actual data process occurring differently from the FPD Guidelines (The shaded context is the FPD Guidelines context in which the reflection occurred). It notes that the usual practice of providing a list of potential suppliers was not followed. It also shows that KMOD changed its mind about the ammunition size, which lead to a series of high level actions involving the Director of GHQ, Assistant Undersecretary and Chairman of Tender Committee. It illustrates that the date for companies to submit their tender proposals was extended because they requested it, but this required high level management involvement.

The process to establish Small Arms Ammunition Factory starts (Construction and Production Line). Information of companies related to ammunition manufacture. Name, Address, Contact details.(AEPA)

Foreign Procurement Division (FPD) received a letter from the General Head Quarters (Director of GHQ), Ministry of Defence along with the scope of work to establish a light weapon (small and medium calibre) Ammunition Factory in Kuwait.(AEPA)

The Director of GHQ did not provide the list of companies that FPD had to contact for the Proposals. It was unexpected because usually GHQ provides FPD with the list of companies to contact for the proposals. Hence, it was the task of FPD to establish the list of companies. Meetings were held between the Director of contract (FPD), Controller of land force division, Assistant Undersecretary to find a proper solution for the issue. It was decided to use the internet to source the list of companies and also to contact the embassies.(AEPA)

The site for the SAF was decided.(AEPA)

FPD collected information of companies capable of manufacturing of ammunitions through the Internet.(AEPA)

The actual emergent process activity significantly changed the context of the procurement process. This is only possible when the emergent events are major, for example the change in the size of the ammunition:

Call for Tendering. FPD sent a letter to the Tender Committee for approval to contact companies for the procurement process.(AEPA)

Received approval from the Tender Committee(AEPA)

Change of Ammunition size. In short change of requirement. This change in requirement immediately after the opening of the SAF process was unexpected.(AEPA)

Received a letter from Director of GHQ with some additions in ammunition size. Change in requirement.(AEPA)

FPD sent letters of Request for Proposals (RFQ) to various embassies and companies which were outsourced through internet Companies which had experience of setting up ammunition factory. In total 10 embassies and 21 companies were sent the RFQs. Proposal submission deadline was set at two months from the date of the RFQ letter.(AEPA)

The Director of GHQ sent a letter to the Director of contracts (FPD) informing them about the change in requirement. It was sudden and unexpected because FPD had received the approval from the tender committee to contact the companies. The asst. undersecretary of FPD contacted the chairman of the tender committee over phone and informed him about the change in requirement. (AEPA)

The changing environment affected the time-point of the procurement process:

Various companies requested for an extension to the submission date. The request for extension for the submission date was forwarded to the Tender committee again for approval.(AEPA)

FPD received the approval from the tender committee to extend the submission date by another month. FPD then notified the embassies and companies about the extension of the submission date.(AEPA)

Extension of the submission date. In short once again meaning change in requirements. To study the SOW it was essential to do a site survey and clarification of various technical issues was a must. Hence the companies requested for an extension in submission date. The Director of Contract (FPD) had to contact the Director of GHQ and the Chairman of the tender committee to request an approval to extend the submission date by one month. Even the reasons for the extension request were to be sent to the concerned departments. It was also necessary to contact and obtain approval from the Director of GHQ and the Chairman of the tender committee in a very short time.(AEPA)

As Appendix (A) template shows the reflective diary was designed to record the experiences of the actors and the researcher to enable the researcher to relate them to the theory. An example of reflection is shown below. This set of reflective notes is indicative of the whole SAF process, in which actual process activities differed from planned action. In the cases noted below and others, the difference caused management anxiety and affected the quality of management decisions. The FPD Director noted:

As the procurement process is already set, any change in it tends to make it longer. The more you want to make sure that you are doing the right thing, the more cowardly decisions you take thus giving us more steps to be followed. There are many changes which we find difficult to take action. ...with any work where money is involved, some people in leading positions tend to be too afraid to act boldly in taking decisions, as they fear the consequences of it. (AEPA)

Issues and problems in the actual SAF procurement process needed to be acted upon. This action, totalling 55 items of data in the reflective diary, was recorded as the 'Emerging Issues (Planning Action) node, shown in Figure 5-10 above. The data below shows the action. The data below notes the objection of the Director of Contract in FPD that GHQ should provide the list of potential suppliers. Senior management considered options and decided to do a search on the Internet. The other options, such as contacting embassies, were rejected because they would take longer to make contact with companies.

The Director of contracts (FPD) raised an issue saying that it was the duty of GHQ to provide the list of companies. It was very essential to prepare the list of companies before obtaining the approval from the tender committee. Hence, without wasting time discussion were held between the department heads. Various options were discussed such as, requesting the lists from the embassies, contacting the Kuwait military attaché based in different countries, surfing the net, etc.(AEPA)

Ultimately it was decided that the best source for the information of the companies was through the Internet. Contacting the embassies of various countries was taken into consideration. The information was collected through the use of internet and going back to Director of GHQ for the list was not considered because Director of GHQ would have sent the list if they had it. Even the embassies were contacted because it was the best way to reach the companies which we couldn't reach through internet.(AEPA)

The changing SOW was significant and contributed to the changing context:

The Tender Committee was already requested for approval to contact the companies for proposal. The change in the requirement meant, the Tender Committee had to be contacted for approval once again before sending RFQs to the companies and embassies. Hence, we again sent a letter to the Tender Committee for approval. Sending the RFQs along with the fresh SOW without informing the Tender Committee was not advisable because the Tender Committee would have made an issue after receiving the proposals from companies. Getting approval from the tender committee within a short notice period was also an issue, hence FPD had to contact the chairman of the tender committee to obtain the approval. Also tender committee meetings are not held daily, they are arranged twice in a month.(AEPA)

Here the proposal had to be sent immediately to Director of GHQ for review so that they could study the proposal as soon as possible and submit the report immediately in order to reduce the delay in implementation of the SAF process. Acknowledgement from the Director of contract (FPD) and the undersecretary was necessary to deliver the proposal. It was also necessary to contact the cross-functional person in Director of GHQ to forward the copy of the proposal. Coordination between FPD and GHQ was very much essential because there was no time limit set for the submission of the report. Also, to obtain the approval from the tender committee it was essential to provide them with the report of GHQ.(AEPA)

The result of the changing environment and the change of the procurement process context resulted in necessary meetings:

Meetings were held among the process workers. The Manager of Land Force Division (FPD) had to convince the Director of contract (FPD) that he will coordinate with the cross-functional departments and finalise the contract at the earliest. I advised the Manager of Land Force Division (FPD) that only arranging meetings with the cross-functional department was a solution to finalise the contract quickly and we should give it a try. (CO)

The data records researcher's reflection on change in requirements by KMOD. This meant FPD senior management had to quickly assess the changes and initiate appropriate action, which involved the Tender Committee, which only met twice a month. Therefore, the FPD Director had to contact the Chairman of Tender Committee directly. The researcher advised Director of Land Force Division to meet with the CDs to finalise the contract early.

As noted earlier, 55 such emerging issues occurred where senior management, including the researcher in many cases, had to respond speedily and effectively. This data revealed the context in which the emerging issues occurred and in column three the rationale for the action taken.

5.4.2 Evaluating Action

Taking action on emerging issues involved FPD Director, researcher in some cases, and CDs. Important and critical decisions were being made that required keeping the SAF process procurement progressing. The data was input into NVivo to generate an illustration and the interrelationships among the data. Figure 5-11 depicts the agreements and disagreements among the involved parties.

Figure 5-11 Evaluating Action
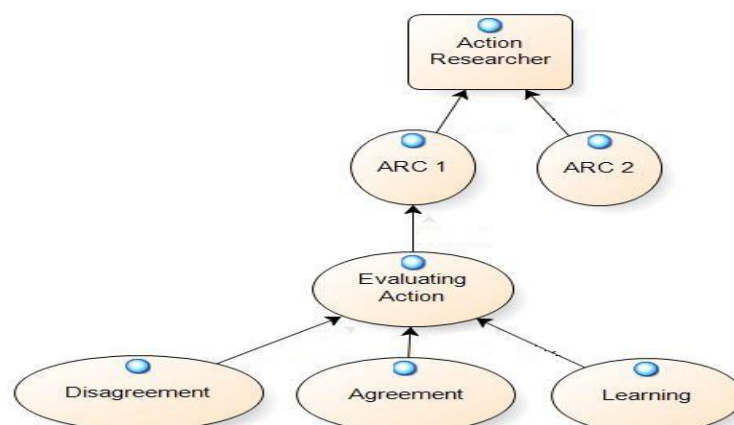
There were 27 points during the SAF process at which action was recorded and evaluated in the reflective diary, using criteria of agreement, disagreement and lessons learnt. The data below illustrates the kinds of agreement and disagreement on the required action on emerging issues. It also records the ensuing learning that informed designing in ARC Two. The first data is the use of the Internet to find potential suppliers of SAF procurement, with agreement on the effectiveness of the Internet but disagreement on the reliability of the information obtained. The lesson learnt was that FPD should do better knowledge management, by maintaining its own IT system database of suppliers.

<u>Agreement:</u> Use of internet was very effective since it reduced a lot of time. Even contacting embassies for information was productive to contact companies for the SAF process. The controller of land forces suggested contacting the embassies and use of internet. (AEPA)

The data below is to finalise the SAF contract and whether an exceptional meeting should be held with the CDs, the position of the Land Forces Director, or the FPD Guidelines should be followed, the position of the FPD Director. The lesson learnt is the need to adapt to the emerging issues, or social system to adapt.

<u>Agreement:</u> The Manager of Land Force Division (FPD) agreed to arrange meetings with the cross-functional department because direct meeting was the only way to finalise the contract as soon as possible.(AEPA).

<u>Agreement:</u> The Manager of Land Force Division (FPD) was in no mood to send the contract to the X-Company by courier because it would have taken two months to receive the signed contract from the X-Company. Also, this particular SAF process was dragging from nearly three years and he wanted the contract to be signed as quickly as possible. (AEPA)

Such events though included may or may not occur next time, hence emergent. For example, if unknown fault occurs in an engine it was not predicted, but it can be identified and resolved, and the solution written in the repair manual for next time. However, there is no guarantee that the same fault will occur again. So, such emergent situations are included in the Guidelines as deferment points. For example, the change in requirements occurred, so now this can be included deferment points. But the next the process runs, change in requirements may or may not occur, and if it does occur it cannot be predicted when or what the magnitude of it.

5.4.3 Experiencing and Reflecting

The researcher recorded all such changing environment and context data. It was input into NVivo to generate an illustration. Figure 5-12 shows significant points of researcher reflection during SAF procurement process. They include 'Issues & Problems in SAF',

'Process Enactment Problems' 'Emergent Action' 'Evaluating Action', 'Improving the PP' and 'Deferment Points'. Three 'Experiencing & Reflecting' nodes are shown separately.

Figure5-12 Significant points of Researcher reflection
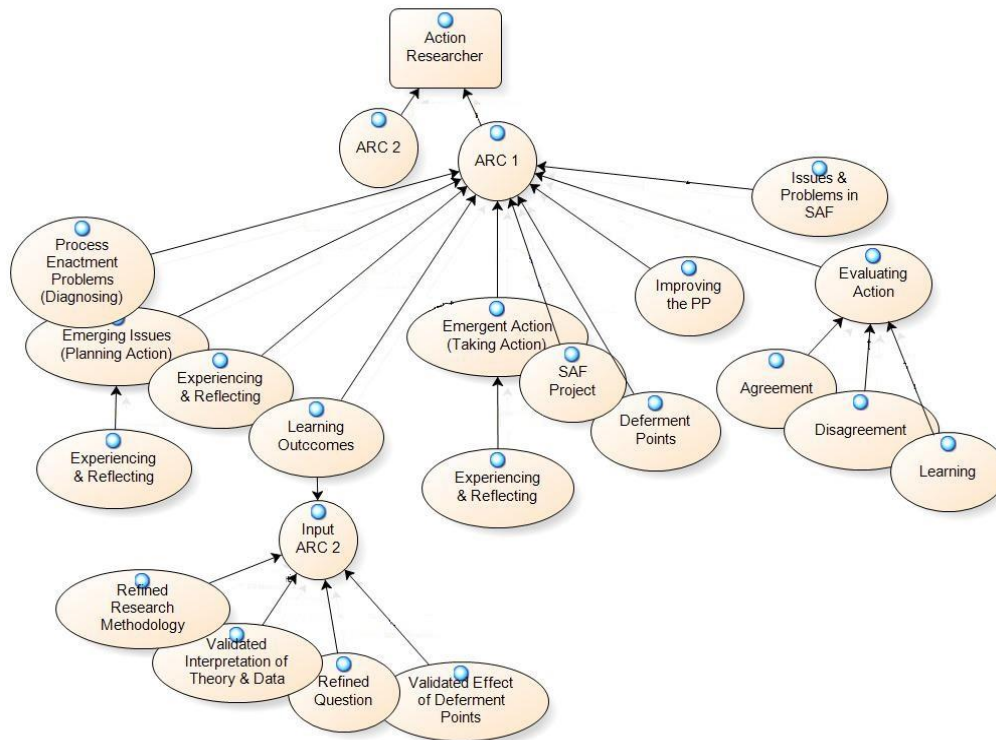
GHQ's changed requirement was noted in the reflective diary. This set of SAF procurement events were significant change in the SAF process. The whole process changed into two separate projects, construction of the small ammunition factory and production of the small ammunition. This can be viewed as a phase change in the SAF procurement process in terms of complexity theory, where systems make a radical change as they adapt to their environment. Phase change is not the same as deferment points of the theory of deferred action. Presently, the theory does not account for phase change. This set of SAF procurement events indicates that it needs to account for phase change in social systems. The researcher terms this Deferred Phase Change Adaptation (DPCA).

5.5 Theory Informed Taking-Action to Counter Emerging Issues

This taking-action is informed by theory, specifically the DMR. For example, the planned action dimension was used to frame the expected events of the Guidelines and the emergence dimension to understand unexpected events. The latter could be dealt with as deferred action. Guidelines did not cater for emergent events, so approvals were needed to take deferred

action. The researcher notes in Sheet 6 of the Reflective Diary that review of previous FPD procurement processes reveals actions taken over the whole procurement process that can be interpreted as self-organising in response to environmental change. Researcher invoked the informing theory of deferred action to address emergence. Figure 5-13 depicts emergence as the octagon node and the inclusion of deferred action in the SAF procurement process as the two square nodes. The whole SAF process involved ten points at which deferred action was taken by FPD senior management, CDs and structural agents such as KMOD Undersecretary, Audit Bureau and Legal Department.

Figure 5-13 Taking Action to Counter Emergence
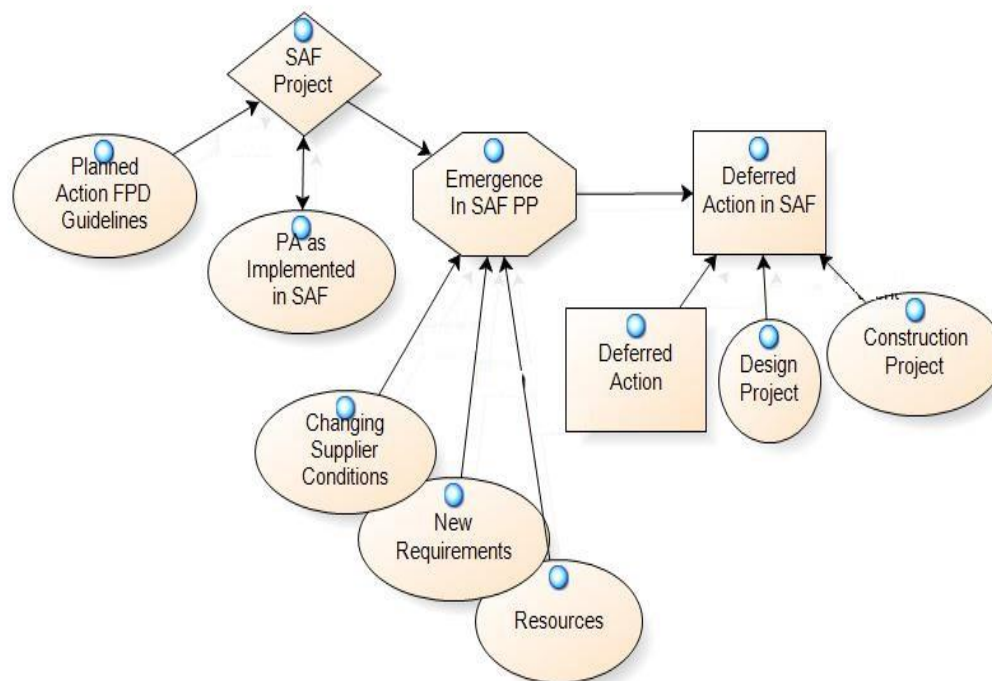
Actual observed deferred actions in the SAF procurement are shown in Table 5-2 FPD compiling its own list of supplier companies, extended submission date for supplier proposals, failure by supplier to provide proposal for construction of the factory, unscheduled meetings, Audit Bureau suggestions to divide contract into three phases, and others. Actors did not recognise them as deferred action, but as obstacles in the rational procurement process. Researcher's interview with FPD Director was the watershed that made Director appreciate relevance of the research and the theory of deferred action. Her interpretation of actual events, or planned action as implemented in SAF, become radically different, as she adopted the deferred action explanation(See Chapter 2, Section 2.8).

Table 5-2 Deferred Action in SAF

DEFERRED ACTION IN SAF PROCUREMNT PROCESS
FPD outsourced the list of companies by: Surfing the net and finalizing with GHQ •   Contacting the various embassies in Kuwait.
Since an extension to the submission date was requested by companies : FPD contacted GHQ and requested approval from them along with and the extended time period to be granted. One month extension was granted by GHQ. FPD forwarded the reply of GHQ to the Central Tender Committee and requested an approval to extend the submission date by one month.
The companies did not provide any proposal for the construction.
•   GHQ requested FPD to arrange meetings with the company to discuss issues related to the proposal and the construction phase. FPD contacted the companies and arranged the meetings. •   FPD coordinated between GHQ and the companies during the meeting schedule.
Fresh proposal for construction of small ammunition factory.
•   FPD contacted company X and arranged meetings between the cross functional departments. •   FPD coordinated between the cross functional departments and Company X. During the meetings discussion were held in details in relation to the construction work. •   Company X agreed to provide a fresh proposal for the construction work.
Audit Bureau suggested dividing the contract into 3 phases.
•   FPD received a letter from Audit Bureau to divide the contract in 3 phases. FPD forwarded the request to GHQ for their suggestion and Approval. FPD received a reply from GHQ and forwarded the same to the Central Tender Committee for their approval. FPD then arranged meetings between the cross functional departments and company X.
Audit Bureau request to investigate the procurement process from the initial stage.
•   FPD received a letter from Audit Bureau to investigate and review all the documents. •   Meeting was held between the process owners and the process workers to solve the issue. •   It was decided to invite Audit Bureau to FPD office to review the documents so that FPD would be in a better position to provide all the documents as requested. Also, misplacement of the documents could be avoided. FPD invited Audit Bureau to the FPD office for investigation.
Various errors in the proposal were raised.
•   FPD received letters from Audit Bureau in relation to calculation errors in the financial proposal provide by Company X. FPD contacted company X with the errors. Company X obliged and rectified the errors in the Financial Offer. Discounts were also requested from Company X.
MEP decided to do the construction phase.
•   FPD arranged meetings between the cross functional departments to discuss issues related to the construction work (planning, implementation etc.) FPD arranged meetings between Company X, MEP and FPD. FPD coordinated and convinced company X to provide design services for the construction work. Company X agreed to provide Design Services and also agreed to provide KMOD with a fresh

proposal for Construction work. FPD contacted the Central Tender Committee for approval to contact Company X to submit the Design Services proposal. FPD contacted the Finance Department to allocate budget for the design services contract.
Annex to the contract was added in relation to the performance bond and advance payment guarantee.
• Company X requested FPD to solve the issue related to the establishment of the Guarantees. The Guarantees were issued by a Bank established in the country of Company X, whereas KMOD only accepts guarantees issued by a local Bank in Kuwait. FPD contact the legal consultant of KMOD in relation to the issue. The legal consultant suggested to add an annex to the contract to formalize the guarantees so that it could be accepted by KMOD. The annex was prepared by FPD. FPD forwarded the annex to the legal Department of KMOD for approval. After receiving the approval from the legal Department, FPD forwarded the annex to Company X for their approval and signature (initials of the authorized Signatory of Company X). FPD then forwarded the signed annex to GHQ for their approval and initials of the Officer authorized for the SAF Process.
Company X delayed to provide advance payment guarantee.
• Meetings were held between the process owners and the process workers for the course of action to be taken because Company X failed to provide Advance payment guarantee for more than two months. It was decided to write a warning letter to Company X to provide the guarantee within 15 days or else the contract would be terminated. FPD received a letter from Company X requesting a meeting. FPD arranged for the meeting. Company X suggested KMOD to sign the installation contract or pay 20% advance payment of the installation contract. • FPD again arranged meetings between Company X and the cross functional departments to solve the issue. After discussions it was decided that Company x would provide the Advance Payment Guarantee without any conditions.

5.5.1 Process Deferment Points in SAF

The observed deferred action suggested formalising deferred action as process deferment points in the procurement process to cater for emergence. Actors were beginning to think and talk of unexpected events in terms of 'deferred action'. The data was input into NVivo to produce observations of the SAF procurement process in terms of the AR and the new vocabulary it was introducing. They referred to it as 'active action', 'using deferment points in the SAF process', 'incremental changes which you call deferment points', 'as a formal step'.

A deferment point is an emergent event that occurs in the process. It is a category or type of event, rather than a process step. Such events can occur when the process runs again, but

other new emergent events can occur that have not been previously identified as deferment points. The researcher's reflective diary also records confirmation of deferred action:

This change in requirement is evidence of change or emergence in social systems. Emergence is an attribute of all social systems. This is both evidence and confirmation of the theory of deferred action that emergence is intrinsic to social systems.(DA)

Such deferred action was observed at the structural level institutions:

The telephonic communication and physical attendance of FPD staff at the Tendering Committee is evidence of deferred action. The normal procedure for formal communication is by letter. This kind of local action, different from the planned procedures, needs to be catered for in organisation design. In the theory of deferred action it is termed 'deferred action'. This set of SAF procurement process events do reveal that current approaches to business process design need to cater for deferred action. The dominant current approaches assume that rational design works, whereas evidence from this action research suggests that they rationally design business processes are tempered with local action, or deferred action. Rational action is modified by a moderating local action that is determined by the environment of the system. (DA)

The volume of such data was analysed in NVivo. The following are the key words of the researcher. The SAF process confirmed the need for process deferment points to make the procurement process efficient and effective. The issue of formalising these in the FPD Guidelines became apparent, but as one interviewee put it, the difficulty of 'finding' process deferment points had to be addressed. This word tree reveals that unexpected events can be a prime source of finding process deferment points. Process deferment points can be major and trivial and can be achieved as part of the rational design of the procurement process. As noted in Chapter 2 (Section 2.5.7) framework for comparing process methodologies, deferment points are an example of time-point, but unlike predictable time-points in current process design approaches, deferment points represent events that are unexpected and unpredictable, or emergent. Deferment points cannot be planned in the sense of predicting their occurrence, but they can be incorporated into the process. Whether the event occurs or not cannot be predicted (See Section 5.5.1).

Figure 5-14 Deferment word tree of Researcher
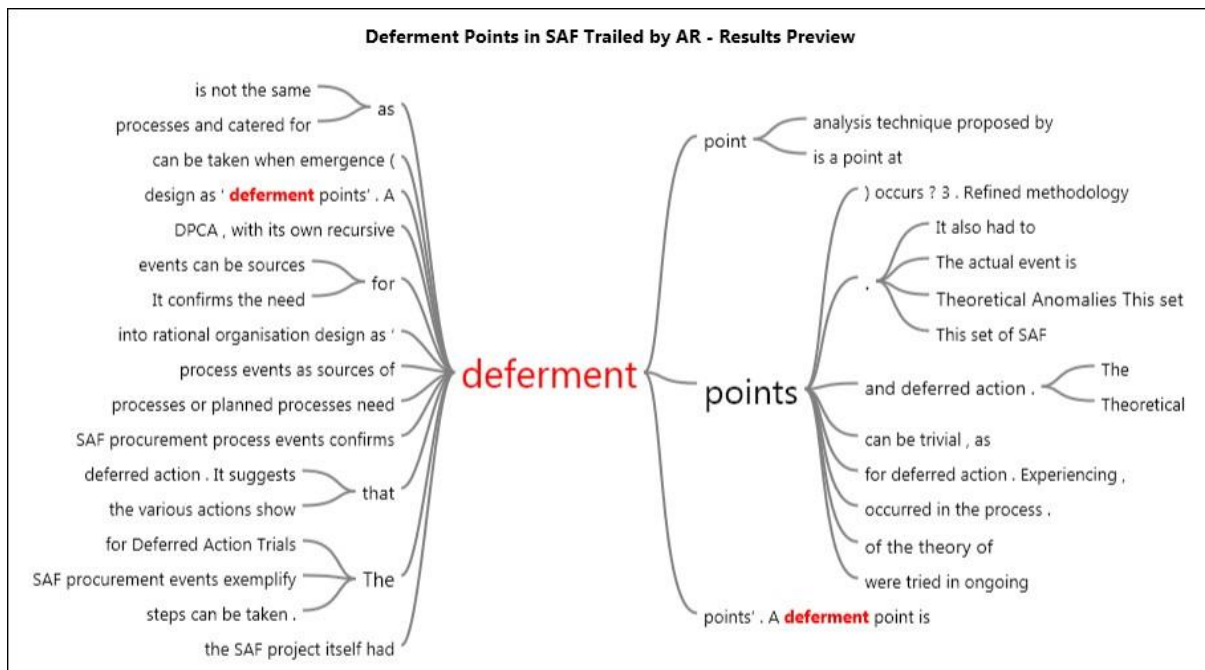
Actors' and researcher's observations of deferment in SAF procurement process is depicted in Figure 5-15. It shows that unexpected events (emergence) resulted in senior management and parties in the structure of the FPD Guidelines to take unstipulated actions at various junctures of the procurement process (deferment points).

Figure 5-15 Process deferment points in SAF
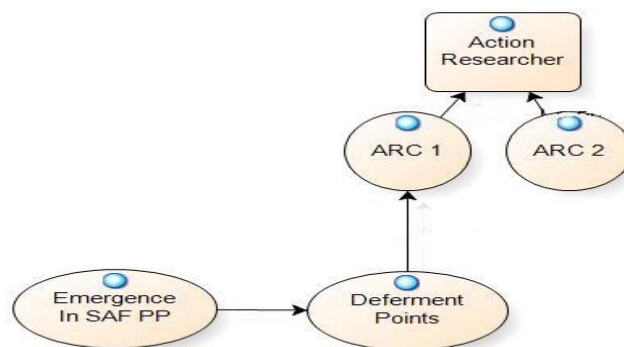
These process deferment points, and Taking-Action analysed in Section 5.4, were informed by the theory of deferred action, and detailed in Table 5-3 and above. Researcher participated in management meetings and one-to-one discussions with her line manager the FPD Director, where she informed management action with the idea of deferred action on ten occasions in the SAF procurement process. Data that would not be expected if the guidelines fully reflected the actual implementation were the basis of recognising deferment points. In other

words, if planned action or the planned process was ontologically true then the data would not be expected. As such data was found it was then grouped into categories and termed deferment points, or emergence that could not be planned in the Guidelines and which required agents acting in the situation in response.

Table 5-3 Actual Process deferment points

Unexpected Event	Source
Sourcing suppliers	Reflective Diary Sheet 1
Unexpected delay & time issue	Reflective Diary Sheet 5
Fundamental requirement change	Reflective Diary Sheet 6
Deciding to divide SAF into two projects: Construction and Design Service	Reflective Diary Sheet 7
Magnified effect on SAF procurement process of trivial issues	Reflective Diary Sheet 8
Effect of conditional events	Reflective Diary Sheet 10
Human error	Reflective Diary Sheet 11
Auditing	Reflective Diary Sheet 12
Recursive events – DPCA, with its own recursive process deferment points	Reflective Diary Sheet 14
Contract-writing and performing	Reflective Diary Sheet 22

The following six process deferment points were identified, as categories of deferment points:

(1) Establishing End User Requirements;

(2) Finalising Company's Proposals;

(3) Finalising Draft Contract and Legal Matters;

(4) Meeting Audit Bureau Requirements;

(5) Tendering Committee Interventions;

(6) Political and Governmental Changes and Requirements.

5.5.2 Agency

Emergence is an indicator of the need for active agency in the procurement process. The unexpected events and subsequent action means that agency is a critical feature of the procurement process.

There are lots of events that cannot be planned and lots of the time we need the legal dept. to help, how to deal with it in legal bases.(AG)

It depends on the event. Anything inside FPD we can deal with it easy and can take actions on it. Even if it is outside but does not affect the procurement process we also can solve it. Many times when we face unpredictable issues with the concerned Departments we call them for a meeting and do the best to solve it.(AC)

By trying to follow up and controlling the procedures aiming to restrict time lose.(AC)

By setting a time schedule to my team and finish our role as soon as we can(AC)

Agency data observed in the SAF procurement were analysed in NVivo and depicted in Figure 5-16. Actors acted in unexpected situations, dealt with uncertainty, influenced and developed knowledge of the procurement process. Awareness of uncertainty depends on agents' knowledge of the structure and planned action.

Figure 5-16 Action Research and Management Agency Model
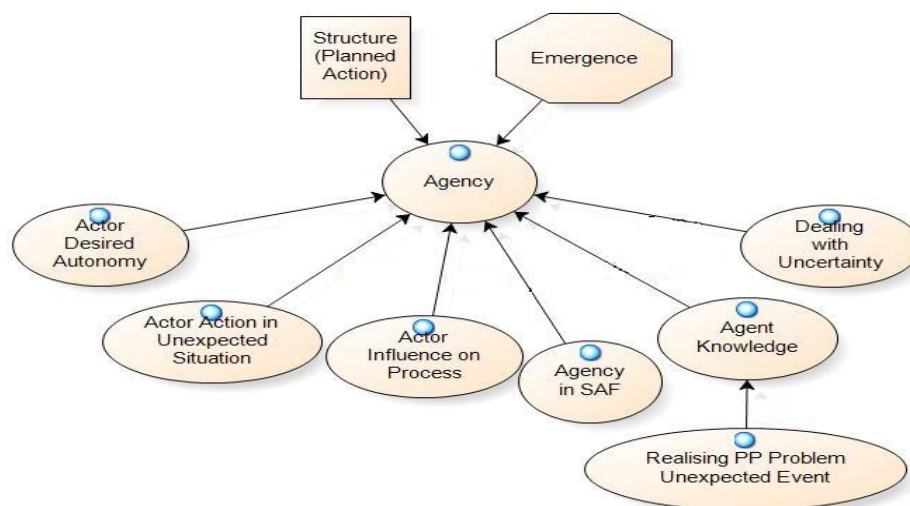
The role of agency is clear in the well-organised structure of the procurement process. However, FPD Director was not aware of the context of agency. Actors were taking actions in unexpected situations, situations that could not have been predicted in the planned action. As noted above, the unexpected events could not be dealt with through risk analysis. These situations are the emergent situations of any organised action according to the theory of

deferred action (Patel, 2006). They can be designed as deferred action. This data was the basis for redesigning the procurement process to reflect social systemic emergence and enable deferred action in ARC Two, whose data is analysed in Section 5.6.

Figure 5-17 is the Agency word tree of process owner and workers. It reveals that actors featured centrally in the implementation of the FPD Guidelines for the SAF procurement process. It shows process owners and workers acting – agency - to deal with unexpected process events. Such events arose from and affected various sources, like other CDs, which in turn would be agents too when affected by other sources events.

Figure5-17 Agency of Process Owner and Workers

Figure 5-19 is the agency word tree of FPD management and the structure in which it operates. It obviously reveals that management feature centrally in taking action in the SAF procurement process.

Figure 5-18 Agency of Management
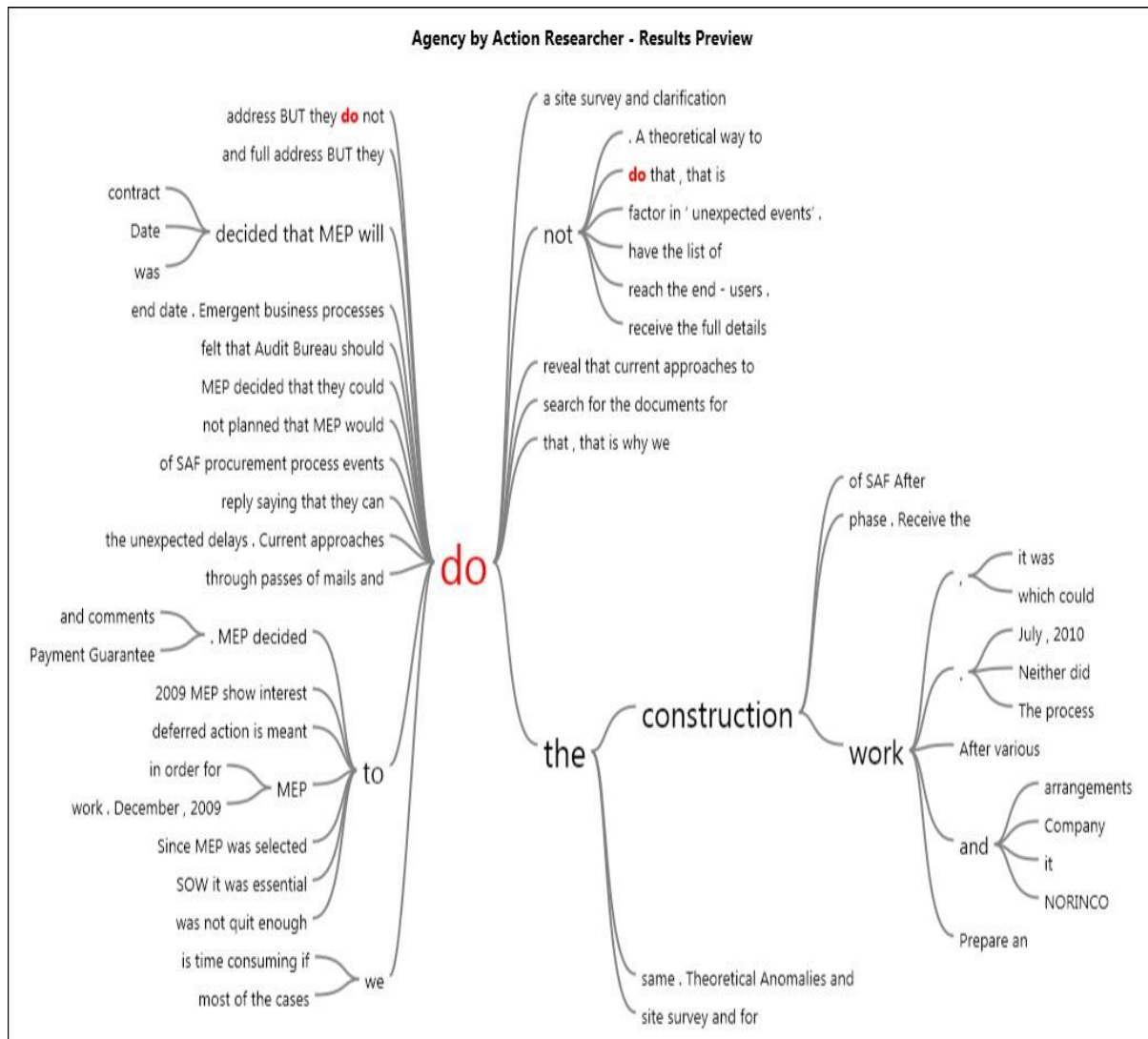
Agency in the whole SAF procurement process shows that process owner and process workers use phrases like 'doing the right thing' in the context of emergence. The process owner, FPD Director spoke about 'make cowardly decisions' in the context of uncertainty, meaning that without proper structural and authorities support, management often made poor decisions. Local action, different from the planned action, was taken in a state of fear of repercussions.

The AR was officially supported by FPD Director and gained currency among process workers. Figure 5-19 is the deferred word tree of process owner and process workers, notable in it is knowledge of 'deferred action' and 'deferred decisions' among them. They state that ideas of 'deferred action will help', 'This is significant understanding' and 'deferred action is promising'.

Figure 5-19 Deferred Action

5.6 Conclusion: Management Learning

The findings of ARC1 informed ARC2. These findings are elaborated here. Promise of deferred action was realised as concrete management learning to inform ARC Two. Researcher obtained significant learning too. Both of which are discussed here.

Figure 5-20 depicts learning outcomes of ACR One that were input into ARC Two. These were: validated interpretation of theory and data, refined research question and refined AR and deferred methodology.

Figure 5-20 Researcher Learning
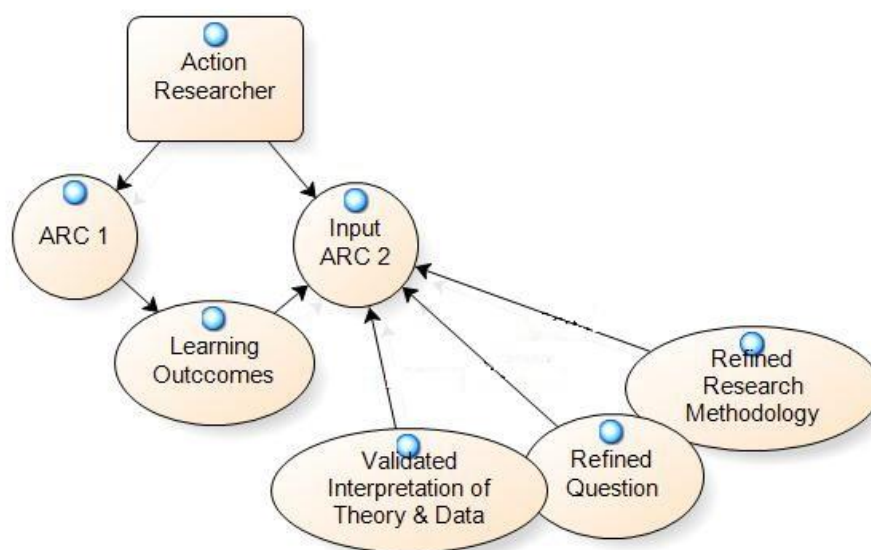
Several learning outcomes were recorded in the reflective diary. First outcome is validated interpretation of the procurement process, that unpredictable events occur in the procurement process and are acted upon by process owner and other involved management. Actors had come to accept these events as unavoidable obstacles in the SAF procurement and dealt with them accordingly. Rather than view them as complexity and deferred action, management view was that they had to comply with FPD Guidelines and to improve working practice to overcome them. Management's paradigm was planned action and it was the same for designers of the Guidelines. So, the Guidelines assumes that the ontology of the process is only planned action. Consequently, designers of the process and managers expect only the predicted events of the process. They would interpret all experiences through the planned action paradigm; they were only looking for data that confirms their perspective or paradigm. However, their paradigm shifted because of the research and managers and designers began

to see emergence perspective. Instead of trying to explain unexpected events in terms of the only the planned action dimension, they began to see that alternative action was required to cope with unexpected events that could not be predicted. Second outcome concerned understanding how to formalise emergence by drawing on the SAF procurement process experience. Management action on unexpected events had been observed and categories of events identified, which will be used to formally design the procurement process for emergence. Third, AR methodology was refined. With active support of FPD Director and KMOD Undersecretary, the PPQG was setup to study the Guidelines and how to redesign the procurement process to reflect emergence. These outcomes were input into ARC Two.

Based on Kumar's (2012) deployment of action research, the learning outcomes as recorded in the researcher's reflective diary that were input into ARC 2 consisted of:

(a) The validated interpretation of the procurement process as an emergent business process.

Unpredictable events occur in the procurement process and are acted upon.

(b) The emerging research question:

How can emergence be formalized? What action can be taken when emergence (deferment points) occurs?

(c) A refined methodology to begin the redesign of the procurement process:

Setting up of the formal procurement process Group

(d) Redesign the FPD PP guidelines for Deferred Action Trials

The deferment points were tried in ongoing processes.

Figure 5-21 depicts the management learning model. It shows experience of deferred action from the SAF procurement process. The terminology 'deferred action' became part of management language and thinking on expected and unexpected events of the procurement process. There are two types of learning outcomes from this experience, experiential learning and propositional learning.

Figure 5-21 Management Learning Model
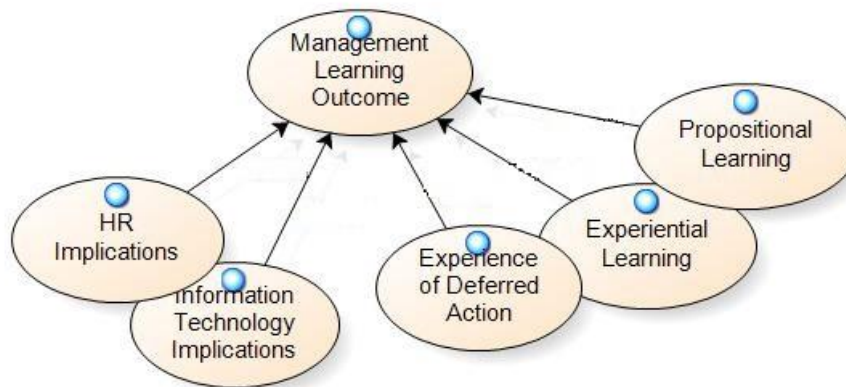
FPD Director and researcher as Controller of Land Forces Contracts learnt significant lessons about plans and emergence concerning process enactment and management. Researcher had adopted the deferred action perspective embarking upon the AR and found data from the ongoing SAF procurement process confirmed it.

Six management learning outcomes resulted from ARC ONE. Researcher's reflective diary recorded understanding of concepts of emergence and deferred action in the changed context of the SAF procurement process. Management now interpreted procurement in the context of emergence and accepted that emergence should be formalised in the FPD Guidelines.

Understanding the concepts of emergence and deferred action in the context of SAF procurement process.

The experiential learning is that the procurement process is not a true process because Departments focus only on their responsibility. This caused delays in the normal process activities and when unexpected events arose.

The procurement general guidelines are insufficient for unique business processes. The FPD PP guideline is fragmented along departmental lines.

Another management should acknowledge human resource development. Process workers need training to acquire proper knowledge of the procurement process.

The need for proper knowledge of the PP among process workers. Lack of qualified personnel. Lack of communication skills.

Similarly, it was noted that management should invest more in IT to support and enable the procurement process.

Use of latest technology must be formalized.

Another key management learning outcome is the proposition that business processes can be unique, shaped by emergence and they require deferred action.

Conceptualising unique business processes as complex adaptive systems leads to the recognition of emergence and the need for deferred action.

Finally, data confirms the predictions of the theory of deferred action.. Unpredictable events do occur in the procurement process and are acted upon by actors, this is emergence. Interpretation of the procurement process in terms of the theory is valid.

Unpredictable events occur in the procurement process and are acted upon. This is the emergence and deferred action of the theory of deferred action applied to the research.

Through her involvement in the AR, as facilitator, participant in the ongoing SAF process and interviewee subject, FPD Director appreciated the key learning outcomes, particularly the data above. She confirmed that the deferred action theoretic had provided the framework necessary to make sense of her experience working on the SAF process and other FPD procurement process in the past. She wanted to formalise it into the procurement process, which began ARC Two. As noted above, such events were not unpredicted or could not be dealt through contingency planning or risk analysis. They were unpredictable events which could not be included in the process and had to be interpreted outside of the planned action paradigm.

Chapter 6: ARC Two: Designing Emergent Business Process

6.1 Introduction

Based on the new understanding arising from the data and experience of Arc One, the aim of ARC Two was to redesign the procurement process as an EBP, to reflect emergence as observed in ARC One. Improvement should shorten the time period to complete procurement processes from three to one-and-a-half years, a fifty per cent reduction in time. This was not an over-ambitious target if the SAF procurement processes could be well-conceptualised and understood as an emergent process. This aim was facilitated by the FPD Director and at the highest level of the 'structure' identified in ARC One, by gaining approval of Minister of Defence and working closely with his Undersecretary. This resulted in effective institutionalisation of the redesigned procurement process or EBP.

Planned action, emergence and deferred action together define a 'deferred system' in the theory of deferred action. A deferred system is designed to link and interact with its changing environment and emerge accordingly. FPD Guidelines and procurement process were redesigned as a deferred system, based on the constructs evidenced in ARC One: 'structure', 'planned action', 'emergence' and 'deferred action'. This redesign is the EBP and the terms deferred system and EBP are used interchangeably.

An overview of ARC Two is given in Figure 6-1. It shows five rectangle components involved in redesigning the EBP: procurement process Quality Group, procurement process Design, EBP Trails, Evaluation of New EBP and Learning Outcomes, which are explained in this Section as the ARC Two research process. The redesign of the EBP focused on structure, emergence, and agency as established in ARC ONE.

Figure 6-1 ARC Two
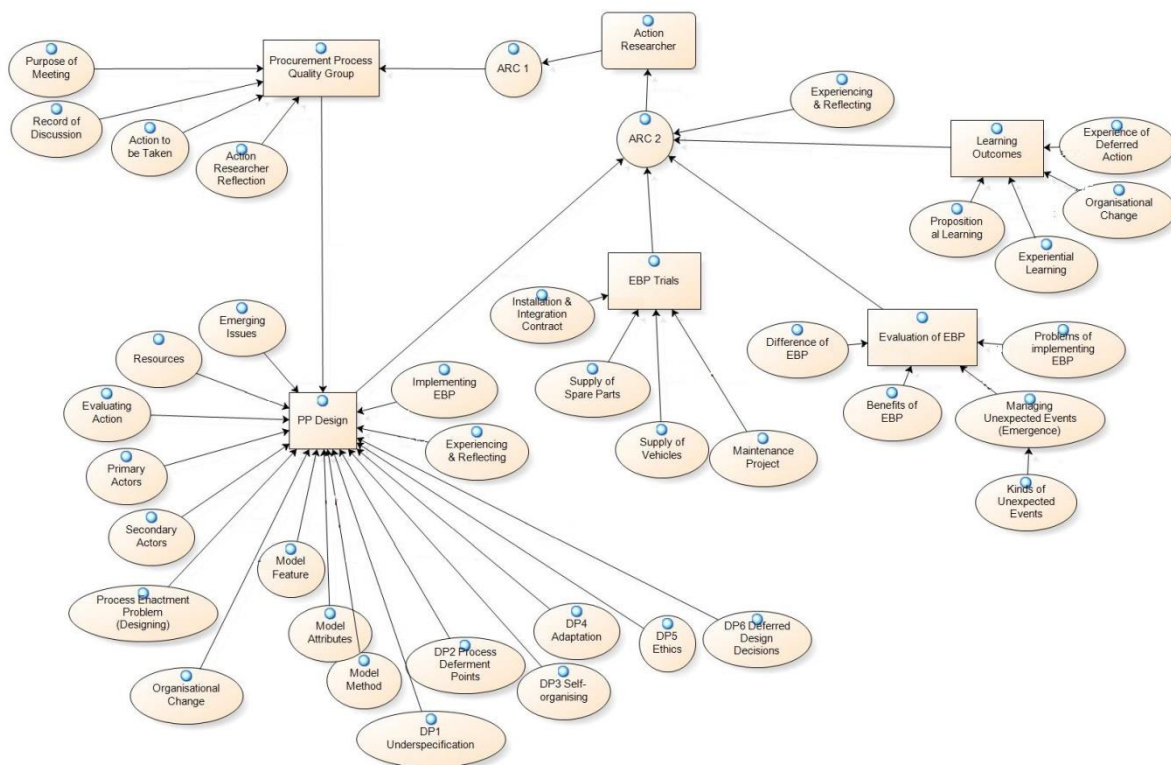
Figure 6-1shows the overall action research. Researcher started ARC ONE problem diagnosis (Circle) that resulted in setting up the Procurement Process Quality Group (rectangle) with its remit (4 ovals). This lead to redesigning the procurement process (square) with all the resources and researcher's experiencing and reflecting involved (18 ovals), including the six deferment points, depicted 'DP1 Underspecification', etc. The process redesign included emerging issues, resources required, evaluating action, primary actors etc. It also included the EBP Trials to verify the findings of the action research and improve the generalizability. ARC Two included 'Experiencing and Reflecting', 'Learning Outcomes' and 'Evaluation of EBP'. Further details are discussed next.

6.1.1 Procurement Process Quality Group

Researcher began the research process independently of the FPD. She discussed it with the FPD Director when data had to be collected and got her approval. When she interviewed FPD Director, the FPD Director began to closely identify with the research because the interview questions enabled her to interpret her experiences of the procurement process, the structure and planned action, in terms of the theory of deferred action. The data text below shows the FPD director's thinking that resulted in her changing her paradigm from solely planned

action to deferred action, which included planned action, emergence and deferred action. The interview questions below and Interviewees' responses made her aware of and recognise unexpected events and actions. She reveals that the FPD Guidelines 'required adjusting' and that 'it does not feel like a set process.'

How is the procurement process implemented?

An action plan has already been agreed upon and approved by all the legal bodies in connection with FPD. Now, this plan in the Bible to follow. At FPD we follow the required steps. I lead the procurement team as the Director and my assistant helps me to monitor and control the steps. People work in teams as required, as contracts vary as I said earlier. We try to follow the Guidelines and action plan, but find there is often much variation. The current SAF procurement process is a typical example. Many stages of SAF have required adjusting the FPD Guidelines. The detailed implemented of the Guidelines in SAF has caused many difficulties and it does not feel like a set process. It has kept changing in SAF. Still, we have to comply with the Guidelines and we must produce the required statutory, financial and contractual documents.(PA)

How can the environmental changes be controlled?

It is not easy to control any change, but by earlier planning of any procurement process as soon as we receive the request from the end users we can do that. In SAF we tried it. But the end user changed the requirements suddenly early by requiring two separate procurements – the factory construction and the design service. The many years of SAF experience shows that it is not really possible to predict environmental change, we need to manage it better. (PA)

How can unexpected events be incorporated in the procurement process?

If they are of use, why not. But if they are not, then they should not be taken into consideration. Your research is helping by introducing the idea of deferred action. Using deferment points in the SAF process helped us to at least recognise that unexpected events happen and we need a way to manage them.(PA)

FPD Director told the researcher that she wanted to formalise the AR at ministerial level and would seek the Minister of Defence's approval. Approval was obtained and resulted in setting up the Procurement Process Quality Group (PPQG). This was the structural foundation of the redesigned EBP. PPQG composed researcher, FPD Director, Undersecretary to the Minister, and Assistant Undersecretary. The FPD Director noted:

The main stakeholders have recognised that process is important and we have set up the procurement process Group with the sanction of the Ministry of Defence. The Assistant Undersecretary gave the authority. It will be a problem to get Concerning Departments to work together in the process. There were long delays in the SAF process because Concerning Departments resisted change. Now the formal procurement process Group, authorised by the Ministry of Defence will be the basis of cooperation between us all. We know about deferment points, but finding them and incorporating them into our Guidelines formally at a later stage will be a challenge. Test and trial is the only way that will help us to evaluate our work. Upon discovering any problem, we are sure that a solution can be found.

Figure 6-2 shows items of data collected during the redesign process and evidenced in the following Sections.

Figure 6-2 Procurement Process Quality Group
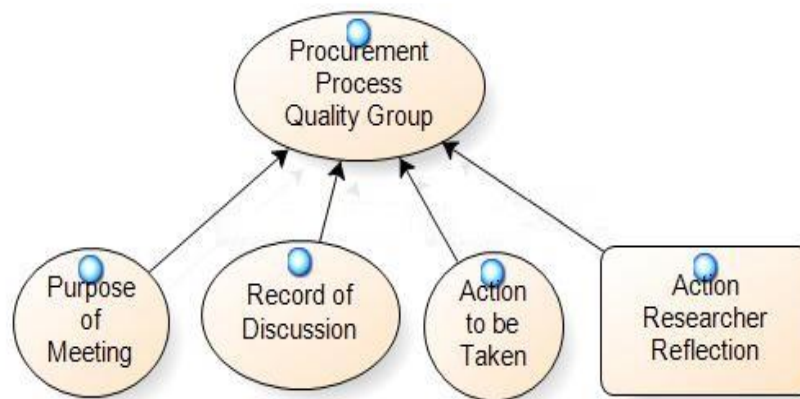
Purpose of each of the twelve meetings held during the redesign process is shown in the tables below. It shows that redesign process was well organised, each meeting had an explicit purpose and was driven by process design concepts and principles of deferred systems design. Process design concepts included input-process-output, begin-end workflow and joined-up departments. Deferred systems design concepts included process architecture (rational design), model attributes and methods and six principles of deferred systems design.

As noted in Chapter 2 (Section 2.8.2), these deferred design principles separate design into two distinct stages. The first stage is the design created by professional designers. In this research, they were designers of the Guidelines: Minister of Defense, Under Secretary, Assistant Undersecretary, and FPD Director who designed and stipulated the EBP procurement process guidelines. For example, the overall record of the use of the principle of under specification is shown in Table 6-1(Appendix B for full record). High level specification of the process concerning the events, activity, state and time-points were determined. These concern what activities will be performed, the start and end events, states of activities if known, and when events and activities need to be performed. This is not the same as a detailed specification needed for example in BPMN. In this first stage, reflective designers rely on as much specification as they can obtain to begin designing. Critically, the process design is not considered incomplete because a full specification of process activities was not obtainable.

Table 6-1 ARC Two Reflective Diary-sheet4

Sheet 4	Date March 2012
EBP Design Activity	**Deferred Systems Design Principle 1: Underspecification**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	Process workers
Model feature	Specification of the EBP or planned action
Model attributes	Specified elements should reflect core structure of the EBP. Underspecification of organisational behaviour
Model Method	Underspecification
Time Duration: **Start time:** **End time:**	*3 weeks* 4 March 2012 23 march 2012
Resources	Director of FPD, Supervisor of Land Forces Contracts (Researcher), three process workers
Process Enactment Problem (Designing) Differentiating meta-level specification and operational level specification of the procurement process was problematical.	**Emerging Issues** Since the procurement process is subject to emergence, the actual enactment or implementation of the process in the future will change, so each process activity cannot be by definition pre-specified.
Organizational Change	Organisational planned action is specified in terms of deferred action theoretic as meta-level specification. The procurement process, or deferred system, cannot be completely specified in dynamical environments. The procurement process is designed and implemented in terms of meta-level specification and operational level specification
Experiencing, Reflecting, Interpreting and Tacking Action	Separating core set of planned organisational behaviours that cannot be permitted to change was cognitively difficult for FPD management. Management is used to dealing with emergent issues as part-and-parcel of the procurement process. The approvals aspects of the procurement process had to be separated and were defined as meta-level specification.
Evaluating the Action and Assessing the Learning Points	Underspecification is organisationally efficacious. Underspecifying organisational behaviours is necessary in emergent organisation. This can be achieved by thinking of organisational behaviour in terms of meta-level specification and operational level specification.
Developing, Confirming Theory	The deferred systems design underspecification principle is confirmed by the SAF procurement process experience. The re-design of the procurement process in terms of meta-level specification and operational level specification was logically inherent in the actual activities of the process owner. The approval necessary for procurement are better interpreted as the meta-level specification of the process.
Theoretical Anomalies and Discussion	None identified.

Another important principle was self-organization. The overall record is shown in Table 6-2. The Primary Actors involved acknowledged that important process owners like the FPD Director and Assistant Under Secretary of Legal Department require some degree of freedom in non-standardisable procurement process. This was achieved by removing the need for Approval Letters for FPD Director and Assistant Undersecretary, as active designers, to act when events occurred that were not in the main EBP Guidelines. Such action is an example

of the other principles adaptation, ethics and deferred design decisions. Active designers respond to emergence to adapt to the changing environment by taking deferred design decisions. The ethics of decision making is also considered in terms of allowing the process owners actual ownership of the process, rather than having to seek approval before deciding what action to take.

Table 6-2 ARC Two Reflective Diary-sheet6

Sheet 6	Date March 2012
EBP Design Activity	**Deferred Systems Design Principle 3:Self-organising**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	Appropriate managers and clerks.
Model feature	Self-organising behaviour
Model attributes	The deferred system should be self-organisation. Organisational behaviour should be self-organising.
Model Method	Autonomous local action
Time Duration: **Start time:** **End time:**	3 Weeks 4 March 2012 23 March 2012
Resources	Existing infrastructure of FPD and procurement process. Additional information technology as required subject to authorisation
Process Enactment Problem (Designing) Learning new behaviour	**Emerging Issues** Cognizance of and cognitive ability to self-organise is challenging. Such self-organising requires a collective memory of the KMOD/FPD context and its statutory and legal framework of the procurement process
Organizational Change	The emergent procurement process is self-organising. It is responsive to environmental change.
Experiencing, Reflecting, Interpreting and Tacking Action	Review of previous FPD procurement processes reveals actions taken over the whole procurement process that can be interpreted as self-organising in response to environmental change.
Evaluating the Action and Assessing the Learning Points	Responding to environmental change is necessary to make the procurement process efficient. Thinking that adherence to the set FPD Guidelines, as done previously, is efficient is not true. Efficiency and effectiveness of the procurement process is enhanced by responding to environmental change through self-organising.
Developing, Confirming Theory	The theory of deferred action is based on the general complexity theory, which confirms that physical and biological systems, as well as socially embedded systems like culture and language, are emergent and self-organising . The evidence from the SAF procurement process and other previous processes reveals that the procurement process is adapted to meet changing conditions; this adaptation is self-organising.
Theoretical Anomalies and Discussion	None Identified.

The FPD Director and stakeholders adopted the new perspective of deferred action, based on complexity and emergence. The research of ARC One resulted in significant action learning, arising from the critical perspective taken on the current procurement process. Concerning the commencement of the PPQG, researcher recorded the following in the reflective diary:

This is the first meeting for the idea of creating a team to work on studying the current procurement process and try to redesign it and eliminate any procedure that is delaying it. This idea came from 4 people (the assistance undersecretary, the director of the contract department, myself and a supervisor of divisions in KMOD/FPD) we planned to take a step in designing the PP, so in the first meeting the idea in general, who should join the team , from which departments, how many members from each department, and how long this team will take to design the PP. also I added that the meetings should take place weekly in addition to any more needed in between, the undersecretary gave us the full authority to work on this process as he will be the leader of the team. The director suggested at least 2 members from each department but I objected because we need 4 active employees at least from our sector to get more ideas. They agreed upon my idea.

A critical step in setting up the PPQG was selecting the process owners. The PPQG discussed the approval letter of establishing the team work received by the undersecretary and decide who would be involved in the team work, and setting the goal and responsibilities of the group. Its primary aim was to study and diagnose the FPD procurement process guidelines, divide the process into categories (cannot delete, must delete) and add deferment points. The PPGQ determined to design the new EBP and take the leadership to implement it successfully.

A sample of the recordings is presented below. The discussions involved structural issues such as seeking approval and planned action such as adjusting the FPD Guidelines. Both structure and planned action needed to change to reflect social systemic emergence.

*We received a letter from the undersecretary approving the idea and supporting it, and gave orders to select the team members Defining purpose, goals and objectives and being explicit about the group or individual task. Developing clear and understandable **roles** for all group members; Understanding and talking about the **authority** structure(s).We received letters from finance and legal department on the reply to our letter mentioning the names of the members that will join the team. Our goal in this team is to take decisions on any action immediately that is why we need all the group members' decision makers. We checked the names and added them to the team members and still waiting for all departments to reply. Send a letter to the finance Department to change the team members. Sending back a letter to the finance department, mentioning the need of decision makers not new employees or beginners. Each member should provide their individual agenda, suggestions and meetings should be held weekly, and if necessary hold others if required. Each member is required to attend.*

Discuss and document the FPD PP in which we are creating redesign for it. This will allows us to have a full comprehension of every single step involved in the task we are building. Discuss the new process with process workers who will actively implement the new EBP; this will clarify to them the newly designed EBP model and improve its efficient and effective implementation. Discuss as many of the real dilemmas, issues, situations and constraints within the group. Incorporate process deferment points designed in an ARC One. Identified process deferment points or emergence in previous FPD

processes. Then these were incorporated into the FPD Guidelines. FPD PP Group identified relevant places in the PP to insert the process deferment points.

The three current procurement projects where the new EBP was implemented were discussed. The Group felt that the new EBP overcome the time delays and saved effort. Time and effort were over expanded in the previous Guidelines. By being time efficient and reducing effort the FPD goal of meeting military needs was being meet efficiently and effectively. By saving time, it is possible to avoid companies raising prices because of inflation or increases in their own costs.

Action taken by the PPQG is illustrated below. It involved much official approval-seeking, checking competency, team building effort and negotiating work allocation among the team members.. Identifying process deferment points took in-depth discussion and designing.

A letter of this idea is prepared by the secretary of the Director of the contract department and signed by her and the assistant undersecretary and sent to the undersecretary for his approval on building a team from all the concerned department in the PP to redesign the procurement process

Letters are prepared by the secretary of the director of the contract department and signed from her and the assistant undersecretary to all concerned departments 'legal, financial, logistic and supply, and end users) are set and sent for their action to provide us with 2 members from each department that are involved directly in the PP and influenced in it

Check the receipt of the letters from all departments & approve the team members and distribute the role of each member. Minutes of meeting should be signed at end of each meeting and action points to be completed by next meeting to be recorded.

Undersecretary and Directors of the Concerning Departments determined the new EBP, by keeping statutory (legal) and regulatory steps and adding new ones including process deferment points.

Collect and study all unexpected and emergent events FPD faced and send to certain departments to get approvals.

The FPD PP Guidelines was rewritten and the new deferred design steps inserted. These included: (1) Establishing End User Requirements; (2) Finalising Company's Proposals; (3) Finalising Draft Contract and Legal Matters; (4) Meeting Audit Bureau Requirements; (5) Tendering Committee Interventions; (6) Political and Governmental Changes and Requirements.

To seek final sanction to institutionalise the new EBP in the FPD.

Researcher reflected on the design work of PPQG as shown below. Several traditional aspects of business process design occurred, such as rationalising process activities, conceptualising start-end procurement process, and setting up process document flows, and resolving disputes. Process of designing in deferred design is itself emergent. It took time and explanation by researcher for PPQG to understand design in emergent terms. Consequently, redesign of the process was an iterative process. Researcher became aware of and recognised emergence in SAF procurement process after understanding the theory of deferred action. PPQG could not recognise it. During redesign they began to understand data from ARC One

and eventually became aware. They had interpreted FPD procurement process as a rational process and had thought of unexpected events as obstacles Table 5.5 does it.

The need for the idea to redesign the FPD PP guidelines. By establishing a team to redesign.

According to the current FPD PP and EBP experience and data collected on SAF process, I think there are lots of procedures that can be eliminated and others can be improved, adding new procedures after taking approvals is needed in some stages.

Team leader should be able to take immediate decisions without the need for authority.

Always worthwhile to get another person's opinion about the claim – they can provide a fresh perspective. Team members should discuss the matter with each other. Often discussing the matter with someone not close to the problem can prevent a potential dispute from developing into a dispute.

In this stage, I thought of setting a guideline of the group mentioning the role of each member. The reason for the team is to achieve its aim. The team will be maintained after the design of the new EBP, so it should be composed of permanent members.

Alternative dispute resolution paths are mediation and obtaining an expert opinion.

We approved that each new element of the EBP reflecting deferred action should be implemented in ongoing procurement processes, because this would provide immediate feedback to design the EBP successfully.

Group members may be changed if they are not active.

The actions from the previous meeting should be recorded on a form distributed to each member and they should record their ideas and implementation.

If there is a strong dispute in the Group there be an independent external adjudicator. All members should be aware of all procurement process guideline, they should study it before we start meetings. Knowledge is an important factor to be considered.

Plan: Make every effort to help the Contractor meet their contractual obligations. Compromise on matters that will not adversely impact the procurement process outcome while maintaining control over the contract, cost, quality and timing.

They had to comply with statutory requirements but were given scope to add new steps and remove inefficient and ineffective ones, including process deferment points, which is a fundamental change in the FPD PP Guidelines since its inception in 1990s.

The design was iterative to make it the most appropriate. Designing requires understanding the problem well, which was gained through the data collected in ARC ONE and ARC Two that helped to identify emergence in the procurement process.

The Group learnt an important lesson about rational planning. The FPD Guidelines is rationally planned and the FPD and the stakeholders were incognizant of the effect of emergence on rational planning. The research and the implementation of the new EBP based on deferred action, improved our understanding of the poverty of rational planning. The effect of emergence on rationally planned business processes needs to be considered and included in the business process.

For example, the PPQG members' paradigm shifted to the DMR perspective (Table 6-3). At the start of the PPGQ the Assistant Undersecretary of FPD believed that it was not possible to use deferred action where governmental and political matters were involved. His view was that any change would always need to be confirmed through Approval Letters. With the clarification provided by the Assistant Under Secretary of Legal Department that 'the substance of the government's decision would not be challenged by any permitted deferred action', the Group decided that it could be a deferment point, because it would not challenge any governmental edict.

Table 6-3 ARC Two Reflective Diary

Sheet 2	Date: Feb 2012
EBP Design Activity	**Revising the FPD Guidelines**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	Consultant for Legal Department
Model feature	Re-design PP into a flexible process but keep key legally required features.
Model attributes	Managers be allowed to make deferred design decisions in emergent situations
Model Method	By legal and regulatory sanction
Time Duration: **Start time:** **End time:**	N/A
Resources	Appropriate personnel
Process Enactment Problem (Designing) Through the experience of working on the FPD Guidelines, problems were identified. The long time to gather approvals that are involved in each procurement process; delaying it to reach its final stage lead us to discover that some steps could be eliminated, exchanged to work in the benefit by shorting the process. Depending on that, the idea of establishing a team to work came to the surface with the aim to institutionalize the EBP.	**Emerging Issues** Histories of five previous procurement processes had been complied. The Action Research had chosen them to reflect both stable and unstable environment. These provided discussion material for the Group to understand deferment points. Several members believed that it was not possible to invoke deferred action where governmental and political matters were involved. The Assistant Under Secretary of Legal Department said, 'the substance of the government's decision would not be challenged by any permitted deferred action'. After much considered discussion, the Group decided that it could be a deferment point, because it would not challenge any governmental edict.
Organizational Change	To radically change the FPD PP Guidelines to reflect organisational emergence of the procurement process.
Experiencing, Reflecting, Interpreting and Tacking Action	Brief or terms of the Group. The Group should be able to make decisions on re-designing without approvals. The leader of Group, Assistant Under Secretary should be able to take decisions.
Evaluating the Action and Assessing the Learning Points	The quality of teamwork depended on factors like communication, coordination and member contributions. More mutual support and effort was necessary than forthcoming. But the Group gelled together well because of the interest shown by the key stakeholder – the KMOD. When these were good the team worked better, more effectively. Teamwork can lead to better decisions and surfacing of problems and better resolution. The need for formal request from the concerning Departments who will join the Group. To keep matters formal.
Developing, Confirming Theory	The beginning activities of the Group reflect emergence. The Group itself had to interpret its terms of reference provided by the Assistant Under Secretary of KMOD.
Theoretical Anomalies and Discussion	None Identified. There is research on the language and its effect of organisation (Truex et al.,2000). This does have an effect of the procurement process. This research shows how language itself is emergent.

6.1.2 Emergent Procurement Process Redesign

Redesign of the EBP took shape as five components, shown in Figure 6-3 from left to right (1) PPQG, designing, composed of (2) design principles and (3) modelling, (4) implementing and (5) evaluating and organisational change. Setting-up and composition of the PPQG group was noted above. Deferred systems design principles, depicted as DP1-DP6, were used to design the EBP and features, attributes and methods of the model were designed. Consideration was given to problems of implementing EBP and required resources. Redesigned EBP was evaluated in terms of the resulting organisational change, impact of the new EBP and researcher's reflections.

Figure 6-3 EBP Re-design
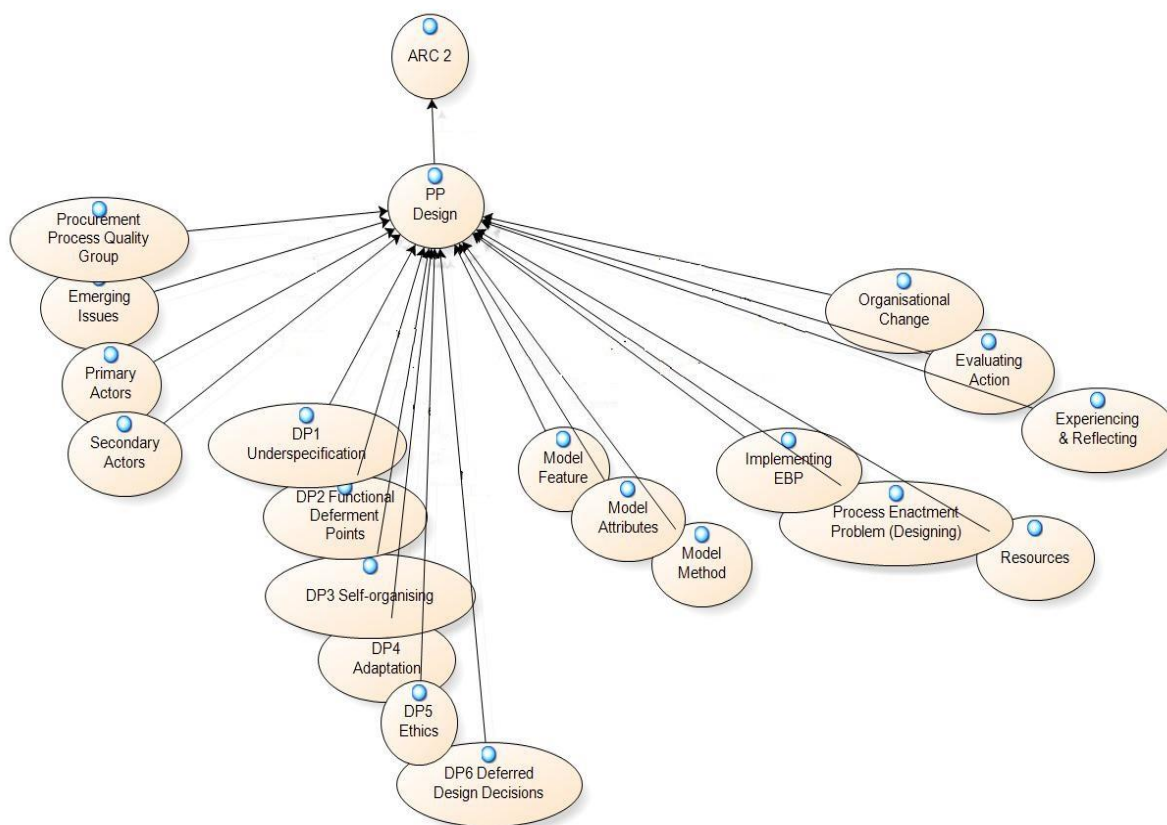
The PPQG encountered emerging issues relating to structure and planned action. Primary actors were Minister of KMOD and his Undersecretary, FPD Director, researcher, Directors of CDs, and they were the main designers. Support actors were process workers involved in operational aspects and EBP Trails.

EBP design was informed by six deferred systems design principles, which cover structure, emergence, planned action and deferred action. These are shown in Table 6-4 as adapted by

researcher for a social system, the procurement process. All the principles were contextualised before applying them to FPD procurement process design, by studying prior procurement processes to identify their relevance. For example, to apply the deferment point principle prior procurement process documentation was analysed by PPGQ, to identify unexpected events which could be designed as categories of deferment points.

Table 6-4 Deferred Systems Design Principles

Deferred System Design Principles	
Underspecfication	The underspecification principle is that reflective designers should design only the structural and functional features of a social system, leaving actual operational design to active designers, or local actors.
Deferment Points	The functional deferment point principle is that reflective designers should identify operational points in the social system, where deferred design by active designers is needed.
Self-organisation	The self-organising principle is that reflective designers should enable actors using a rationally designed system to self-organise how it is used socio-technically.
Adaptation	The adaptation principle is that reflective designers should design the social system to be adaptable.
Ethics	The ethics principle is that active designers should be enabled to design a social system themselves, since they are live and experience it.
Deferred Design Decisions	The deferred design decisions principle is that the actual design of a social system should be deferred to reflective designer, who respond to social systemic emergence by taking deferred design decisions.

Adapted from Patel (2007)

The major hurdle in designing process deferment points based on these categories was structural, getting approval to add and eliminate some procedures. This was possible and supported by high-level stakeholders' involvement, as illustrated below.

Most categories, like political changes in Ministry or government and supplier unable to meet requirement and end user changing requirements. Difficulty will be getting some approvals to add or eliminate some procedures. But this will be supported by stakeholders' involvement.

The FPD Process Group meetings were useful to identify deferment points. During the discussion the researcher pointed out potential deferment points that could be written into the new FPD emergent procurement process. The FPD PP Guidelines was rewritten and the new six deferment points leading to deferred design were inserted. The new FPD emergent procurement process was trailed on four procurement processes.

The deferment points are:

(1) Establishing End User Requirements;

(2) Finalising Company's Proposals;

(3) Finalising Draft Contract and Legal Matters;

(4) Meeting Audit Bureau Requirements;

(5) Tendering Committee Interventions;

(6) Political and Governmental Changes and Requirements.

The deferred principles are embedded in it. For example, unexpected changes can occur during 'Finalising draft contract and legal matters'. Data below shows events during SAF process to illustrate deferred action during the final stages of the contract. The following deferred principles are embedded in this action. Underspecification applies because normally the process for dealing with this would involve seeking approval letters from the Legal Department and KMOD. The deferment point is unexpected matters related finalising contracts and legal matters. Self-organisation occurred because FPD and Legal Department resolved the issue without reference to KMOD and need for decisions from higher authority. Consequently, the process adapted to the emergent situation. By taking the decision FPD ethics was protected and deferred design occurred.

Company X requested FPD to solve the issue related to the establishment of the Guarantees. The Guarantees were issued by a Bank established in the country of Company X, but KMOD only accepts guarantees issued by a local Bank in Kuwait. FPD contacted the legal consultant of KMOD in relation to the issue. The legal consultant suggested to add an annex to the contract to formalize the guarantees so that it could be accepted by KMOD. The annex was prepared by FPD and agreed by Company X. FPD then forwarded the signed annex to GHQ for their approval and initials of the Officer authorized for the SAF Procurement process.

Thus, rather than discrete points, deferred systems design principles are embedded in the core EBP, composed of 'Model Feature', 'Model Attributes' and 'Model Method'. A model feature defined the boundary of the EBP. For example, start point and end point of the process, and within that the requisite official approvals and major directorial decision points. A model attribute defined the process activities, for example tender-drafting, contract-drawing and contract-revising. A model method is how a process activity is done, for example contract-drawing is done by using a word-processor.

EBP resulted in significant organisational change. Managers' decision-making became transparent. The notion of 'cowardly decisions' voiced by FPD Director, was understood better in terms of emergence which necessitates decisions by managers that are not formally

authorised. This has resulted in changing the culture of decision-making, making it more open, which facilitates better communication along the EBP. Open decision-making has altered managers risk perceptions; what would previously have been regarded as very risky decision is now perceived as acceptable, because it is legitimate within the 'structure' and 'planned action' of the FPD. It has resulted in greater and better cooperation among CDs along the procurement process.

To prevent poor decisions, deferred decisions are only permitted by very experienced management staff. In the case of SAF only for the FPD Director, Project Controller and Supervisors. The Director has twenty years' experience and Project Controller hasten years. Others on the SAF procurement had 12 to 13 years' experience. A person with less than eight years' experience cannot be a Supervisor and should have 'excellent' annual evaluations. To be promoted four specialised training courses need to be attended.

The researcher consulted with the FPD Director about who should be authorised. The FPD Director and the researcher decided that it should be only senior management who have over five years' experience. The researcher noted in the Reflective Diary:

The practice of adapting is new to FPD. To implement it requires change in mindset. The progressive Director of FPD wants to include adaptive behaviour in the procurement process. She is making use of deferred design decisions. There was much discussion between the Controller and FPD Director about the suitability of people to undertake adaption in the procurement process. It was concluded that only experienced management should be permitted.

6.1.3 Deferred Action Trials

The new EBP was trialled in four procurement processes, Installation & Integration Contract, Maintenance Procurement process, Supply of Spare Parts and Supply of Vehicles, shown in Figure 6-4.

Figure 6-4 EBP Trials
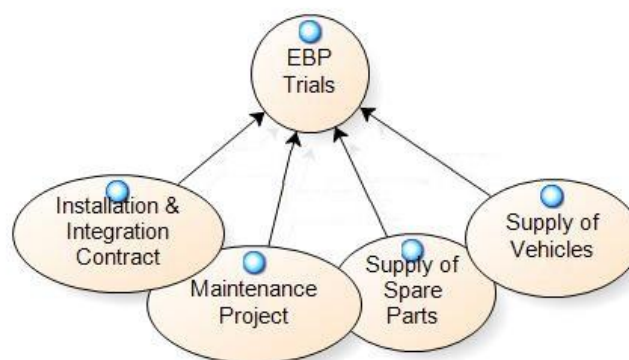
Table 5.7 shows the occurrence of deferment points in the ongoing trail procurement. As noted earlier, once deferment points have been identified in a procurement process like the SAF process they do not have to occur again.

These trials can be evaluated in terms of ASET. For example particular activities were shortened or even eliminated. In the case of supply of spare parts activities like correspondence between CDs was eliminated and replaced with a meeting, which resulted in immediate action and saving of time. In other cases, some states of an event were resolved quicker. For instance, in the maintenance procurement both activity and the time point were eliminated and compressed by requiring a meeting to agree the site survey and the company clarification. In comparison, under the previous FPD guidelines they would have been two activities and the time point would have been longer, resulting in the delay of submission of proposals.

Table 6-5 shows the occurrence of different deferment points in the trails, because of emergence they could not be predicted. In the Supply of Spare Parts procurement four of the six deferment points identified in SAF occurred. For example, the Finalizing Company's Proposals occurred in which the Statement of Work (SOW) was unclear to the Company and the Director took a deferred design decision to progress the procurement process, rather than wait for approvals. This resulted in saving approximately 20 days. Similarly, in the Supply of Vehicles procurement, because the SOW was unclear the Section Head met with the Director and the Director took deferred design decision to meet with the end user directly to clarify it, rather than seek and wait for approval from the Assistant Under Secretary or even higher approvals. This resulted in more efficient process by saving approximately 30 days.

Table 6-5 Deferred Action Trials

Procurement process Name (Ongoing processes)	DA Trials New Deferred Design	Outcome Deferred Action	Resultant Process Improvement
Supply of Spare Parts	Establishing the End User Requirements	There were some queries from the Company because the specifications and conditions were not clear in the Statement of Work (SOW). These were addressed as deferred action.	Time saving Cost saving Better quality decision Less number of people involved Less documents involved
	Finalizing Company's Proposals	Since the SOW was unclear on the specification and conditions; the Director	Time Saving Better quality decision

		decided to consult as deferred action with the company to finalize the proposals.	Less number of people involved
	Finalizing Draft Contract and Legal Matters	All the requirements to draft the contract were considered and hence the contract was finalized without much issue by the company. So, there was no deferred action involved.	Time saving Cost saving Less number of people involved Less documents involved
	Meeting Audit Bureau Requirements.	All the documents required for the approvals were provided to Audit Bureau in one letter and hence the approval was obtained within a short period. So, there was no deferred action involved.	Time saving Cost saving Less documents involved
Integration and Installation Contract	Establishing the End User Requirements	The End User decided to change the requirements. The Section Head in consultation with the FPD Director met with them as deferred action and clarified the new requirements.	Time saving Cost saving Better quality decision Less number of people involved Less documents involved
	Meeting Audit Bureau Requirements	The new documents were sent to Audit Bureau, who requested a meeting before granting the approval. This was enacted as deferred action and hence the approval was obtained speedily.	Time saving Cost saving Less documents involved
	Political and Governmental Changes	Since all the documents were kept up to mark and sent to the Minister office for signing there was no delay in signing of the contract. There was no deferred action involved.	Time Saving
Supply of Vehicles	Establishing End User Requirements	The SOW was unclear lacking some essential details of specifications required by the end user. Even the terms and conditions to submit the proposal was unclear without doubts. The Section Head sought the FPD Director's approval as deferred action to meet with the end user to clarify requirements.	Time saving Cost saving Better quality decision Less number of people involved Less documents involved
	Tender Committee Intervention	The SOW was sent to the tender committee along with the report from GHQ about the technical proposals	Time saving Better quality decision

		which resulted in quick decision and approval of the proposal. This intervention was as deferred action.	Less documents involved
	Finalizing the Company Proposal	The proposal did not mention some critical end user specification, hence it was necessary to intervene as deferred action. The FPD Director acted as the lead with support from the Section Head to finalize the proposal.	Time saving Cost saving Better quality decision
	Finalizing Draft Contract and Legal Matters	The Draft Contract is in the process of finalizing because all the legal requirements of the draft contract are considered and will be negotiated with the company accordingly. Expectation is high of the draft contract being finalized soon. The Legal Department raised some issues which the FPD managed as deferred action; the FPD Director met with the Legal Department Director to resolve the issue.	Time saving Cost saving Better quality decision Less number of people involved Less documents involved
Maintenance Procurement process	Establishing End User Requirements	As deferred action the SOW was amended beforehand taking into consideration the site survey and the meetings with the company to clear their doubts and queries. Resulting in sufficient time for the company to prepare their proposals.	Time saving Cost saving Better quality decision Less number of people involved
	Finalizing the Proposals	Since all the requirements and specification queries were answered in the site survey and the meetings as deferred action, the evaluation of the proposals were quick. The report of the submitted proposals from the company was established within a short period.	Time saving Better quality decision

The EBP improved the speed of the procurement process in the case of finalizing proposals. Speed is critical in finalizing proposals because the longer it takes to finalize the proposal the more likely it is cost will rise because of inflation or change of raw material prices. For example in the supply of vehicles procurement the contract was finalized quicker than

expected. This is because deferred action was enabled, the FPD Director acted as the lead with support from the Section Head to finalize the proposal.

6.2 Evaluating the Emergent Business Process

Evaluation of the EBP focused on managing unexpected events, benefits arising from it and the kinds of unexpected events that can be resolved with deferred design decisions. Figure 6-5 depicts the data model of the evaluation. It shows that data was collected on EBP Trails, Managing Unexpected Events (Emergence), Problem of Implementing EBP, Benefits of EBP and Difference of EBP.

Figure 6-5 Evaluation of EBP
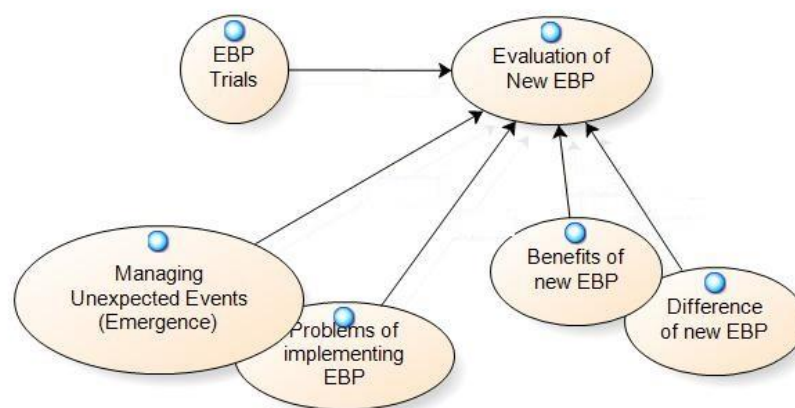
To illustrate each of these components, a sample of Interviewee data text is produced in this subsection representing the spectrum of evaluation. (A larger sample is given in Appendix B, Dataset 8). Interviewees mentioned benefits achieved through formalisation, deferment points, deferred decisions and managing unexpected events. The conclusion of the evaluation is that the EBP makes management of emergence possible and that it will be institutionalised deeper.

6.2.1 Managing Unexpected Events and Deferred Decisions

Process owner, stakeholders and most process workers said the EBP is better for managing unpredictable events, but some process workers said it was an experiment that could fail. FPD Director was positive. In the data below, she said that 'emergent events' should not take management by surprise and that they should be avoided and evaluated in 'live test'. This was done in the EBP Trails analysed in the previous section. She thought that the EBP will rationalise the procurement process. As noted earlier emergence cannot be predicted. By

rationalise is meant KMOD political figures and military and FPD management's shift in the paradigm to deferred action from planned action as part of the management learning. Emergence cannot be pre-empted but it can be acknowledged in the design of the process, which was done by recognising the need for deferred action. This way the KMOD military and political people and FPD management became aware of emergence. This is important because otherwise they would continue to believe that the Guidelines were sufficient and unexpected events were something that could be catered for in them by writing more steps and contingencies.

I think that those unexpected emergent events should not attend in the first place, in my opinion we should avoid falling in such mistakes that delays the whole process. And study the preparation of those unexpected events, to create a live test and demonstration to what it could result in as each event acquires. In my opinion, no doubt that EBP would help us eliminate some of the routine procedures that extend the process. It will clear out the unexpected to enable us to solve the problem.

Inclusion of deferred decisions made a difference to managing emergence. An Interviewee below, noted that it helped to determine 'evaluation criteria' for unexpected events, and resulted in less special meetings that had been used to manage each occurrence of unexpected events. Further, the same interviewee focuses on the organisational change that resulted from the EBP, enabling managers to respond 'quickly' by making 'deferred decisions'. Formal 'approval' is still required, as Interviewee notes.

As I said, yes. I think that if it worked or did not work in the benefit of the process at least it will establish an elimination of ambiguity if the event attended and also publish some kind of evaluation criteria to each individual event. There was a reduction in the special meetings when deferred decisions were included. (DDD)

Most people does not respond good to the idea of change, since they are familiar with the current process, than they are not open to new methods. The normal categories political, supplier and end user requirement changes, all can be included. The deferred action means managers can make decisions quickly and keep in the Guidelines. (DDD)

Yes, Instead of dealing with each unexpected event as an individual case and taking approvals on it in each procurement process, we collect them all and take the approvals needed from all the concerned departments then add them to the procurement process. This is the deferred approach. It is working better. Managers are making deferred decisions but still we have to get approvals, so it is working better. (DDD)

The EBP made a difference to respond to environmental change, as illustrated below. Through deferred decisions, it helped to reduce delays caused by changing requirements and supplier contract negotiations and queries.

End user changes in requirements. This is very important because they change their requirements once the procurement has started. The delays in the SAF process become less with deferred action.

Also, suppliers' changes to details of contracts are better managed by deferred decisions. Again, earlier SAF's suppliers delayed progress because of this, but when we started to use deferred decisions, it was easier to deal with it. (DDD)

FPD Director states below that formalising emergence is necessary to 'manage emergent problems', and that 'the ideas of deferment points and deferred action will help' and notes that political change, supplier change and end user change can all be managed using deferred action.

I think all kinds. Unexpected or emergent problems cannot be predicted, it comes suddenly whether we use FPD PP guidelines of the new EBP. But I can say it will be less by using EBP because our goal in the beginning is to formally manage emergent problems. The ideas of deferment points and deferred action will help. The political change, End User change, supplier change, and even internal change, all can be handled as deferred action, because we recognise emergence formally, and we know that our procurement process has to adapt to it. (DA)

6.2.2 Problems of Implementing EBP

Researcher did not expect difficulty in implementing the EBP, because the formally constituted and authorised PPQG involved all the relevant stakeholders and CDs. A critical management issue concerns authority and power. Interviewee below mentioned: 'having new power is itself uncertain'. This is an issue mentioned by the FPD Director in Subsection 5.4.1. Process workers did view other departments as 'slow' in adopting new practices. They stressed the need for training and learning to cooperate, and about efficiency and effectiveness of the process.

We are learning. We do not know how it will work with the Guidelines. The SAF process had less meetings in the later part because of the EBP. I think managers are sometimes unsure. You know having new power is itself uncertain, if you know what I mean. Deferred decisions are like taking approval from themselves, when they are not used to it. I think the problems will appear only in the beginning of implementing the EBP, by time everyone involved in it will get used to it with time. Still, some people in concerns department are slow. I think we need training. (EBP)

Much more learning is needed. We are used to waiting, now we have to act quickly. People have to be more aware of cooperation across concerns Departments. We need better way to find the deferment points, by studying previous procurement processes to see what unexpected events occurred. The concepts of efficiency and effectiveness have not substantially changed since the 2002 Guidelines, although greater emphasis has been placed on risk management and liability. (EBP)

There are many but we will deal with them. We overcome the first when the formalisation of the EBP was agreed by the stakeholders. We need ways to find deferment points to really make it work. We used previous procurement processes and SAF itself to see what events were unexpected and used them in the SAF process. As I said, we need better decisions to make the work high quality, move away from cowardly decisions. Making EBP work means practicing it well. We need managers to learn more about it and work within the Guidelines. (EBP)

Working according to set time was mentioned as a cultural issue by Interviewee below, in the context of deferred decisions. Since deferred decisions can be taken faster, process workers need to be able to respond accordingly, but they are used to the culture of personal pace of work rather than formally required timed action.

Reacting faster means process workers have to work faster too. This is a problem is our culture. People are not easy to change. We had long delays before in SAF. Now we have to move with the deferred decisions. Many of our people are still too slow. I think we need training on this EBP (DDD)

A critical issue for successful implementation of the EBP is changing management behaviour. FPD Director had noted her view on 'cowardly decisions', where managers were reluctant to act outside the parameters of the FPD Guidelines. She notes further below that such decisions are now 'more transparent', meaning they are formally incorporated into the FPD Guidelines as central to the new EBP. The same was noted by another Interviewee process worker too. Another Interviewee mentioned that CDs too have to learn new behaviour and extend it beyond their SAF procurement experience, and adopt EBP in all procurements.

The new EBP has made our cowardly decisions more transparent by incorporating them into the procurement process. I said about cowardly decisions earlier, with any work where money is involved, some people in leading positions tend to be too afraid to act boldly in taking decisions, as they fear the consequences of it. If you are not with a great experience in this field, then you try your best to cover your back by taking extra steps (in accordance with the Law). I do not object to abiding by the law, but I think that we need sometimes to be courageous in taking decisions in favour of the work. (EBP)

Formally recognising deferred action in our procurement process is a way to make those cowardly decisions not cowardly anymore. Now we recognise them as necessary because of emergence and need to take them. As our research groups and Process Group have shown, we need to adapt to the environment in order for our decisions to be effective. (EBP)

As I said, managers are learning about taking deferred decisions. They are unsure. I see that in the translations we do. They need to be more confident. As I said, concerns department are new to EBP. They need to work with us. They learnt about EBP in the SAF process. Now they need to practice it for all our procurement, especially large procurement processes like SAF where much unexpected can happen. Another problem is finding the deferment points. We are looking at past procurement processes to see what happened that was different from the Guidelines, what we did and when it happened. This will help build a bank of unexpected events. This will be formalised in the new EBP. (EBP)

6.2.3 Benefits of EBP

While some process workers see the benefit of the EBP, others do not. One Interviewee referred to it as 'potential model that could increase the productivity of our performance'.

Another Interviewee thinks EBP could fail because 'it is under experiment'. FPD Director also sees it as an experiment, 'taking shape and is open', but is positive about it.

EBP implementation is a potential model that could increase the productivity of our performance, guiding us through area of sudden unexpected events that will help us eventually resolving any emergent problem. They are talking of extending it to other government departments too. (EBP)

The idea of an expected emergent EBP as a whole is jeopardized to failure since it is under experiment, and will get year to be implemented efficiently. Yet improving the process is a fact that could not be denied. (EBP)

Definitely yes because the new PP is still taking shape and is open for good suggestions and ideas. The idea of deferred action means that all the concerning Departments are aware that unexpected change happens and we need to deal with it flexibly. The SAF process wouldn't have taken so long. (EBP)

There were benefits in the SAF process. An Interviewee noted: 'We have less special meetings in later stages of SAF', because unexpected events were being interpreted in terms of emergence and deferred action. Another Interviewee, said that deferment points helped in the SAF procurement, and that 'it could change things'. Another Interviewee says EBP could be defensive method against unexpected events.

If those unexpected events kept being repeated it could end up resulting in creating some kind of preparation methods of how to manage dealing with those events in the benefit of EBP. This is the deferment point they call. I think it can be managed. We have less special meetings in later SAF. (DP)

In my opinion those events could conclude in issues leading to inefficient functional specifications that could not work for the benefit of the process. The deferment point helped in SAF but it could change things. (DP)

Unexpected problems are featured with not being predicted and invisible. So EBP could work as a defending preparing method toward solving it. We saw how it helped in the later years of the SAF process. My work did not change so much, there was change but I did not feel out of control. (DP)

Benefits in time, cost, productivity and performance were mentioned by process owner and workers interviewees. FPD Director felt confident that not only would deferred action help to manage large procurement processes, but it would save time and costs. Time and process time-points had been a major issue in the SAF procurement process. She and other process workers mentioned savings in time and costs.

The result will be a faster and time/money saving process. As I said, we now have common understanding of emergence. We do not need to fear unexpected events. We can face them with deferred action, formally recognised. The long delays we experienced in SAF should not occur in future for similar large procurement processes. The procurement will be a true process we will all work together across concerning Departments. We will comply with the Guidelines, but we will also not be cowardly to make the right decisions. (DA)

I think EBP would save time and reduce money, also it will reduce the effort we as employees do by following the very long PP guideline procedures. It is helping us to reduce uncertainty by knowing that we need to respond to it. It is helping manage it. Procurement of services should be conducted in a way that imposes the same level of accountability and responsibility on a service provider as would exist if the agency carried out the service itself. (DA)

Reduce acquisition time and cost, and improve services of performance to the end-users. The quality of our work is better. We will be efficient and react better to unexpected events. Let's say we are managing uncertainty. (DA)

An important benefit is managing emergent 'system requirements', as an interviewees said, or end users' changing requirements, and basing procurement on deferred design principles results in better quality procurement.

EBP would help defining the system requirements and assist in prioritizing requirements, the result of implementing EBP will help us understand the new methods of paving the way to acknowledge the new utilization of models to get better development. (DDD)

EBP procurement process will facilitate the performance objectively and achieve success in terms of providing principles that will be not difficult to user participations. Yes, are performing better. As I said, quality of contracts has improved, we are making fewer changes. SAF started to see less change after the process deferment points i.e. deferred decisions. (DDD)

The implementation would obtain a frequent update to those who are involved in the process enhancing their applying to ensure timely and realistic decisions. We had better quality in SAF when we used deferred actions. The contract quality improved, few amendments after we started deferred decisions. (DDD)

EBP has improved management and employee competency and knowledge. This can be interpreted to mean the awareness of emergence, which previously had left process workers uncertain what action to take in the context of only planned action.

EBP is maintaining employee competency and knowledge of new technology through the attendance of comprehending EBP procurement courses. By seeing the new emerging events we do not appear incompetent. This is good for my morale. (KN)

I think that applying EBP would support the essential management, having knowledgeable skill procurement employees that will be specialized understanding the business process practices. It should improve the time it takes to complete the process and manage the unexpected events better. Managers can now make deferred decisions, they like that. SAF suppliers were worried about details and instead of waiting, managers acted by deferred decisions. It makes our work better too. (KN)

6.2.4 Difference of EBP

The difference made by the new EBP is reflected in structure and planned action. Process workers expected the EBP to take time to work properly, 'by practice' or by applying EBP knowledge to practice, as evidenced below. The Interviewee mentioned the difference it made to the SAF process, and the formalisation of the PPQG as necessary to make a difference to structure and planned action. An important aspect of this practice is for CDs 'to

work in the process' and not separately, according to planned action. She added that EBP would be improved with further scrutiny. Similarly, Interviewee notes the structural difference EBP makes, 'reducing regulations and routine policies' that consumed time, and another interviewee noted the improvement in knowledge of unpredictable events'.

Yes, by practice, I think when we add the emergent events to the procurement process formally we can then deal with it easily and quickly. You know, it helped in later parts of SAF. Now, making it formal as the research group will help. The process deferment points make it manageable, I mean unexpected events. (KN)

EBP process will go through different channel of scrutiny, no wonder that some of channels could accept and some could rejected. I mean, the concern departments now need to work in the process, not separately. So, they too will need to identify and manage their unexpected events. They need to be committed like we are in FPD. (KN)

I think it will represent a great deal of knowledge and experience reducing regulations and routine policies. Mainly, we can plan the unexpected, which sounds strange. But process deferment points is not exactly predicting, only making space to act to unexpected events. That means we have better knowledge and my coordination activities are easier to do because managers are not waiting or uncertain. (KN)

The PP can react better to unexpected events. We have more knowledge of unpredictable events because of the deferred action aspect of the process. It has shorten the period of each step, because some steps take very long time and I think it does not need this long time. (KN)

The evaluation data revealed qualitative difference in performance with the new EBP. Interviewees said it improved response times to unexpected events, and reducing need for special meetings. FPD Director recognised the difference in quality too.

The allowance of such difference could create a qualitative performance in terms of how to act toward this PP ... Quality of work has improved because we can act faster, we don't have to wait for special meetings and react. Instead of reacting, we can plan for unexpected events.(EBP)

Changing the procurement process according to the environment changes is a great step for improving the procurement process and speeding it up, such action will be associated with big difference that will occur such as saving time and effort.(EBP)

We expect the new EBP could help to improve the quality of our work. We now recognise that the planned procurement process is effective when it recognises emergence and deferred action. This is significant understanding for us. We struggled to cope with it previously, thinking our planning is not effective. Equally significant is that our procurement process will adapt to the environment, rather than remain rigid. It will be an adaptive EBP. This does not mean we sideline the Guidelines, it is adaptive within the Guidelines.(EBP)

It is to our expectations and responding well to unexpected events. We now have more flexibility, not because of more autonomy, but because we understand better how planning can work alongside emergence. The first AR Cycle helped by thinking about deferment as active action within the Guidelines, or as we now say deferred action. Then, the second AR Cycle meant we put it formally into practice. The procurement process is now transparent where emergence is concerned. We know about it and understand it, and can deal with it with deferred action. (EBP)

The FPD Director noted the issue of sustaining the organisational change, which depends on actors in the structure of the planned action. Though the new EBP is institutionalised, has structural legitimacy, she notes it is fragile because structural actors can move to change it because of political expediency:

It is very difficult to set these changes in writing as it is a well-known fact that with the change in command, we stand on a 50/50 ground. If the new command wishes a change in the known policy, then not much can be done. Yet if the new command maintains the same policy, then progress will be a sustainable policy. The procurement process needs to change accordingly. It will work better because we will fulfil the End User requirements efficiently. (OT)

A way to gain sustainable legitimacy is if the EBP is a true model of the actuality of the procurement process. Interviewees noted that such a model would need to accurately reflect changing environment, and reflected on the positive effect of process deferment points in the SAF process. An Interviewee thought the procurement process is better because 'managers are working better' and spoke of generalising the DMR to other government departments. Generalisation is addressed in the next Section in terms of management lessons learnt.

Merging both PP and environmental changes is creating a model that could work widely as the new Guideline. In SAF, after we started process deferment points, it was easier for managers to respond to environmental change. They made decisions instead of arranging special meetings to see what to do. Now, the unexpected events are not so unexpected, if you know what I mean. If we make it work well here it can be used by all governmental organizations.(EN)

The difference to the PP if we allowed it to change according to environmental changes; is a description of a complete model procurement process that can be used as a guide by governments, adding important changes according to the environmental changes. And eliminate all steps that are not applicable to all procurements. This has worked in later parts of SAF. The environmental change was handled with deferred decisions. It reduced waiting times. Now, managers are working better I think.(AEPA)

6.2.5 Management and Organisational Learning

The AR has resulted in sustainable organisational change based on successful management learning and organisational learning. Management learning is the learning about the procurement process and its changing environment achieved by managers and organisational learning is the learning embedded in the procurement process in the organisation. Figure 6-6is the learning outcomes data model, composed on researcher's and colleagues' experience of deferred action, experiential learning and propositional learning.

Figure 6-6 Learning Outcomes
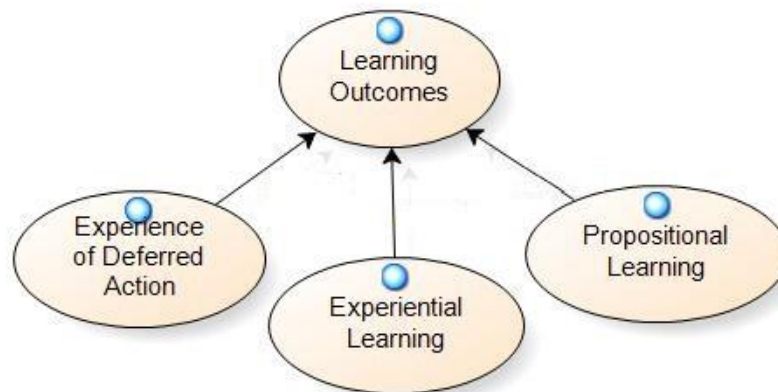
Management and organisational learning was possible because of researcher's and colleagues' critical disposition to management. They showed a willingness to question their own assumptions of managing, resulting in critical management. Management's assumption of managing rationally was confronted with evidence of emergence and management were open to changing their management thinking resulting in the new EBP.

Table 6-6 shows the learning outcomes. Management based on rational paradigm is limited, as the FPD Director said:

> *The more you want to make sure that you are doing the right thing, the more cowardly decisions you take thus giving us more steps to be followed.*

Resulting experiential learning, is that compliance to set rules is necessary but not sufficient, responding to unexpected events, or change generally, is necessary. Experience of deferred action is that it compliments, rather than averts, planned action. The FPD Director said:

> *Our main goal is to provide the army with zero obstacles. The goal is to facilitate the armed forces' work and the outcome is to secure the required defence equipment.*

Table 6-6 ARC Two Learning Outcomes

AR Cycles	Learning Outcome
Cycle Two	In rational models of management, managers encounter many changes in which they find it difficult to take action.
Experiential Learning (Leading to learning in organisational context)	Complying by set rules is necessary but not sufficient Management needs to be flexible in the context of unexpected events or emergence; leading to change in the FPD Guidelines.
Experience of Deferred Action	Managers can make decisions in response to environmental change. This helps to achieve the FPD goal of effective support for KMOD.
Organizational Change	FPD PP Guidelines redesigned as EBP. The PP is embedded across the CDs and Authorities.
AR Cycle (Leading to knowledge in the form of propositional learning, reported as outcomes of the research)	Propositional learning: Process efficacy requires contextual decision-making by managers to respond to environmental changes.

Further Research and Impact
Extend the research to other divisions of KMOD to understand and device metrics of emergence and deferred action for effective contextual decision-making. The researcher's interest in researching ToDA metrics and adding sophisticated measurements of the FPD EBP.

Based on Kumar (2012)

In the evaluation of the EBP she noted:

We expect the new EBP could help to improve the quality of our work. We now recognise that the planned procurement process is effective when it recognises emergence and deferred action. This is significant understanding for us. We struggled to cope with it previously, thinking our planning is not effective. Equally significant is that our procurement process will adapt to the environment, rather than remain rigid. It will be an adaptive EBP. This does not mean we sideline the Guidelines, it is adaptive within the Guidelines.

6.2.6 Organisational Change

Learning outcomes of ARC One where implemented in ARC Two. The AR has resulted in significant organisational change based on the concept of deferred system. The EBP is a deferred system that adapts to its environment. The propositional learning arising from the AR which makes this possible is that process efficacy requires contextual decision-making to respond to environmental change.

As well as the structural organisational change, EBP reflected some of the eight characteristics of 'reengineered processes'(Hammer and Champy, 1993:50-64). The idea of 'worker make decisions' is reflected in the deferred design decisions enabled in the new EBP, which are made by authorised managers. EBP has 'multiple versions' as it reflects the procurement process based on the FPD Guidelines, as well as the outward face of reflecting the environment. On a higher dimension the new EBP simultaneously reflects rational design and emergent design. Critically, EBP has embedded the idea that 'work is performed where it makes the most sense', which is pertinent in the context of unexpected events that require contextual, local responses. This is related to the feature that 'Hybrid centralised/decentralised operations are prevalent', deferred action reflects this feature well, since it is based on planned action (centralised) but responds to environmental change through deferred action (decentralised operations). Equally significant is that 'checks and controls are reduced' in the EBP, removing countless approvals that were necessary in the previous FPD Guidelines. In the EBP 'reconciliation is minimised' because 'A case manager provides a single point of contact', namely the FPD Director. The only characteristic that has not occurred in the new EBP is that 'several jobs are combined into one'. This is because there was no pressure by KMOD/FPD to save costs through changing job roles.

6.3 Conclusion

Data interpretation confirms the DMR, evidencing the variables: structure, emergence and deferred action in the SAF procurement process. The confirmed DMR served as the model to redesign the procurement process, using action research as the process design methodology, As the new EBP to reflect emergence. The six deferred systems design principles and were implemented. Formal acknowledgement of the researcher's research by KMOD/FPD management, in the form of the setting up of the PPQG was instrumental in the successful institutionalisation of the EBP, as the new emergent procurement process sanctioned by the actors in the structure of the planned action.

In data from ARC ONE, process workers thought that they cannot control environmental factors. The successful EBP Trails and redesign of the new EBP show that, though the environment cannot be controlled, actors can be enabled to respond to changes by designing deferred systems. The critical management lesson learnt is summed up well by FPD Director:

> *Formally recognising deferred action in our procurement process is a way to make those cowardly decisions not cowardly anymore. Now we recognise them as necessary because of emergence and need to take them. As our research groups and PPQG have shown, we need to adapt to the environment in order for our decisions to be effective.*(DA)

Chapter 7: Discussion and Contribution

7.1 Introduction

This research drew on the understanding stemming from the general theory of complexity and, specifically, from the theory of deferred action. It is the perspective that there is no simple linear or cause-effect account of reality; rather, reality is complex and that this complexity is essentially emergent. Therefore, the research questions were framed by developing the DMR as the theoretical framework, which postulated that any design needs to cater for three design dimensions, planned action, emergence and deferred action in order to cater for emergence. The research findings contributed specific empirical evidence of deferment points in the procurement process. Though Patel (2006) postulated the existence of deferment points in designed social systems, until now there had been no empirical evidence. The research also evidenced the design of an EBP based on the principles of deferred design. Patel (2008) had proposed the principles for deferred design but they had not been empirically verified. This research applied them to design EBP and confirmed their utility in the procurement process EBP and in the subsequent trials.

The research findings indicate that in general, like the FPD Guidelines, most business processes and process design methodologies suppose that processes can be designed rationally and are rational artifacts; they are based on only one design dimension – planned action. The research literature analysed in Chapter 2 also assumes planned action is the best approach because it draws on maximizing rationality. In the DMR theoretical framework of this research, this is termed the single rationality dimension of design. In contrast, the present research proposed the DMR based on the theory of deferred action, which has three dimensions for designing social systems, planned action (p), emergent organisation (e) and deferred action (d). It is the synthesis of these three design dimensions that gives rise to the design of business processes capable of responding to emergence or emergent business process. In general, design of all artifacts that need to function in a changing environment need to be based on the three dimensions of deferred design.

The data from this research validated the DMR, which can be applied to interpret the findings more generally. For example, a specific learning resulting from ARC One concerned human error:

Human error needs to be explicitly recognised in business processes and catered for as deferment points for deferred action.

As noted earlier, human error results in systems failure. Such error in business processes can either cause serious disruption to the process or halt it. By including deferred design decisions, particularly as deferment points, such human error can be addressed locally by actors.

Planned events can be overlooked because of human error. There is prior research on human error's capacity to cause major disasters (Perrow, 1984). The Military Engineering Projects was the only department of KMOD which deals with the construction work and Director of GHQ failed to contact them in the initial stage of the SAF project. The theory of deferred action (Patel, 2006) does not explicitly mention human error as a source of deferred action. Human error needs to be incorporated into emergent business process and the theory of deferred action.

As discussed earlier in Chapter 2, business processes can certainly be planned better through effective risk analysis. However, to be effective such risk analysis depends on the analyst's ability to identify risk and prepare mitigation procedures. The data in ARC One revealed that the environment of the procurement process changed suddenly and unexpected process events, activity, states and time-points can occur, and result in the context of the procurement process changing. Together, such change leads to an emergent business process. It is this emergence which cannot be identified for risk analysis. Consequently, such emergence can be dealt with by designing the process to accommodate deferment points, and allow deferred design decisions to cope with emergent events. The changing context requires new knowledge that itself is emergent. Patel (2012) explains how emergent context necessarily requires emergent knowledge, because existing knowledge would not be suitable for the new emergent context.

The new understanding of emergence among the managers constituted their new mindset. Managers' effectiveness is determined by their experiential knowledge, which is interpreted by managers themselves from their particular perspective. This perspective changed from the rational FPD Guidelines before the AR to the emergent business process; the latter meant accepting the changing environment, changing context and consequently deferment points, deferred design decisions and in general deferred action. This new management mindset enabled the FPD and CDs to work in unison, where everyone recognized the emergent events, activities, states and time-points of the EBP.

The literature review in Chapter 2 dealt with the theoretical assumptions and arguments for specified process design made by other researchers; research methods and methodology they used; and interpretation of the existing data. It established the current state of knowledge, particularly what is known and not known about non-standardisable process design. Currently, researchers have devised new process techniques and methodologies for standardisable process design (Davidson, 1993), but not focused on non-standardisable process design. For non-standardisable process, Holtham (1994) developed a conceptual model of Business Process Reengineering (BPR) management innovation and Patel (2007) developed a theoretical model of Emergent Business Process (EBP). However, there literature review identified that process design assume that business process are stable and planable, and current design approaches for emergent business process were not found. Therefore, it was concluded that conceptualizations, models and design approaches are needed to help design and improve EBP.

For this research the literature review questions were: (a) What is the effect of emergence on non-standardisable business processes? (b) How can the FPD procurement process be redesigned using the deferred design approach to enable local actors to take deferred action to manage emergent events? Each concept in these questions needs to be defined. As covered in Chapter 2, current research on business process design assumes predictable and stable process events, activity, states and time-points operating in a predictable and stable environment. It was shown that there is evidence of this for standardisable business processes. Existing process design approaches focus on process design methodologies that predetermine process events, activity, states and time-points. When designed business processes do not perform as expected, researchers seek more standardisation and better methodologies.

However, as noted in Chapter 2 non-standardisable business processes are unique and operate in unpredictable and changing environment, which makes *some* process events, activity, states and time-points unpredictable or emergent. It was noted that the literature on complexity theory explains the effect of changing environment and the consequent unpredictability as 'emergence'. Though non-standardisable processes and emergence are recognised in the literature (Markus et al., 2002; Marjanovic, 2005; Grobler et al., 2006; Patel, 2007), there is a need for process design methodologies for them in the context of emergence. The problem addressed in this research concerns how to design EBP.

In this research the general complexity theory was used to understand how emergence can be interpreted in process design. Complexity theory was used to define and conceptualise non-standardisable business processes as EBP, and to help answer the first research question on the effect of emergence on processes. Also combined with AR, deferred action was used because it provides principles for designing for emergence. It was used to help design EBP, and to help answer the second research question on how to design EBP.

It is hypothesised that the unpredictable events in emergent process can be dealt with by applying the deferred approach. An objective was to understand how to identify emergence and another objective was to develop a way to design EBP. So, the DMR was proposed to study the SAF process and trails and to develop a method for designing EBP. The DMR accounts for structure, emergence and agency. Through AR, this research investigated the effect of emergence on non-standardisable business processes using the DMR and how to design them in the context of emergence.

As noted in Chapter 4, pragmatist researchers seek theoretical knowledge for resolving practical problems. This research adopted and interpretivism as the pragmatist approach. Avison et al., (2009) state that interpretivism is used to understand 'meaning' of a phenomenon; this helped understand process owners and workers' meaning. To understand the meaning that process owners and process workers attach to their actions. As a practitioner, the researcher was required to work on the procurement process as a standardised process. The process owner and workers encountered unforeseen or unexpected events, which they tried to deal with unsuccessfully through the standardised procurement process. Researcher wanted to resolve the problem, but did not think that adding better standards and methods would do it. Instead she wanted to research the problem by apply theory relating to complexity and emergence. Her research revealed that successful non-standardisable business processes should reflect emergence and enable agency to cope with emergent issues locally.

The pragmatist focus on the procurement problems resulted in developing the researcher and contributing to the learning of Director of FPD and other stakeholders or organisational learning. Reflective learning is a feature of AR (Shah et al., 2007; Avison et al., 1999), which flows from reflexive critique of practice (Winter, 1989). Through AR, the process owners learnt that they 'can adapt to changing circumstances by taking an active role in shaping (*their*) own future' (Clarke, 1980: 152). This study sought to make a significant contribution

to organisational learning at the KMOD/FPD. Emergence and deferred action were accepted as new ways to create order in the procurement process that supplemented the existing specified design.

The research resulted in accounting for unpredictable process events and making a contribution to designing non-standardisable processes. It has contributed to understanding how to design non-standardisable processes using AR. This research contributes the use of the deferred design approach as a process design methodology to design EBP. AR was used to apply deferred design principles and deferment point to redesign the FPD guidelines as an EBP.

The study revealed emergent events in the SAF procurement process and in response actions taken by process owners and workers which validates the DMR. It also confirms Grobler et al.'s (2006) complexity findings, that complexity increases the problems of making effective process decisions and designing sound process policies. Processes affected by emergence require deferred design decisions to enable the process to adapt to the changing environment and identification of deferment points (See Chapter 5 Section 5.5.1) for process adaptation and emergence. In this Chapter, by drawing on available literature discussion of the research findings will focus on instantiation of the EBP by using the deferred design approach as a process design methodology.

7.2 Instantiation

By applying theory, AR has a direct impact on practice by developing knowledge and methods to resolve a practical management problem. As Avison et al. (1999: 94) assert: 'researchers should try out their theories with practitioners in real situations and real organisations'. A theory is put into actual practice, or 'instantiation' to develop organisational learning based on theory. The kind of organisational learning Senge (1990) describes, occurred among the KMOD/FPD management. Process owners and stakeholders expanded their 'capacity to create results they truly desire' and 'new and expansive patterns of thinking' were encouraged.

This means they had a change in their frame of reference. The Director of the FPD observed: 'I can now see that these are events arising from uncertainty. All this time we believed that the procurement Guidelines were weak and needed to be better planned.' This same change

in perspective occurred for the KMOD stakeholders and the process workers, as noted in Chapter 5 earlier.

Thus DMR constructs structure, emergence and agency were empirically verified in the SAF procurement process and this informed the redesign of the EBP based on the DMR. The non-standardisable procurement process is now acknowledged by KMOD/FPD as an emergent process requiring deferred action. This empirical verification of the DMR, can be the basis of general application to non-standardisable business process design. Process design can benefit from this theoretical understanding of emergence. Smart et. al., (2009: 491) note that developing the 'prerequisite "process mindset" is a fundamental component of a process approach' to managing organisations. The implication of the findings for practice is that in developing such a 'process mindset', practitioners need to acknowledge and implement management of emergence.

The researcher already had detailed knowledge of the problems occurring on the SAF procurement process through her role as the process manager from the beginning of the process, she experienced the problems directly and build up detailed knowledge. This detailed knowledge was useful to understand the procurement process problem and was collected as data in the Reflective Diary. Normally, the number of AR cycles necessary to understand the problem is more when the researcher is new to the problem, for example as academic, and may need multiple AR cycles of understanding and resolving the problem (Avison et al., 1999). When the AR is a practitioner their actual experience of the problem contributes to shortening the number of AR cycles required (Sankaran and Tay; 2003; Clarke, 1980).

Another reason for using two AR cycles concerns the required outcomes of AR. The pragmatist and action research adopted in this research should result in resolving the management problem. This research resulted in resolving the problem of how to recognise and cater for the emergence procurement problem at KMOD/FPD. KMOD's administration and FPD's management facilitated the research and cooperated fully in carrying it out. The potential management learning that could result from the AR was well understood by the FPD Director and she facilitated the research well. Her involvement resulted in KMOD's Assistant Undersecretary setting up the PPQG research group. This research group was composed of high level participants from the CDs of the procurement process.

SAF Procurement process can be classed as a non-standardisable business process using Marjanovic's (2005) classification. In which case, unexpected events should be expected to occur. The empirically verified DMR is a sound basis for redesigning non-standardisable business processes, where unexpected events can be addressed as deferred action. The kinds of process deferment points identified in the KMOD/FPD procurement process can be found in other procurement processes. With knowledge of these kinds of process deferment points and the six deferred systems design principles, non-standardisable business process can be better designed to cater for unexpected events transparently.

Hammer and Champy's (1993) characterisation of successful 'reengineered processes' were evident in the EBP. The claim that BPM is a business driven management discipline that helps organisations model and optimise processes to align overall business objectives has been verified by the findings of this research. The emergent procurement process of the FPD enables it to better adapt to the dynamics market conditions and take strategic decisions on the fly. It has enabled the FPD to become more agile and sustain emergent changes on an ongoing basis whilst constantly providing key organisational benefits.

The pragmatist value for practical knowledge was combined with humanistic action research value to improve the situation. A beneficial outcome of the collaboration between researcher and her colleagues is the researcher's initiative to form positive work experience groups in the procurement process, actively supported by the Director of FPD. Researcher is accepted by her line manager and colleagues for her humanism.

The EBP is now formally institutionalised within the institutional structure of the KMOD/FPD procurement process. It responds to emergence (unexpected events) by deploying deferred action as deferred design decisions of local actors. Researcher's interview with the FPD Director marked the watershed that made the Director appreciate the relevance of the research and the theory of deferred action. Her interpretation of actual events, or the planned action as implemented in the SAF procurement process, become radically different, as she adopted the deferred action perspective. Prior to the new EBP, actors did not recognise unexpected events and management responses to them as deferred action, but regarded them as obstacles in the procurement process and struggled to comply with the planned action of the FPD Guidelines.

The pragmatist research established the value of formal understanding of emergence by mapping the SAF procurement process. Formal understanding of emergence provided stakeholders, process owner and process workers with a model view of the procurement process, based on empirical data. As a result, there is now transparency of emergent decision-making in the procurement process, as well as the centralization and decentralisation of the process model.

7.3 Implications for Process Design Practice

Academic knowledge can be improved by studying practice (Shah et al., 2007; Avison et al., 1999). Pragamtist approach seeks to develop practically valid knowledge and AR aims to contribute to do this by applying theory to practice. Application of the DMR to the SAF procurement process problem has resulted in understanding the nature of emergence, its effect on process, and how to design EBP. This application of theory to practice improved practice.

Given the research findings, the emergentist view of knowledge and learning applies to designing non-standardisable processes. The emergent knowledge and learning applies because complete knowledge of emergent systems, like EBP, cannot be predetermined for design purposes. As Osberg et al., (2008) argue:

> 'Rather, therefore, than thinking of knowledge as the representation of a world that is somewhere present in itself, our considerations suggest an 'emergentist' epistemology in which knowledge reaches us not as something we receive but as a response, which brings forth new worlds because it necessarily adds something (which was not present anywhere before it appeared) to what came before.' (p. 15).

Consequently, complete knowledge of emergent systems, like EBP, cannot be predetermined for design purposes. Predetermination or designing by specification is a problem from the complexity perspective because it does not cater for the kind of self-organisation found in the SAF process (See Chapter 5, Section 5.4). Process design methodologies covered in Chapter2 (Section 4.4) breakdown business process. McKelvey (1999) argues that process theory should adopt the evolutionary aspect to explain and predict. As evidenced in the data interpretation (Chapter 5), process is *evolving* and *adapting* in the context. Such processes and organisations should be seen as 'complex adaptive systems' (CAS). McKelvey states that the study of CAS:

'… has become the ultimate interdisciplinary science, focusing its modeling activities on how microstate events, whether particles, molecules, genes, neurons, human agents, or firms, self-organize into emergent aggregate structure.' (McKelvey, 1999:23)

In this research, the data for SAF procurement process revealed this kind of 'emergent aggregate structure'. The highly specified process design was unresponsive to emergence and was redesigned to reflect emergent aggregate structure. Mckelvey (2002) further notes that executives find it difficult to produce and manage 'emergent structure'. In this study this was catered for by applying deferred design decisions.

Practitioners in the public sector benefit little from theoretical research by academics. The public sector is a major purchaser of goods and services from the economy, yet it is relatively under-researched by business process researchers. As noted in Section 5.6 on applying AR to understand the FPD procurement process, the core outcome of AR is that people learn effectively while working on real problems. Research should 'provide insight and support to practitioners' (Smart et. al., 2009). The deferred action theoretical framework and the DMR were used to develop better evidence based practice.

The findings of this research have implications for approaches to business process design in both public and private sectors, based on 'design thinking'. This is the idea that organisations should be designed rather than simply analysed Dunne and Martin (2006). Design thinking is a system approach.

Design, how an organisation gets things done, is related to BPM. This research addressed how to design business processes for systemic emergence. Non-standardisable business processes are subject to many unexpected events during the process execution to which they should adapt and in the long term all business processes need to adapt because of emergence.

Designing is an important human activity because of its impact on the 'triple bottom line' – social, environment and economic (Gray and Milne, 2002). Design approaches based solely on rationalism cannot satisfy these three design goals. Irwin (2011) argues that design that is based on human needs, rather than wants and desires, leads to sustainable human activity. She provides a:

'... meta-level definition of design as a ubiquitous human activity that is an emergent property of people striving to satisfy their needs .... Design can therefore be seen as the shaping of flows of energy and matter to meet human concerns...' p.42.

This requires thinking of complex design problems like procurement processes as: 'wicked problems', design and the satisfaction of needs and systems thinking.

Rational design as in existing BPDM, like SCORE and BPEL, covered in Chapter 2, focuses only on planned action. The entire business process is assumed to be knowable in detail and its future implemented operation predictable. BPDM focus on obtaining a complete specification of the business process, meaning each activity required to complete the process, and use this specification to stipulate the business process.

The researcher's experience of the procurement process showed that this kind of detailed specification was not possible and that the procurement process was subject to unexpected events. Even if complete specification is possible, the stipulated business process was confronted by emergence. Therefore, rational design is not sufficient.

Business processes also need to be designed for systemic emergence. The pragmatist research evidenced unexpected events or systemic emergence. The procurement process is systemically related to suppliers, KMOD and political structure, and all their separate and interconnected activities result in emergent properties of procurement, which need to be catered for in the procurement process. These emergent properties cannot be handled by planned action approach only.

Therefore, as evidenced in this research, theory of deferred action's three dimensions for designing social systems is relevant for business process design and operation: planned action, emergence and deferred action. A rational approach or planned action is necessary to obtain all the detailed actions necessary and possible and to specify them to undertake a process, but this is not sufficient because of emergence. So, the process should be designed to reflect systemic emergence. This can be achieved by identifying and including deferment points in the process and enabling actors to take deferred action or deferred design decisions.

DMR variables of structure, emergence and agency were found to occur in the rationally designed FPD Guidelines for procurement. Therefore, DMR serves as a model for designing emergent social systems. Process designers need to consider the DMR to design business

processes. The difference between the three design dimensions of the theory and the DMR is that the DMR is a model of complex reality for designing artefacts. The pragmatist research data confirmed its relevance for the KMOD/FPD procurement process. It reflects the complex and emergent reality of organisational activity well. Structure, emergence and planned action conceptualise well the complexity of purposeful action that has to cope with systemic emergence.

The DMR can be implemented using the six deferred design principles. They have been constructed to enable designers to develop deferred systems capable of adapting to the environment and changing requirements and are reflected in the three design dimensions. The principle of underspecification is reflected in the planned action dimension. Planned action should be limited to identifying the structural features of the design and not focus on extreme detailed specification of action. Deferment points, self-organisation and adaptation are a reflection of emergence. Ethics and deferred design decisions reflect local action or deferred action, which is necessary to respond to organisational emergence.

7.4 Contribution to Process Design Methodology

This thesis advances knowledge of designing non-standardisable processes by conceptualising them as *emergent business processes* (EBP) and contributing a new approach that combines AR and deferred design for designing them using action research as a process design methodology. Uncertain and unpredictable conditions is characterised here as *emergence*. The observer cannot predetermine all the possible process events for processes that operate in emergent conditions and s/he cannot determine how to act upon unpredictable process events, because some events will be predictable and others unpredictable.

The action research methodology and deferred approach were used to research to identify and resolve the problem with EBP. It was used as an approach for designing EBP. The research contributes the new understanding of non-standardisable processes as EBP. This is a significant contribution because it is conceptualisation and design methodology that is not found in the literature. This conceptualisation and design methodology recognises the need to find new approaches for designing and implementing EBP, as identified in the literature review. Therefore, the research also contributes a new approach for designing EBP using the action research methodology and deferred design as an emergent process design methodology.

The research also adds further recognition of how to design process for non-standardisable process. The literature review uncovered only a few significant references to non-standardisable processes (Markus et al., 2002; Marjanovic, 2005; Grobler et al., 2006; Patel, 2007).

The research also discovered evidence of deferment points and implementation of the deferment points. This is a significant contribution because it helps to support the theory of deferred action and emergence. It also significant because it is the first empirical evidence in the literature, as no previous research has previously found such evidence.

The research found evidence of deferred action and implementation of deferred action. This is also a significant contribution because it supports the theory of deferred action and emergence. The reactions of FPD management and KMOD to unpredictable events were re-conceptualised as deferred action in response to emergence and formalised in the FPD Guidelines.

Three specific outcomes of this research form contributions to the development of the theory of deferred action. One, the DMR was applied to design a new emergent business process successfully, the FPD procurement business process. Two, deferred action was observed in the SAF procurement process, verifying the phenomenon of deferred action. Two, deferment points were identified and verified empirically for the first time.

Researcher's reflection on contribution is depicted in the data model in Figure 6.1. The data was recorded in the reflective diary as 'Data Confirming Theory' and 'Theoretical Anomalies', shown as elliptical objects. Confirming data is obviously verification of the theory and the DMR. There was no unexplained data or theoretical anomalies. This confirms the theory's validity and application to practice.

First, the research resulted in applying and confirming the DMR in the case of business processes. This confirms and supports the application of the DMR by Ramrattan (2010) to the problem of developing Web-based IS and Naymiah-Asyimah and Patel (2010) to improving organisational learning and knowledge management in a healthcare organisation. The redesign of the procurement process as an EBP demonstrates that the DMR is applicable to practice. As Figure 7.1 depicts, it was applied in ARC ONE to a unique business process, the SAF procurement process, and contributed to understanding emergent aspects of the process. This knowledge was used to redesign the process in ARC Two as a deferred system or EBP,

which was implemented in the structure of the FPD as planned action. The new EBP acknowledges emergence and incorporates deferred action. ARC One and ARC Two were aimed at producing organisational change, namely redesigned EBP, which resulted in collecting data which confirmed the DMR.

Figure 7-1 Contribution to Theory Development
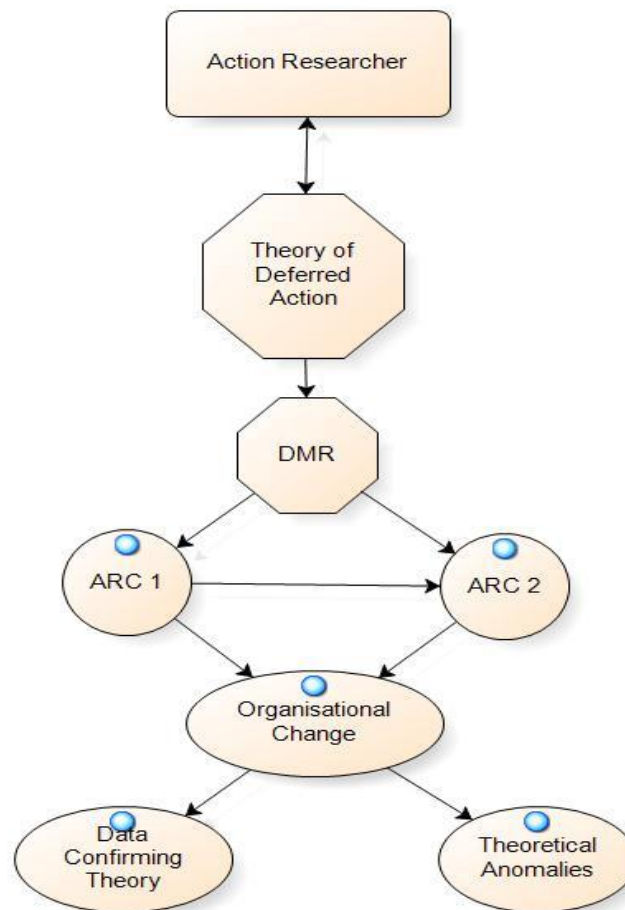
Second, deferred action was observed empirically in the SAF procurement process. This was action taken by FPD Director and Directors of CDs with approvals from Minister of KMOD and other structural actors in response to unexpected events or systemic emergence. These actors did not term their action as deferred action, but acted to resolve unexpected events when they arose during execution of the FPD Procurement Guidelines in the SAF procurement process. Through the application of DMR, researcher introduced the theory of deferred action and its terminology, which actors used to make sense of their environment and actions. Actors' use of the terminology confirmed the validity of the theory in practice and improved effectiveness of their process activities.

Third, a new contribution is the first empirical identification and verification of deferment points, as predicted in the theory of deferred action. Although the theory predicts deferment points, there has been an absence of empirical evidence in the literature. This research verified the concept empirically by identifying the following deferment points in the procurement process:

(1) Establishing End User Requirements;

(2) Finalising Company's Proposals;

(3) Finalising Draft Contract and Legal Matters;

(4) Meeting Audit Bureau Requirements;

(5) Tendering Committee Interventions;

(6) Political and Governmental Changes and Requirements.

Reflections on these data that confirm the theory were recorded in the reflective diary, whose sample extracts are produced below (Produced in full in Appendix A, Dataset 2). These are a record evidence of systemic emergence. Apparently pragmatic events arise emergently, as predicted in the theory, and actors use the FPD Guidelines as a reference on how to react to them. For example, defence forces changing requirements. Responses to unexpected events resulted in telephonic communication and physical attendance at meetings, for example at the Tendering Committee. Researcher affirmed these as deferred action by reflecting on them.

Developing, Confirming Theory: These seemingly pragmatic events revealed that matters arise emergently. The FPD Procurement Guidelines did not provide instructions on how to source arms manufacturers. But the cause of the emergence was not the absence of FPD Procurement Guidelines. The disagreements between the Director of contract (FPD) and Director of GHQ is indicative of points in the procurement process at which either stipulated business processes or planned processes need process deferment points. The actual event is sometimes different from the planned event. This is explained as the emergent nature of social systems. Patel (2006) postulates that emergence is an attribute of all social systems. No theoretical anomalies can be noted.

Developing, Confirming Theory: This change in requirement is evidence of change or emergence in social systems. Others... postulate that emergence is an attribute of all social

systems. This is both evidence and confirmation of the theory of deferred action that emergence is intrinsic to social systems (Patel, 2006).

The dominant current approaches assume that rational design works, whereas evidence from this research suggests that the rationally design business processes are tempered with local action, or deferred action. Rational action is modified by a moderating local action that is determined by the environment of the system.

Deferred action is systemic and assumes systems and their sub-systems. Researcher noted sub-systems to be the 'ecosystem' of the FPD procurement and identified deferred action in them too. Changes in the ecosystem are reflected in the focal procurement system. Uncertainty in the ecosystem cascades to the focal system. She noted these as below:

The FPD subsystem's environment is composed of Director of GHQ KMOD and other legal and institutional bodies, whose environment is the Legal and Legislative Council, whose environment is the Parliament. The environment of the tendering companies is all those subsystems and the economic system it operates in. It indicates that the environment of a social system should be defined as other subsystems. This is consistent with the general complexity theory (Pavard and Dugdale, 2006). These subsystems compose the ecosystem of the social system engaged in the purposeful action – to build the small ammunition factory. This set of events again confirms deferred action.

As noted in the theoretical framework in Chapter 2, a deferment point is a point at the intersection of two design dimensions of social systems: planned action and emergence. Researcher coined the term 'deferred phase change adaptation' (DPCA) when reflecting on the significant change in requirements that split the SAF procurement process into the construction process and the design services process. As noted in the reflective diary, the PDCA of the SAF process itself had process deferment points. It also had to comply with the FPD Guidelines. This is an example of recursive adaptation, which is not explicit in the theory of deferred action. Another example of DPCA was the MEP's decision to do the construction work. She noted this as below.

This set of SAF procurement events were significant change. Arguably, the whole process changed into two separate processes construction of the small arms factory and production of the small arms. This can be viewed as a phase change in terms of complexity theory (Pavard and Dugdale, 2006), were systems make a radical change as they adapt to their

environment. Phase change is not the same as deferment points of the theory of deferred action. The theory of differed action does not account for phase change.

As noted in Chapter 2, the literature evidences 'emergent organisation'. Observations in this research of unexpected events and response to them by management, confirm the view that organisations are emergent. Examples of emergent event noted in the reflective diary included the Audit Bureau investigation of the SAF procurement process. Researcher noted that: 'The Audit Bureau can be thought of as the regulator of the social system.' researcher noted in the reflective diary that the events mentioned above 'point to structural emergence of organisation'. Patel (2007) differentiates between emergent procedure and emergent structure and proposes a theoretical model of process design to account for them.

There is prior research on capacity of human error to cause major disasters and 'normal accidents' (Perrow, 1984):

> 'If interactive complexity and tight coupling – system characteristics – inevitably will produce an accident, I believe we are justified in calling it a normal accident, or system accident. The odd term normal accident is meant to signal that, given the system characteristics, multiply and unexpected interactions of failures are inevitable. This is an expression of an integral characteristic of the system, not a statement of frequency.' (Perrow, 1984:5).

Though not on the same scale as Perrow's reference to human error, researcher noted in the reflective diary that:

'The Military Engineering Processes was the only department of KMOD which deals with the construction work and GHQ failed to contact them in the initial stage of the SAF process. The theory of deferred action (Patel, 2006) does not explicitly mention human error as a source of deferred action. Human error needs to be incorporated into EBP and the theory of deferred action.'

The SAF process took longer than expected. The time issue is relevant because the theory of deferred action (Patel, 2006) mentions the evolution and adaptation of social systems over time. The longer the time that a business process takes the more likely it is to evolve and adapt. Time needs to be made explicit in the case of EBP (Patel, 2007). As noted in the reflective diary:

The long, time delay in the SAF process, over two years, is significant. Standardisable business processes have a definite start and end date. Emergent business processes do not. A theoretical way to measure the required time scales of EBP is necessary. The theory of deferred action does not mention it (Patel, 2006).

Patel (2006) refers to deferred action as the pragmatism of 'natural action', the actions humans take in human activity systems to survive and achieve goals in the face of systemic emergence and environmental change. The set of SAF procurement events observed and the formalised deferred action in the new EBP reflect such pragmatism to achieve the goals of KMOD/FPD procurement. There was no data that contradicted the theory of deferred action or created theoretical anomalies; but this does not mean the theory is conclusively valid, as other researchers may observe contrary data in the future.

7.5 Research Impact

As noted in Chapter 4, pragmatism seeks to discover knowledge that can be used practically. In fact, pragmatist research is to find knowledge that is practical (Easterby-Smith et al., 2012). Such knowledge make a difference to practice. Similarly, whereas other research methods may have an impact indirectly on business practice, AR is suitable for direct social and economic impact (O'Brien, 2001). Other research methodologies like case study using interviews and ethnography, require the researcher to be disconnected observer who is separate from the actual work of the organisation. As reflective practitioner at KMOD/FPD, researcher wanted to remain active in her role and to support management to resolve the procurement process issues being encountered in the SAF procurement process. The direct impact of this research was the redesign of the procurement process as the new EBP and the significant structural reorganisation that this entailed.

The research has contributed knowledge of how to design inter-organisational EBP across public administrative departments. This is the practice framework based on the DMR. The core of the practice framework is the DMR and the six deferred systems design principles. The practice framework can be used to design other core business process, like government service to citizens, and support process, like management reporting.

As the research resulted in solving KMOD/FPDs process problem and making a contribution to theory, the two AR cycles were sufficient. The study has established an integrative theoretical framework containing the EBP and factors associated with employee commitment

to the organization. Researcher has maintained her interest in developing a collaborative work culture and building social relationship in the work place, which has been supported by the FPD Director. This contributed to gaining consensus among process workers to facilitate the implementation of the new EBP.

7.6 Conclusion

This AR has made a significant contribution to procurement practice at KMOD/FPD by designing the new EBP. It has also contributed to managers' learning by providing deferred action constructs that explain their experiences better. The DMR now serves as a valuable frame for FPD management and KMOD officials to interpret procurement process activities.

This AR has also made a contribution the theory of deferred action, by applying and verifying the DMR empirically, and then using the verified data and the DMR to design the new EBP. It also discovered deferment points empirically and applied them to procurement practice.

Yet, as the FPD Director voiced in her interview:

'No matter how accurate you create a system, the world we live in is changing all the time, therefore we get a touch of it from time to time. I think this cannot be predicted and we have to learn to manage it.'

Her thought is a reminder that research on business process design and organisation design, has yet to find suitable models capable of managing change. The DMR serves as one usable model at present.

Chapter 8: Conclusion

8.1 Introduction

Using Söderström et al.'s (2002) framework to compare process design approaches, this research concludes that activity, state, event and time-point (ASET) and their interrelation are different for non-standardisable processes like the SAF procurement process compared to standardisable process. The research data shows that the difference is that process activities, states, events and time-points are affected by unpredictable events or emergence in non-standardisable processes.

Researcher become interested in investigating processes because of unpredictable events in the SAF procurement process. As Söderström et al. (2002: 602) states: 'Activities, states and the running of time can be thought of as existing regardless of an observer but events are some facts about a thing that an observer notices and records by some means.' Researcher noticed unpredictable events in the procurement process that were not accounted for in the FPD Guidelines.

The review question of this research was: *What is the effect of emergence on non-standardisable business processes?* The literature review led to specific action research questions: *How can the deferred design approach be used to design non-standardisable business processes? Can the deferred design principles reflect emergence as a process design methodology to design EBP?*

The action research has led to important lessons for FPD management. Process management needs to acknowledge emergence and cater for it in process design. They now recognise the effect of emergence on the procurement process and gained actual experience of it in the redesign and implementation of the process to reflect emergence. Improve the communicative relationships between the Kuwait Ministry of Defence and FPD management, FPD and CDs, and between the process owner management and process worker staff.

8.2 Action Research & Deferred Approach for Designing EBP

A research question was: *How can the SAF procurement process be redesigned using deferred design to enable local actors to take deferred action to manage emergent events?* This research contributes how to design EBP. An EBP can be based on the Deferred Model

of Reality (DMR), by identifying deferment points and using the deferred design principles. The literature reviewed earlier shows that there are many techniques and methodologies for designing standardized business processes (Section 2.3 and 2.5), but they do not consider emergence. By applying the DMR, this research found AR a suitable approach for designing EBP.

Avison et al. (1999:94) state that action research is the combination of theory and practice. It involves change in practice and through reflection of the researcher. Researcher applied theory to design EBP using action research itself as process design methodology. The theoretical base for this was the Deferred Model of Reality (DMR). This has contributed to the theoretical knowledge of designing EBP by applying the DMR and deferred design principles to design EBP.

As noted earlier in the Introduction Chapter, the similarities between AR and EBP make the application of AR to design EBP suitable. AR was applied in the actual management situation, where emergence was not accounted for in the FPD Guidelines. Like emergence itself AR was used in actual time or real-time. The analysis of the management problem was done in real-time, just as the design and execution of the EBP. This is a unique application of AR which is new. It was applied to design EBP. This application of AR as a process design tool is unique. This use of AR is the first process design method aimed at designing EBP.

Action research approach was used to design EBP to cope with uncertainty and unpredictable events arising from the changing environment of the procurement process. The data showed that FPD organisation was emergent (Section 5.3) and non-standardisable business process are characterized by uncertainty (Section 8.2). So, action research approach can be called 'emergent design' (Cavallo, 2000:768), which is required when prediction is limited and people's understanding of the situation is necessary. The term 'Emergent Design':

> '...puts a spotlight on the need … to study the conceptual space where the purposeful stance implied by the word "design" mates with the openness implied by the word "emergent". This mating underlies modern approaches to organisational practice.' (Cavallo, 2000:774)

The data showed that organisational practice is affected by emergence and required the emergent design approach, but this needed to be informed by theory and the theory of deferred action was used.

8.3 Deferred Model of Reality

The application of AR as a process design approach was done by using theory. Since the theory of deferred action uses the term *emergence* for unpredictability, the unpredictability of the non-standardisable procurement process of SAF was termed emergence too. As noted in the literature review, Marjanovic (2005) posed the challenge of designing non-standardisable processes with emergent events. The Deferred Model of Reality was derived from the literature by the researcher to understand the problem theoretically. Emergence, Structure and Agency are useful design constructs that can be used to design EBP. The six principles of deferred systems design can be interpreted within the DMR and applied to design appropriate structure, agency and response to emergence. The result is that the KMOD/FPD is now recognised within Kuwaiti government as a progressive modern military support system.

The DMR were used for better evidence-based practice. It was the basis for resolving collaboratively the problem of unexpected events. It also enabled identification of emergence as the cause of unexpected events and enabled 'future predictions about personal and organizational change' (Reason and Bradbury, 2002). The DMR led to the empirical validation of deferment points predicted in the theory of deferred action (See Section 5.4 and 5.5). So, the action research contributed the DMR and demonstrated its relevance to designing EBP.

The DMR thus explains the increasing recognition of the problem of designing EBP detailed in Section 2.9.2. It supports the idea that managers need to think practically about emergence (Maguire and Mckelvey, 1999; McKelvey, 2002; Stacey, 2000). Data revealed emergence in the procurement process as identified by Marjanovic (2005) in her classification of non-standardisable business processes. The research also contributes to recognizing *emergent organizations* when designing non-standardisable business processes (Feldman, 2003; 2004).

Analytical approaches to business process design covered in Section 2.3 can be supplemented with the deferred design approach. While business process problems can be solved analytically, the sustainability of processes can be improved by taking the deferred design approach. Standardisable which can be completely specified but non-standardisable process can be only partially specified. The six deferred design principles are relevant to business process.

Beginning with reflective practice, this research contributed to significant change in procurement process practice and management learning. It resulted in significant learning for researcher, organisational learning and management learning for colleagues. Beginning with reflective practice, researcher wanted to understand the reasons for the problems in the SAF procurement process she was managing. She learnt how to understand the problem theoretically by applying the theory of deferred action, and designed research to collect and interpret data. In terms of practice, she learnt that management needed to revise their frame of reference to see emergence and respond accordingly. This research also contributed to FPD managers' and KMOD officials' learning of emergent procurement process. This organisational learning was achieved in terms of acceptance of the evidence of emergence from the AR and redesign and institutionalisation of the new EBP to reflect emergence.

Practically and theoretically the main research question on the effect of emergence on non-standardisable business processes has been answered in terms of systemic emergence. The effect of emergence means that non-standardisable processes cannot be expected to be implemented as completely specified processes because of unexpected events. The SAF procurement process shows that if it is, then actors struggle to make sense of unexpected events. Theoretically, the answer is that this effect is emergence which forces adaptive behaviour, termed deferred action. The redesign of the procurement process to reflect emergence was based on the deferred action theoretical framework – the DMR. The data supported it as discussed in Chapter 6 and 7.

8.4 Limitations

The research theoretical framework provides a beginning for developing knowledge about EBP and methods for designing EBP. But more needs to be done, some of it is to overcome potential limitations of this research. This is especially true to further refine and implement the proposed new EBP methodology. The limitations may concern validity and reliability of the data and generalizability.

A limitation concerns the 'sampling frame'. This means that a flexible research design is needed as the research unfolds (Saunders et al. 2011). In management research participants are found serially. It depends on who and what data was found before; which determines the emerging sampling to support the theoretical framework. There was an attempt to find anomalies between the data and the theoretical framework. But the purposeful/theoretical

sampling was adequate. This meant that research participants were selected by the research purpose.

Another limitation is the criteria used to select the sample – in this case the process owners, process workers and stakeholders. The researchers ensured that the sample matched the official organisation chart that is process owners, workers and stakeholders were identified based on their official positions. However, this can be a limitation because these people may have expressed their interest without realising it. The researcher tried to overcome this by using official documents and the reflective diary where possible to corroborate the interview data. The research was not limited by 'failed entre' Tuckett A (2004)– that is the researchers was able to access all the required process owners, process workers and stakeholders.

The researcher's journal can be another limitation. This can happen because of the researcher is seeking data to test the hypothesis and may exclude data that seems to be contradictory. Again, this was avoided because the researcher used interviews and document analysis, data sources that are determined by others independent of the researcher. This adds to the validity of the data.

The assumptions made in this research may limit the research and its generalisability. The choice of methodology is one example. Interpretivism research can be generalised (Williams, 2000). Another area is the assumptions of the DMR. The DMR assumes that real social situations, like business process, consist of planned action and deferred action, this is because of emergence. However, as shown in Chapter 5, the data supported these assumptions. So, the research methodology used and the data both support the assumptions and improve the validity of the generalisation.

There can also be limitations in the data collection and analysis techniques (Saunders et al. 2011).The methods used in this research were reflective diary, in-depth interviews and document analysis. The kind of data required to confirm the DMR and the new EBP process design methodology were obtained by these methods. The questions designed for the in-depth interviews were based on the literature review and DMR. The collected data showed that the dimensions of the DMR and the deferment points were evidenced by the data. A set of question on the difference as perceived by the actors on uncertainty and unpredictability could have added further insight.

When generalising the findings the type of organisation where data was collected needs to be considered. The pragmatist research was carried out in KMOD/FPD, which is essentially a command-and-control organisation. The civilian FPD has a management hierarchy recognisable in other private companies, but the ultimate authority is the political Minister of Defence and the government. Yet, command-and-control organisations are very different. Collaboration to achieve the AR outcomes was achieved relatively easily, which may not happen in non-military organisations.

Some of the process uncertainty identified among interviewees may be attributed to changing personnel of the SAF group, which was changed twice. This required time for them to learn the SAF procurement process knowledge before they could contribute. Some interviewees declined use of audio recording which may have affected accuracy of some data because researcher's field notes had to be written by hand.

The findings, confirmed DMR and redesigned new EBP apply to KMOD/FPD because the data was collected in FPD. What this data reveals for wider governmental structure needs to be considered. It could be argued that as the SAF procurement process, being a non-standardisable process, was exceptional, and that the findings cannot be extended to the general procurement process. From a systems perspective this would not be accurate, because since a systems perspective was taken, the findings apply to emergent organisations generally.

Some military confidential and sensitive documents were not accessible by the researcher. This does not reduce the validity of the AR for the KMOD/FPD. The pragmatist research gathered relevant data on the procurement process, which was used to redesign the new EBP.

8.5 Further Research

A number of questions arise from this research that cannot be concluded from the available data. The structure variable of the DMR in this research is composed of the KMOD and FPD, as well as other government agencies. Data was collected only from the FPD because this is where the procurement process is executed and it confirms the DMR. This is significant because the environment and unexpected events only appear to affect the procurement process in the FPD. However, the theory of deferred action should apply to the larger structure too (Patel, 2006), composing other divisions of KMOD, other interrelated

government departments and agencies. So, whether such emergence occurs in other parts of the structure and how actors respond needs further research.

The relevance of the DMR for business processes that last a shorter time period than the SAF procurement process studied needs to be researched. The SAF lasted 5 years, in which the DMR was evidenced. As the Theory of Deferred Action predicts that emergence is a quality of all social systems, emergence would be expected in shorter time business processes. Also, is emergence a feature of standardisable business processes?

The DMR needs to be applied in other public organisations to assess its wider applicability. The KMOD/FPD organisation is essentially a command-and-control organisation. Though the DMR has explained the procurement process problem and been used to redesign the process in this type of organisation, its wider applicability is not assessed.

Though the qualitative improvements were evidenced in the data interpretation, the researcher's engineering training suggests better metrics can be obtained for deferment points and deferred systems. She has posed the issue with her manager and this can be potential further research. It would require using a research methodology that is independent and can establish a way of measuring emergence to enabling better decisions based on data.

Another area of further research is how the research outcomes has had an impact on the efficiency and effectiveness of the re-design EBP. This will be discussed with KMOD/FPD's senior management. As the SAF procurement process has been redesign as an EBP, it is necessary to assess its viability over time. Though this research evaluated it in this research, it still requires measuring and evaluating over time.

Though the qualitative improvements were evidenced in the data interpretation, researcher's engineering training suggests better metrics can be obtained for deferment points and deferred systems. Adding measurements to the theory can further improve the evidence-base. Specifically, a method to measure the relation between the theory's design dimensions, planned action, emergence and deferred action. This would make rational planning more effective because it could be done quantitatively by asking what-if type questions: What amount of deferred action is needed if a certain amount of planning is done? What is the expected emergence if planning and deferred action are a certain amount, and after what time?

The data reveals the need for an information system to manage the information to support the EBP, or Contract Information System (CIS). In interviews, process workers voiced that IT should be used to manage the data. The procurement process should be supported with a CIS. This was not discussed at the PPQG meetings because it was not in the group's brief.

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Glossary

Term	Description
Deferment Points	This is the juncture within any planned action where local action is taken by actors in response to unpredicted events, or in general emergence.
Deferred Action	Action enabled by reflective systems designers and taken by active systems designers (local actors) to respond to systemic emergence.
Deferred Action Theoretical Framework	The theoretical framework based on the theory of deferred action and complied, using structuration theory and agency, to investigate business process management.
Deferred Design	The process of designing in response to emergence within predetermined bounds or rational design during enactment
Design-In-Action	The activity of responding analytically to business operational and management problems.
End User	Internal clients of FPD
Planned Action	Human purposeful action that is rationally, analytically designed to solve a problem.
Systemic emergence	Appearance of a system as a consequence of its self-formation and affected-formation. Affected-formation is affected by changing environment of the system.
Theory of Deferred Action	The thesis that rational design of systems should be complemented with deferred action mechanisms to reflect systemic emergence.
Social Systemic Emergence	Appearance of a social system as a consequence of its self-formation and affected-formation. Affected-formation is affected by changing environment of the social system.
Process Deferment Points	Points in business processes where actors are enabled to design locally in response to unexpected events.

Appendix A: Cycle One Problem Diagnosis and Incremental

Interventions Design-In-Action

DATA SET 1: Problem Diagnosis

DATASET 1.1 Actual Emergent Process Activities

CONSTRUCTION OF SMALL AMMUNITION FACTORY (SAF)

PORJECT INITIATION AND CONTRACT DRAFTING

July 2007 – June 2012

This dataset records the detail descriptions of each SAF procurement process activity as it occurred. It shows that the FPD attempted to comply with the FPD Guidelines for procurement. However, unpredictable events meant that the actual procurement process that unfolded is different from the expected FPD Guidelines. It depicts the planned action, new unexpected requirement, changed requirement, differences in views, and radically different changes or emergence in the SAF procurement process. Particularly, it records where these actual SAF process activities were different from the Guidelines. In each process activity it identifies people/job role. E.g. the KMOD Legal Department and Legal Director, identifies issues/problems/hurdles, solutions It notes the process activities that changed the SAF procurement process.

Activity Number	Description	Details	Date
1.	Start of SAF Business Process	The process to establish Small Arms Ammunition Factory starts (Construction and Production Line). The central GTPC reviewed the request from GHQ and the End User and approved the project to establish an Ammunition Factory in Kuwait.	July, 2007
2.	Letter of Authority	Foreign Procurement Department (FPD) received a letter from the Director of General Head Quarters (GHQ), Ministry of Defence along with the scope of work to establish a light weapon (small and medium caliber) Ammunition Factory in Kuwait.	July, 2007
3.	FPD contacted all concerned department for a meeting	FPD process workers prepare an official letter to all concerned parties to discuss the project requirements.	July, 2007
4.	Approving the official letter	Approve the official letter from the director incharge	July, 2007
5.	Approving the official letter	Approve the letter from the department manager	July, 2007
6.	Approving the official letter	Approve the letter from the Asst. Undersecretary	July, 2007
7.	Call for meeting	FPD sent the official letter to all concerned parties to discuss the project requirements.	
8.	Site Decided	The site for the project was decided by GHQ and the end User and approved by the GTPC.	December, 2007
9.	Sourcing Companies	The process worker of FPD collected information of companies capable of manufacturing of ammunitions through the Internet. The list of companies is usually provided by GHQ, However, in this case the list was not provided and FPD had to source it through the use of internet.	December, 2007
10.	FPD contacting the committee to get approvals to call for tender	FPD process workers prepare a letter to the Chairman of the GTPC for approval to contact companies for the project. This action was taken as per the guidelines of FPD. Through an official letter prepared by process workers	January, 2008

11.	Approving the official letter	Approve the official letter from the director incharge	January, 2008
12.	Approving the official letter	Approve the letter from the department manager	January, 2008
13.	Approving the official letter	Approve the letter from the Asst. Undersecretary	January, 2008
14.	Call for Tender	FPD sent a letter to the Chairman of the GTPC for approval to contact companies for the project. This action was taken as per the guidelines of FPD.	
15.	GTPC Approval	Received the approval from the committee.	January, 2008
16.	GHQ Additional Requirements	Received a letter from the Director of GHQ with some additions in ammunition size. Change in requirements. Usually the requirement is carefully scrutinized and then a request is made to FPD. However, in this case it was not a planned action because GHQ requested a change in requirement after the initial request.	February, 2008
17.	Preparing letters to Request for Proposal	FPD process workers prepare letters of Request for Proposals (RFQ) to various embassies and companies which were outsourced through internet, Companies which had experience of setting up ammunition factory. In total 10 embassies and 21 companies were sent the RFQs. Proposal submission deadline was set at two months from the date of the RFQ letter. through an official letter prepared by process workers	February, 2008
18.	Approving the official letter	Approve the official letter from the director incharge	February, 2008
19.	Approving the official letter	Approve the letter from the department manager	February, 2008
20.	Approving the official letter	Approve the letter from the Asst. Undersecretary	February, 2008
21.	FPD Request for Proposal	FPD sent letters of Request for Proposals (RFQ) to various embassies and companies which were outsourced through internet, Companies which had experience of setting up ammunition factory. In total 10 embassies and 21 companies were sent the RFQs. Proposal submission deadline was set at two months from the date of the RFQ letter. through an official letter prepared by process workers	February, 2008

22.	Companies request for an extension of the closing date	Various companies requested for an extension to the submission date. It was not as per plan, which resulted in a delay.	April, 2008
23.	The need of GTPC approval for extension of closing date of the tender	FPD process workers prepare an official letter to request for extension for the submission date to the chairman of the GTPC for approval.	April, 2008
24.	Approving the official letter	Approve the official letter from the director incharge	April, 2008
25.	Approving the official letter	Approve the letter from the department manager	April, 2008
26.	Approving the official letter	Approve the letter from the Asst. Undersecretary	April, 2008
27.	Letter for extension sent	FPD sent a request for extension for the submission date to the chairman of the GTPC for approval. through an official letter prepared by process workers	April, 2008
28.	FPD Request for Proposal Submission Deadline Extended	The Assistant Under Secretary of FPD received the approval from the Chairman of the GTPC to extend the submission date by another month.	May, 2008
29.	Preparing to Notify the companies about the extension of the submission date	FPD process workers prepare official letters to notify the embassies and companies about the extension of the submission date.	May, 2008
30.	Approving the official letter	Approve the official letter from the director incharge	May, 2008
31.	Approving the official letter	Approve the letter from the department manager	May, 2008
32.	Approving the official letter	Approve the letter from the Asst. Undersecretary	May, 2008
33.	Notifying the companies about the extension of the submission date	FPD send the letters notifying the embassies and companies about the extension of the submission date.	May, 2008
34.	Receipt of Proposals	The Assistant Under Secretary of FPD received the proposals within the submission date from seven companies. FPD expected proposals from more than 10 companies but it received only 7 proposals.	June, 2008
35.	Preparing letters to send the proposals to the committee	FPD process workers prepare an official letter to the committee to attach the 7 proposals for review and selection	June, 2008
36.	Approving the official letter	Approve the official letter from the director incharge	June, 2008

37.	Approving the official letter	Approve the letter from the department manager	June, 2008
38.	Approving the official letter	Approve the letter from the Asst. Undersecretary	June, 2008
39.	Sending the proposals to the committee	Sending the lettering attaching the 7 proposals to the committee for their action to provide us back with the technical proposals only	June, 2008
40.	GHQ Assess Technical Proposal	FPD process workers prepare an official letter, attaching the Technical Proposals to GHQ for study and comments.	June, 2008
41.	Approving the official letter	Approve the official letter from the director incharge	June, 2008
42.	Approving the official letter	Approve the letter from the department manager	June, 2008
43.	Approving the official letter	Approve the letter from the Asst. Undersecretary	June, 2008
44.	Forward the Technical Proposals to GHQ	FPD send the official letter forwarding the Technical Proposals to GHQ for study and comments.	June, 2008
45.	The need to Invited the companies to Kuwait to Present their Proposals	The director of GHQ requested the Assistant Under Secretary of FPD to contact the companies and invite them to Kuwait to discuss various issues related to their proposals.	July, 2008
46.	Companies Invited to Kuwait to Present their Proposals	FPD process workers prepared an official letter to All 7 companies to invite them to Kuwait for a meeting.	July, 2008
47.	Approving the official letter	Approve the official letter from the director incharge	July, 2008
48.	Approving the official letter	Approve the letter from the department manager	July, 2008
49.	Approving the official letter	Approve the letter from the Asst. Undersecretary	July, 2008
50.	Companies Invited to Kuwait to Present their Proposals	FPD sent the official letters to All 7 companies to invite them to Kuwait for a meeting.	July, 2008
51.	GHQ Shortlist	After scrutinizing the proposals and discussion through internal meetings, GHQ shortlisted Company X for the tender.	July, 2008
52.	forwarded GHQ's comments to the committee	FPD process workers prepare an official letter to the Chairman of the GTPC for action and selection.	August, 2008
53.	Approving the official letter	Approve the official letter from the director incharge	August, 2008
54.	Approving the official letter	Approve the letter from the department manager	August, 2008

55.	Approving the official letter	Approve the letter from the Asst. Undersecretary	August, 2008
56.	Shortlist sent to GTPC	FPD forwarded the GHQ's comments to the Chairman of the GTPC for action and selection. Through an official letter prepared by process workers	August, 2008
57.	GTPC Approval for Winning Bid	The Chairman of the GTPC approved Company X for the project and forwarded a letter to the Assistant Under Secretary of FPD informing them about the winning company.	August, 2008
58.	Preparing to notify the winning company	FPD process workers prepared an official letter to the winning company	September, 2008
59.	Approving the official letter	Approve the official letter from the director incharge	September, 2008
60.	Approving the official letter	Approve the letter from the department manager	September, 2008
61.	Approving the official letter	Approve the letter from the Asst. Undersecretary	September, 2008
62.	Winning Bid Informed	FPD sent the official letter to the winning company	September, 2008
63.	The need of Price Negotiation with Company X	FPD process workers prepared an official letter requesting Company X for discount on the total value of the contract.	September, 2008
64.	Approving the official letter	Approve the official letter from the director incharge	September, 2008
65.	Approving the official letter	Approve the letter from the department manager	September, 2008
66.	Approving the official letter	Approve the letter from the Asst. Undersecretary	September, 2008
67.	requesting Company X for discount	FPD sent the official letter requesting Company X for discount on the total value of the contract.	September, 2008
68.	Requirements Specification between GHQ and Company X	The process worker of FPD arranged meetings between GHQ, End User and the Company X to discuss issues related to the proposals.	October, 2008
69.	The need for SAF Construction Negotiations	FPD process workers prepared an official letter to invite company X to Kuwait for more negotiation	October, 2008
70.	Approving the official letter	Approve the official letter from the director incharge	October, 2008
71.	Approving the official letter	Approve the letter from the department manager	October, 2008
72.	Approving the official letter	Approve the letter from the Asst. Undersecretary	October, 2008
73.	Company X invited for more	FPD sent the official letter to invite company X to	October, 2008

	negotiations	Kuwait for more negotiation	
74.	SAF Construction Negotiations	Discussions were held with Company X in relation to the construction of the SAF. Since construction was involved it was very much necessary to negotiate with Company X the requirements and specifications for the construction work.	October, 2008
75.	FPD Prepare Draft Contract	The process workers of FPD prepared the Draft Contract for the project.	October, 2008
76.	Sending the draft contract to GHQ	FPD process workers prepared an official letter attaching the draft contract to the Director of GHQ (End User) for reviewing.	November, 2008
77.	Approving the official letter	Approve the official letter from the director incharge	November, 2008
78.	Approving the official letter	Approve the letter from the department manager	November, 2008
79.	Approving the official letter	Approve the letter from the Asst. Undersecretary	November, 2008
80.	Draft Contract sent to GHQ	FPD sent the official letter attaching the draft contract to the Director of GHQ (End User) for reviewing.	November, 2008
81.	Sending the draft contract to company X	FPD process workers prepared an official letter attaching the draft contract to Company X for their review and comments.	November, 2008
82.	Approving the official letter	Approve the official letter from the director incharge	November, 2008
83.	Approving the official letter	Approve the letter from the department manager	November, 2008
84.	Approving the official letter	Approve the letter from the Asst. Undersecretary	November, 2008
85.	Draft Contract sent to Company X	FPD sent the official letter attaching the draft contract to Company X	
86.	Sending the draft contract to KMOD Legal Department	FPD process workers prepared an official letter attaching the draft contract to KMOD Legal Department for Reviewing and comments.	November, 2008
87.	Approving the official letter	Approve the official letter from the director incharge	November, 2008
88.	Approving the official letter	Approve the letter from the department manager	November, 2008
89.	Approving the official letter	Approve the letter from the Asst. Undersecretary	November, 2008

90.	Draft Contract sent to KMOD Legal Department	FPD sent the official letter attaching the draft contract to KMOD Legal Department	November, 2008
91.	Sending the draft contract to the Audit Bureau	FPD process workers prepared an official letter attaching the draft contract to the Audit Bureau for reviewing and comments.	November, 2008
92.	Approving the official letter	Approve the official letter from the director incharge	November, 2008
93.	Approving the official letter	Approve the letter from the department manager	November, 2008
94.	Approving the official letter	Approve the letter from the Asst. Undersecretary	November, 2008
95.	Draft Contract sent to the Audit Bureau	FPD sent the official letter attaching the draft contract to Audit Bureau	November, 2008
96.	Change in SAF project	The Director of Audit Bureau suggested to the Assistant Under Secretary of FPD to separate the project in two parts: Construction and Production Line. This was not a planned action and since Audit Bureau had suggested this action it was necessary to act accordingly.	December, 2008.
97.	The need for the GTPC approval on separate the contract in two parts	FPD process workers prepared an official letter to contact the chairman of the GTPC for approval to separate the contract in two parts. This does not happen normally. This was the first time in the history of FPD that such a request was made and hence it was not a planned action.	December, 2008
98.	Approving the official letter	Approve the official letter from the director incharge	December, 2008
99.	Approving the official letter	Approve the letter from the department manager	December, 2008
100.	Approving the official letter	Approve the letter from the Asst. Undersecretary	December, 2008
101.	Contacting the chairman of the GTPC for approval to separate the contract in two parts	FPD sent the official letter to contacted the chairman of the GTPC for approval to separate the contract in two parts	December, 2008
102.	The need for the GTPC approval for Construction	Since it was not a planned, approval from the GTPC was essential. Hence, the Assistant Under Secretary of FPD contacted the GTPC for approval to contact Company X for the Construction Proposal and received Approval from GTPC. Through an official letter prepared	January, 2009

		by process workers	
103.	Approving the official letter	Approve the official letter from the director incharge	January, 2009
104.	Approving the official letter	Approve the letter from the department manager	January, 2009
105.	Approving the official letter	Approve the letter from the Asst. Undersecretary	January, 2009
106.	Sending the letter to the committee	FPD sent the official letter to GTPC for approval to contact Company X for the Construction Proposal and received Approval from GTPC	January, 2009
107.	GTPC Approval	Received the approval from the committee.	January, 2009
108.	The need for MEP Military Engineering Projects to join FPD	Since the project now has a construction part, the need for MEP to join FPD is a must, they will be the technical consultant in this part	January, 2009
109.	Contacting Company X requesting for construction proposal	FPD process workers prepared an official letter to contact Company X with Request For Proposal (RFP) with the submission date and SOW	January, 2009
110.	Approving the official letter	Approve the official letter from the director incharge	January, 2009
111.	Approving the official letter	Approve the letter from the department manager	January, 2009
112.	Approving the official letter	Approve the letter from the Asst. Undersecretary	January, 2009
113.	Request for construction proposal	FPD sent the official letter to Company X with Request For Proposal (RFP) with the submission date and SOW	January, 2009
114.	The need for a meeting with all concerned department on the new proposal	The process workers of FPD arranged meetings between GHQ, End User, FPD, MEP and the Company X to discuss issues related to the construction work and ultimately it was decided that Company X will provide financial and technical proposal for the construction of SAF. The whole process was not planned and was an emergent issue which had to be solved as quickly as possible.	February, 2009 March, 2009
115.	Company X SAF construction proposal submitted	Company X submitted their proposal for the construction work.	April, 2009
116.	Forwarding the construction proposal to MEP	FPD process workers prepared an official letter to forward the proposal to MEP for study and comments.	April, 2009
117.	Approving the official letter	Approve the official letter from the director incharge	April, 2009

118.	Approving the official letter	Approve the letter from the department manager	April, 2009
119.	Approving the official letter	Approve the letter from the Asst. Undersecretary	April, 2009
120.	Sending the construction proposal to MEP	FPD sent the official letter to forward the proposal to MEP for review and comments.	April, 2009
121.	Forwarding the construction proposal to GHQ	FPD process workers prepared an official letter to forward the proposal to GHQ for study and comments.	April, 2009
122.	Approving the official letter	Approve the official letter from the director incharge	April, 2009
123.	Approving the official letter	Approve the letter from the department manager	April, 2009
124.	Approving the official letter	Approve the letter from the Asst. Undersecretary	April, 2009
125.	Sending the construction proposal to GHQ	FPD sent the official letter to forward the proposal to GHQ for review and comments.	April, 2009
126.	GHQ and MEP Study Results	FPD received the study result from GHQ and MEP.	April, 2009
127.	Forwarding the GHQ and MEP Study Results to the GTPC Approval	FPD process workers prepared an official letter to forward the review report of GHQ and MEP to the Chairman of the GTPC for review. Accordingly the proposal was approved by the Chairman of the GTPC.	April, 2009
128.	Approving the official letter	Approve the official letter from the director incharge	April, 2009
129.	Approving the official letter	Approve the letter from the department manager	April, 2009
130.	Approving the official letter	Approve the letter from the Asst. Undersecretary	April, 2009
131.	GHQ Study Results sent to the GTPC	FPD sent the official letter to forward the review report of GHQ and MEP to the Chairman of the GTPC for review.	April, 2009
132.	Draft Contract Prepared by FPD	Since the construction proposal was approved by the GTPC, the process workers of FPD prepared the Draft Contract for the construction work.	May, 2009
133.	The need to invite Company X to discuss issues	FPD process workers prepared an official letter to invite the representatives of Company X to discuss issues related to the construction contract. Delegates of Company X arrived to Kuwait to discuss the Draft Contract.	June, 2009
134.	Approving the official letter	Approve the official letter from the director incharge	June, 2009
135.	Approving the official letter	Approve the letter from the department manager	June, 2009
136.	Approving the official letter	Approve the letter from the Asst. Undersecretary	June, 2009

137.	Discussion meeting	The meeting discussion was held for a week with all concerned departments in KMOD	June, 2009
138.	Company X approved the meeting date	FPD Received a confirmation letter from Company X to meet KMOD in July	July, 2009
139.	Meeting with all concerned department was held	Meeting with all concerned department was held and discussed all the aspect of the construction project, checked the draft contract, and also visited the site.	July, 2009
140.	Finalizing the draft contract	MEP team, Company X and FPD process workers with the help of the directors reviewed and checked the draft contract , this step took long time because it was the first time FPD work on a construction contract	August, 2009
141.	Sending the Draft Contract to GHQ	FPD process workers prepared an official letter to forward the Draft Contract to GHQ for their review and comments.	September, 2009
142.	Approving the official letter	Approve the official letter from the director incharge	September,2009
143.	Approving the official letter	Approve the letter from the department manager	September,2009
144.	Approving the official letter	Approve the letter from the Asst. Undersecretary	September,2009
145.	Draft Contract sent to GHQ	FPD sent the official letter attaching one copy of the Draft Contract to GHQ for their review and comments	September,2009
146.	Sending the Draft Contract to KMOD Legal Department	FPD process workers prepared an official letter to forward the Draft Contract to the Legal Department of KMOD for their review and comments.	September, 2009
147.	Approving the official letter	Approve the official letter from the director incharge	September, 2009
148.	Approving the official letter	Approve the letter from the department manager	September, 2009
149.	Approving the official letter	Approve the letter from the Asst. Undersecretary	September, 2009
150.	Draft Contract sent to KMOD Legal Department	FPD sent the official letter attaching one copy of the Draft Contract to KMOD Legal Department for their review and comments	September, 2009
151.	Received on draft contract from KMOD legal Department	The Assistant Under Secretary of FPD received approval and comments from the KMOD Legal Department related to the draft contact.	October, 2009
152.	Sending the Approved Draft	FPD process workers prepared an official letter to	October, 2009

	Contract to Legal and Legislation Council	forward the approved draft to the Legal and Legislation Council for approval which is very essential before signing the contract and is instructed in the guidelines of FPD.	
153.	Approving the official letter	Approve the official letter from the director in-charge	October, 2009
154.	Approving the official letter	Approve the letter from the department manager	October, 2009
155.	Approving the official letter	Approve the letter from the Asst. Undersecretary	October, 2009
156.	the Approved Draft Contract sent to Legal and Legislation Council	FPD sent the official letter to the Legal and Legislation Council for approval which is very essential before signing the contract and is instructed in the guidelines of FPD.	October, 2009
157.	Sending the Draft Contract to the Audit Bureau	FPD process workers prepared an official letter to forward one copy of the Draft Contract to the Director of Audit Bureau for their review and approval. This course of action is also very essential before signing the contract.	October, 2009
158.	Approving the official letter	Approve the official letter from the director incharge	October, 2009
159.	Approving the official letter	Approve the letter from the department manager	October, 2009
160.	Approving the official letter	Approve the letter from the Asst. Undersecretary	October, 2009
161.	Draft Contract sent to the Audit Bureau	FPD sent the official letter to the Audit Bureau	October, 2009
162.	FPD receive Audit Bureau assessment	The director of Audit Bureau forwarded a letter to the Assistant Under Secretary of FPD with various questions related to the project. Particularly the total value of the proposal.	October, 2009
163.	GHQ involve MEP	The Director of GHQ contacted the Military Engineering Department (MEP) to study the design and layout of the construction proposal and for their comments for the same. Military Engineering Department of KMOD deals with all the construction and civil work of KMOD and hence this action was taken by GHQ.	November, 2009
164.	Audit Bureau Scrutinize the SAF project	Audit Bureau wanted to investigate the whole project from the beginning. Hence the director of Audit Bureau requested the Assistant Under Secretary of FPD to allow the personnel from the Audit Bureau visit FPD and examine all the	November, 2009

		documents related to the project. This had never happened before that the personnel of any external body visited FPD to scrutinize the documents.	
165.	FPD comply with Audit Bureau	The Assistant Under Secretary of FPD obliged and granted permission to the personnel of Audit bureau to examine all the documents related to the project and FPD provided the copies of all the documents that Audit bureau requested.	November, 2009
166.	Scrutiny of financial proposal by Audit Bureau	The director of Audit Bureau forwarded a letter to the Assistant Under Secretary of FPD highlighting various discrepancies in the financial proposal. In turn the Assistant Under Secretary of FPD sent a letter to the company X to rectify the error and demanded clarification wherever necessary. Accordingly the company X clarified and rectified the errors in the financial proposal (calculation errors).	November, 2009
167.	Discount request	FPD process workers prepared an official to Company X requesting to reduce the total value of the project by providing discounts.	November, 2009
168.	Approving the official letter	Approve the official letter from the director incharge	November, 2009
169.	Approving the official letter	Approve the letter from the department manager	November, 2009
170.	Approving the official letter	Approve the letter from the Asst. Undersecretary	November, 2009
171.	Sent Discount request to Company X	FPD sent the official to Company X requesting to reduce the total value of the project by providing discounts.	November, 2009
172.	MEP show interest to do the construction of SAF	After meetings between MEP and GHQ, the Director of MEP suggested that they can handle the construction work and requested time to study the project.	November, 2009
173.	Specification of construction work.	Meetings were held between Company X and MEP in relation to the specification of the construction work.	December, 2009
174.	MEP to do the Construction work	After various meetings held between the departments heads of MEP, GHQ, End User and FPD it was decided that MEP will do the	July, 2010

		construction work.	
175.	Company X to provide Design Service	It was not a planned that the construction work will be done by MEP and hence FPD arranged meetings between the concerned departments and the company X to negotiate and discuss issues related to the construction work. During the meeting it was decided that Company X will provide the Design Services for a cost.	July, 2010
176.	MEP and Company X meet to coordinate SAF Construction	The process workers again arranged meetings between the representatives of MEP and the company X to finalize the design, layout, approvals, etc. for the construction work. The meetings had to be arrange in a short notice period hence it was decided to contact the personnel from MEP and the company over telephone.	July, 2010
177.	The need for GTPC Approval for Design Service	FPD process workers prepared an official letter to the Chairman of the GTPC requesting approval to contact Company X for Design Services proposal. Received Approval from GTPC.	July, 2010
178.	Approving the official letter	Approve the official letter from the director incharge	July, 2010
179.	Approving the official letter	Approve the letter from the department manager	July, 2010
180.	Approving the official letter	Approve the letter from the Asst. Undersecretary	July, 2010
181.	GTPC Approval for Design Service	FPD sent the official letter to the Chairman of the GTPC requesting approval to contact Company X for Design Services proposal..	July, 2010
182.	Approval for Design Service from the GTPC	Received Approval from GTPC for Design Service from Company X	July, 2010
183.	Preparing to Call for Tender for Design Service	FPD process workers prepared an official letter to Request for Proposal for the Design Services to Company X.	August, 2010
184.	Approving the official letter	Approve the official letter from the director incharge	August, 2010
185.	Approving the official letter	Approve the letter from the department manager	August, 2010
186.	Approving the official letter	Approve the letter from the Asst. Undersecretary	August, 2010
187.	Call for Tender for Design Service	FPD sent the official letter to Request for Proposal for the Design Services to Company X.	August, 2010
188.	Receipt of Design Service	Company X obliged and provided FPD with a	October, 2010

	Proposal	proposal for Design Services. Since time was running the Assistant Under Secretary of FPD requested the company X to submit the proposal at the earliest.	
189.	The need for the GTPC approval for the design service proposal.	FPD process workers prepared an official letter to forward the proposal to the GTPC for approval.	October, 2010
190.	Approving the official letter	Approve the official letter from the director incharge	October, 2010
191.	Approving the official letter	Approve the letter from the department manager	October, 2010
192.	Approving the official letter	Approve the letter from the Asst. Undersecretary	October, 2010
193.	GTPC approval for the design service proposal.	FPD sent the official letter to the GTPC for approval	October, 2010
194.	Sending the Proposal to GHQ and MEP	FPD process workers prepare an official letter to forward the proposal to GHQ and MEP for their Study and report.	October, 2010
195.	Approving the official letter	Approve the official letter from the director incharge	October, 2010
196.	Approving the official letter	Approve the letter from the department manager	October, 2010
197.	Approving the official letter	Approve the letter from the Asst. Undersecretary	October, 2010
198.	Proposal Sent to GHQ and MEP	FPD sent the official letter to GHQ and MEP for their Study and report	October, 2010
199.	Design service Proposal approved by the GTPC	The Assistant Under Secretary of FPD received the approval from the GTPC for the Design Services proposal.	November, 2010
200.	FPD communicate with KMOD Finance Department	Since the project was divided and not according to the plan, the Finance department had to be contacted to allocate the budget for the Design Services. Hence, FPD process workers prepared an official letter to the Finance Department of KMOD to allocate the Budget for the Design Services Contract.	November, 2010
201.	Approving the official letter	Approve the official letter from the director incharge	November, 2010
202.	Approving the official letter	Approve the letter from the department manager	November, 2010
203.	Approving the official letter	Approve the letter from the Asst. Undersecretary	November, 2010
204.	FPD communicate with KMOD Finance Department	FPD sent the official letter to Finance Department of KMOD to allocate the Budget for the Design	November, 2010

		Services Contract.	
205.	FPD prepare Design Services Draft Contract	The approval for the Design Service proposal was already received by FPD. The process workers of FPD started working on the Draft Contract. High priority was given and the draft contract was prepared within a couple of days.	November, 2010
206.	Forwarding the Design Services Draft Contract to KMOD Legal Department	FPD process workers prepare an official letter to forward the Draft Contract to the Director of the legal department of KMOD for review and comments.	November, 2010
207.	Approving the official letter	Approve the official letter from the director incharge	November, 2010
208.	Approving the official letter	Approve the letter from the department manager	November, 2010
209.	Approving the official letter	Approve the letter from the Asst. Undersecretary	November, 2010
210.	Design Services Draft Contract Sent to KMOD Legal Department	FPD sent the official letter to the legal department of KMOD for review and comments.	November, 2010
211.	Comments on draft contract from Legal Department	The Assistant Under Secretary of FPD received comments on the Design Services Draft Contract from the Director of Legal Department.	December, 2010
212.	Comments on draft contract from MEP	The Assistant Under Secretary of FPD received comments on the Design Services Draft Contract from MEP	December, 2010
213.	Invitation to company X to finalize the Draft Contract	FPD process workers prepare an official letter to invite the authorized representatives of Company X to discuss and finalize the Design Services Draft Contract.	January, 2011
214.	Approving the official letter	Approve the official letter from the director incharge	January, 2011
215.	Approving the official letter	Approve the letter from the department manager	January, 2011
216.	Approving the official letter	Approve the letter from the Asst. Undersecretary	January, 2011
217.	Invitation to company X to finalize the Draft Contract	FPD sent the official letter to invite the authorized representatives of Company X to discuss and finalize the Design Services Draft Contract.	January, 2011
218.	Finalizing the Draft contract	Delegates of Company X arrived in Kuwait. Meetings were held between the representatives of FPD and the representatives of company X. After discussions, FPD finalized the Design	January, 2011

		Services Draft Contract.	
219.	Allocation of Budget	FPD received the allocation of the budget from the Finance Department for the Design Services Contract.	February, 2011
220.	Sending the Design Services Draft Contract to Legal and Legislation Council	FPD process workers prepare an official letter to forward one copy of the Design Services Draft Contract to the Legal and Legislation Council for their approval.	February, 2011
221.	Approving the official letter	Approve the official letter from the director incharge	February, 2011
222.	Approving the official letter	Approve the letter from the department manager	February, 2011
223.	Approving the official letter	Approve the letter from the Asst. Undersecretary	February, 2011
224.	Design Services Draft Contract sent to Legal and Legislation Council	FPD sent the official letter to the Legal and Legislation Council for their approval.	February, 2011
225.	Sending the Design Services Draft Contract to the Audit Bureau	FPD process workers prepare an official letter to forward one copy of the contract to the Audit Bureau for approval.	March, 2011
226.	Approving the official letter	Approve the official letter from the director incharge	March, 2011
227.	Approving the official letter	Approve the letter from the department manager	March, 2011
228.	Approving the official letter	Approve the letter from the Asst. Undersecretary	March, 2011
229.	Design Services Draft Contract sent to the Audit Bureau	FPD sent the official letter to the Audit Bureau for approval	March, 2011
230.	Queries from Audit Bureau	The Assistant Under Secretary of FPD received questions from the Audit Bureau. The Assistant Under Secretary FPD replied back with the clarifications.	March, 2011
231.	Audit Bureau meeting to discuss the implementation of SAF project	The Director of Audit Bureau asked the Assistant Under Secretary of FPD to arrange a meeting with all project members. All the project members had a meeting with the Audit Bureau. The meeting was held to discuss issues related to the project i.e. the procedures, the implementation phase of the construction, installation and the production line.	April, 2011
232.	Approval from Legal Department of KMOD	The Assistant Under Secretary of FPD received the approval from the Director of Legal	April, 2011

		Department of KMOD.	
233.	Approval from Audit Bureau	The Assistant Under Secretary of FPD received the approval from the director of Audit Bureau.	May, 2011
234.	Approval from Legal and Legislation Council	The Assistant Under Secretary of FPD received the approval from the Legal and Legislation Council	May, 2011
235.	Invitation to sign the Design Contract	FPD process workers prepare an official letter to invite the authorized personnel of Company X to Kuwait to sign the Design Services Contract.	May, 2011
236.	Approving the official letter	Approve the official letter from the director incharge	May, 2011
237.	Approving the official letter	Approve the letter from the department manager	May, 2011
238.	Approving the official letter	Approve the letter from the Asst. Undersecretary	May, 2011
239.	Invitation to sign the Design Contract	FPD sent the official letter to Company X to invite the authorized personnel to Kuwait to sign the Design Services Contract.	May, 2011
240.	Design Services Contract Signing.	The contract was signed by the General Manager of Company X	June, 2011
241.	Performance Bond Request	FPD process workers prepare an official letter to requested Company X to provide the Performance Bond Guarantee for the contract according to the contract terms.	June, 2011
242.	Approving the official letter	Approve the official letter from the director incharge	June, 2011
243.	Approving the official letter	Approve the letter from the department manager	June, 2011
244.	Approving the official letter	Approve the letter from the Asst. Undersecretary	June, 2011
245.	Performance Bond Request	FPD sent the official letter to Company X to provide the Performance Bond Guarantee for the contract according to the contract terms	June, 2011
246.	Performance Bond received	Company X provided the Performance Bond Guarantee.	July, 2011
247.	Sending Contract for signing	FPD process workers prepare an official letter to forward all the necessary documents were sent to the Director of the Legal Department of KMOD for singing the contract by the authorized head of KMOD.	August, 2011
248.	Approving the official letter	Approve the official letter from the director incharge	August, 2011
249.	Approving the official letter	Approve the letter from the department manager	August, 2011

250.	Approving the official letter	Approve the letter from the Asst. Undersecretary	August, 2011
251.	Contract sent for signing	FPD sent the official letter to Legal Department of KMOD for singing the contract by the authorized head of KMOD.	August, 2011
252.	KMOD sign Design Service Contract	The contract was signed by the Minister of Defence, KMOD.	September, 2011
253.	Sending the Original Contract to Company X	FPD process workers prepare an official letter to forward One original copy of the contract was sent to Company X for their records.	September, 2011
254.	Approving the official letter	Approve the official letter from the director incharge	September, 2011
255.	Approving the official letter	Approve the letter from the department manager	September, 2011
256.	Approving the official letter	Approve the letter from the Asst. Undersecretary	September, 2011
257.	Original Contract sent to Company	FPD sent the official letter to Company X.	September, 2011
258.	Sending a copy of the signed Contract to the Audit Bureau	FPD process workers prepare an official letter to forward one copy of the signed contract to the Director of the Audit Bureau.	September, 2011
259.	Approving the official letter	Approve the official letter from the director incharge	September, 2011
260.	Approving the official letter	Approve the letter from the department manager	September, 2011
261.	Approving the official letter	Approve the letter from the Asst. Undersecretary	September, 2011
262.	A Copy of the signed Contract sent to the Audit Bureau	FPD sent the official letter to the Audit Bureau	September, 2011
263.	Sending a copy of the signed Contract to Finance Department	FPD process workers prepare an official letter to forward one copy of the signed contract to the Director of Finance Department of KMOD.	September, 2011
264.	Approving the official letter	Approve the official letter from the director incharge	September, 2011
265.	Approving the official letter	Approve the letter from the department manager	September, 2011
266.	Approving the official letter	Approve the letter from the Asst. Undersecretary	September, 2011
267.	A copy of the signed Contract sent to Finance Department	FPD sent the official letter to the Finance Department of KMOD.	September, 2011
268.	Sending a copy of the signed	FPD process workers prepare an official letter to	September,

	Contract to GHQ	forward one copy of the signed contract to GHQ.	2011
269.	Approving the official letter	Approve the official letter from the director incharge	September, 2011
270.	Approving the official letter	Approve the letter from the department manager	September, 2011
271.	Approving the official letter	Approve the letter from the Asst. Undersecretary	September, 2011
272.	A copy of the signed Contract sent to GHQ	FPD sent the official letter to the GHQ.	September, 2011
273.	Sending a copy of the signed Contract to MEP	FPD process workers prepare an official letter to forward one copy of the signed contract to MEP.	September, 2011
274.	Approving the official letter	Approve the official letter from the director incharge	September, 2011
275.	Approving the official letter	Approve the letter from the department manager	September, 2011
276.	Approving the official letter	Approve the letter from the Asst. Undersecretary	September, 2011
277.	A copy of the signed Contract sent to MEP	FPD sent the official letter to the MEP.	September, 2011
278.	Requesting Bank Guarantee from Company	FPD process workers prepare an official letter to request Company X to provide the Advance Payment Guarantee and the Proforma Letter of credit. The advance payment guarantee is very much essential to establish the letter of credit.	September, 2011
279.	Approving the official letter	Approve the official letter from the director incharge	September, 2011
280.	Approving the official letter	Approve the letter from the department manager	September, 2011
281.	Approving the official letter	Approve the letter from the Asst. Undersecretary	September, 2011
282.	Requesting Bank Guarantee from Company	FPD sent the official letter to company X	September, 2011
283.	Proforma of letter of credit	The Proforma Letter of credit was provided by Company X.	October, 2011
284.	Noncompliance by Company X	It was nearly 2 months from the date of request by FPD to submit the Advance Payment Guarantee. Company X delayed to provide the Advance Payment Guarantee by nearly couple of months as well as to highlight the reason for the delay.	November, 2011
285.	Formal Warning to company X to comply with the terms	The contract was signed nearly three months back and Company X had not submitted the Advance	December, 2011

	of contract.	payment guarantee, hence, it was necessary to take stern action so that there was no delay in the contract coming into force. Meetings were held between the heads of the concerned departments and it was decided to give Company X a notice period of 15 days to submit the Guarantee. FPD process workers prepare an official letter to request Company X to provide the Advance Payment Guarantee urgently with a notice period of 15 days.	
286.	Approving the official letter	Approve the official letter from the director incharge	December, 2011
287.	Approving the official letter	Approve the letter from the department manager	December, 2011
288.	Approving the official letter	Approve the letter from the Asst. Undersecretary	December, 2011
289.	Formal Warning to company X to comply with the terms of contract	FPD sent the official letter to company X	December, 2011
290.	Meeting request by Company X	The General Manager of Company X sent a letter to the Assistant Under Secretary of FPD requesting a meeting with FPD to discuss the issues related to the Advance Payment Guarantee.	January, 2012
291.	Part Advance Payments for Installation and Operation Contract and Design Services Contract	FPD obliged for a meeting and discussions were held, where Company X informed KMOD to sign the Installation and Operation Contract immediately and to release the payment of 20% advance payment for the Installation and Operation Contract along with the 20% advance payment for the Design Services Contract. The reason given by Company X for their request was that they cannot continue with the same total amount of the offer for the Installation contract because of the currency inflation internationally. Also the Installation and Operation Contract was to be signed after nearly two years i.e. after the completion of the construction contract and hence they could maintain the same price offer.	February, 2012
292.	Company X compliance with FPD	After discussions, the General Manager of Company X obliged and agreed to provide the	March, 2012

		Advance Payment Guarantee. Company X provided KMOD with the Advance Payment Guarantee.	
293.	Request to establish Letter of Credit	FPD process workers prepare an official letter to forward the necessary documents to the Director of Finance Department of KMOD to establish the Letter of Credit and instructed to release the Advance Payment at the earliest.	March, 2012
294.	Approving the official letter	Approve the official letter from the director incharge	March, 2012
295.	Approving the official letter	Approve the letter from the department manager	March, 2012
296.	Approving the official letter	Approve the letter from the Asst. Undersecretary	March, 2012
297.	Request to establish Letter of Credit	FPD sent the official letter to company X	March, 2012
298.	Establishment of letter of Credit	The KMOD Finance Department established the Letter of Credit and released the Advance payment to Company X. The copy of the Letter of Credit was forwarded to the Assistant Under Secretary of FPD which in turn forwarded the same to Company X.	May, 2012
299.	KICK-OFF-Meeting	The contract for the Design Service Contract still did not come into force because the Kick-off-Meeting between MEP and Company X to finalize the time frame and the related work for the construction project had to take place.	May, 2012
300.	Contract comes into force.	The kick off meeting was very essential for the contract to come into force. The process workers of FPD immediately contacted the Director of MEP and the representative of Company X simultaneous and arranged for the meeting within a short notice period. Finally, the meeting between MEP and Company X was held and the contract came to force.	June, 2012

DATASET 1.2 SAF Project: Planned, Emergence And Deferred Action

This dataset set records how the FPD Guidelines were actually implemented, and how they were affected by emergence and what deferred action was taken.

KMODFPD PP Guidelines PLANNED ACTION (PA)	SAF IMPLEMENTATION (As Planned Action was Implemented)	SAF EMERGENCE (In Actual Process)	DEFERRED ACTION (DA)
Receive request from the Logistics and Supply attached with it the (SOW) and the suggested companies	The process to establish Small Arms Ammunition Factory starts (Construction and Production Line)	Names of the companies were not provided by the GHQ. FPD collected information of companies related with manufacturing of ammunitions.	FPD outsourced the list of companies by: Surfing the net and finalizing with GHQ Contacting the various embassies in Kuwait.
Review the (SOW) sent from the Logistics and Supplies ensuring that there is an estimated Budget for the project (if possible)	Foreign Procurement Department (FPD) received a letter from the General Head Quarters (GHQ), Ministry of Defence along with the scope of work to establish a light weapon (small and medium calibre) Ammunition Factory in Kuwait.	Various companies requested for an extension to the submission date.	Since an extension to the submission date was requested by companies : FPD contacted GHQ and requested approval from them along with and the extended time period to be granted. One month extension was granted by GHQ. FPD forwarded the reply of GHQ to the Central Tender Committee and requested an approval to extend the submission date by one month.
Determine the suggested companies (from the Logistics and Supplies and the registered companies in the data base of Foreign Procurement), in case there are no companies' names available, then the Foreign Procurement contacts the (MAO)	The site for the project was decided.	The request for extension for the submission date was forwarded to the Central Tender Committee for approval.	The companies did not provide any proposal for the construction

Military Attaché Offices of various countries (Embassies) to propose companies.			
Prepare an official letter requesting the KMOD General Tender and Practice Committee to get the agreement for the tender	FPD collected information of companies capable of manufacturing of ammunitions through the Internet. (Names of the companies should be provided along with the requirement by GHQ, this can avoid a delay).	Companies did not provide any proposal for the construction of the ammunition factory because to provide a financial offer site survey and other things had to be done (necessary).	GHQ requested FPD to arrange meetings with the company to discuss issues related to the proposal and the construction phase. FPD contacted the companies and arranged the meetings. FPD coordinated between GHQ and the companies during the meeting schedule.
Approve the official letter from the director in charge	Call for Tender: FPD sent a letter to the Central Tender Committee for approval to contact companies for the project.	Company X was requested to provide a fresh proposal for Construction of Small calibre Ammunition factory (Light weapon).	Fresh proposal for construction of small ammunition factory.
Approve the letter from the department manager	Received the approval from the committee.	Audit Bureau suggested dividing the contract in 3 phases. (Construction, Installation and Training & Maintenance)	FPD contacted company X and arranged meetings between the cross functional departments. FPD coordinated between the cross functional departments and Company X during the meeting week. During the meetings discussion were held in details in relation to the construction work. Company X agreed to provide a fresh proposal for the construction work.

Approve the letter from the Asst. Undersecretary	Received a letter from GHQ with some additions in ammunition size. Change in requirements.	Audit Bureau wanted to investigate the whole project from the beginning and hence personnel from the Audit Bureau visited FPD and requested the copies of all the documents related to the project.	Audit Bureau suggested dividing the contract into 3 phases
Receive the agreement of the committee for the tender with the approved names of the participating companies by the committee	FPD sent letters of Request for Proposals (RFQ) to various embassies and companies which were outsourced through internet Companies which had experience of setting up ammunition factory. In total 10 embassies and 21 companies were sent the RFQs. Proposal submission deadline was set at two months from the date of the RFQ letter.	Various discrepancies related to the financial proposal were raised (calculation errors) and rectified by Company X.	FPD received a letter from Audit Bureau to divide the contract in 3 phases. FPD forwarded the request to GHQ for their suggestion and Approval. FPD received a reply from GHQ and forwarded the same to the Central Tender Committee for their approval. FPD then arranged meetings between the cross functional departments and company X.
Prepare an official letter to the companies with Request For Proposal (RFP) with the following: the submission date , SOW and the terms and conditions of the tender	Various companies requested for an extension to the submission date. The request for extension for the submission date was forwarded to the Central Tender Committee again for approval.	MEP was not contacted regarding the construction before the implementation of the project.	Audit Bureau request to investigate the project from the initial stage.
Approve the official letter from the director in charge	FPD received the approval from the tender committee to extend the submission date by another month. FPD then notified the embassies and companies about the extension of the submission date.	MEP suggested that they can handle the construction work and request time to study the project.	FPD received a letter from Audit Bureau to investigate and review all the documents. Meeting was held between the process owners and the process workers to solve the issue. It was decided to invite Audit Bureau to FPD office to review the documents so that FPD would be in a better position to provide all the

			documents as requested. Also, misplacement of the documents could be avoided. FPD invited Audit Bureau to the FPD office for investigation.
Approve the letter from the department manager	FPD received the proposals within the submission date from seven companies. The proposals of the 7 companies were sent to the Central Tender Committee for review and selection.	Meetings were held between NORINCO and MEP in relation to the construction work. FPD had to arrange meetings between Company X and MEP	Various errors in the proposal were raised.
Approve the letter from the Asst. Undersecretary	The Technical Proposals were sent to GHQ for study and comments.	MEP decided to do the construction work and NORINCO to give design services.	FPD received letters from Audit Bureau in relation to calculation errors in the financial proposal provide by Company X. FPD contacted company X with the errors. Company X obliged and rectified the errors in the Financial Offer. Discounts were also requested from Company X
Follow the Tender, receive company inquires and answer these inquires with co-ordination with the Logistics and Supplies and the RU (Requesting Unit), extend the submission date of proposals if required by 50% of the total number of the companies , this after submitting a request to the committee	GHQ requested FPD to contact the companies and invite them to Kuwait to discuss various issues related to their proposals. All 7 companies were contacted and invited to Kuwait for a meeting. (check whether medium and small calibre was decided after the meeting)	Annex to the contract was added in relation to the establishment of the Performance Bond and Advance Payment Guarantee.	MEP decided to do the construction phase.

Receive the Companies' proposals	After the meeting were conducted, GHQ shortlisted Company X for the tender.	Company X delayed to provide the Advance Payment Guarantee for nearly couple of months.	FPD arranged meetings between the cross functional departments to discuss issues related to the construction work (planning, implementation etc.) FPD arranged meetings between Company X, MEP and FPD. FPD coordinated and convinced company X to provide design services for the construction work. Company X agreed to provide Design Services and also agreed to provide KMOD with a fresh proposal for Construction work. FPD contacted the Central Tender Committee for approval to contact Company X to submit the Design Services proposal. FPD contacted the Finance Department to allocate budget for the design services contract.
Prepare an official letter, send the proposals with a report to KMOD General Tender and Practice Committee	FPD forwarded GHQ's comments to the Central Tender Committee.		Annex to the contract was added in relation to the performance bond and advance payment guarantee.
Approve the official letter from the director in charge	The tender committee approved Company X for the project.		Company X requested FPD to solve the issue related to the establishment of the Guarantees. The Guarantees were issued by a Bank established in the country of Company X, whereas KMOD only accepts guarantees issued by a local Bank in Kuwait. FPD contact the legal consultant of KMOD

			in relation to the issue. The legal consultant suggested to add an annex to the contract to formalize the guarantees so that it could be accepted by KMOD. The annex was prepared by FPD. FPD forwarded the annex to the legal Department of KMOD for approval. After receiving the approval from the legal Department, FPD forwarded the annex to Company X for their approval and signature (initials of the authorized Signatory of Company X). FPD then forwarded the signed annex to GHQ for their approval and initials of the Officer authorized for the SAF Project.
Approve the letter from the department manager	Company X was informed about the winning bid by FPD.		Company X delayed to provide advance payment guarantee.
Approve the letter from the Asst. Undersecretary	FPD requested Company X for discount on the total value of the contract.		Meetings were held between the process owners and the process workers for the course of action to be taken because Company X failed to provide Advance payment guarantee for more than two months. It was decided to write a warning letter to Company X to provide the guarantee within 15 days or else the contract would be terminated. FPD received a letter from Company X requesting a meeting. FPD arranged for the

			meeting. Company X suggested KMOD to sign the installation contract or pay 20% advance payment of the installation contract. FPD again arranged meetings between Company X and the cross functional departments to solve the issue. After discussions it was decided that Company x would provide the Advance Payment Guarantee without any conditions.
Prepare an official letter, send the technical proposals only to the Logistics and Supplies for review and reply	Further discussions related to the project were carried out by the end user, GHQ and Company X.		
Approve the official letter from the director in charge	Discussions were held with Company X in relation to the construction of the SAF.		
Approve the letter from the department manager	FPD Prepared the Draft Contract for the project.		
Approve the letter from the Asst. Undersecretary	Draft contract was sent to GHQ (End User) for reviewing		
Receive a reply from the Logistics and Supplies determining the accepted technical proposals of the companies with a comprehensive technical report approved by the concerned committee mentioning in it the names of the committee's members, their positions and their signature on the report	Draft Contract was sent to Company X.		

Prepare an official letter, contacting the companies for clarification or modifications to their offer (if there is any change in requirement/SOW by the end user)	Draft Contract was sent to the Legal Department of KMOD for Reviewing		
Check the technical report with all the proposals' documents, making sure of the proposals and the requirements	Draft Contract was sent to Audit Bureau for reviewing		
Approve the official letter from the director in charge	Audit Bureau suggested to separate the project in two parts: Construction and Production Line		
Approve the letter from the department manager	FPD contacted the Central Tender Committee for approval to separate the contract in two parts.		
Approve the letter from the Asst. Undersecretary	FPD contacted the Central Tender Committee for approval to contact Company X for the Construction Proposal and received Approval from Central Tender Committee		
Receive a reply from the committee after opening the financial proposals and recommending the wining company	It was decided that Company X will provide financial and technical proposal for the construction of SAF		
Prepare an official letter to the wining company and further requesting a best discount on the total value of their offer.	Company X submitted their proposal for the construction work.		
Approve the official letter from the director in charge	The proposal was sent to the Central Tender Committee by FPD. FPD forwarded the proposal to GHQ for study and comments.		

Approve the letter from the department manager	FPD received the study result from GHQ.		
Approve the letter from the Asst. Undersecretary	The proposal was approved by the Central Tender Committee.		
Prepare and forward the draft contract to the wining company, with the detailed information of the contract in Arabic Language and an equivalent translation in English	A Draft Contract was made by FPD.		
Approve the official letter from the director in charge	FPD invited Company X to discuss issues related to the contract. Delegates of Company X arrived to Kuwait to discuss the Draft Contract. The meeting discussion was held for a week with all concerned departments in KMOD.		
Approve the letter from the department manager	After finalizing with Company X, the Draft Contract was sent to GHQ.		
Approve the letter from the Asst. Undersecretary	Copy of the Draft Contract was also forwarded to the Legal Department of KMOD.		
Prepare an official letter, sending the contract to the Logistics and Supplies for studying	Received approval and comments from the KMOD Legal Department related to the draft contact.		
Approve the official letter from the director in charge	Copy of the Draft Contract was also forwarded to the Legal and Legislation Council for approval.		
Approve the letter from the department manager	Copy of the Draft Contract was sent to Audit Bureau for their approval.		
Approve the letter from the Asst. Undersecretary	Audit Bureau forwarded a letter to FPD with various questions related to the project. Particularly the total value of the proposal.		

Prepare an official letter sending the contract to the Legal Department in order to be sent to the Legal Legislative Department for studying.	GHQ contacted the Military Engineering Department (MEP) to study the design and layout of the construction proposal and for their comments for the same. (If construction work is involved, MEP should be contacted before the implementation of the project in order to access the actual requirement and the SOW should be prepared accordingly).		
Approve the official letter from the director in charge	Audit Bureau wanted to investigate the whole project from the beginning. Personnel from the Audit Bureau visit FPD and requested copies of all the documents related to the project. (All the documents related to the Project should be sent to the Audit Bureau before requesting approval this could solve issues and clarifications).		
Approve the letter from the department manager	FPD provided Audit Bureau with all the documents.		
Approve the letter from the Asst. Undersecretary	Various discrepancies related to the financial proposal were raised (calculation errors) and rectified by Company X. (To avoid this event it is recommended that the FPD studies the proposal before sending it to the other departments.		
Receive L&S letter containing the comments on the draft contract, if any	Company X was requested to reduce the total value of the project by providing discounts.		
Add L&S comments to the draft contract	MEP suggested that they can handle the construction work and request time to study the project.		

Receive Legal department letter containing the comments on the draft contract, if any	Meetings were held between Company X and MEP in relation to the construction work.		
Add the legal department comments to the draft contract	Decided that MEP will do the construction work		
Prepare an official letter, sending the contract with all its annexes and documents to the Audit Bureau	Company X will provide the Design Services for a cost.		
Approve the official letter from the director in charge	Meetings were held between Company X and MEP to finalize the design, layout, approvals, etc. for the construction work.		
Approve the letter from the department manager	FPD contacted Central Tender Committee to take approval to contact Company X for Design Services proposal. Received Approval from Central Tender Committee.		
Approve the letter from the Asst. Undersecretary	Company X was requested to provide a proposal for the Design Services.		
Receive Audit Bureau letter with their inquires	Company X obliged and provided FPD with a proposal for Design Services.		
Prepare an official letter, replying all the Audit Bureau inquiries	Proposal was sent to the Central Tender Committee for approval.		
Approve the official letter from the director in charge	Proposal sent to GHQ for their Study.		
Approve the letter from the department manager	Proposal sent to MEP for their Study.		

Approve the letter from the Asst. Undersecretary	Received approval from Central Tender Committee for the Design Services proposal.		
Receive Audit Bureau letter with their final remark to the draft contract	FPD contacted the Finance Department of KMOD to allocate the Budget for the Design Services Contract.		
Add the final remarks of the Audit Bureau and the Legal Legislative Department pertinent to the draft contract	FPD started working on the Draft Contract.		
Contact the Logistics and Supplies to get a serial number for the contract	FPD forwarded the Draft Contract to the legal department of KMOD for review and comments.		
Provide the company with the final draft contract for reviewing and agreement	Received comments on the Design Services Drat Contract from the Legal department.		
Confirm that the budget is allocated for the project (Financial Year), if not then Prepare an Official letter to the Logistics and Supplies requesting them to allocate the budget.	Received comments on the Design Services Drat Contract from MEP		
Approve the official letter from the director in charge	FPD invited Company X to discuss and finalize the Design Services Draft Contract.		
Approve the letter from the department manager	Delegates of Company X arrived in Kuwait and after discussions with FPD finalized the Design Services Draft Contract.		
Approve the letter from the Asst. Undersecretary	FPD forwarded a letter to the Finance Department to allocate the Budget for the Design Services Contract.		

Prepare an official letter and invite them to sign the contract (authorized representative with an original copy of the Power of Attorney)	One copy of the Design Services Draft Contract was forwarded to the Legal and Legislation Council for their approval.		
Approve the official letter from the director in charge	One copy of the contract was sent to Audit Bureau for approval.		
Approve the letter from the department manager	FPD received questions from the Audit Bureau. FPD Answered the questions.		
Approve the letter from the Asst. Undersecretary	Audit Bureau asked FPD to arrange a meeting with all project members. All project members had a meeting with the Audit Bureau.		
Meeting with the company	FPD received the approval from the Legal Department of KMOD.		
The company submits the form of declaration of payment and receipt of commission, if applicable, before signing the contract	FPD received the approval from the Audit Bureau.		
Receive the Performance Bond guarantee from the company	FPD received the approval from the Legal and Legislation Council		
Prepare an official letter to the Legal Department to send the contract for final signature in accordance to the regulations	FPD invited the authorized personnel of Company X to Kuwait to sign the Design Services Contract.		
Approve the official letter from the director in charge	The contract was signed by Company X		

Approve the letter from the department manager	FPD requested Company X to provide the Performance Bond Guarantee for the contract according to the contract terms.		
Approve the letter from the Asst. Undersecretary	Company X provided the Performance Bond Guarantee.		
Receive the signed Contract from the Legal Department	All the necessary documents were sent to the Legal Department of KMOD for singing the contract by the authorized head of KMOD.		
Prepare and official letter to the company and send one original copy of the signed contract and request the company to provide the Advance Payment Guarantee and original Advance Payment Invoice as per the contract terms and also the duly filled Proforma L/C.	The contract was signed by KMOD.		
Approve the official letter from the director in charge	One original copy of the contract was sent to Company X for their records.		
Approve the letter from the department manager	One copy of the contract was forwarded to Audit Bureau.		
Approve the letter from the Asst. Undersecretary	One copy of the contract was sent to the Finance Department of KMOD.		
Prepare an official letter to the Logistics and Supplies to forward them a copy of the contract.	One copy of the contract was forwarded to the GHQ for their records.		
Approve the official letter from the director in charge	One copy of the contract was forwarded to MEP.		

Approve the letter from the department manager	FPD requested Company X to provide the Advance Payment Guarantee and the Proforma Letter of credit.		
Approve the letter from the Asst. Undersecretary	The Proforma Letter of credit was provided by Company X.		
Prepare an official letter to the Finance Department to forward them a copy of the contract.	Company X delayed to provide the Advance Payment Guarantee by nearly couple of months.		
Approve the official letter from the director in charge	FPD requested Company X to provide the Advance Payment Guarantee urgently with a notice period of 15 days.		
Approve the letter from the department manager	Company X requested for a meeting with FPD to discuss the issue related to the Advance Payment Guarantee.		
Approve the letter from the Asst. Undersecretary	FPD obliged for a meeting and discussions were held, where Company X informed KMOD to sign the Installation and Operation Contract immediately and to release the payment of 20% advance payment for the Installation and Operation Contract along with the 20% advance payment for the Design Services Contract. The reason given by Company X for their request was that they cannot continue with the same total amount of the offer for the Installation contract because of the currency inflation internationally. Also the Installation and Operation Contract was to be signed after nearly two years i.e. after the completion of the construction contract and hence they could maintain the same price offer.		

Prepare an official letter to the Legal Department to forward them a copy of the contract.	After discussions, Company X obliged and provided KMOD with the Advance Payment Guarantee.		
Approve the official letter from the director in charge	FPD immediately forwarded the necessary documents to the Finance Department of KMOD to establish the Letter of Credit and release the Advance Payment.		
Approve the letter from the department manager	The KMOD Finance Department established the Letter of Credit and released the Advance payment to Company X.		
Approve the letter from the Asst. Undersecretary	The contract for the Design Service Contract still did not come into force because the Kick-off-Meeting between MEP and Company X to finalize the time frame and the related work for the construction project had to take place.		
Receive the Advance Payment Bank guarantee and the Advance Payment Invoice from the company			
Receive the Proforma letter of Credit from the company			
Prepare an official letter to the Finance Department providing them with the bank guarantees and request them to open the L/C (letter of Credit), pay the amount of the Advance payment.			

Approve the official letter from the director in charge			
Approve the letter from the department manager			
Approve the letter from the Asst. Undersecretary			
Receive letter from the Finance Department regarding the establishment of the Letter of Credit			
Prepare an official letter Informing the company with the coming into force date			
Approve the official letter from the director in charge	Finally, the meeting between MEP and Company X was held and the contract came to force.		
Approve the letter from the department manager			
Approve the letter from the Asst. Undersecretary			
Receive letter from the company relating to the shipment details.			
Prepare an official letter to acknowledge the information related to the shipment and answer the queries if any requested by the company			
Approve the official letter from the director in charge.			
Approve the letter from the department manager			
Approve the letter from the Asst. Undersecretary.			

Prepare an internal memo to the Shipping Department and provide them the information related to the shipment.			
Approve the official letter from the director in charge			
Approve the letter from the department manager			
Receive the invoices from the company			
Send the invoice to the Logistics and Supplies for approval and signature			
Receive the approved invoice from the Logistics and Supplies			
Prepare an official letter to the Finance Department and forward them the approved original invoice for settlement of payment with the company.			
Approve the official letter from the director in charge			
Approve the letter from the department manager			
Approve the letter from the Asst. Undersecretary.			
Receive a confirmation of settlement from the financial department			
Prepare an official letter to Head Quarters and request them to confirm that the contract is completed successfully without any complains, if			

yes, then mention the remarks in detail			
Approve the official letter from the director in charge			
Approve the letter from the department manager			
Approve the letter from the Asst. Undersecretary.			
Prepare an official letter to the company and request them to provide us with the Tax Clearance Certificate to claim the Tax holdback amount.			
Approve the official letter from the director in charge			
Approve the letter from the department manager			
Approve the letter from the Asst. Undersecretary.			
Receive the acknowledgement from Logistics and Supplies relating to the completion of the contract with a detailed list of discrepancies, If any.			
Receive the Tax clearance certificate from the Ministry of Finance			
Prepare an official letter contacting the financial department to release the Tax hold back amount.			
Approve the official letter from the director in charge			

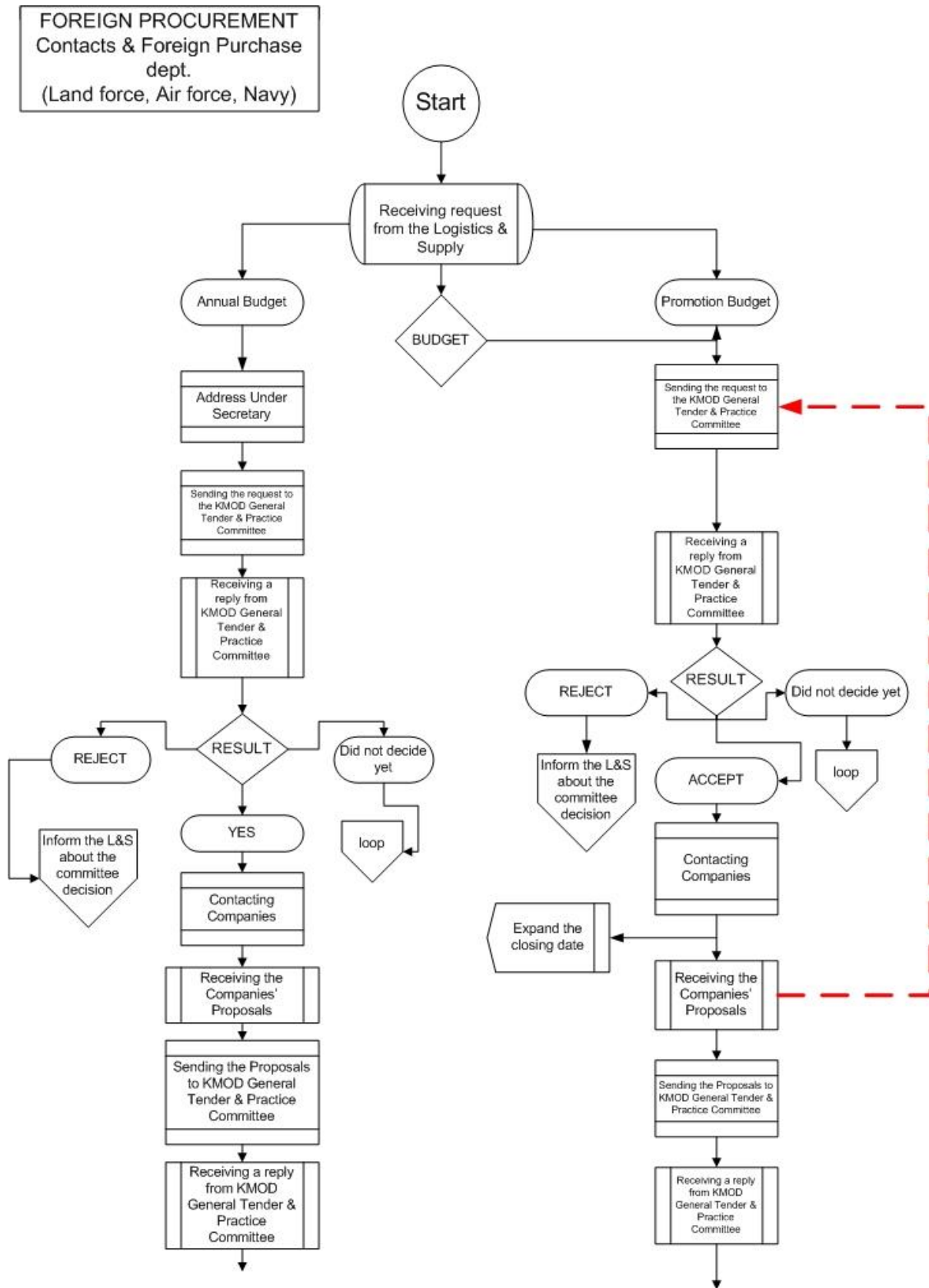|			
Approve the letter from the department manager			
Approve the letter from the Asst. Undersecretary			
Prepare and official letter to the company to inform and thank them for successful completing the contract. If there were any discrepancies then to rectify it with immediate effect.			
Approve the official letter from the director in charge			
Approve the letter from the department manager			
Approve the letter from the Asst. Undersecretary			
Contract completed			

DATASET 1.3 FPD Flowchart

No ← RESULT → Did not decide yet

DONE

No ← RESULT → Did not decide yet

DONE

Contacting the Audit of Bureau

Company's reply on the contract draft and the discount amount

No ← RESULT → Did not decide yet

DONE

Signing of the contract initialed by company and Logistics

Contact the National Offset Company

NOC Reply

Sending the contract signed by company and logistics to legal department for final signing

Forwarding the contract to the authorized signatory

Receiving the signed contract (original) from Legal Department

Sending a copy of the contract to (L&S, Financial Department, Legal Department, winning company)

Contract comes into force

DATASET 1.4 Flowchart Of SAF Procurement Process In Hindsight

This flow chart is a mapping of Dataset 1, the actual SAF procurement process.

```
                    ◇ RESULT ◇
                         │
                      ( YES )
                         │
┌──────────────┐   ┌──────────────┐   ┌──────────────────┐
│ Meetings held│ ◄ │Invited       │ ◄ │Sent the technical│
│ between       │  │companies to  │   │Proposals to the  │
│ Companies and │  │discuss issues│   │Logistics & Supply│
│ Logistics &   │  │related to    │   └──────────────────┘
│ Supply        │  │technical     │            │
└──────────────┘   │proposal      │            ▼
        │          └──────────────┘        ( Reply )
        └──────────────────────────────────►   │
                                                ▼
                                          ◇ RESULT ◇
                                                │
                                          ( ACCEPT )
                                                │
                              ┌──────────────────────────┐
                              │Sent the reply of the L&S │
                              │to KMOD general tender &  │
                              │practice committee        │
                              └──────────────────────────┘
                                                │
                              ┌──────────────────────────┐
                              │Received approval from the│
                              │General tender & practice │
                              │committee                 │
                              └──────────────────────────┘
                                                │
                              ┌──────────────────────────┐
                              │Contacted the wining      │
                              │company                   │
                              └──────────────────────────┘
                                                │
                              ┌──────────────────────────┐
                              │Prepared the draft of the │
                              │contract                  │
                              └──────────────────────────┘
                                                │
                                          contacting
```
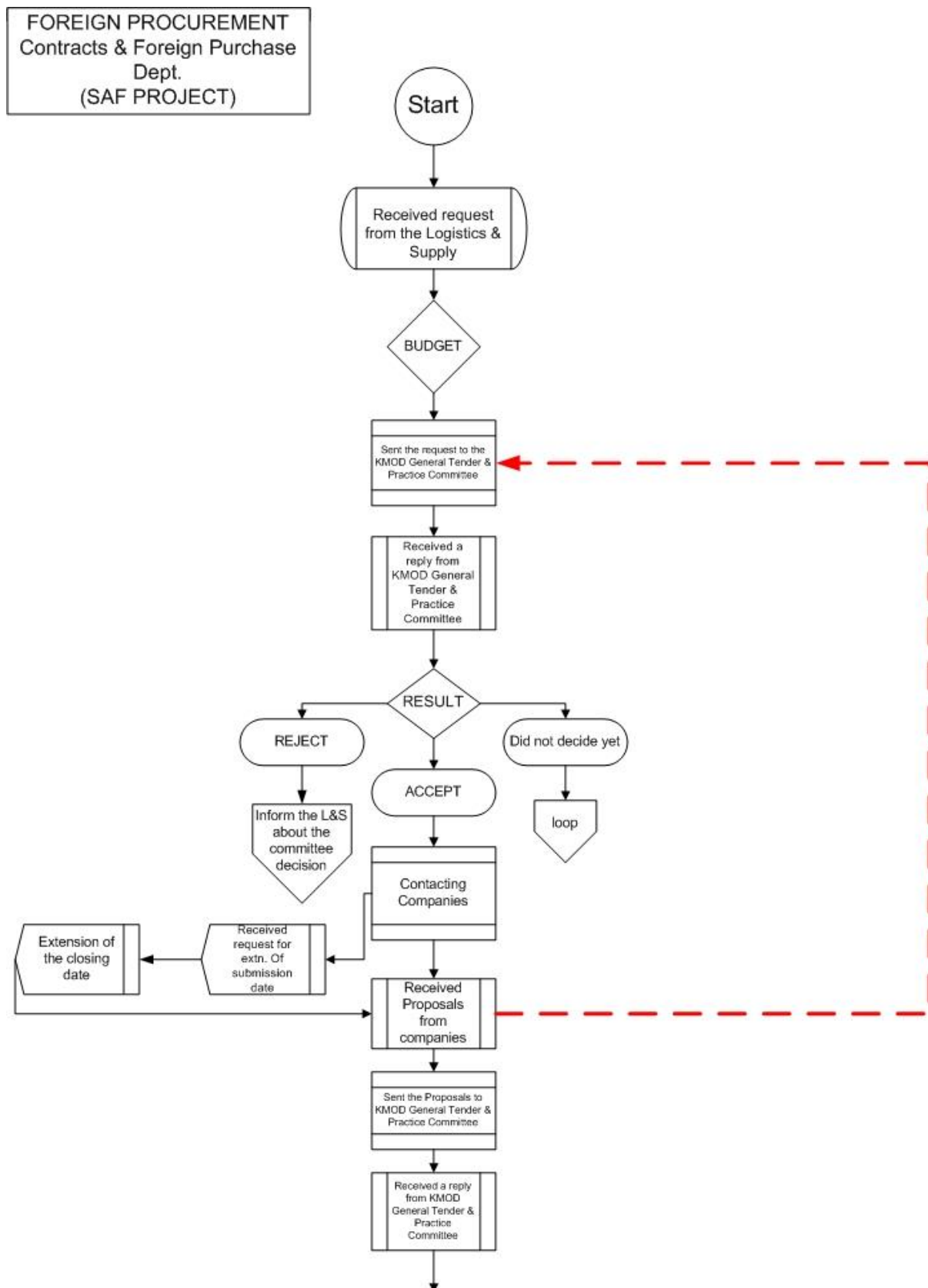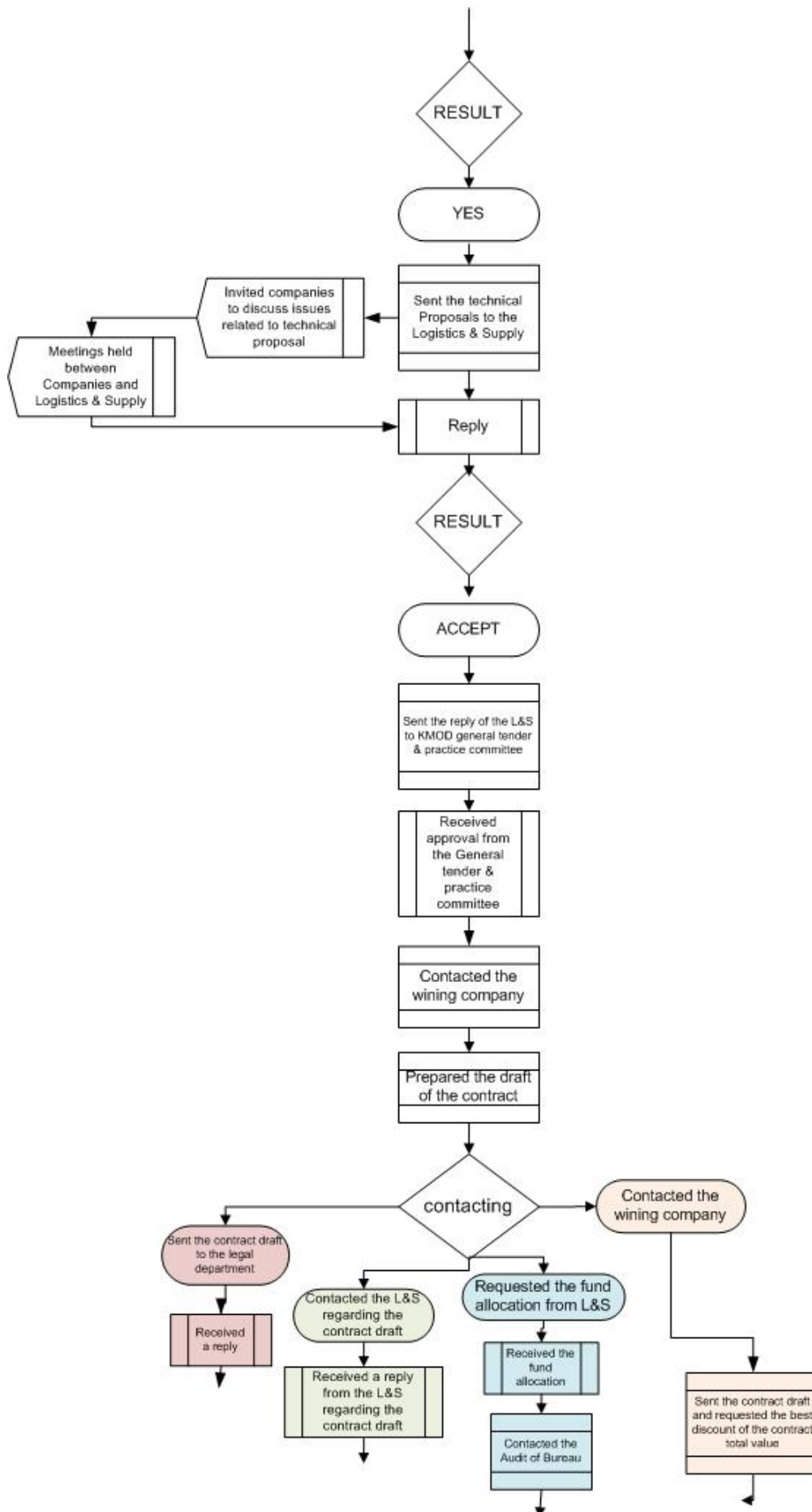
- Sent the contract draft to the legal department → Received a reply
- Contacted the L&S regarding the contract draft → Received a reply from the L&S regarding the contract draft
- Requested the fund allocation from L&S → Received the fund allocation → Contacted the Audit of Bureau
- Contacted the wining company → Sent the contract draft and requested the best discount of the contract total value

```
                        Received request
                        from Audit Bureau
                        to divide the Project


   CONSTRUCTION                           INSTALLATION AND
                                             OPERATION


   Sent request for approval
   to KMOD General
   Tender & Practice
   Committee


   Received approval
   from the General
   tender & practice
   committee


   Sent Request to X
   company to submit fresh
   proposal for construction


   Received Proposal
   from X Company


   Sent Technical proposal        Sent Proposal to General
   to Logistics & Supply          Tender & Practice
                                  Committee for approval


         Reply


        RESULT


        ACCEPT


   Sent the reply of the L&S
   to KMOD general tender
   & practice committee


   Received
   approval from
   the General
   tender &
   practice
   committee
```

Prepare the draft
of the contract

Invited the X company to
Kuwait to Finalize the
draft contract

Finalized the draft
contract with the X
company

contacting

Sent the contract draft
to the legal
department

Contacted the Audit
Bureau regarding the
draft contract

Contacted Legal &
Legislative council
regarding the contract draft

Contacted the L&S
regarding the
contract draft

Received
approval

Received various
questions and
investigation
request

Received a reply
from the Legal &
Legislative council

L&S contact Military
Engineering Projects with
regards to construction
proposal

FPD comply and
provide all documents
to Audit Bureau

MEP show interest
in the construction
work

Received letter
highlighting
calculation errors
in proposal

Contacted the
company requesting
discount and
regarding calculation
errors.

Meetings held between the
various department and X
company including MEP with
regards to construction work

RESULT

MEP will do the
construction work

```
Sent the request to the KMOD
General Tender & Practice
Committee to contact
company for design service
proposal

            ↓

Received a
reply from
KMOD General
Tender &
Practice
Committee

            ↓

Sent Request to X
company to submit fresh
proposal for construction

            ↓

Received
Proposal from
X Company

            ↓
```

Sent Technical proposal to Logistics & Supply   Sent Proposal to General Tender & Practice Committee for approval

Reply

RESULT

ACCEPT

Sent the reply of the L&S to KMOD general tender & practice committee

Received approval from the General tender & practice committee

Sent the contract signed by
company and logistics to legal
department for final signing

↓

Forwarding the contract to the authorized
signatory

↓

Received the signed contract
(original) from Legal
Department

↓

Sent a copy of the contract to (L&S,
Financial Department, Legal
Department, Audit Bureau & MEP)

↓

Sent a copy of the Original contract
to X Company

↓

Contacted the X Company for
Advance Payment Gurantee

↓

Received meeting request
from X Company with
regards to Advance Payment
Gurantee

↓

Meeting held and issues solved with
regards to the Advance Payment
Guarantee

↓

Received Advance Payment
Guarantee from X Company

↓

Kick Off Meeting held between MEP
and the X Company

↓

Contract
comes into
force

DATASET 1.5 FPD Procurement Process Guidelines

This dataset is the Table of the FPD Guidelines.

Sr.no.	Process Activity	Required Resources
1.	Receive request from the Logistics and Supply (L&S) attached with it the (SOW) scope of work and the suggested companies	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
2.	Review the (SOW) sent from the Logistics and Supplies ensuring that there is an estimated Budget for the project (if possible)	Director/Head of Section/Process Worker
3.	Determine the suggested companies (from the Logistics and Supplies and the registered companies in the data base of Foreign Procurement), in case there are no companies' names available, then the Foreign Procurement contacts the (MAO) Military Attaché Offices of various countries (Embassies) to propose companies.	Director/Head of Section/Process Worker/ internet Computer/ Ms Word/A4 Letters
4.	Prepare an official letter requesting the KMOD General Tender and Practice Committee to get the agreement for the tender	Process Worker Computer/ Ms Word A4 Letters/Printer/ stationery(Pen, stapler, holding pins)
5.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
6.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
7.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
8.	Send the approved official letter requesting the KMOD General Tender and Practice Committee to get the agreement for the tender	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
9.	Receive the agreement of the committee for the tender with the approved names of the participating companies by the committee	Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
10.	Prepare an official letter to the companies with Request For Proposal (RFP) with the following: the submission date , SOW and the terms and conditions of the tender	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)
11.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
12.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
13.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
14.	Send the approved official letter to the companies with Request For Proposal (RFP) with the following: the submission date , SOW and the terms and conditions of the tender	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
15.	Follow the Tender, receive company inquires and answer these inquires with co-ordination with the Logistics and Supplies and the RU (Requesting Unit), extend the submission date of proposals if required by 50% of the total number of the companies , this after submitting a request to the committee	Director/Manager/ Process Worker/ Computer/ Ms Word Printer/ stationery(Pen, stapler, holding pins, A4 Letters)

16.	Receive the Companies' proposals	Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
17.	Prepare an official letter, to send the proposals with a report to KMOD General Tender and Practice Committee	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)
18.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
19.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
20.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
21.	Send the approved official letter, sending the proposals with a report to KMOD General Tender and Practice Committee	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
22.	Prepare an official letter, to send the technical proposals only to the Logistics and Supplies for review and reply	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)
23.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
24.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
25.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
26.	Send the approved official letter, attaching the technical proposals only to the Logistics and Supplies for review and reply	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
27.	Receive a reply from the Logistics and Supplies determining the accepted technical proposals of the companies with a comprehensive technical report approved by the concerned committee mentioning in it the names of the committee's members, their positions and their signature on the report	Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
28.	Prepare an official letter to the committee attaching End-users letter that concluded the technical study and the wining company asking them to provide us with the financial proposals	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)
29.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
30.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
31.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
32.	Send the approved official letter to the committee attaching End-users letter that concluded the technical study and the wining company asking them to provide us with the financial proposals	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
33.	Receive a reply from the committee after opening the financial proposals and recommending the wining company	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
34.	Prepare an official letter to the wining company and further requesting a best discount on the total value of their offer.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)

35.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
36.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
37.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
38.	Send the approved the official letter to the wining company and further requesting a best discount on the total value of their offer.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
39.	Prepare the draft contract	Process workers/ computer/Printer/ stationery(Pen, stapler, holding pins, A4 letters)
40.	Review the draft contract	Head of Section/ Director/Manager
41.	Prepare an official letter to forward the draft contract to the wining company, with the detailed information of the contract in Arabic Language and an equivalent translation in English	Process Worker Computer/ Ms Word/Printer/ stationery(Pen, stapler, holding pins, A4 Letters)
42.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
43.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
44.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
45.	Send the approved official letter attaching the draft contract to the wining company, with the detailed information of the contract in Arabic Language and an equivalent translation in English	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
46.	Prepare an official letter, sending the draft contract to the Logistics and Supplies for studying	Process Worker Computer/ Ms Word/Printer/ stationery(Pen, stapler, holding pins, A4 Letters)
47.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
48.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
49.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
50.	Send the approved official letter, attaching the draft contract to the Logistics and Supplies for studying	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
51.	Prepare an official letter sending the draft contract to the Legal Department in order to be sent to the Legal Legislative Department for studying.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)
52.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
53.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
54.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
55.	Send the approved official letter attaching the draft contract to the Legal Department in order to be sent to the Legal Legislative Department for studying.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
56.	Receive L&S letter containing the comments on the draft contract, if any	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
57.	Add L&S comments to the draft contract	Process workers/ computer/Printer/ stationery(Pen, stapler, holding pins, A4

		letters)
58.	Review the draft contract after adding the L&S comments	Head of Section/ Director/Manager
59.	Receive Legal department letter containing the comments on the draft contract, if any	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
60.	Add the legal department comments to the draft contract	Process workers/ computer/Printer/ stationery(Pen, stapler, holding pins, A4 letters)
61.	Review the draft contract after adding the Legal comments	Head of Section/ Director/Manager
62.	Prepare an official letter, sending the contract with all its annexes and documents to the Audit Bureau	Process Worker/ Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
63.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
64.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
65.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
66.	Send the approved official letter, attaching the draft contract with all its annexes and documents to the Audit Bureau	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
67.	Receive Audit Bureau letter with their inquires	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
68.	Prepare an official letter, replying all the Audit Bureau inquiries	Process Worker/ Computer/ Ms Word/Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
69.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
70.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
71.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
72.	Send the approved official letter, replying all the Audit Bureau inquiries	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
73.	Receive Audit Bureau letter with their final remark to the draft contract	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
74.	Add the final remarks of the Audit Bureau and the Legal Legislative Department pertinent to the draft contract	Process worker/ Computer/ Ms Word/ stationery(Pen, stapler, holding pins)
75.	Review the final remarks of the Audit Bureau and the Legal Legislative Department pertinent to the draft contract	Head of Section/ Director/Manager
76.	Contact the Logistics and Supplies to get a serial number for the contract	Process Worker/ Telephone
77.	Prepare an official letter sending the company the final draft contract for reviewing and agreement	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding

		pins, A4 Letters)Fax
78.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
79.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
80.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
81.	Send the approved official letter attaching the final draft contract to the company for reviewing and agreement	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
82.	Prepare an Official letter to the Logistics and Supplies requesting them to allocate the budget.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
83.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
84.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
85.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
86.	Send the approved official letter to the Logistics and Supplies requesting them to allocate the budget.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
87.	Prepare an official letter to the company and invite them to sign the contract (authorized representative with an original copy of the Power of Attorney)	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
88.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
89.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
90.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
91.	Send the approved official letter to the company and invite them to sign the contract (authorized representative with an original copy of the Power of Attorney)	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
92.	Prepare an official letter to the End users to invite them to sign the contract	Process Worker/ Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
93.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
94.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
95.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
96.	Send the approved official letter to the End users to invite them to sign the contract	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
97.	Meeting with the company	Process workers/ director in charge/head of section/company representatives/end-users
98.	Receive the Performance Bond guarantee from the company	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
99.	Prepare an official letter to the Legal Department to send the contract for final signature in accordance to the regulations	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax

100.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
101.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
102.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
103.	Send the approved official letter to the Legal Department to send the contract for final signature in accordance to the regulations	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
104.	Receive the signed Contract from the Legal Department	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
105.	Prepare and official letter to the company and send one original copy of the signed contract and request the company to provide the Advance Payment Guarantee and original Advance Payment Invoice as per the contract terms and also the duly filled Proforma L/C.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
106.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
107.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
108.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
109.	Send the approved official letter to the company and send one original copy of the signed contract and request the company to provide the Advance Payment Guarantee and original Advance Payment Invoice as per the contract terms and also the duly filled Proforma L/C.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
110.	Prepare an official letter to the Logistics and Supplies to forward them a copy of the contract.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
111.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
112.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
113.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
114.	Send the approved official letter to the Logistics and Supplies to forward them a copy of the contract.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
115.	Prepare an official letter to the Finance Department to forward them a copy of the contract.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
116.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
117.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
118.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
119.	Send the approved official letter to the Finance Department to forward them a copy of the contract.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
120.	Prepare an official letter to the Legal Department to forward them a copy of the contract.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax

121.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
122.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
123.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
124.	Send the approved official letter to the Legal Department to forward them a copy of the contract.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
125.	Receive the Advance Payment Bank guarantee and the Advance Payment Invoice from the company	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
126.	Receive the Proforma letter of Credit from the company	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
127.	Prepare an official letter to the Finance Department providing them with the bank guarantees and request them to open the L/C (letter of Credit), pay the amount of the Advance payment.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
128.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
129.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
130.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
131.	Send the approved official letter to the Finance Department providing them with the bank guarantees and request them to open the L/C (letter of Credit), pay the amount of the Advance payment.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
132.	Receive letter from the Finance Department regarding the establishment of the Letter of Credit	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
133.	Prepare an official letter Informing the company with the coming into force date	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
134.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
135.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
136.	Approve the letter from the Asst. Undersecretary	Asst. Under Secretary/ stationery(Pen, holding pins)
137.	Send the approved official letter to the company Informing them with the coming into force date	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
138.	Receive letter from the company relating to the shipment details.	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
139.	Prepare an official letter to acknowledge the information related to the shipment and answer the queries if any requested by the company	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax

140.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
141.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
142.	Approve the letter from the Asst. Undersecretary.	Asst. Under Secretary/ stationery(Pen, holding pins)
143.	Send the approved official letter to the company to acknowledge the information related to the shipment and answer the queries if any requested by the company	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
144.	Prepare an internal memo to the Shipping Department and provide them the information related to the shipment.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
145.	Approve the memo	Director / fax/stationery(Pen, stapler, holding pins, A4 Letters)
146.	Prepare an official letter to Send the invoice to the Logistics and Supplies for approval and signature	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
147.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
148.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
149.	Approve the letter from the Asst. Undersecretary.	Asst. Under Secretary/ stationery(Pen, holding pins)
150.	Send the approved official letter to Send the invoice to the Logistics and Supplies for approval and signature	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
151.	Receive the approved invoice from the Logistics and Supplies	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
152.	Prepare an official letter to the Finance Department and forward them the approved original invoice for settlement of payment with the company.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
153.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
154.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
155.	Approve the letter from the Asst. Undersecretary.	Asst. Under Secretary/ stationery(Pen, holding pins)
156.	Send the approved official letter to the Finance Department and forward them the approved original invoice for settlement of payment with the company.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
157.	Receive a confirmation of settlement from the financial department	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
158.	Prepare an official letter to Head Quarters and request them to confirm that the contract is completed successfully without any complains, if yes, then mention the remarks in detail	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
159.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
160.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
161.	Approve the letter from the Asst. Undersecretary.	Asst. Under Secretary/ stationery(Pen, holding pins)

162.	Send the approved official letter to Head Quarters and request them to confirm that the contract is completed successfully without any complains, if yes, then mention the remarks in detail	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
163.	Prepare an official letter to the company and request them to provide us with the Tax Clearance Certificate to claim the Tax holdback amount.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
164.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
165.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
166.	Approve the letter from the Asst. Undersecretary.	Asst. Under Secretary/ stationery(Pen, holding pins)
167.	Send the approved official letter to the company and request them to provide us with the Tax Clearance Certificate to claim the Tax holdback amount.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
168.	Receive the acknowledgement from Logistics and Supplies relating to the completion of the contract with a detailed list of discrepancies, If any.	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
169.	Receive the Tax clearance certificate from the Ministry of Finance	Fax/Employee/Manager /Registration record of FPD/Director/Head of Section/Process Worker/ stationery(Pen, stapler, holding pins)
170.	Prepare an official letter contacting the financial department to release the Tax hold back amount.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
171.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
172.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
173.	Approve the letter from the Asst. Undersecretary.	Asst. Under Secretary/ stationery(Pen, holding pins)
174.	Send the approved official letter contacting the financial department to release the Tax hold back amount.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
175.	Prepare and official letter to the company to inform and thank them for successful completing the contract. If there were any discrepancies then to rectify it with immediate effect.	Process Worker Computer/ Ms Word/ Printer/ stationery(Pen, stapler, holding pins, A4 Letters)Fax
176.	Approve the official letter from the director in charge	Director/ stationery(Pen, holding pins)
177.	Approve the letter from the department manager	Manager/ stationery(Pen, holding pins)
178.	Approve the letter from the Asst. Undersecretary.	Asst. Under Secretary/ stationery(Pen, holding pins)
179.	Send the approved official letter to the company to inform and thank them for successful completing the contract. If there were any discrepancies then to rectify it with immediate effect.	Employee/Scanner/fax/ photo copy machine/ stationery(Pen, stapler, holding pins, A4 letters)
180.	Contract Completed	

DATASET 2 ARC One Reflective Diary

Action Research Reflection on the SAF Emergent Business Process: Problems, Events and Actions

Researcher designed the field diary to record her reflections on the SAF procurement process, the problems, events and actions taken. As well as expected FPD procurement events, the diary is a record of the many unexpected events and details of what the researcher contributed to solving emergent events in her managerial capacity. Since she adopted the theory of deferred action, her contributions drew on its deferment points and deferred design constructs, to conceptualise the procurement process as a EBP. Some of these unexpected events become defined as actual deferment points which resulted in deferred design, the AR intervention.

To date, the actual SAF procurement project has taken five years. The diary is a record of the expected planned action, as required in the FPD Guidelines, and unexpected events or emergent events. These events are recorded as 'unexpected events', 'surprises' and 'suddenness'. Management responded by planning action and taking action, in which researcher participated as a manager, and on which she recorded her reflections using the deferred action theoretical framework. The diary also records individual and organisational learning resulting from the experience. It also records whether the observed events confirm or refute the theory of deferred action.

Sheet 1 **SAF Event** FPD receives the Letter of Requirement for the SAF Project from Director of GHQ.	**Description** Verify the request and the X-Company details before forwarding the letter for approval to the Tender Committee. FPD receives the Letter of Requirement from Director of GHQ along with the Scope of work and the list of companies to be contacted.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
1. The process to establish Small Arms Ammunition Factory starts (Construction and Production Line) 2. Foreign Procurement Department (FPD) received a letter from the General Head Quarters (Director of GHQ), Ministry of Defence along with the scope of work to establish a light weapon (small and medium calibre) Ammunition Factory in Kuwait. 3. The site for the SAF project was decided. 4. FPD collected information of companies capable of manufacturing of ammunitions through the Internet.	Information of companies related to ammunition manufacture. Name, Address, Contact details. The Director of GHQ did not provide the list of companies that FPD had to contact for the Proposals. It was unexpected because usually GHQ provides FPD with the list of companies to contact for the proposals. Hence, it was the task of FPD to establish the list of companies. Meetings were held between the Director of contract (FPD), Controller of land force division, Assistant Undersecretary to find a proper solution for the issue. It was decided to use the internet to source the list of companies and also to contact the embassies. The Guideline process events, activities, states and time-points layout the expected context in which the procurement process should happen. However, the actual context changed when the names of potential suppliers was not provided at the start of the procurement process. Any new context would need new understanding and	July, 2007

	actions. (CO)	
D e s i g n - I n - A c t i o n		
Process Enactment Problem (Diagnosing)	**Emerging Issues (Planning Action)**	**Emergent Action (Taking Action)**
Difficulty in actually assessing whether the companies are really efficient to approach for the tender and the capability of the X-Company for this type of a SAF project. Researcher as Controller of land forces division instructed the staff to collect and verify the names of companies through the use of the Internet. The Director argued that before starting with the information collection it is better to contact Director of GHQ and ask them for the list of companies.	The Director of Contracts (FPD) raised an issue saying that it was the duty of GHQ to provide the list of companies. It was very essential to prepare the list of companies before obtaining the approval from the tender committee. Hence, without wasting time discussion were held between the department heads. Various options were discussed such as, requesting the lists from the embassies, contacting the Kuwait military attaché based in different countries, surfing the net. Ultimately it was decided that the best source for the information of the companies was through the Internet. Contacting the embassies of various countries was taken into consideration. The information was collected through the use of internet and going back to Director of GHQ for the list was not considered because Director of GHQ would have sent the list if they had it. Even the embassies were contacted because it was the best way to reach the companies which we couldn't reach through internet.	The history of the companies was minutely studied before short listing. Even the embassies of those countries were approached which had a reputation in the manufacturing of ammunitions.
Experiencing, Reflecting, Interpreting and Tacking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**

To collect information related to ammunition manufacturer was difficult. Internet was the best source. The Director of contract (FPD) of the department was contacted to get approval to use internet for information.

It is time consuming if we do not have the list of companies beforehand. And the FPD Procurement Guidelines did not stipulate how to collect information which resulted in discussion among process workers and many options were discussed. Contacting Director of GHQ for the list, contacting the Kuwait Military Attaché based in various countries, surfing the internet and contacting the embassies were some of the options discussed to obtain the list of companies. Since the list was not provided the work got delayed by a couple of weeks. It would be better if Director of GHQ provides a list of companies to be contacted or to maintain a proper database of the companies related to defence industry. Proper database would be highly recommended.

Data was collected of many companies including their history and capabilities. Even the details of embassies of various countries were collected in order to contact them too.

Omission of the list of companies was an issue since it resulted in delay. It doesn't happen always. Director of GHQ provides a list of companies to contact in all the cases. In this case it did not happen. Only if there was a proper database system it could be easy to find the companies. Meetings were held between the Director of contract (FPD), Controller of land force division, Assistant Undersecretary to find a proper solution for the issue. Researcher recommended contacting the embassies and surfing the net to source the companies because full details of the company history can be sourced from the net easily. I also, suggested maintaining a proper database system so that it could be easy to outsource companies in future Processes as per the requirement.

Collection of information for these SAF Processes was time consuming and the best method was the use of internet. Through internet it was possible to collect the information in a very short time.

I think the action taken by using internet was perfect since all the companies related to the defence industry can be found on the net. There were many websites which have a proper database and list the companies with their capabilities and specialization. Even contacting the embassies was a better choice since the embassies too maintain a proper record of companies as per their expertise.

Evaluating the Action and Assessing the Pragmatic Learning Points

Agreement: Use of internet was very effective since it reduced a lot of time. Even contacting embassies for information was productive to contact companies for the SAF project. The controller of land forces suggested contacting the embassies and use of internet.

Disagreement: Information collected from the internet was not reliable. Since one cannot consider the whole information provide on net to be 100% true. The Director of contract (FPD) wanted to contact Director of GHQ and ask them for a list rather than FPD collecting the information.

Learning: FPD should maintain a proper Organizational database (knowledge management) so that they have

the required list of companies immediately as and when required. The lesson learnt by FPD is better, especially for the procurement process. E.g. In the case of the database of arms manufacturers, it is called knowledge management; the lesson learnt is that it is efficient to have proper organisational knowledge management.

Experiencing, Reflecting, Interpreting, Tacking Action

It is the job of FPD to source suppliers. In the case of SAF procurement the FPD Procurement Guidelines failed to stipulate suitable arms manufacturers. The process of sourcing arms manufacturers appeared to be random, since no list of arms manufacturers had been provided. This apparent randomness is a reflection of emergence. During the everyday work of FPD sourcing suppliers and contract drawing such emergence is accepted and not cognizant to the process owner and process workers. The actual action taken was appropriate and pragmatic.

Developing, Confirming Theory

These seemingly pragmatic events revealed that matters arise emergently. The FPD Procurement Guidelines did not provide instructions on how to source arms manufacturers. But the cause of the emergence was not the absence of FPD Procurement Guidelines. The disagreements between the Director of contract (FPD) and Director of GHQ is indicative of points in the procurement process at which either stipulated business processes or planned processes need deferment points. The actual event is sometimes different from the planned event. This is explained as the emergent nature of social systems. Patel (2006) postulates that emergence is an attribute of all social systems. No theoretical anomalies can be noted.

Theoretical Anomalies

A single planned event is either realised or not. Rational plans can be communicated among process workers in overall terms or even as metaphor (Nonaka 1991). Whether it is realised or not, it is not implemented in actuality as the intended planned action in all its detail.

Sheet 2 **SAF Event** Approval from the Tender Committee to contact the companies.	**Description** Forward the SOW to Tender Committee and request approval to contact the companies.	
SAF Process Event Number	**Description (issues & Problems)**	**Date**
5. Call for Tendering. FPD sent a letter to the Tender Committee for approval to contact companies for the project. 6. Received approval from the Tender Committee 7. Received a letter from Director of GHQ with some additions in ammunition size. Change in requirement. 8. FPD sent letters of Request for Proposals (RFQ) to various embassies and companies which were outsourced through internet Companies which had experience of setting up ammunition factory. In total 10 embassies and 21 companies were sent the RFQs. Proposal submission deadline was set at two months from the date of the RFQ letter.	Change of Ammunition size. In short change of requirement. This change in requirement immediately after the opening of the SAF project was unexpected. This is change added to the changing context. It was unclear why the military decided to change the ammunition size, but it added to the developing new context. (CO) The Director of GHQ sent a letter to the Director FPD informing them about the change in requirement. It was sudden and unexpected because FPD had received the approval from the tender committee to contact the companies. The asst. undersecretary of FPD contacted the chairman of the tender committee over phone and informed him about the change in requirement.	January - February, 2008
D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**

SOW was forwarded to the Tender Committee to take approval for contacting companies. Change in requirement means taking approval from Tender Committee again. It effects the time duration of the contract and delay in the SAF project. The Manager of Land Force Division (FPD) suggested that the request can be sent to companies and to write to the Tender Committee was not required. However the Director of contract (FPD) instructed the Manager of Land Force Division (FPD) to take immediate action and inform the Tender Committee about the change and take approval again.	The Tender Committee was already requested for approval to contact the companies for proposal. The change in the requirement meant, the Tender Committee had to be contacted for approval once again before sending RFQs to the companies and embassies. Hence, we again sent a letter to the Tender Committee for approval. Sending the RFQs along with the fresh SOW without informing the Tender Committee was not advisable because the Tender Committee would have made an issue after receiving the proposals from companies. Getting approval from the tender committee within a short notice period was also an issue, hence FPD had to contact the chairman of the tender committee to obtain the approval. Also tender committee meetings are not held daily, they are arranged twice in a month.	The Tender Committee was contacted immediately and approval was taken within a week. Most of the communication was done by telephone and a representative attended the meeting, hence the result was quick response from the Tender Committee. There is no specific point of contact, who can take immediate action and delays can occur. However, the Director of FPD contacted the Chairman of the Tender Committee and clarified the reason for the approval which resulted in quick action.
Experiencing, Reflecting, Interpreting and Tacking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
To take approvals is not easy and fast rather it is a time consuming. Tender Committee meetings are held every 15 days. Weekly meetings are held only on urgent basis. I feel that there should be a point of contact who could arrange the emergency tender committee meetings as well as to coordinate on regularly basis. Also, I would suggest that the tender committee	The document related to the change in the requirement was immediately sent by FPD to the Tender Committee on arrival of the documents from Director of GHQ. Coordination with the Tender Committee staff was done accordingly to hasten the approval work. In this case, the Director of contract	Approval from the Tender Committee was done due to the quick response and coordination with the Tender Committee staff. Taking the issue to the Tender Committee was appropriate because later on it would be an issue where the Tender Committee would have argued that the SOW sent to the companies was different than the one sent to them for approval.

be notified about the change in the SOW if there are minor changes and an approval should be awaited only in the case of major changes, this can avoid unnecessary delays.	(FPD) had to contact Director of GHQ and request for the reason in the change of requirement because the same had to be explained to the Tender Committee as well. Even taking approval within a short time was important because the tender committee meetings are held only twice a month. It was necessary to contact the chairman of the tender committee and clarify the change in requirement to hold an emergency meeting to approve the request.

Evaluating the Action and Assessing the Learning Points

Agreement: It was unfortunate that an unexpected change in requirement had occurred which is not normal if FPD follows the general terms and conditions. It's time consuming. However, the Manager of Land Force Division (FPD)'s prompt action led to the approvals from the Tender Committee within a short period. The Director of contract (FPD) agreed and contacted Director of GHQ to request the reason for change in requirement.

Disagreement: To take approvals means to explain and justify the change in requirements which takes a lot of time and energy. Coordination between the Arms and Ammunition Department (End User), Director of GHQ, FPD and Tender Committee is very much essential and not an easy task to be done within a week. The Manager of Land Force Division (FPD) was against taking any action and wanted Director of GHQ itself to write to the Tender Committee the reason for the change.

Learning: Unexpected events can occur. Maintaining the list of contacts in emergent situation is very essential.

Experiencing, Reflecting, Interpreting, Tacking Action

As a researcher I feel that the Requirement should be properly studied and only then a request for proposal should be made. Changing the requirement at any stage after the initial request would be rather confusing and time consuming which may lead to delay in SAF project. In this case the process had to be repeated i.e. taking approval twice.

Here I feel that a proper study of the requirement should be initiated before finalising the request. Changes later on would be confusing and creates a doubt in the minds of the stakeholders.

Developing, Confirming Theory

This change in requirement is evidence of change or emergence in social systems. Anderson et. al., (1999) and Dron (2005) postulate that emergence is an attribute of all social systems. This is both evidence and confirmation of the theory of deferred action that emergence is intrinsic to social systems (Patel, 2006).

Theoretical Anomalies

As this event is confirmation of the theory of deferred action, no theoretical anomalies can be noted. The researcher was concerned that no theoretical anomalies were found. Discussion with the Supervisor reassured here that that is acceptable and that it was evidence of confirmation of the theory of deferred action.

Sheet 3 **SAF Event** RFQ are sent to the companies with the terms and condition of submission of the proposal.	**Description** RFQ are sent to companies. The RFQ contains the terms and conditions the companies have to follow to participate in the tender. E.g. The submission date is mentioned in the RFQ and proposal submitted after the date are not acceptable.	
SAF Process Event Number	**Description**	**Date**
9. Various companies requested for an extension to the submission date. The request for extension for the submission date was forwarded to the Tender committee again for approval. 10. FPD received the approval from the tender committee to extend the submission date by another month. FPD then notified the embassies and companies about the extension of the submission date.	Extension of the submission date. In short once again meaning change in requirements. To study the SOW it was essential to do a site survey and clarification of various technical issues was a must. Hence the companies requested for an extension in submission date. The Director of Contract (FPD) had to contact the Director of GHQ and the Chairman of the tender committee to request an approval to extend the submission date by one month. Even the reasons for the extension request were to be sent to the concerned departments. It was also necessary to contact and obtain approval from the Director of GHQ and the Chairman of the tender committee in a very short time.	April - June, 2008
D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**

Change in submission date means taking approval from cross-functional departments. It effects the time duration of the contract and delay in the SAF project. The Manager of Land Force Division (FPD) immediately informed the Director of contract (FPD) about the request for extension of submission date. The Director of contract (FPD) asked how many companies had requested for the extension and ordered that the extension request should be sent to the Tender Committee only if we receive extension requests from minimum 3 companies. The period given for submission was two months and the request for extension was received by one X-Company after one month from request date. In total we received extension request from 5 companies. The Director of contract (FPD) then instructed the Manager of Land Force Division (FPD) to immediately contact the Tender Committee and Director of GHQ and follow up with them. It was agreed just one week before the ending date of submission of the proposal.	Director of GHQ and the Tender Committee had to be contacted for approval to extend the submission date. The request had come from more than 5 companies it had to be considered due to the fact that it was a vast SAF project. The extension request was sent to Director of GHQ and the Tender Committee as well. If the request had come from less than 3 companies then the Tender Committee and Director of GHQ wouldn't be contacted for approval and the extension request was to be rejected without consultation. The SOW of the project was vast because there was construction, installation and operation involved. Also for this purpose site survey was essential and the time provided was not quit enough to do the site survey and for bidding. In the SOW there was no fixed date provided for the site survey and hence it had to be arranged. Arranging meetings and site surveys depends on the availability of the officers in charge. Also to the extension request had to be granted within a short time and for that it was necessary to obtain the approvals from GHQ and the Tender Committee.	Director of GHQ and the Tender Committee were contacted immediately and approvals were taken within a short period. Most of the communication was done by telephone and a representative attended the meeting and hence the result was quick response from the Tender Committee. The reasons for the extension of submission date were very well clarified to the concerned departments so that they could decide easy.
Experiencing, Reflecting, Interpreting and Tacking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**

To take approvals is not easy and fast rather it is a time consuming. Tender Committee meetings are held every 15 days. Weekly meetings are held only on urgent basis.

The SAF project was vast and enough time should had been given to companies to study the SOW. I feel that before sending the request all the details of the SAF project should be studied carefully and minutely and such situation can be avoided. This action again led to confusion and repetition of actions. I suggested that even FPD should study the SOW before sending the requests and highlight any discrepancies in the SOW so that it could be rectified before sending the request.

The request to extend the submission date was immediately sent by FPD to the Tender Committee and Director of GHQ. Coordination with the Tender Committee staff and Director of GHQ was done accordingly to hasten the approval work.

I feel this action could have been avoided if the companies were given appropriate time limit taking into consideration the SAF Processes details.

Here Director of GHQ and the Tender Committee had to be contacted again for the extension. The reasons for the extension request had to be explained to the Tender Committee. To co-ordinate between departments is not an easy task. I recommend that all the points should be considered from the point of view of the X-Company as well before requesting a proposal.

Approvals from the Tender Committee and Director of GHQ were done due to the quick action and coordination with the Tender Committee staff and Director of GHQ.

This action could had been avoided if the time duration to submit the proposal was accessed because it involved setting up a factory which means construction, installation, training, maintenance, etc.

The action taken here was appropriate because by communication through correspondence (letters) a solution was not possible and only communication by telephone and meetings made it possible.

Evaluating the Action and Assessing the Learning Points

Agreement: The request to extend the submission is not normal it is done by companies only if the time period given is not enough for study of the scope of work. However, the Manager of Land Force Division (FPD)'s prompt action led to the approvals from the Tender Committee and Director of GHQ within a short period. Tele communication played an important factor for the extension approval.

Disagreement: The Director of contract (FPD) and Manager of Land Force Division (FPD) didn't agree to the extension initially. The companies too didn't request for extension on receipt of the RFQ. Also, coordination between the FPD, Director of GHQ and the Tender Committee is very much essential and not an easy task to be done in a short period of time.

Learning: FPD should study the scope of work before requesting proposals and look for events which are not considered in the SOW. If there is any event overlooked in the SOW it has to be rectified instantly.

Experiencing, Reflecting, Interpreting, Tacking Action

The normal procedure to communicate formal requests is to use letters, but the communication to expedite the extension date of the tendering was done by telephone.

Developing, Confirming Theory

The telephonic communication and physical attendance of FPD staff at the Tendering Committee is evidence of deferred action. The normal procedure for formal communication is by letter. This kind of local action, different from the planned procedures, needs to be catered for in organisation design. In the theory of deferred action it is termed 'deferred action'. This set of SAF procurement process events do reveal that current approaches to business process design need to cater for deferred action. The dominant current approaches assume that rational design works, whereas evidence from this action research suggests that they rationally design business processes are tempered with local action, or deferred action. Rational action is modified by a moderating local action that is determined by the environment of the system.

Theoretical Anomalies

This set of SAF procurement process events poses no theoretical anomalies.

Sheet 4 **SAF Event**	**Description**
FPD receives the proposals from the tendering companies.	FPD makes a list of the companies that submitted the report and forwards them to Director of GHQ and Tender Committee and accordingly informs the winning X-Company. FPD receives the proposals from the tendering companies. and forwards the Technical Proposal to Director of GHQ for study and the Financial Proposal to the Tender Committee. Director of GHQ submits the report of their study and the Tender Committee approves the winning X-Company based on the report from Director of GHQ

SAF Process Event Number	**Description: Issues & Problems**	**Date**
11. FPD received the proposals within the submission date from seven companies. The proposals of the 7 companies were sent to the Tender Committee for review and selection. 12. The Technical Proposals were sent to GHQ for study and comments. 13. GHQ requested FPD to contact the companies and invite them to Kuwait to discuss various issues related to their proposals. All 7 companies were contacted and invited to Kuwait for a meeting. 14. After the meeting were conducted, GHQ shortlisted Company X for the tender. 15. FPD forwarded GHQ's comments to the Tender Committee. 16. The tender committee approved Company X for the project. 17. Company X was informed	FPD received the proposals from the companies and forwarded them to the respected departments. However, the proposal had some discrepancies which had to be discussed with the companies. ALL the companies had not quoted for the construction work. Some had quoted for large calibre ammunition too. In some proposals there were technical issues which had to be clarified. Hence, Director of GHQ requested FPD to arrange for meetings with the companies. To arrange meetings in a short duration is very difficult and FPD had to arrange for it. FPD had to write letters to the companies with the suggested dates for the meeting and await for their reply's and confirmations.	June, 2008

about the winning bid by FPD. 18. FPD requested Company X for discount on the total value of the contract.		
D e s i g n - I n - A c t i o n		
Process Enactment Problem (Diagnosing)	**Emerging Issues (Planning Action)**	**Emergent Action (Taking Action)**
FPD received the request from Director of GHQ to arrange the meetings but the time period for the meetings was not sufficient. The Director of contract (FPD) requested Director of GHQ to give sufficient time to the companies to attend the meetings. But Director of GHQ sent the suggested date and the meetings were to be arranged on those dates. The Manager of Land Force Division (FPD) immediately informed the staff to write to the companies and inform them about the meeting dates. The staff informed the Manager of Land Force Division (FPD) that it was not possible to arrange the meetings immediately due to the lack of time. Only one week was given to the companies to confirm the date for the meeting. The staff sent the letters. FPD did not receive any confirmation reply from the companies. Couple of the companies replied asking for change in dates for the meeting. Only three companies attended the meetings. Discussions were held between the X-Company and Director of GHQ and finally X-	Request for a meeting was not planned. It was an unexpected event in the procurement process. Upon receiving the request, letters were immediately sent to the companies informing them about the suggested dates. There were two ways to inform the companies, by writing official letter or by email. The Director of contract (FPD) wanted to inform the companies by email. But the later was written because emails are not considered as official and legal by KMOD. The meetings were to be arranged in a short notice period. The schedule of the meeting was provided by the Director of GHQ. The only difficulty was to notify the companies about the meeting dates and receive confirmation from the companies of their participation.	Official letters were sent to the companies informing them about the dates for the meeting. However, only three companies attended the meetings and the rest couldn't due the fact that there was not enough time given to them. After the meetings were held Director of GHQ shortlisted X-Company for the SAF project and submitted a report to FPD. FPD immediately forwarded the report to the Tender Committee for approval. After receiving the approval FPD informed the winning X-X-Company.

Company was short listed by Director of GHQ. The Manager of Land Force Division (FPD) informed the staff to reply to the companies and inform them that the dates cannot be changed.		
Experiencing, Reflecting, Interpreting and Tacking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
Arranging meetings was not planned. Hence there were discussions among the process workers whether the time given to attend the meetings was enough. Only one week was given to the companies to attend the meeting. The Director of contract (FPD) contacted Director of GHQ by telephone to request enough time, but Director of GHQ insisted to stick with the dates. The Manager of Land Force Division (FPD) then immediately instructed the staff to make official letters and inform the companies. However, due to the short notice period a couple of companies did not attend the meeting. I suggested that at 15 days' time period should be given to the companies because the proposal has to be reviewed and accordingly the representatives of the companies can clarify their part.	The emerging issue of arranging the meetings could have been avoided if they were included in the scope of work. The time frame given to the companies to attend the meeting was very limited. Given to understand that the SAF project was vast the companies would have expected enough time to study the proposal and come prepared for the meetings. Discussions were held between the process workers such as the staff, Manager of Land Force Division (FPD) of Land forces division and the controller of the Land Forces division about the time frame for the meeting and the immediate action to be taken to solve the issue of arranging the meetings. The proper channel to contact the companies and that too immediately was a matter of concern.	The Director of contract (FPD) contacted Director of GHQ by telephone to solve the issue about the time frame was right because there was not enough time to write letters asking for change in dates for the meeting. Informing the companies by writing official letter to them was appropriate because KMOD doesn't consider emails as official.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) agreed to write official letters to the X-Company to inform them about the meeting. Even the staff agreed to this and prompt action was taken accordingly.

Disagreement: The Director of contract (FPD) disagreed and wanted to change the dates to provide the companies enough time to attend the meeting. He even tried contacting Director of GHQ by phone and wanted to contact the companies through email to achieve quick response from the companies. This is unprecedented and

indicative of deferred action.

Learning: Process workers upstream need to plan their actions in order not to cause pressure for process workers downstream.

Experiencing, Reflecting, Interpreting, Tacking Action

The researcher suggests that Director of GHQ should have mentioned about the invitations to the companies for a meeting and site survey in the scope of work itself to avoid confusion and unnecessary hurdles later after receiving the proposals. Even the companies would have got a clear picture to provide a relevant quote.

Developing, Confirming Theory

This set of events indicates uncertainty was present upstream of the procurement process, with Director of GHQ, which caused pressure downstream in FPD's actions and had an impact on the tendering companies. The environment of a system can be thought of as an ecosystem, each subsystem has its environment, which in turn is a subsystem with its own environment. The FPD subsystem's environment is composed of Director of GHQ KMOD and other legal and institutional bodies, whose environment is the Legal and Legislative Council, whose environment is the Parliament. The environment of the tendering companies is all those subsystems and the economic system it operates in. It indicates that the environment of a social system should be defined as other subsystems. This is consistent with the general complexity theory (Pavard and Dugdale, (2006). These subsystems compose the ecosystem of the social system engaged in the purposeful action – to build the small ammunition factory. This set of events again confirms deferred action.

Theoretical Anomalies

This set of SAF procurement process events poses no theoretical anomalies.

Sheet 5 **SAF Event** FPD prepares the draft.	**Description** Draft contract is prepared according to the subject of the SAF project and approvals from cross-functional departments are taken. FPD prepares the draft contract and forwards it to the cross-functional departments and the winning X-Company.

SAF Process Event Number	**Description: Issues & Problems**	**Date**
19. Further discussions related to the project were carried out by the end user, GHQ and Company X. 20. Discussions were held with Company X in relation to the construction of the SAF. 21. FPD Prepared the Draft Contract for the project.	Discussion related to construction and implementation of the SAF project was held. The clarifications and explanations are done before selecting the winning X-Company and then discussion are held based on the submitted proposal. It was very necessary to clarify the issue related to the construction work and the willingness of the companies to carry out the construction work if the tender was awarded to them. The construction of the facilities of SAF greatly relates to the machineries which have to be installed.	October, 2008

<div align="center">D e s i g n - I n - A c t i o n</div>

Process Enactment Problem (Diagnosing)	**Emerging Issues (Planning Action)**	**Emergent Action (Taking Action)**
The controller of the department informed the staff to arrange meetings between Director of GHQ, Arms and Ammunition Department (End User) and the X-Company. FPD coordinated between the X-Company and the departments.	To arrange the meeting, the Director of contract (FPD) instructed the Manager of Land Force Division (FPD) to inform the X-Company about the meeting and the time duration would be one week. Also, the meeting had to be arranged in a short notice period. Hence, the company was notified about the agenda of the meeting so that it could prepare itself.	Letters were written to the X-Company informing them about the meeting. It was not planned in advance. As per their general terms and conditions the draft contract is prepared immediately after the winning X-Company is decided. In this case no proper plans were made in relation to the implementation of the whole SAF project.
Experiencing, Reflecting, Interpreting and Tacking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**

As mentioned earlier, it is not an easy task to coordinate and arrange for meetings in a short time. In this case the FPD Procurement Guidelines were not clear and the process workers had to work on the solutions to avoid delays. It is very essential to have a proper guideline which should cover all the unexpected delays. As a researcher, I had suggested contacting the concerned department over telephone and clarifying the actual need for the meeting in order to notify the company of the same in order to grant time, so that the company could prepare themselves for the meeting.	As a researcher, I think this problem could have been avoided if a site survey and clarification of the SAF project was done under the scope of work itself. Since it was not done earlier, there was much confusion following up with the X-Company and the cross-functional departments. The process workers had to coordinate to find out the exact time duration for the meetings. The process workers of FPD (Manager of Land Force Division (FPD) of Land forces division, FPD) had to contact the personnel of Director of GHQ, personnel of the arms and ammunition department (Arms and Ammunition Department (End User)) to fix a date for the meeting and accordingly had to inform the X company about the meeting date. All this had to be done via telephone to avoid delays.	The action taken here was quick and the X-Company was informed in advance about the time duration for the meetings so that X-Company could plan its visit accordingly. Usually the companies are only informed about the meeting but the time duration is not given to them because the discussion takes one to two days only.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) insisted on informing the companies in advance about the time duration which doesn't happen in normal cases.

Disagreement: The Director of contract (FPD) was reluctant to inform the X-Company about the time duration because Director of GHQ had not mentioned the details of discussions.

Learning: The procurement process should have explicit events and time scales.

Experiencing, Reflecting, Interpreting, Tacking Action

In this case no proper plans were made in relation to the implementation of the whole SAF project. As a researcher I would suggest that a proper guideline should be made before starting with a new SAF project. Deadline should be well decided before the start so that delays are avoided.

Developing, Confirming Theory

It is very essential to have a proper guideline which should cover all the unexpected delays. Current approaches do not factor in 'unexpected events'. The Theory of Deferred Action terms it 'emergence' and for organisational

design 'emergent organisation' (Patel, 2007; Ramrattan and Patel 2010) and Marjanovic (2005) as non-standardisable business process. Patel's (2006) theory of deferred action enables such unexpected delays to be incorporated into rational organisation design as 'deferment points'. A deferment point is a point at the intersection of two dimensions of social systems, planned action and emergence.

Theoretical Anomalies and Discussion

This set of SAF procurement events poses no theoretical anomalies. The dominant paradigm for organisation design, planning assumes the primacy of two tenants. One, organisation design can be determined solely rationally and once designed can be expected to be enacted as designed. Two, the designed organisation can be expected to be enacted with certainty. As rationally designed. This set of SAF procurement events reveal that rationalism and certainty counter these primary premises of the rational dominant paradigm for organisation design. Weick and Browning (1986) call this 'organisation life'.

Sheet 6 **SAF Event** FPD prepares the draft contract and forwards it to all the cross-functional departments as well as the X-Company for their review and comments.	**Description** The draft contract is prepared by FPD. It is forwarded to legal Department, Director of GHQ, Audit Bureau and Legal and Legislative Council for approval.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
22. Draft contract was sent to GHQ (End User) for reviewing. 23. Draft Contract was sent to Company X. 24. Draft Contract was sent to the Legal Department of KMOD for Reviewing. 25. Draft Contract was sent to Audit Bureau for reviewing. 26. Audit Bureau suggested to separate the project in two parts: Construction and Production Line.	The draft contract was prepared by FPD. However, to divide the contract in two parts means re-drafting of the contract. It also means that discussions have to be held with the cross-functional departments in relation to contract separately. It also means delay in the implementation of the SAF project. Approvals were also needed from the concerned departments to separate the contracts. The most important was to get the approvals at the earliest to reduce the delay.	November - December, 2008

27. FPD contacted the Tender Committee for approval to separate the contract in two parts.		
D e s i g n - I n - A c t i o n		
Process Enactment Problem (Diagnosing)	**Emerging Issues (Planning Action)**	**Emergent Action (Taking Action)**
The draft contract was prepared taking into consideration all the details of the SAF project. At this stage to divide the contract into two parts would result in delay. The Director of contract (FPD) and the Manager of Land Force Division (FPD) coordinated with the Audit Bureau to find a solution to the problem. However, the Audit Bureau was adamant and wanted the SAF project to be divided so that the financial issues of the SAF project could be clear. The Director of contract (FPD) then instructed the Manager of Land Force Division (FPD) to work accordingly and the manger instructed the staff to work on the draft contract and divide it in two parts, construction and installation, maintenance and training in the other part. Since the SAF project had to be divided the Manager of Land Force Division (FPD) insisted that fresh proposals for the construction work and installation should be requested from the X-Company so that there was no confusion in the future.	Here division of the SAF project was not planned and hence this led to delay in the SAF project. The Audit Bureau was cross-functional with the financial issue of the SAF project and taught that it would be appropriate to break the SAF project in two parts so that the financial issue could be solved. KMOD was not in the favour of dividing the SAF project to avoid the delay in implementation of the SAF project. However, to be flexible and clear it was decided to divide the SAF project. This solution was unexpected, never before has this type of request been made by an outside body. Accordingly, the various departments had to be contacted for approvals. All this had to be done quickly and swiftly.	On receipt of information to divide the SAF project in two parts, FPD immediately started working on the draft contracts, at the same time co-ordinating with Director of GHQ and the X-Company and arranged meetings between them to request for fresh proposals and to resolve any issue which were pending for discussion.

Experiencing, Reflecting, Interpreting and Tacking Action	Experiencing, Reflecting, Interpreting and Tacking Action	Experiencing, Reflecting, Interpreting and Tacking Action
The division of the contract was not planned and that too resulted in a delay. The FPD Procurement Guidelines does not mention anything about division of Processes after selecting the wining X-Company, neither does it mention anything about any external bodies suggesting to divide the Processes. The division again led to discussion among process workers to decide how the contract should be drafted. Whether the same proposal should be continued or fresh proposals should be requested. The Director of contract (FPD) arranged meetings with Director of GHQ, Arms and Ammunition Department (End User) to decide about the issues. After discussion, the Director of contract (FPD) instructed the Manager of Land Force Division (FPD) and the staff to work accordingly.	As a researcher the division of the SAF project was very much uncertain. As result discussion were held between the process workers as to how the SAF project should be implemented. I advised the Director of contract (FPD) to request the X-Company to provide fresh proposals in order to avoid confusions in future. Accordingly, the meetings were held and the X-Company was requested to provide separate proposals for the SAF project. Also, I highlighted the need for the company to provide a detailed price break down to avoid any issues later.	I feel the action taken here was very immediate, which helped reduce the delay. The case of division of the project delayed the SAF project because discussions were held again between the X-Company and the cross-functional departments. The draft contracts were prepared again which had to be sent again to the cross-functional department after receipt of fresh proposals from the X-Company.

Evaluating the Action and Assessing the Learning Points

Agreement: Upon suggestion from the Audit Bureau, FPD had to work accordingly to divide the project. The Manager of Land Force Division (FPD) and Director of contract (FPD) agreed to the idea of division of the SAF project and instructed the staff to prepare the draft contract.

Disagreement: The Arms and Ammunition Department (End User) and Director of GHQ were not in the favour of a division because they knew that it could result in a delay.

Learning: Process owner and process workers should be prepared to change routines in response to the environment.

Experiencing, Reflecting, Interpreting, Tacking Action

As a researcher, I would suggest that all procurement Processes in future should be decided as per the length and

nature of the project. If it involves construction and installation, first divide the contract in parts so as to avoid any delays or changes later on.

Developing, Confirming Theory

This set of SAF procurement events were significant change. Arguably, the whole project changed into two separate Processes construction of the small arms factory and production of the small arms. This can be viewed as a phase change or non-linear change (Byrne, 1998; Styhre, 2002) in terms of complexity theory, were systems make a radical change as they adapt to their environment. Phase change is not the same as deferment points of the theory of deferred action. The theory of deferred action does not account for phase change. This set of SAF procurement events show that the theory of deferred action needs to account for phase change in systems. The researcher terms this deferred phase change adaptation (DPCA). The significant observation concerns deferred phase change adaptation of systems, as detailed above. Such adaptation should be facilitated in social systems.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 7 **SAF Event** FPD contacts the Tender Committee for approval to request the X-Company for proposal.	**Description** FPD sends a letter to Tender Committee for approval to request the X-Company for a fresh proposal. This was not planned but the action was repeated according to the situation.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
28. FPD contacted the Tender Committee for approval to contact Company X for the Construction Proposal and received Approval from Tender Committee. 29. It was decided that Company X will provide financial and technical proposal for the construction of SAF. 30. Company X submitted their proposal for the construction work.	FPD had to repeat the action again due to the situation. This meant that the procedures had to be followed again of taking approval from the Tender Committee and contacting the X-Company for fresh proposal. Letter had to be written to the X-Company requesting two separate proposals with detailed price break down. Also, it was very essential to coordinate with the company so that the company would submit the proposal at the earliest.	January – April, 2009
D e s i g n - I n - A c t i o n		
Process Enactment Problem (Diagnosing)	**Emerging Issues (Planning Action)**	**Emergent Action (Taking Action)**
Writing letters to the Tender Committee and the X-Company was not the issue, but the actual issue was the time involved for this action which had to be repeated. The Manager of Land Force Division (FPD) thought it was as per FPD Procurement Guidelines to take approval from the Tender Committee to contact the X-Company for fresh proposal. Director of GHQ wanted the SAF project to be implemented as soon as possible and was not interested in the procedures. The Director of	It was decided to contact the Tender Committee for approval to contact the X-Company because it was the right way and as per the FPD Procurement Guidelines. It was possible that the Tender Committee would raise an issue later if prior approval was not taken. Explanation had to be provided to the Tender Committee for such a request. Accordingly, after approval the X-Company was to be contact for fresh proposals. The only issue was to coordinate with the company and request them to submit the proposal at the earliest.	The Tender Committee was contacted and approval was taken to contact the X-Company. FPD immediately sent a letter to the X-Company requesting the proposals. The X-Company in turn sent proposals within two months.

contract (FPD) argued that taking approval was not required and we could directly contact the X-Company because the approvals were taken earlier.		
Experiencing, Reflecting, Interpreting and Tacking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
The Tender Committee was contacted for approval to request proposals from the X-Company due to division of the SAF project. The process workers had to coordinate with X-Company and the cross-functional departments to divide the SAF project.	All the phases of a SAF project should be well reviewed in advance to avoid unnecessary hurdles. It also helps to have a clear idea of the SAF project and plan accordingly. In this case, consultation between the cross-functional departments was very much essential to avoid further delays in the SAF project and for that reason I suggested that we should request the companies for separate proposals, and meetings were held accordingly. The result was that separate proposals were requested and further confusions were avoided. I also suggested that we request the company to provide a detail price proposal to clear all financial doubts. Also, I highlighted the need for a deadline for submission of proposal so that the company would abide and avoid delay.	The emergent action taken was appropriate because confusion was possible in the later stages if a single proposal was referred. A detailed proposal was essential to clear all financial doubts of the cross-functional departments. Also, to avoid unnecessary issues, approvals were a must and as per the FPD Procurement Guidelines.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) was in favour of division of the contract so that the future phases of the SAF project could be planned and unnecessary delays could be avoided.

Disagreement: Since the SAF project was about to be delayed, Director of GHQ was not in the favour of dividing the contract. The Arms and Ammunition Department (End User) too was not in favour of division of the contract.

Learning: Process owner and process workers should be prepared for change whenever required the situation requires a non preplanned response.

Experiencing, Reflecting, Interpreting, Tacking Action

As a researcher, I feel this could be avoided by deciding to divide the SAF project in the initial stage by requesting separate proposals from the X-Company for construction and installation. Here too, the event was not planned action and delay was not avoidable. It would be better to decide the phases of the SAF project in the beginning itself as per the nature of the SAF project.

Developing, Confirming Theory

The deferred phase change adaptation of the SAF project itself had deferment points. It also had to comply with the FPD Procurement Guidelines. This is an example of recursive adaptation, which is not explicit in the theory of deferred action.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 8 **SAF Planned Action** FPD receives the proposals and sends them to Director of GHQ and Tender Committee.	**Description** Proposals are received from the X-Company and sent to the Director of GHQ for their review and report. The report is then forwarded to Tender Committee for approval.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
31. The proposal was sent to the Tender Committee by FPD. FPD forwarded the proposal to GHQ for study and comments. 32. FPD received the study result from GHQ. 33. The proposal was approved by the Tender Committee.	After receiving the proposal, FPD forwards the proposal to Director of GHQ for review and report. FPD coordinates the completion of the report with Director of GHQ. There is no time limit to submit the report. The report is then forwarded to the chairman of the Tender Committee.	April 2009 – May 2009

D e s i g n - I n - A c t i o n

Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
The proposals are received by FPD and sent to Director of GHQ with an enclosing letter which takes approximately a week to reach Director of GHQ. FPD then awaits the receipt of the report from Director of GHQ and in turns forwards to the Tender Committee for approval. As soon as the proposal was received the Director of contract (FPD) instructed the Manager of Land Force Division (FPD) to forward the same to Director of GHQ for their review. However the Manager of Land Force Division (FPD) argued saying that the proposal should be sent to Director	Here the proposal had to be sent immediately to Director of GHQ for review so that they could study the proposal as soon as possible and submit the report immediately in order to reduce the delay in implementation of the SAF project. Acknowledgement from the Director of contract (FPD) and the under-secretary was necessary to deliver the proposal. It was also necessary to contact the cross-functional person in Director of GHQ to forward the copy of the proposal. Coordination between FPD and GHQ was very much essential because there was no time limit set for the submission of the report. Also, to obtain the approval	Acknowledgement from the Director of contract (FPD) and under-secretary was taken and we decide to forward one copy of the proposal by hand instead of sending it by mail alone. The cross-functional person in Director of GHQ was contacted and the proposal was forwarded to Director of GHQ by hand; at the same time another copy was sent by internal mail.

of GHQ by hand i.e. to deliver a copy of the proposal the same day. It was decided that a copy of the proposal will be sent along with a formal letter and another copy be delivered the same day by hand which is not done usually.	from the tender committee it was essential to provide them with the report of GHQ.	
Experiencing, Reflecting, Interpreting and Tacking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
Usually, the proposals are sent by internal mail alone and not hand delivered. As per the guideline of FPD all documents have to be forwarded by internal mail to maintain proper records and proof.

In order to save time there were discussions held between the Director of contract (FPD), Manager of Land Force Division (FPD) and under-secretary. Hand delivering the proposal was suggested and approved by all. | The Director of contract (FPD) wanted to send the documents by mail. I suggested that if the proposal is hand delivered then Director of GHQ can start reviewing the proposal immediately and would save time and meanwhile the normal procedure of sending the proposal by mail can be followed. Also, I had requested the director to assign a person to contact GHQ regularly to know the status of the report. The reason for this kind of action was due to the fact that there was no time limit set for the submission of the report. | Since there is no time limit for submission of report, it was very essential to forward the proposal without wasting time and coordination with Director of GHQ for the report was also a must to avoid further delays. |

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) was in favour of sending the proposal by hand to avoid further delays in submission of report by Director of GHQ. The SAF project was already delayed and not on plan.

Disagreement: The Director of contract (FPD) wanted to send the proposal by mail only since FPD follows this guideline and never delivers any documents by hand to avoid confusion and maintain proof and records.

Learning: FPD should not hesitate to take action outside the guidelines if it can have a major impact on the situation and avoid unnecessary delays.

Experiencing, Reflecting, Interpreting, Tacking Action

Since the SAF project had already been delayed, this trivial set of SAF procurement events become magnified. What should have been trivial and followed according to the FPD Procurement Guidelines, became a significant issue of debate.

Developing, Confirming Theory

This set of SAF procurement events exemplify the deferment points of the theory of deferred action by focusing on one particular trivial event – sending tender proposals by internal mail according to the SAF Guidelines. It demonstrates the need for local action (not planned), or deferred action. It suggests that deferment points can be trivial, as well as non-trivial.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 9 **SAF Planned Action**	**Description**
FPD forwards the draft contract to the X-Company by postal mail.	A draft contract is prepared by FPD and the same is forwarded to the X-Company by courier for their review and comments.

SAF Process Event Number	**Description: Issues & Problems**	**Date**
34. A Draft Contract was made by FPD. 35. FPD invited Company X to discuss issues related to the contract. Delegates of Company X arrived to Kuwait to discuss the Draft Contract. The meeting discussion was held for a week with all concerned departments in KMOD.	The SAF project was already delayed. Sending the draft contract to the X-Company my postal mail awaiting their response meant a delay of another two to three months. To arrange the meetings the cross.	May 2009 – June 2009

D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
The draft contract was prepared by FPD. However, it was necessary that further delays be avoided and the contract be finalised as soon as possible. Discussions were held among the process worker at FPD. The Director of contract (FPD) recommended to send the draft proposal by courier to the X-Company. But the Manager of Land Force Division (FPD) argued that it would take another two to three months to finalise the contract, because the X-Company will reply back with their doubts etc. and that	To avoid wastage of time, it was decided that FPD will not send the draft proposal to the X-Company by courier; instead it will request a meeting with the X-Company to discuss the issue of the draft contract and finalise the contract as soon as possible. Accordingly, the X-Company was contacted and FPD coordinated with The cross-functional departments to arrange the meeting and saw to it that no further delays occur. The delegates of the X-Company arrived within a week and meetings were held for a whole week. The contract was	To arrange meetings and coordinate with the cross-functional departments is difficult due to the given time period. Meetings had to take place as early as possible and to confirm the availability of the cross-functional personals was a big task. However, FPD arranged the meetings successfully and finalised the contract within two weeks.

would require more time.	finalised within a week and hence reduced the time period which usually occurs in normal cases. Discussions were held for one week and all contractual terms were finalised. Some points were undecided because it required the approval of KMOD legal department. Such as the percentage of the Bank Guarantees, the percentage of Advance payment. The time duration for the clearance of the invoices, etc.	
Experiencing, Reflecting, Interpreting and Tacking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
As per the FPD Procurement Guidelines, it was difficult to finalise the contract within two weeks. Usually the draft proposal is sent to the X-Company by courier and FPD waits for the response from the X-Company. This process takes approximately two to three months to finalise the contract. Here, the action was taken outside the FPD Procurement Guidelines (not planned action) and FPD had to coordinate with the cross-functional departments to succeed. As mentioned earlier, it is difficult to arrange meetings between the cross functional department personnel due their busy schedule and short notice period.	Meetings were held among the process workers. The Manager of Land Force Division (FPD) had to convince the Director of contract (FPD) that he will coordinate with the cross-functional departments and finalise the contract at the earliest. I advised the Manager of Land Force Division (FPD) that only arranging meetings with the cross-functional department was a solution to finalise the contract quickly and we should give it a try.	The emergent action taken here was appropriate because it saved at least two months of time. If the normal procedure was followed it could lead to a further delay in the implementation of the SAF project.
Evaluating the Action and Assessing the Learning Points		
Agreement: The Manager of Land Force Division (FPD) agreed to arrange meetings with the cross-functional department because direct meeting was the only way to finalise the contract as soon as possible. **Disagreement:** The Director of contract (FPD) was not in favour of meetings because it was difficult to get all		

P a g e |the cross-functional personals for a meeting within a short period of time due to their busy schedules.

Learning: Normal procedure can be replaced by emergent procedure. This is an example of the need for adaptation of the social system.

Experiencing, Reflecting, Interpreting, Tacking Action

It may be necessary to follow local action. I feel that this procedure should be followed with all the SAF Processes in order to avoid delays.

Developing, Confirming Theory

In accordance with earlier findings (Feldman 2000), this is an example of emergent procedure or emergent organisation. Similar to SAF Process Events in Sheet 6, this indicates that organisation is emergent. These earlier SAF Process Events point to structural emergence of organisation. Patel (2007) proposes a theoretical model to account for emergent procedure and emergent structure.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 10 **SAF Planned Action**	**Description**	
FPD forwards the draft contract to the cross-functional departments for approval.	The draft contract is sent to Director of GHQ, Legal Department, Audit Bureau and the Legal and Legislation of Council Ministry for their approvals before signing the contract.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
36. After finalizing with Company X, the Draft Contract was sent to GHQ. 37. Copy of the Draft Contract was also forwarded to the Legal Department of KMOD. 38. Received approval and comments from the KMOD Legal Department related to the draft contact. 39. Copy of the Draft Contract was also forwarded to the Legal and Legislation Council for approval. 40. Copy of the Draft Contract was sent to Audit Bureau for their approval. 41. Audit Bureau forwarded a letter to FPD with various questions related to the project. Particularly the total value of the proposal.	FPD forwards the draft contracts to the cross-functional departments through regular mail and awaits reply from them. The whole procedures take more than a couple of months because if there are any queries from the cross-functional departments they have to be clarified and only then FPD receives approval to proceed. The issue here was to coordinate with the cross functional departments to obtain their comments and queries related to the draft contract because hereto there was no time limit set.	Sept. 2009 – Oct. 2009

D e s i g n - I n - A c t i o n

Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
Since the SAF project was already delayed it was essential to act fast and reduce the time. Hence a decision was to be made how to process in a quick manner. The	The approvals had to be received as soon as possible because of the delay. Hence hand delivery of the draft contract was opted to avoid the delay. At the same time the	In order to avoid unnecessary delays FPD arranged to hand deliver the draft contract and even faxed the enclosing letter so that the departments could study the draft

Manager of Land Force Division (FPD) requested approval from the Director of contract (FPD) to hand deliver the copies of the contract to the cross-functional department to avoid the time delay of delivering the contract by regular mail. The Director of contract (FPD) argued that we should work as per the FPD Procurement Guidelines to maintain records and proof. After discussion the Director of contract (FPD) agreed and the Manager of Land Force Division (FPD) instructed the staff to arrange to hand deliver the contract and at the same time forward it by regular mail as well.	draft contract was sent by regular mail as well to maintain records of the same. Usually the through postal mail it takes a week or more for the documents to reach the cross-functional department and to avoid time delay hand delivery was opted. Also, since there was no time limit set to obtain a response it was essential to coordinate with them to hasten the results.	contract immediately to approve the contract.
Experiencing, Reflecting, Interpreting and Tacking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
Drafts contracts are normally sent by the general mail which is as per the FPD Procurement Guidelines of FPD. Hand delivery of the documents is usually not a normal practise of FPD. The process workers had to decide about the course of action to be taken so that the approvals were received at the earliest. The Manager of Land Force Division (FPD) had to convince the Director of contract (FPD) and the undersecretary that he could arrange to hand deliver to the cross-functional department.	As a researcher I recommended that the use of internet is very essential to avoid delays due to manual work. If the draft contract was sent through email it would be appropriate it could save time, cost and energy. I also suggested to set a time limit so that the cross functional departments would revert back with their queries within a given time. Since there was no time limit set there could be delay in receiving the comments or approval.	In this case the action taken was appropriate because the only way to receive approvals quickly was to hand deliver the draft contract due to the fact that emails are not considered as unofficial.

Evaluating the Action and Assessing the Learning Points

Agreement: the Manager of Land Force Division (FPD) was in agreement with the idea to send the draft contract by hand and waiting for the draft contract to be sent by regular mail would have taken more time for approval.

Disagreement: The Director of contract (FPD) raised an issue saying the hand delivery would not be right

P a g e |because it was not as per the Procurement Guidelines of FPD. He insisted that to maintain proper records and proof it was essential to send the draft contract by regular mail.

Learning: Time limit should be set to avoid delay in receiving a response from the cross functional departments.

Experiencing, Reflecting, Interpreting, Tacking Action

I suggested to send the draft contract by email to the cross-functional departments to speed up the process.

Developing, Confirming Theory

Conditional events can be sources for deferment points. This set of SAF procurement events is conditional on receiving approval before the next steps can be taken. The deferment point analysis technique proposed by Patel (2005) can incorporate conditional process events as sources of deferment points.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 11 **SAF Event** FPD contacts MEP for approval related to the construction proposal.	**Description** The proposal is sent to MEP for study and report.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
42. GHQ contacted the Military Engineering Department (MEP) to study the design and layout of the construction proposal and for their comments for the same.	The military engineering SAF Processes department had to be contacted before the wining X-Company was selected. It was certain that MEP would raise issues because it was the only department which deals in construction work related to KMOD. However in this case the MEP was not contacted before sending the requests and it was essential to coordinate with them for their response.	November, 2009
D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
The Military Engineering Projects was the only department of KMOD which deals with the construction work and Director of GHQ failed to contact them in the initial stage of the SAF project. Discussions were held how to handle the issue at this moment and FPD was quite sure that issue will be raised regarding the proposal. The Director of contract (FPD) suggested that all the related documents related to the construction proposal should be submitted to MEP and instructed the Manager of Land Force	Since Director of GHQ had contacted MEP to study the construction proposal, FPD could have relaxed and waited for the decision or report from MEP. However, instead of waiting the Director of contract (FPD) instructed the Manager of Land Force Division (FPD) to provide MEP with all the documents for the construction proposal and arrange meetings between MEP, Director of GHQ, FPD and the X-Company. Here again it was the work of FPD to arrange the meetings which	The Manager of Land Force Division (FPD) immediately contacted Director of GHQ and MEP and discussed whether a meeting with the X-Company was needed. After discussion the Manager of Land Force Division (FPD) contacted the X-Company and arranged for a meeting with the cross-functional departments.

Division (FPD) to coordinate and follow up the whole matter.	requires a lot of effort due to the busy schedule of the personnel and a short time period.	
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
The proposal of all the seven companies should had been sent to MEP for their study. The FPD Procurement Guidelines did not stipulate that MEP has to be contacted for all construction work of KMOD. The process was not planned and there were high chances of MEP raising an issue about the construction proposal. MEP should had been contact before the SOW was prepared because it was the only department which deals with all construction work of KMOD and their approval is very much essential for all construction works of KMOD.	In this SAF project various issues delayed the SAF project. Here too, contacting MEP at the later stage was not proper but it was essential to take approval from MEP. It was decided to coordinate with MEP, Director of GHQ and the X-Company to solve the issues raised by MEP. The process workers had to arrange meetings and discussion were held among the process workers to efficiently solve the issue. I advised that in future cases MEP should be contacted immediately when FPD receives a request from Director of GHQ which involves construction work or MEP should be involved in the preparation of the SOW which involves construction phase.	The action taken here was appropriate because it was essential to coordinate with the cross-functional departments, especially between MEP and the X-Company. FPD arranged the meetings and tried to solve the issue successfully.

Evaluating the Action and Assessing the Learning Points

Agreement: The Director of contract (FPD) agreed to coordinate with the cross-functional departments to solve the issue. It was likely that MEP would had raise issues and the right way to solve the issue was to arrange meetings between the X-Company and MEP.

Disagreement: The Manager of Land Force Division (FPD) wanted Director of GHQ to solve the issue and arrange for the approval from MEP and argued that Director of GHQ should had contacted MEP in the initial stage itself.

Learning: Human error needs to be explicitly recognised in business processes and catered for as deferment points for deferred action.

Experiencing, Reflecting, Interpreting, Tacking Action

The researcher thinks that MEP should had been contacted as soon as the proposals from all the companies were

received.

Developing, Confirming Theory

Planned events can be overlooked because of human error. There is prior research on human error's capacity to cause major disasters (Perrow, 1984). The Military Engineering Projects was the only department of KMOD which deals with the construction work and Director of GHQ failed to contact them in the initial stage of the SAF project. The theory of deferred action (Patel, 2006) does not explicitly mention human error as a source of deferred action. Human error needs to be incorporated into emergent business process and the theory of deferred action.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 12 **SAF Event** Audit bureau requests for clarification from FPD.	**Description** Letter for clarification/queries is sent by Audit Bureau to FPD after study of the draft contract.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
43. Audit Bureau wanted to investigate the whole project from the beginning. Personnel from the Audit Bureau visit FPD and requested copies of all the documents related to the project. 44. FPD provided Audit Bureau with all the documents.	This was an emergent event. It was not scheduled in the FPD Procurement Guidelines and highly unexpected. All documents cross-functional with the SAF project had to be provided to Audit Bureau, as they decided to investigate the SAF project details from the initial stage. Coordinating with the audit Bureau by arranging meeting and clarifications. Assigning personnel to assist and coordinate with the personnel of Audit Bureau.	November, 2009
D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
Audit bureau requested FPD to provide all the documents related to the SAF project to investigate the matter from the initial stage. Discussions were held between the Assistant Under Secretary, Director of contract (FPD) and the Manager of Land Force Division (FPD). The Manager of Land Force Division (FPD) suggested that FPD should provide all the documents to the Audit Bureau but the Director of contract (FPD) was reluctant and instructed the Manager of Land Force Division (FPD) to arrange a meeting with Audit Bureau to solve the issue.	It was decided that personal from the Audit Bureau should visit FPD to check the details and FPD will provide them the copies of the documents they need. It was not feasible to carry all the documents to the Audit Bureau for them to investigate since there were chances of omitting or misplacing the documents. Meetings had to be arranged as per the availability of the personnel concerned. Also it was not certain of the time required for the whole investigation.	Meeting was held with the Audit Bureau to solve the issue. It was appropriate for Personnel from Audit Bureau to visit FPD and investigate the SAF project. Even FPD would be able to provide the documents immediately in order to avoid delays.

Experiencing, Reflecting, Interpreting and Taking Action	Experiencing, Reflecting, Interpreting and Tacking Action	Experiencing, Reflecting, Interpreting and Tacking Action
Audit bureau should have requested for the documents which were essential for their investigation in the initial stage. FPD guideline does not stipulate that a request for investigation will be made from any external Ministry and how to handle the matter. Since a request was made the process workers had to decide how to handle the matter and what documents should be essential for the investigation. It was not a planned action because never did any external Ministry ask for documents to investigate from the initial stage of the SAF project. Ultimately it results in delay of the SAF project.	A request for investigation was again resulting in delay of the SAF project. It was unexpected that Audit Bureau would make such a request. The Director of contract (FPD), Manger and the undersecretary of FPD had to decide how the documents could be arranged for Audit Bureau and whether the documents should be sent to Audit Bureau. I advised that the audit Bureau should be invited to FPD so that FPD was in a position to provide the documents immediately upon their request. Even it would reduce unnecessary delay.	The action taken by inviting the Audit Bureau was appropriate because all the documents we with FPD and it was necessary to reduce the time taken for investigation. Also taken documents to Audit Bureau means that personals from FPD should go to Audit Bureau to assist them to search the documents. Hence, the right venue to provide the documents was FPD.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) was in the favour of sending all the documents to Audit Bureau for their investigation. He felt that Audit Bureau should do search for the documents for their investigation.

Disagreement: The Director of contract (FPD) was against the idea of sending the documents to the Audit Bureau because there were chances of the original documents being miss placed and if the personals from Audit Bureau visited FPD then the personals of FPD would easily assist them with the documents required for their investigation.

Learning: Regulatory emergent events can arise and need to be catered for in the procurement process.

Experiencing, Reflecting, Interpreting, Tacking Action

At this stage the Audit Bureau investigation was not appropriate, since it led to delay in implementation of the SAF project.

Developing, Confirming Theory

The Audit Bureau investigation was an emergent event. It was not appropriate but had to be accommodated in the SAR procurement process. It confirms the need for deferment points and deferred action. The Audit Bureau can be thought of as the regulator of the social system.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 13 **SAF Planned Action** Technical proposal is sent to MEP for their review and report.	**Description** For building construction involved in the SAF project, the technical proposal is sent to MEP for their review and report.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
45. Various discrepancies related to the financial proposal were raised (calculation errors)and rectified by Company X. 46. Company X was requested to reduce the total value of the project by providing discounts. 47. MEP suggested that they can handle the construction work and request time to study the project. 48. Meetings were held between Company X and MEP in relation to the construction work.	After the technical report is sent to MEP for their review, it is not sure how long MEP will take to submit their report because in construction work many factor are taken into consideration. If some changes are required then FPD has to coordinate between MEP and the X-Company to rectify and modify the proposal as per the requirements. It was essential to arrange meetings between MEP and the X-company to clarify all doubts of MEP.	November - December, 2009

D e s i g n - I n - A c t i o n

Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
The technical proposal was forwarded to MEP and MEP submitted their reply saying that they can do the construction work, which could reduce the cost since they have all the personnel, equipment etc. which is required for the construction work. The Director of contract (FPD) instructed the Manager of Land Force Division (FPD) to write to the X-Company requesting a	Meeting was fixed between all the cross-functional departments and the X-Company to avoid any issues later on. Initially MEP wanted a meeting with the X-Company but it was not opted for because a decision related to the construction work was to be made and the presence of the cross-functional departments was very much required. Also, approval from Director of GHQ and the Arms and Ammunition Department (End	Meetings were arranged between Director of GHQ, FPD, Arms and Ammunition Department (End User) and the X-Company. Discussion were held based on the construction work to be done by MEP and the X-Company to provide design support.

meeting between the X-Company and MEP. But the Manager of Land Force Division (FPD) argued that the meeting should be held in FPD and all the cross-functional departments should attend the meeting so that the result is known by all. Hence a meeting was arranged between all the cross-functional departments and the X-Company.	User) was very much required.	
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
It was not planned that MEP would do the construction work. Neither did Director of GHQ consult with MEP in the initial stage of the SAF project. The FPD guideline does not stipulate the course of action to be taken if such issue arises. This led to discuss between the process workers. Since it was not a planned action it was very much essential to coordinate between MEP and the X-Company to obtain a satisfactory solution. Such events rarely happen. It is decided before the SOW is sent to the X-Company for proposal. This action leads to a lot of confusion and the right course of action had to be taken or the delay in the SAF project was un avoided.	This action was not planned and required due course of action. It was essential to convince the X-Company to provide the design support in order for MEP to do the construction work. The process workers had to discuss with the process owners the course of action. I had suggested to the Manager of Land Force Division (FPD) to contact Director of GHQ and discuss the course of action before conducting the meetings between the cross-functional departments and the X-Company.	The emergent action taken was appropriate because MEP decided that they could do the construction work and it was essential that the X-Company provide MEP with the design support. Since the X-Company had already provided the proposal for construction work it was very difficult but essential to convince them to provide design work only. Even arranging meetings within a week between the cross-functional department was a greater task due the busy schedule of the process owners.

Evaluating the Action and Assessing the Learning Points

Agreement: Modifying the scope of work at a later stage creates a lot of confusion and coordination is a must. The Manager of Land Force Division (FPD) was in the favour of the action taken by arranging meeting in a short period of time. He wanted the meetings to be held as quick as possible to obtain quick result.

Disagreement: The Director of contract (FPD) was not in the favour of arranging the meetings. He wanted MEP to provide a report first and then fix meetings with the X-Company.

Learning: Management acceptance that normal procedure can be changed and adopt emergent procedure as per the nature of the situation.

Experiencing, **Reflecting, Interpreting, Tacking Action**

The unexpected MEP's decision to undertake the construction of the small arms factory created subsequent unexpected events in FPD and related departments in the procurement process. The Director of contract (FPD) and Manager of Land Force Division (FPD) had to cater for it.

Developing, Confirming Theory

This set of SAF procurement process events reflects the deferred model of reality well (Patel, 2012). Though purposeful action is deliberate and planned, or rational, it needs to enable local action in response to emergence. MEP's decision to construct the factory is an example of deferred phase change adaptation (DPCA) recorded in Sheet 6. Similar to the splitting of the SAF project into two separate project, construction and production, MEP's decision to construct the factory is an example of deferred phase change adaptation of the social system.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 14 **SAF Event** FPD has to contact the Tender Committee and take approval for the construction work.	**Description** Once a new (emergent) course of action is taken it is essential to take approval from the Tender Committee if it involves financial issues.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
49. Decided that MEP will do the construction work. 50. Company X will provide the Design Services for a cost. 51. Meetings were held between Company X and MEP to finalize the design, layout, approvals, etc. for the construction work. 52. FPD contacted Tender Committee to take approval to contact Company X for Design Services proposal. Received Approval from Tender Committee.	Since MEP was selected to do the construction work, it was essential to study the whole construction proposal and prepare FPD Procurement Guidelines and list of essential requirements and approvals from cross-functional authorities before implementation of the construction work. Meetings had to be arranged between MEP and the X-Company. Also approval from the Tender Committee had to be obtained. GHQ had to be updated about the status of the project on regular basis.	July, 2010
D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
Meetings had to be arranged between the X-Company and MEP to discuss the course of action to be taken. The Director of contract (FPD) suggested that MEP and the X-Company themselves arrange meetings and prepare the course of action. However, the Manager of	It was decided that FPD will arrange the meetings and coordinate between MEP and the X-Company. Coordinating between the cross-functional departments itself was a major task. All related information had to be provided during the meetings. Personals from FPD attending the meetings and assisted	Meetings were arranged between the cross-functional departments and the X-Company so that a decision could had reached efficiently. After the report was prepared it was forwarded to the Tender Committee immediately for approval.

Land Force Division (FPD) argued that FPD should coordinate and arrange for meetings between the X-Company and MEP so that FPD is aware of the out comings of the meeting since they had to update Director of GHQ about the results.	the personals to solve the issue efficiently. If MEP and the X-Company had to conduct the meetings it would had been time consuming because most of information they required had to be sorted from Director of GHQ and the Arms and Ammunition Department (End User). Also the Tender Committee had to be contacted in order to receive the approval with a short time period.	
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
It was decided that MEP will do the construction work and arrangements had to be made so that MEP could organise and prepare themselves. The FPD Procurement Guidelines did not stipulate about any changes in the procedures. This lead to discussion between the process owners. The Tender committee was also contacted and emergency meeting was held in order to obtain their approval.	FPD had to coordinate with the cross-functional departments and arrange meetings at the earliest. The process actors had to contact the process owners to arrange the meetings. I suggested that all necessary assistance be provided so that MEP and the X-Company deicide on the work and MEP provide the report urgently. Even the Tender Committee should be approached for approval. I also highlighted the need to set a time limit so that MEP submits the report on priority basis.	As an action research I fell the action taken was appropriate. Arranging the meetings between the cross-functional departments was not an easy task and FPD course of action made it possible resulting in quick decision.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) was in the favour of arranging the meetings between the cross-functional departments so that a quick decision was possible.

Disagreement: The Director of contract (FPD) wanted MEP and the X-Company to decide among themselves the course of work and prepare the statement of work for construction.

Learning: Normal procedure can be replaced by emergent action necessary to respond.

Experiencing, **Reflecting, Interpreting, Tacking Action**

The researcher thinks that Director of GHQ should had involved MEP during the study and preparation of the SOW. This could have reduced the wastage of time arising from MEP's subsequent decision to construct the factory themselves.

Developing, Confirming Theory

This set of SAF procurement events provides the details of the DPCA, with its own recursive deferment points.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 15 **SAF Event**	**Description** FPD requests the X-Company to submit a proposal within a specified proposal. On receipt of the design services proposal it is forwarded to the Tender Committee for approval.
Request the X-Company for a design services proposal and after receiving forward it to the Tender Committee for approval.	

SAF Process Event Number	**Description: Issues & Problems**	**Date**
53. Company X was requested to provide a proposal for the Design Services. 54. Company X obliged and provided FPD with a proposal for Design Services. 55. Proposal was sent to the Tender Committee for approval. 56. Proposal sent to GHQ for their Study. 57. Proposal sent to MEP for their Study. 58. Received approval from Tender Committee for the Design Services proposal.	FPD had to coordinate with the X-Company so that the X-Company could send their proposal as early as possible. Also on receipt of the proposal it had to be forwarded to the cross-functional department for their study and approval. If there were clarification needed then FPD had to contact the X-Company and request for the clarifications. FPD had to contact the Tender Committee immediately on receipt of the report from GHQ and MEP in order to request an approval without delay.	August - November, 2010

D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
The X-Company was requested to provide a fresh proposal for the design services. However, there was no submission date mentioned on the letter of Request hence it was essential to follow up with the X-Company so that they provided the proposal on urgent basis. The Manager of Land Force Division	Follow up with the X-Company was required so that they submit the proposal at the earliest. Meetings had to be arranged between MEP and the X-Company so that if there is any clarification regarding the proposal it can be cleared soon. Also, approval from the tender committed had to be obtained	After the proposal was submitted, FPD arranged for a meeting with the X-Company giving MEP a specified time to study the proposal. FPD did not wait for MEP to study the proposal and then request for a meeting for clarification of the proposal. This was done in order to avoid wastage of time.

(FPD) contacted the X-Company on regular basis through telephone for follow up. The Director of contract (FPD) wanted to request a fresh proposal with a submission dated so that the X-Company did not delay. After the X-Company provided the proposal the financial proposal was sent to the Tender Committee and the technical proposal to the cross-functional departments for their study.	urgently.	
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
FPD guideline does not stipulate how to proceed faster on urgent basis. As per FPD Procurement Guidelines we have to wait for the X-Company to submit the proposal and after that the normal procedures should be followed till the approvals are received. This action of requesting a fresh proposal for design support wouldn't have arisen at this stage but could be done if it was mentioned in the SOW and the waste of time could have been avoided.	Requesting the X-Company for a design support proposal was an emerging issue because it was not planned that the construction work was to be done by MEP. As an action research. Since the proposal was requested it was necessary that things move faster and as per plan to avoid delays. The process owners were contacted by FPD and it was decided that specific time limit should be given to MEP to study the proposal and submit a report; even meeting with the X-Company for clarifications was planned in advance.	The emergent action taken here was appropriate because requesting proposal at this stage and change the requirement meant time consumption. Hence planning a meeting with the X-Company in advance and having a time limit let to quick result.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) agreed to follow up the matter on regular basis so that there was no time delay. He even requested the process owners to decide on a time limit so that the report was submitted at the earliest.

Disagreement: The Director of contract (FPD) was not in favour of follow up etc. He felt that it would be extra work for FPD since SAF was not the only SAF project FPD was handling. It also involved coordination with the process owners which was also not an easy task.

Learning: The procurement process should have fixed time scales.

Experiencing, Reflecting, Interpreting, Tacking Action

As a researcher I feel that contacting the X-Company to follow up the matter and being prepared in advance for the future action was very much required. I feel that this situation can be avoided if proper planning is done in advance. Also, you cannot expect that things go around as per the FPD Procurement Guidelines and emergence can be expected. I had suggested that it was a better idea to plan a meeting with the X-Company so that clarification or any other issues can be cleared and a report is submitted by MEP at the earliest.

Developing, Confirming Theory

This set of SAF procurement process events is an example of deferred action (Patel, 2006). The details of the various actions show that deferment points occurred in the process.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 16 **SAF Event**	**Description** FPD requests Finance Department to allocate the budget for the proposal along with the approval letter of the Tender Committee.
FPD sends letter to the Finance Department to allocate the budget. FPD prepares the draft contract.	FPD prepares the draft contract and forwards them to the cross-functional department for approval.

SAF Process Event Number	**Description: Issues & Problems**	**Date**
59. FPD contacted the Finance Department of KMOD to allocate the Budget for the Design Services Contract. 60. FPD started working on the draft contract.	Since there was a change in the Project requirement, FPD had to request the Finance Department to allocate the Budget for the Design proposal. Also it had to modify the earlier prepared draft contract and prepare the fresh draft contract for the design proposal only.	November, 2010

D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
Since there was a change in requirement, FPD once again had to send a request to the Finance Department to allocate fresh budget for the design proposal. It had to send the letter of approval of Director of GHQ and the Tender Committee. Even the draft contract had to be modified and a fresh draft contract had to be prepared for the design support alone. The Director of contract (FPD) instructed the Manager of Land Force Division (FPD) to write the letter of request to the finance department and forward it by regular mail. But, the Manager of	The letter of request was sent to the Finance Department by regular mail and hand delivery of the letter was not opted for. Proper records and proof had to be maintained and hence hand delivery was not the option. Even the draft contract was prepared as per the design proposal and the articles were listed after discussion with the MEP personnel. Also, the points raised by X company in the earlier draft contract had to be considered.	Finance department was contacted immediately to allocate the budget. All necessary documents were provided to them so that there was no delay due to lack of proper documents. Discussion was held with MEP and the draft contract was prepared urgently.

Land Force Division (FPD) argued saying that by regular mail it may take a week for the letter to reach the Finance Department. But it was decided that the letter will go by regular mail. At the same time, the Manager of Land Force Division (FPD) instructed the staff to prepare the draft contract for the design support.		
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
Change in requirement means a lot of work to be repeated including explanations. This event was not planned and it is not stipulated in the FPD Procurement Guidelines. It was an emerging issue and had to be handled appropriately. The process owners had to discuss the issue and accordingly explain it to the finance department so that the amendment could be made and the budget be allocated at the earliest. Here too the event was not planned and hence arrangements had to made for approvals. Since the previous allocated budget was to be reduced it was necessary to convince the finance department and get the allocation done immediately.	Change in requirements in not a good sign since the SAF project gets delayed. Here the process had to be repeated once again to allocate the budget. The process actors had to discuss with the process owners the way to explain and convince the Finance department to allocate the budget. It usually takes months to receive the allocation of budget. I advised that it would be wise to meet the personals of the finance department and convince them by explaining the facts for the reallocation of the budget.	Normally allocation of budget takes more than a couple of months. The action taken here by meeting the finance department and convincing them to allocate the budget on urgent basis was appreciable. Even consulting the MEP department for drafting the contracting was very much required because the technical terms of the design proposal were known only to the MEP department.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) was in favour of meeting the personals of the finance department to allocate the budget quickly. Usually it takes a couple of months for allocation and FPD didn't want to waste more time by waiting for the reply from the finance department.

Disagreement: The Director of contract (FPD) wanted to follow the general guideline of FPD. He knew that it was difficult to get things moving even though we wanted it to. Convincing the Finance Department required physical time and personals from the cross-functional departments had to be contacted and arrangements for the meeting had to be made to make it possible.

Learning: Normal Procedure *should be* replaced by emergent procedure. This is a significant shift in management's thinking.

Experiencing, Reflecting, Interpreting, Tacking Action

The FPD process team had to react to the new requirement, in order to write the finance and other details of the SAF contract for service design. As with previous aspects of the SAF procurement project, the FPD process owner and team responded quickly to minimise the time already lost.

Developing, Confirming Theory

The theory of deferred action does not mention the scope or depth of deferred action. This set of SAF procurement process events is an illustration of the detail and depth of deferred action work. Much work involved the communication between FPD and the Finance Department on the details of the allocated budget. The allocated budget had to be divided because the construction work was to be done by MEP and the design services by the X company. Also measures had to be taken so that the total amount does not exceed the allocated budget for the whole project. The theory of deferred action needs to be elaborated to differentiate the kinds of deferred action in terms of scope and depth.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 17 **SAF Event**	**Description** The draft contract is prepared by FPD and forwarded to the legal department by regular mail.	
FPD forwards draft contract to the legal department for review and comments.		

SAF Process Event Number	**Description: Issues & Problems**	**Date**
61. FPD forwarded the Draft Contract to the legal department of KMOD for review and comments. 62. Received comments on the Design Services Drat Contract from the Legal department. 63. Received comments on the Design Services Drat Contract from MEP	The draft contract had to be sent to the cross-functional departments for their approval. But FPD had to hasten the event and receive the approval as quick as possible. The issue was how to get the approval quickly.	November - December, 2010

D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
The draft contract was prepared and forwarded to the legal department and MEP for their review and comments. The Manager of Land Force Division (FPD) requested the Director of contract (FPD) to forward a copy of the draft contract through email so that it could reach the cross-functional personals immediately. However the Director of contract (FPD) argued that we should follow the FPD Procurement Guidelines and send it by regular mail.	The draft contract was sent by regular mail because emails are not considered as official. To keep record and proof it was necessary to send the documents by regular mail. However, it was also necessary to coordinate with the cross functional departments through phone so that FPD could receive the reply on priority basis.	FPD forwarded the draft contract to the legal department and MEP through regular mail and awaited the reply from them.

Experiencing, Reflecting, Interpreting and Taking Action	Experiencing, Reflecting, Interpreting and Tacking Action	Experiencing, Reflecting, Interpreting and Tacking Action
Sending the draft contract by regular mail is the normal procedure of FPD. However, as a researcher I would prefer that the draft contract was sent by email, this could save time and cost as well. Since the SAF project was not finalised and discussion were carried on for more than two years the Process owners wanted FPD to fasten the procedures. It took nearly two months to receive a feedback from both the departments which again resulted in delay of the SAF project. Nearly two weeks were wasted because the draft contract was sent through regular mail.	Since the proposal was accepted and the draft contract had to be made I think that conducting meetings and finalising the draft contract with the cross-functional departments was very essential. However in this case that didn't happen. Here the draft was prepared and then sent to the respected departments for approval. So nearly two months for the comments was natural. The process actors had to receive the comments as early as possible and they had to decide the proper way to get the work done. I had suggested to forward the draft contract by email so that waste of time could be averted. I also suggested contacting the concerned persons over phone to get the work done on priority basis.	In this case the normal procedure was followed and the time taken for this event was nearly two months. The action here would have been appropriate if the draft contract was sent by email. It would had saved time and cost.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) was in favour of forwarding the draft contract by email which could result in time saving. However the request was not accepted and the regular mail procedure was opted for.

Disagreement: The Director of contract (FPD) was adamant on sending the draft contract by regular mail to maintain proper records and proof. It was because the SAF project was already delayed and he didn't want to take the blame that FPD had delayed the SAF project. Also, emails are not considered as a legal document by KMOD.

Learning: Normal procedure had to be followed to maintain proper records to avoid any issues in future. This is the planned action aspect of the deferred action theory.

Experiencing, Reflecting, Interpreting, Tacking Action

An issue with emergent events is the added time delay which is often more than compared to the same normal events. This could not be satisfactorily resolved and FPD had to wait on other departments in the SAF procurement process to respond.

Developing, Confirming Theory

The time issue is relevant because the theory of deferred action (Patel, 2006) mentions the evolution and adaptation of social systems temporally. The longer the time that a business process takes the more likely it is to evolve and adapt. This needs to be made explicit in the case of emergent business processes (Patel, 2007).

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 18 **SAF Event** FPD forwards the contract to the X-Company for review and comments.	**Description** The draft contract is sent to the X-Company so that they can review and reply back with their comments to finalise the contract before signing.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
64. FPD invited Company X to discuss and finalize the Design Services Draft Contract. 65. Delegates of Company X arrived in Kuwait and after discussions with FPD finalized the Design Services Draft Contract.	The draft of the design support contract was ready and had to be finalised after the companies review and comments. This had to be done quickly in order to save time. The issued was to arrange the meeting with Company X and the cross Functional Department in a short notice period.	January, 2011
D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
FPD had to finalise the draft contract quickly so that the contract could be signed at the earliest. The Director of contract (FPD) instructed the Manager of Land Force Division (FPD) to forward the contract to the X-Company by regular mail as stipulated in the FPD Procurement Guidelines of FPD. However, the Manager of Land Force Division (FPD) insisted that FPD invite the X-Company for a meeting and discuss the contract articles and finalise the contract within a week.	Since the SAF project was under negotiations for over two years FPD wanted to finalise the contract at the earliest. Hence FPD decided to invite the X-Company to Kuwait in order to reduce wastage of time. Instead of following the FPD Procurement Guidelines where the contract is sent to the X-Company by regular mail and then FPD waits for the X-Company to respond. This takes nearly a couple of months. Arranging a meeting within a short notice period was a major issue because all the concerned persons of the cross functional department had to be contacted over phone to confirm their availability.	FPD invited the X-Company to Kuwait to discuss and finalise the contract. Meetings were held between the X-Company and FPD at the FPD office for three days. The result was that the contract was finalised with a week.

Experiencing, Reflecting, Interpreting and Taking Action	Experiencing, Reflecting, Interpreting and Tacking Action	Experiencing, Reflecting, Interpreting and Tacking Action
The normal procedure is to forward the contract to the X-Company by regular mail which is time consuming as it takes nearly a couple of months. Hence a meeting with company X and the cross functional department was the only solution to hasten the matter.	Since the process owners wanted the contract to come into force at the earliest they were insisting FPD to take quick action. The process owners were in constant touch with FPD to follow up the status of this contract. I suggested contacting all the concerned personals over phone in order to arrange the meeting within two weeks.	The action taken here was quite appropriate because the result was very quick. The contract was finalised within a week's time. If the FPD Procurement Guidelines were to be followed then FPD had to wait for at least a couple of months to receive the comments and finalise the contract. So this action nearly saved two months of time.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) was in agreement with this action because it saved time and the possibility of the contract coming into force soon was visible.

Disagreement: The Director of contract (FPD) was not in favour of this action because he felt that the X-Company would not respond quickly and agree to visit Kuwait within a short period of time. Also, he wanted to follow the FPD Procurement Guidelines which is usually done.

Learning: Emergent procedure can reduce the time duration with favourable results.

Experiencing, Reflecting, Interpreting, Tacking Action

The researcher suggested that the companies should be sent the draft contract by email and also invited to Kuwait in order to avoid wastage of time. In order to avoid wastage of time the process actors had to coordinate with the X-Company and arrange meetings. The researcher advised the Director of contract (FPD) to invite the X-Company for a meeting and also coordinated with the X-Company to arrange the meeting within a week's time and the result was that the contract was finalised within a week time which is not a usual case.

Developing, Confirming Theory

The long time delay in the SAF project, over two years, is significant. Standardisable business processes have a definite start and end date. Emergent business processes do not. A theoretical way to measure the necessary time scales of emergent business processes is necessary. The theory of deferred action does not mention it (Patel, 2006).

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 19 **SAF Event** FPD forwards the draft contract to the cross-functional departments for approvals.	**Description** The draft contract is sent to Audit Bureau and the Legal and Legislation of Council Ministry for their approvals before signing the contract.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
66. FPD forwarded a letter to the Finance Department to allocate the Budget for the Design Services Contract. 67. One copy of the Design Services Draft Contract was forwarded to the Legal and Legislation Council for their approval. 68. One copy of the contract was sent to Audit Bureau for approval. 69. FPD received questions from the Audit Bureau. FPD answered the questions.	FPD forwards the draft contracts to the cross-functional departments through regular mail and awaits reply from them. Approvals from the external ministries are very essential before signing the contract. All necessary documents have to be forwarded to the external ministries in order to receive their approval without any delay.	February – March, 2011

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Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
A decision had to be made to proceed in a quick manner. The Manager of Land Force Division (FPD) requested the Director of contract (FPD) to hand deliver the copies of the contract to the cross-functional departments especially the Audit Bureau to avoid the time delay of delivering the contract by regular mail. The Director of contract (FPD) argued that we should work as per the FPD	The approvals had to be received as soon as possible. Hence hand delivery of the draft contract was opted to avoid the delay. At the same time the draft contract was sent by regular mail as well to maintain records of the same. Usually through regular mail it takes a week or more for the documents to reach the cross-functional department and to avoid time delay hand delivery was opted.	In order to avoid unnecessary delays FPD arranged to hand deliver the draft contract and even faxed the enclosing letter so that the departments could study the draft contract immediately to approve the contract.

Experiencing, Reflecting, Interpreting and Taking Action	Experiencing, Reflecting, Interpreting and Tacking Action	Experiencing, Reflecting, Interpreting and Tacking Action
Procurement Guidelines to maintain records and proof. After discussion the Director of contract (FPD) agreed and the Manager of Land Force Division (FPD) instructed the staff to arrange to hand deliver the contract and at the same time forward it by regular mail as well.	Also if there are queries from Audit Bureau then the reply can be made immediately without delays. The only concern was to receive an approval for the external ministries because procedures have to be followed as per the FPD guidelines.	
Drafts contracts are normally sent by general mail which is as per the FPD Procurement Guidelines of FPD. Hand delivery of the documents is usually not a normal practise of FPD. The process workers had to decide about the course of action to be taken so that the approvals were received at the earliest. The Manager of Land Force Division (FPD) had to convince the Director of contract (FPD) and the under-secretary that he could arrange to hand deliver to the cross-functional department.	As an action research I recommend that the use of internet is very essential to avoid delays due to manual work. If the draft contract was sent through email it would be appropriate it could save time, cost and energy. I had suggested to send through email but it was not accepted since email addresses were not provided by the cross-functional departments and emails are not considered as official by KMOD.	In this case the action taken was appropriate because the only way to receive approvals quickly was to hand deliver the draft contract due to the fact that emails are not considered as official.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) was in agreement to send the draft contract by hand so that the time period to process with the approvals would reduce.

Disagreement: The Director of contract (FPD) was against sending the contract by hand delivery because it was not as per the FPD Procurement Guidelines of FPD. He insisted that proper records should be maintained hence it was essential to send the draft contract by regular mail.

Learning: Even in emergency situation some procedures need to be maintained to comply with regulations. However, this needs to be researched further in terms of rational design.

Experiencing, Reflecting, Interpreting, Tacking Action

The Director of contract (FPD) argued that we should work as per the FPD Procurement Guidelines to maintain records and proof. This position had to be considered but eventually the environmental changes had to take precedence.

Developing, Confirming Theory

This set of SAF procurement process events affirms the force of the environment on the adaptation of the social system. Normal internal procedures had to give way to proceed towards successful completion of the SAF project. The kind, variety and degree of such changes is not mentioned in the theory of deferred action (Patel, 2006; Ramrattan, 2010; Nyame-Asiamah and Patel, 2010) or in emergent business process literatures (Patel, 2007; Marjanovic, 2005).

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 20 **SAF Event** FPD has to follow up with the cross-functional departments related to the approvals and answer all the queries and clarification in relation to the approval.	**Description** After the contract is sent to the cross-functional departments, FPD has to follow up and clarify any enquiries made by them.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
70. Audit Bureau asked FPD to arrange a meeting with all project members. All project members had a meeting with the Audit Bureau. 71. FPD received the approval from the Legal Department of KMOD. 72. FPD received the approval from the Audit Bureau. 73. FPD received the approval from the Legal and Legislation Council.	Meetings had to be arranged between Audit Bureau and all the cross-functional departments at a short notice period.	April – May , 2011
D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
Audit Bureau requested FPD to arrange a meeting between all the cross-functional departments and Audit Bureau, since they wanted to discuss various issues related to the SAF project. The Director of contract (FPD) ordered the controller to write official letter to the cross-functional departments to arrange the meeting. However, the controller argued and convinced the Director of contract (FPD) to	To arrange the meeting it was very essential to coordinate and inform the cross-functional departments about the meeting and the issues to be discussed during the meeting. Also, it is difficult to arrange a meeting at a short notice of time.	The personals from the cross-functional departments were contacted and accordingly the meeting was fixed within a week. In order to reduce the time delay the personals were contacted by telephone and hence the arrangement was made within time.

inform the cross-functional personals over telephone instead of writing official letters. The controller instructed the staff to contact the personals and arrange the meeting at the earliest and also to inform them about the issues to be discussed during the meeting.		
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
As mentioned earlier, it is not an easy task to coordinate and arrange for meetings in a short time. A call for meeting by the audit Bureau was unexpected. The FPD Procurement Guidelines does not state about a meeting request by any external department. The meeting was not planned and hence to avoid further delays the staff had to coordinate with all the cross-functional departments and arrange the meeting on urgent basis.	As a researcher I think that such a request at a later stage can be avoided if the scope of work and the proposal are provided as soon as it is approved by the Tender Committee. The scope of work has to be stable without any changes once established. FPD had to contact all the cross-functional departments over telephone to arrange the meeting. Normally official letters are written informing the cross-functional departments about the meeting which takes nearly 2 to 3 weeks.	The action taken here was quick and the cross-functional departments were informed about the meetings. The normal procedure was not followed instead the personals were contacted over telephone which resulted in quick action and arrangement of the meeting.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) convinced the Director of contract (FPD) to contact the personals over telephone which rarely happens. This quick action resulted in arrangement of the meeting within a week.

Disagreement: The Director of contract (FPD) was reluctant to contact the X-Company about the meeting and wanted to inform them by official mail to maintain record which is the normal practice of FPD.

Learning: Immediate action by any means of communication as per the situation can be highly favourable and resulting in time reduction.

Experiencing, Reflecting, Interpreting, Tacking Action

The time delay became an important issue and the most expedient procedure was followed.

Developing, Confirming Theory

No new theoretical observations are evident from the data in this set of SAF procurement process events. They tended to agree with the set FPD Guidelines but out of shift in terms of order and time period.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 21 **SAF Event**	**Description**
FPD forwards two sets of the Original contract to the X-Company for signing.	After receiving the approvals from all the cross-functional departments, FPD forwards two copies of the original contract to the X-Company for signing.

SAF Process Event Number	**Description: Issues & Problems**	**Date**
74. FPD invited the authorized personnel of Company X to Kuwait to sign the Design Services Contract. 75. The contract was signed by Company X.	FPD forwards the contract copies for signing. This procedure takes around one month plus. Since the project had delayed it was essential that company X signs the contract at the earliest.	May – June, 2011

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Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
It takes approximately a couple of months for the contract to be signed by the X-Company. The contract is sent by courier to the X-Company. The X-Company reviews the same and signs and sends it back to FPD. The whole process takes time and in between FPD replies to the queries raised by the X-Company, if any. The Director of contract (FPD) instructed the Manager of Land Force Division (FPD) to send the contract to the X-Company by courier. However, taking in consideration the time involved in the process the Manager of Land Force Division (FPD) requested the Director of contract (FPD) if the X-Company could be invited to	Since the process of sending the contract to the X-Company and then awaiting its arrival is time consuming it was decided to contact the X-Company and arrange a meeting so that the contract could be signed at the earliest. Also, if there were any queries from the X-Company it was easy to clarify the doubts.	The X-Company was contacted and the invitation to visit Kuwait for the meeting was sent. The X-Company representatives arrived Kuwait within 10 days and the meeting was held between FPD and Company representatives. The contract was signed without any hurdles or delays.

Kuwait for signing. Ultimately the Director of contract (FPD) agreed to invite the X-Company representatives to Kuwait.		
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
The action taken here was appropriate and the result was quick. Usually, as per the FPD Procurement Guidelines of FPD, the contract had to be sent to the X-Company which in turn will review the contract and return back the signed copy which takes approximately two months. In order to avoid this delay and to fasten the process discussion were held between the management and finally a decision was made to contact the X-Company so that they could visit Kuwait and sign the contract. The process of inviting the X-Company was not planned but still it was fruitful and the result was that the contract was signed within 10 days.	As a researcher I feel that such situation arised due to the reason that this particular SAF project was under process from nearly three years and the contract was still to be established. There was pressure from the stake holders to hasten with the process and establish the contract. Even inviting companies to KMOD to sign the contract is a better solution rather than sending the contract to the X-Company which is time consuming. Discussion were held between the process workers and the process owners to reduce the time period and to establish the contract at the earliest and hence the decision was made to invite the X-Company to KMOD to sign the contract.	The action taken here of inviting the X-Company representatives to Kuwait to sign the contract was appropriate. The result was that the contract was signed within 10 days or else it would have taken two months to receive the sign contract from the X-Company.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) was in no mood to send the contract to the X-Company by courier because it would have taken two months to receive the signed contract from the X-Company. Also, this particular SAF project was dragging from nearly three years and he wanted the contract to be signed as quickly as possible.

Disagreement: The Director of contract (FPD) disagreed and wanted to follow the FPD Procurement Guidelines, which states that the contract should be couriered to the X-Company.

Learning: Normal procedures should be replaced by emergent procedures.

Experiencing, Reflecting, Interpreting, Tacking Action

This set of SAF procurement process events resulted in personal strain on the Manager of Land Force Division (FPD). Consequently, the communicative relationship of the process owner and process stakeholders become strained too. The most expedient procedure was agreed.

Developing, Confirming Theory

No new theoretical observations are evident from the data in this set of SAF procurement process events. They tended to agree with the set FPD Guidelines but out of shift in terms of order and time period.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 22 **SAF Event** FPD sends the contract to the X-Company for signing and requests the X-Company to provide the Performance Bond Guarantee.	**Description** FPD writes a letter to the X-Company requesting to provide the Performance Bond Guarantee which is very much essential before signing the contract by the authorised personnel of KMOD.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
76. FPD requested Company X to provide the Performance Bond Guarantee for the contract according to the contract terms. 77. Company X provided the Performance Bond Guarantee. 78. All the necessary documents were sent to the Legal Department of KMOD for singing the contract by the authorized head of KMOD.	The X-Company was to be notified to provide the Performance Bond Guarantee at the earliest to avoid further delays. Also, the Performance Bond Guarantee has to be exactly the same as per the annex of the contract.	June – August, 2011

<p align="center">D e s i g n - I n - A c t i o n</p>

Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
FPD had to inform the X-Company to provide the Performance bond guarantee. But there were some amendments to be made to the Performance Bond Guarantee because it was insisted by the bank of the X-Company. FPD had to contact the consultant of the legal department of KMOD and arrange for the amendment. The Manager of Land Force	The consultant of the legal department was to be contacted personally to amend the performance Bond guarantee. This process was completed within 3 days. If an official letter was to be written it would had taken one month for the whole process. Hence writing an official letter was avoided and instead meeting personally was opted for. All the necessary documents were to be	The consultant of the legal department was contacted and appropriate action was taken to amend the Performance bond guarantee. The copy of the amended guarantee format was sent to the X-Company immediately. It took nearly 5 days to amend the guarantee format and to forward the same to the X-Company.

Division (FPD) drafted the letter to the legal department to make an amendment to the performance Bond guarantee, but the Director of contract (FPD) instructed the Manager of Land Force Division (FPD) to contact the consultant of the legal department personally and arrange for the same.	forwarded to the legal department and coordination with legal department was essential to sign the contract on priority.	
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
It is not stipulated in the FPD Procurement Guidelines whether the Performance Bond Guarantee can be amended or changed. This lead to discussion between the management and to decide the course of action to be taken to solve the problem. Since the X-Company did not consult with their bank in advance the situation of further delay arose. It can be avoided if FPD notifies the companies to consult with their banks related to the annexes of the contract.	This was not planned and it cannot be predicted in advance. The company's request to amend the Performance Bond Guarantee was not expected and FPD Procurement Guidelines does not stipulate and measures to be taken in this respect. I had suggested contacting the legal consultant of KMOD for a solution and it was the only appropriate way to solve the issue immediately.	The action taken here was appropriate because contacting the legal department for a solution was the only way out. Also, instead of writing a letter FPD decided to contact in person, this result in quick action and solution to the whole issue. FPD received the Performance Bond Guarantee from the X-Company within two months.

Evaluating the Action and Assessing the Learning Points

Agreement: The Director of contract (FPD) did not want to waste time and wanted to contact the legal advisor to find a solution to the whole issue, which was done promptly.

Disagreement: The Manager of Land Force Division (FPD) wanted to write a letter to the legal department because he doubted that the legal advisor would take any action without an official letter.

Learning: Emergent action is appropriate for quick results.

Experiencing, Reflecting, Interpreting, Tacking Action

The researcher thinks the X-Company should have consulted their bank regarding the Performance Bond Guarantee when the draft contract was sent to them. She advised the Director of contract (FPD) to contact the legal advisor of KMOD to find the solution for the issue. Accordingly, the legal advisor of the legal department was consulted to solve the issue.

Developing, Confirming Theory

This set of SAF procurement process events confirms deferment points and deferred action.

Theoretical Anomalies and Discussion

This set of SAF procurement events poses no theoretical anomalies.

Sheet 23 **SAF Event** The signed contract is sent to the cross-functional departments and the X-Company for their records. FPD requests the X-Company for the advance payment guarantee and proforma Letter of Credit.	**Description** After FPD receives the contract signed by the authorised personnel of KMOD, the contract is forwarded to the cross-functional departments by regular mail. Also, one copy of the contract is sent to the X-Company with a request to provide the advance payment guarantee and the proforma Letter of credit.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
79. The contract was signed by KMOD. 80. One original copy of the contract was sent to Company X for their records. 81. One copy of the contract was forwarded to Audit Bureau. 82. One copy of the contract was sent to the Finance Department of KMOD. 83. One copy of the contract was forwarded to the GHQ for their records. 84. One copy of the contract was forwarded to MEP. 85. FPD requested Company X to provide the Advance Payment Guarantee and the Proforma Letter of credit.	FPD has to send the contract to the cross-functional departments. One copy of the contract has to be sent to the X-Company along with the request to provide advance payment guarantee. FPD has to follow up so that the X-Company provides the advance payment guarantee at the earliest without any delays. Usually the process takes around a couple of months.	September, 2011

D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
Usually the whole process takes around a couple of months and FPD had to follow up with the X-Company so that they provide the advance payment guarantee within a month and avoid any delays for	The contract was sent by regular mail to the X-Company. It takes around a week for the contract to reach the X-Company by courier. Handing over the original contract by hand personally was not opted	A formal letter was written to the X-Company forwarding them the original contract and also requesting them the advance payment guarantee and the proforma Letter of Credit which is

the contract to come into force. The Manager of Land Force Division (FPD) requested the Director of contract (FPD) for permission to contact the X-Company and to hand over the original contract by hand. But the Director of contract (FPD) was against the idea and wanted the contract to be sent by regular procedure i.e. by courier. If the contract was handed over to the X-Company representative by hand than the X-Company could have proceeded with the advance payment guarantee without any delay.	for because to maintain proper records it was not possible to hand deliver. It was essential the Company X provide the Advance Payment Guarantee within a week to proceed with the payments so that the contract comes into force accordingly.	very essential for the contract to come into force. Official letters were also written to the cross-functional departments attaching the copies of the contract for their records and reference.
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
Sending the contract by courier was as per the FPD Procurement Guidelines but it would have saved time if the X-Company was handed over the contract in person. This could have led to saving time. It would have resulted in the X-Company providing the advance payment guarantee at the earliest say, within a month. FPD Procurement Guidelines does not suggest to handover the contract in person and the management had discussion about the issue. But it was decided against handing over the contract in person.	The contract was in negotiation and discussions for over three years and it was necessary to avoid any further delays. Hence the researcher suggested that the X-Company should be contacted and the contract should be handed over personally. But it was not considered and the contract was sent by regular courier which resulted in delay of submitting the Advance Payment Guarantee.	The action taken here was not appropriate because the result was not satisfactory and this delay could was avoided. Even saving a couple of weeks was important and could result in the contract coming into force at the earliest.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) had suggested forwarding the contract to the X-Company in person so that the X-Company could proceed with the establishment of the advance payment

guarantee immediately.

Disagreement: The Director of contract (FPD) knew the importance of reducing the delay but it was also necessary to maintain proper records and after all it was the original contract which had to be forwarded to the X-Company.

Learning: Normal Procedure results in delay which can be avoided by considering emergent action.

Experiencing, Reflecting, Interpreting, Tacking Action

This set of SAF procurement process events emphasise the tension between responding locally, deferred action, and complying with planned action even when the environment requires deviance from the planned action. The most pragmatic action was taken.

Developing, Confirming Theory

This set of SAF procurement process events emphasises that deferred action is pragmatic action. Patel (2006) refers to it as 'natural action'; the actions humans and human activity systems take to survive and achieve teleological goals in the face of environmental change.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 24 **SAF (Un) Planned Action** FPD receives the advance payment guarantee and the proforma Letter of Credit before establishing the letter of credit.	**Description** FPD awaits the advance payment guarantee and the proforma Letter of Credit from the X-Company, which is very much essential before signing the contract. FPD cannot write to the finance department without receiving the advance payment guarantee and the proforma Letter of credit.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
86. The Proforma Letter of credit was provided by Company X. 87. Company X delayed to provide the Advance Payment Guarantee by nearly couple of months. 88. FPD requested Company X to provide the Advance Payment Guarantee urgently with a notice period of 15 days.	The Advance payment guarantee and proforma Letter of Credit was awaited by FPD. The X-Company forwarded the proforma Letter of Credit but failed to provide the advance payment guarantee. They wanted KMOD to sign the installation and the maintenance contract before providing the advance payment guarantee. FPD had to put pressure on the X-Company to provide the advance payment guarantee.	October- December, 2011
D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
The X-Company provided the proforma Letter of Credit but failed to provide the advance payment guarantee which was delaying the establishment of the letter of credit. Meetings were held between the management of FPD and the Manager of Land Force Division (FPD) suggested to send a reminder to the X-Company but the Director of contract (FPD) argued that just reminder will not work and it was necessary to put pressure on the X-Company so that they provide the	Since the X-Company failed to provide the advance payment guarantee for nearly three months, FPD had to send a letter to the X-Company informing them that they should provide the advance payment guarantee within two weeks or else the contract will be terminated. The other suggestion of sending a reminder was not opted for because it was necessary for the X-Company to take action immediately. This action of Company X was unexpected and	FPD sent a letter to the X-Company warning them that if they did not provide the advance payment guarantee within two weeks then FPD would terminate the contract having no choice.

advance payment guarantee within a couple of week.	there were no explanations provided by the company.	
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
The delay in providing the Advance payment guarantee was not expected from the X-Company. And the FPD guideline does not suggest any stern course of action to be taken in this matter. This was not as per plan and it was resulting in unnecessary delay. I think the companies should be given a time limit to submit the guarantees so that unnecessary delay are avoided and the procedures are followed as per plan.	The management of FPD discussed among themselves and decided to take action by sending a letter by putting pressure and warning them that if they did not provide the advance payment guarantee within 15 days than the contract will be automatically terminated. I had suggested writing a warning letter because the company failed to provide the advance payment guarantee as well as any explanation for their delay.	The action taken here was appropriate because the X-Company was delaying in providing the advance payment guarantee which was resulting in further delay of the SAF project. And since the contract was already signed there was pressure on FPD to proceed with all the formalities at the earliest.

Evaluating the Action and Assessing the Learning Points

Agreement: The Director of contract (FPD) decided to send a strong warning letter to the X-Company so that they provide the advance payment guarantee within two weeks because it was affecting the coming into force date of the contract.

Disagreement: The Manager of Land Force Division (FPD) wanted to send a reminder to the X-Company because he felt that it would be harsh on the part of KMOD without considering the companies part for this kind of action taken by them.

Learning: Stern Emergent Action are advisable in such cases of non-compliance.

Experiencing, Reflecting, Interpreting, Tacking Action

This set of SAF procurement process events, as with others previously, emphasises the human aspects. There were differences of opinion over pragmatic actions such as failure to provide the advance payment guarantee. The FPD and cross-functional departments differed on how to deal with this issue. Ultimately, a warning had to be issued.

Developing, Confirming Theory

This set of SAF procurement process events confirms the deferred systems design (Patel, 2006). Deferred systems are designed to achieve specific goals and perform certain functions. This warning letter was necessary to ensure the social system achieved its SAF procurement goal. Human's acquire and organise available resources to achieve specific goals by design and a deferred system whilst enabling deferred action is meant to do the same.

Theoretical Anomalies and Discussion

This set of SAF procurement events poses no theoretical anomalies.

Sheet 25 **SAF Un-Planned Action** Unscheduled Meeting with X-Company	**Description** FPD received a meeting request from the X-Company. FPD had to arrange the meeting between the X-Company and the cross-functional departments.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
89. Company X requested for a meeting with FPD to discuss the issue related to the Advance Payment Guarantee. 90. FPD obliged for a meeting and discussions were held, where Company X informed KMOD to sign the Installation and Operation Contract immediately and to release the payment of 20% advance payment for the Installation and Operation Contract along with the 20% advance payment for the Design Services Contract. The reason given by Company X for their request was that they cannot continue with the same total amount of the offer for the Installation contract because of the currency inflation internationally. Also the Installation and Operation Contract was to be signed after nearly two years i.e. after the completion of the construction contract and hence they could maintain the same price offer.	This action was not planned by FPD it was unexpected and sudden. The X-Company requested a meeting to discussion certain issue related to the contract and the delay for not providing FPD with the Advance Payment Guarantee. FPD had to arrange a meeting between the X-Company and the cross-functional departments without any delay. As mentioned earlier, it is not an easy task to arrange the meetings between the cross-functional departments because most of the time the personnel of the cross-functional departments have a busy schedule and to arrange a meeting is very difficult in a short notice period.	January - February, 2012
D e s i g n - I n - A c t i o n		
Process Enactment Problem	**Emerging Issues**	**Emergent Action**

(Diagnosing)	(Planning Action)	(Taking Action)
The company's request for a meeting was received by FPD to discuss issue related to the contract and the delay in providing the Advance payment guarantee. The Director of contract (FPD) instructed the Manager of Land Force Division (FPD) to send official letters to the cross-functional departments with the suggested date for the meeting. The Manager of Land Force Division (FPD) argued that instead of sending official letter to the cross-functional departments it would be a better idea to contact them by telephone and arrange a meeting at the earliest. But the suggestion was not accepted by the Director of contract (FPD) and the instructed the Manager of Land Force Division (FPD) to send official letters.	Arranging meetings is a difficult task because the availability of the cross-functional personnel has to be considered because of their busy schedules. However, official letters were sent to the cross-functional departments with a suggested date for the meeting. This procedure takes one month for the letters to reach the cross-functional department and to receive a reply. Since this was as per the Procurement Guidelines of FPD this action was followed to maintain proper records.	FPD sent a letters to the cross-functional departments informing them about the suggested date for the meeting. And after receiving the reply from the cross-functional departments FPD sent a letter to the X-Company informing them about the date of the meeting. This process took around one month plus.
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
FPD informed the cross-functional departments about the suggested date of the meeting and after receiving their replies sent a letter to the X-Company informing them about the date of the meeting. The FPD Procurement Guidelines does not suggest any course of action if the X-Company suggests a meeting after the contract is signed. Hence it was not as per plan and FPD had to arrange for the meeting.	The management of FPD decided to write official letters to the cross-functional departments and this process took around a month. After receiving the approvals for the meeting date FPD sent an official letter to the X-Company and informed them about the meeting date. I had suggested to contact the cross functional department over phone to arrange the meetings but it was	The action taken here was not appropriate because if the personnel were contacted through phone or email, the meeting could had been arranged within a couple of weeks and the result would had been favourable. Since official letters were written it took around two months for the arrange the meeting.

| | not considered because the reasons provided by company X was not satisfactory and records had to be maintained of such action by the company X. | |

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD) was in agreement to contact the cross-functional personnel through phone or email to avoid delays and arrange the meeting within two weeks. This could have resulted in favour of the contract coming into force at the earliest.

Disagreement: The Director of contract (FPD) was in no mood to contact the personnel of the cross-functional departments because he wanted to maintain proper records so that in future if there were any problems then FPD could protect their side by showing proof of the actions taken by FPD and show that the delay was not from the side of FPD.

Learning: Authority prevails and FPD guidelines should be followed to maintain records.

Experiencing, **Reflecting, Interpreting, Tacking Action**

The researcher thinks this should have been done by contacting the cross-functional personnel over telephone or email and this could have saved time and the meeting could had been scheduled within two to three weeks. She had suggested the Director of contract (FPD) to contact the personnel over telephone to reduce the time delay and arrange the meeting within two to three weeks. But the suggestion was not considered because contacting them by phone or email was not official and no records could be maintained by this action.

Developing, Confirming Theory

This set of SAF procurement process events confirms the thesis of deferred action. The X-Company's request was unexpected and had to be addressed even though it was not in the FPD Guidelines.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 26 **SAF Event** FPD forwards the documents related to the contract to the Finance Department to establish the Letter of Credit.	**Description** FPD receives the Advance Payment Guarantee from the X-Company and forwards all the necessary documents related to the contract to the Finance Department and instructed them to establish the Letter of Credit at the earliest.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
91. After discussions, Company X obliged and provided KMOD with the Advance Payment Guarantee. 92. FPD immediately forwarded the necessary documents to the Finance Department of KMOD to establish the Letter of Credit and release the Advance Payment. 93. The KMOD Finance Department established the Letter of Credit and released the Advance payment to Company X.	FPD receives the advance payment guarantee from the X-Company and forwards all the related documents to establish the Letter of Credit to the finance department. The process to establish the Letter of Credit takes nearly one to two months and FPD wanted the Letter of Credit to be established at the earliest.	March - May, 2012
D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
The X-Company provided FPD with advance payment guarantee and in turn FPD forwarded all the documents to the finance department. Since the contract was delayed and the process had taken nearly 3 years, FPD wanted the contract to come into force at the earliest. Hence the Director of contract (FPD) instructed the Manager of Land Force Division	After receiving the advance payment guarantee from the X-Company, FPD had to send all the necessary documents to the finance department to establish the letter of credit. Since the SAF project had already delayed, FPD wanted the Letter of Credit to be established within a short period and hence they decided to contact the under-secretary of the finance department	FPD sent an official letter to the finance department with all the documents to the Finance department to establish the letter of credit. On the other side the Manager of Land Force Division (FPD) also contacted the under-secretary of the finance department to take immediate action and establish the letter credit within a short period.

(FPD) to send an official letter to the finance department to establish the Letter of Credit at the earliest. The Manager of Land Force Division (FPD) wanted to contact the under-secretary of the finance department and request his assistance to establish the Letter of Credit at the earliest without any delays.	to push the matter so that immediate action was taken. It takes around two months for the Letter of Credit to be established through normal procedures.	
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
The Letter of Credit had to be established at the earliest to avoid further delays. As per the FPD Procurement Guidelines, all necessary documents had to be forwarded to the finance department to establish the letter of credit. Then it is the work of the finance department to take action and FPD has no involvement in the procedures to establish the letter of credit.	FPD sent all the necessary documents to the finance department to establish the letter of credit. Usually FPD sends the necessary documents and after that it is the work of the finance department to action. It takes nearly a couple of months to establish the letter of credit. I had suggested to contact the Assistance Under-secretary of the Finance Department personally so that the letter of credit for this project was established on priority.	The action taken here was appropriate because contacting the under-secretary of the Finance Department for assistance was the appropriate action and the result was that the Letter of Credit was established within a month.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD)'s suggestion was considered and the under-secretary of the finance department was contacted to establish the Letter of Credit which is not done usually.

Disagreement: The Director of contract (FPD) wanted to send an official letter to the finance department along with all the necessary documents. He did not want to take any favours from the other department.

Learning: Normal procedure can be followed with emergent action.

Experiencing, Reflecting, Interpreting, Tacking Action

The researcher thinks there should be a time limit given to the finance department so that unnecessary delays can be avoided. Since there is no time limit there is no priority given. She had suggested to contact the under-secretary of the finance department for assistance so the Letter of Credit could be establish within a short time.

Developing, Confirming Theory

No new theoretical observations are evident from the data in this set of SAF procurement process events. They tended to agree with the set FPD Guidelines but out of shift in terms of order and time period.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

Sheet 27 **SAF Event** Design Service Contract outstanding	**Description** Meeting had to be arranged between the X-Company and MEP before the contract came into force. This Kick-off-Meeting was in the FPD Guidelines but was part of the Design Service Contract.	
SAF Process Event Number	**Description: Issues & Problems**	**Date**
94. The contract for the Design Service Contract still did not come into force because the Kick-off-Meeting between MEP and Company X to finalize the time frame and the related work for the construction project had to take place. 95. Finally, the meeting between MEP and Company X was held and the contract came to force.	As per the contract terms a Kick-off -Meeting had to be arranged between MEP and the X-Company to plan the whole SAF project. This was unexpected because the meeting was to be held between MEP and company X, which never happened and FPD had to coordinate to arrange the meeting.	May - June, 2012
D e s i g n - I n - A c t i o n		
Process Enactment Problem **(Diagnosing)**	**Emerging Issues** **(Planning Action)**	**Emergent Action** **(Taking Action)**
The Letter of Credit was established but the contract still had to come into force because as per the terms of the contract a Kick-off-Meeting between MEP and the X-Company had to be arranged. FPD had to contact the X-Company and MEP to arrange the meeting within a short period. It was nearly a month after the Letter of Credit had been established. The Director of contract (FPD) instructed the Manager of Land Force Division	Since MEP did not take the initiative to arrange the meeting with company X. FPD had to coordinate to arrange the meeting. FPD forwarded the letters to the X-Company and MEP informing them about the suggested date for the meeting. The option of contacting them over phone was not opted for because FPD wanted to maintain records and proof of the action taken.	FPD sent an official letters to the X-Company and MEP and arranged the Kick-off-Meeting so that the contract came into force immediately.

(FPD) to send official letters to MEP and the X-Company to inform them about the suggested date for the meeting. The Manager of Land Force Division (FPD) suggested contacting the X-Company and MEP over phone so that the meeting could be held within a week.		
Experiencing, Reflecting, Interpreting and Taking Action	**Experiencing, Reflecting, Interpreting and Tacking Action**	**Experiencing, Reflecting, Interpreting and Tacking Action**
There is no course of action mentioned in the FPD Procurement Guidelines in relation to the Kick-off-Meeting. However, FPD had to write official letters to the X-Company and MEP to arrange the meetings. The Kick-off-Meeting was to discuss the course of action to be taken during the implementation of the SAF project. I think MEP should have arranged the Kick-off-Meeting with X-Company as soon as the Letter of Credit was established. However they wanted FPD to arrange the meeting which resulted in a delay.	FPD sent official letters to MEP and the X-Company suggesting the meeting date. I had suggested contacting the X-Company and MEP over phone so that the meeting could have been arranged within a week. But my suggestion was not considered because FPD wanted to maintain records of the course of action taken.	The action taken here was not appropriate because if both the cross-functional parties were contacted over phone the meeting could have been arranged within a week. Since official letters were sent it took more than a month to arrange the meeting.

Evaluating the Action and Assessing the Learning Points

Agreement: The Manager of Land Force Division (FPD)'s suggestion was not considered and hence the result was that the time taken to arrange the meeting was nearly more than a month.

Disagreement: The Director of contract (FPD) as usual wanted to follow the procedures and hence was in favour of sending official letters to MEP and the X-Company to arrange the meeting. The whole procedure took more than a month.

Learning: Regular follow up is very crucial else it can result in unexpected delays.

Experiencing, Reflecting, Interpreting, Tacking Action

The disagreement between the Manager of Land Force Division (FPD) and Director of contract (FPD) was over following the FPD Guidelines. The researcher made suggestions consistent with the theory of deferred action, as noted above, to promote deferred action.

Developing, Confirming Theory

No new theoretical observations are evident from the data in this set of SAF procurement process events.

Theoretical Anomalies

This set of SAF procurement events poses no theoretical anomalies.

DATASET 3 Interview Questions and Sample Interviews

The aim of the interviews was to do process analysis. Interviews began with stakeholders and/or participants who are believed to have the most complete understanding of the FPD procurement process to be redesigned. They are subject experts. The aim was to understand the existing conditions and goal of redesigning an EBP. It provided the high-level outline of the business procurement process.

The researcher sought to understand actors' interpretations of the FPD Guidelines. She avoided confrontation to elicit the best data. She did not impose here understanding on subjects as a senior manager and let them use their own terminology, acronyms and aliases. She made notes of the current problems and points that would help redesign the EBP and later expanded these in the Reflective Diary.

Interview Questions

Interviewee:
Position:

Date:
Time:

Structure
These questions account for structure/planned action. Questions are based on literature, FPD Guidelines and the Theory of Deferred Action (Patel, 2006).

Planning Questions

What is the business of KMOD/FPD?

What procurement process does KMOD/FPD use to complete its responsibility?

What is the primary goal/outcome of the business procurement process?

What are the business rules to perform the procurement process effectively?

What level of knowledge does KMOD/FPD have to plan the procurement process?

How is the procurement process planned?

How is the procurement process implemented?

What are the major weaknesses of the procurement process?

How is the success of the procurement process evaluated?

Agency
These questions account for actors and their actions in the context of planned organisational work. They are based on FPD Guidelines and FPD organisation structure.

What role do you play in the procurement process?

How do you influence the procurement process?

Unexpected Events/Emergence Questions
These questions acknowledge Structure and account for emergence/complexity. Questions are based on literature, FPD Guidelines as applied and the Theory of Deferred Action (Patel, 2006). They collect data on what happens unexpectedly in the structure/planned.

Describe the environment of the procurement process?

What outside the FPD can affect the procurement process?

What factors in the environment affect the procurement process?

How do these factors affect the procurement process?

What changes occur in business procurement processes?

Describe how job roles have changed?

What changes occur in resources supporting business procurement process?
(Feldman, 2004)

What changes occur in the business rules?

What changes occur in routines of the procurement process?
(Feldman, 2000)

What changes occur in the management structure of FPD?

How does FPD deal with the uncertainty in the internal and external environment?

What problems occur in the procurement process?

Why do the problems occur?

What unexpected events occur?

Agency
These questions seek to understand what actors do when unexpected events arise in emergent situations and what knowledge they have of structure/planned action and emergence. What local action do actors take when problems/unexpected events occur. Questions are based on literature, actors' experience of FPD Guidelines as applied and the Theory of Deferred Action (Patel, 2006).

Describe the level of knowledge you need to do your tasks in the procurement process?
(Marjanovic, 2006)

How do you come to realise the problem/unexpected event?

What kind of actions do you think you should be allowed to do and why?

Agency
Local Action Questions at Structural Level

How are the problems and unexpected events managed?

What events that occur unpredictably that cannot be planned?

Local Action Question at Planned Action Level
What do you do when problems/unexpected events occur to resolve them? What action do you take?

Describe the things you do that are not part of the planned procurement process? Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?

Emergent Business Process Design
These questions are to collect data on designing EBP, covering Structure/Planned Action, Emergence and Deferred Action. These questions are based on the literature and the theory of deferred action (Patel, 2006).

What aspects of the procurement process work best? Why?

What's the biggest opportunity for improvement?

What aspects of the procurement process are difficult? Why?

In what ways is the design of the procurement process limited?

How are the major limitations being addressed?

Is the procurement process goal achieved efficiently? If not, explain why not.

Is the goal achieved effectively? If not, explain why not.

In what ways can the procurement process save money, time and effort?

Is the quality of the work appropriate? How can the quality be improved?

What improvements to communications between sections need to be made?

What improvements need to be made in the information provided about the procurement process?

Can the environmental changes be predicted and planned? How?

How can the environmental changes be controlled?

How can unexpected events be incorporated in the procurement process?

<u>Agency</u>
What parts of the process do you seek to eliminate, and why?

What do you think are the opportunities for improving the procurement process?

Who should participate in designing the procurement process?

Are you satisfied? What improvements need to be made? What suggestions do you have to improve it?

Interview Questions
Interviewee: 06
Position: Manager (Director)

Date:29 Aug 2012
Time: 11:00 Am

Planning Questions (Structure)

This set of question accounts for planned action or structure. Questions should be based on the FPD procurement process flow chart – or in terms of the research literature the rationalism of planning or reasoned action.

What is the business of KMOD/FPD?

I personally like to think of FPD as a place where the army's dreams come true. FPD is the final gate to military side and the first door to the civilian side. Many steps are to be taken and many departments to be addressed before getting any contract to signature. Our vision is to be the efficient commercial arm of the armed forces.

What procurement process does KMOD/FPD use to complete its responsibility?

The procurement process is very long based on the FPD Procurement Guidelines. It starts with a letter from general headquarters, logistics and supplies stating their request along with the scope of work and the names of the companies. Before requesting the proposals, an approval from the tendering committee that is responsible for receiving and opening the proposals. The proposals are studied by the end user who on his behalf has to produce a technical study of evaluation. Our work is also connected with the legal department, financial department, legislation and the Audit Bureau. We follow set procedures or the plan for procurement. This has been applied for the SAF procurement but there have been problems doing it exactly as prescribed.

What is the primary goal/outcome of the business procurement process?

Our main goal is to provide the army with zero obstacles. The goal is to facilitate the armed forces' work and the outcome is to secure the required defence equipment.

What are the business rules to perform the procurement process effectively?

The rules have been difficult to apply in some situations faced by the SAF procurement. Some rules are imposed on the process of which sometimes I see

less use. Yet, we are committed to the regulations imposed as the process by the law, Audit Bureau, legal department and legal and legislation. We comply by procedural rules for procurement, financial rules of budgeting and legal rules of the legislature. These sets of rules are laid out in the FPD Procurement Process Guidelines. In the case of SAF, we have had to struggle to comply by such rules because of unexpected events.

What level of knowledge does KMOD/FPD have to plan the procurement process?

To plan the procurement process we use the FPD Guidelines and find that the procurement process varies according to the materials and equipment being purchased for the armed forces. Our knowledge has improved since we were set up. Senior people have become very knowledgeable. Many of our employees start with no knowledge, whatsoever in the procurements business. Their experience in this field accumulates with years. They learn that they need to comply by the business rules, as I said earlier, but sometimes this is difficult. Also, the army does not have proper knowledge of the procurement process. If they appreciate it then we can do our part better because they will supply us with the right information and not keep changing their minds.

How is the procurement process planned?

The procurement process is considerably young as no set plan was clear in FPD except in the 90's when the Assistant Undersecretary of FPD at that time wished to have a draft contract to be prepared and considered standard. All the details of the process followed through the years to come. We now follow the FPD Procurement Guidelines. Each procurement project does vary but we have to produce the statutory, financial and contractual documents required in the FPD Guidelines. Each procurement project is led by myself and we, the Director and Assistant Undersecretary, as the senior team, vary the procurement activities according to each project. So, we find variation when procuring supplies for the armed forces. But some procurement projects are easier because we can follow the Guidelines easily. The SAF project has proven to be a challenge. We are learning how to manage large and problematical procurement in uncertain conditions and we need to re-design our procurement process to reflect it.

How is the procurement process implemented?

An action plan has already been agreed upon and approved by all the legal bodies in connection with FPD. Now, this plan in the Bible to follow. At FPD we follow the required steps. I lead the procurement team as the Director and my assistant helps me to monitor and control the steps. People work in teams as required, as contracts vary as I said earlier. We try to follow the Guidelines and action plan, but find their is often much variation. The current SAF project is a typical example. Many stages of SAF have required adjusting the FPD Guidelines. The detailed implemented of the Guidelines in SAF has caused many difficulties and it does not feel like a set process. It has kept changing in SAF. Still, we have to comply with the Guidelines and we must produce the required statutory, financial and contractual documents.

What are the major weaknesses of the procurement process?
1. The long process
2. Unexpected or variation in employees' attitudes and work patterns
3. Similar variation is armed forces requirements
4. Not comprehending the importance of the work by some of those who work in FPD
5. Surrounded by unpractical ideas and people
6. Lack of ambitions of some employees in FPD
7. Lack of procurement knowledge in the Army
8. Personal benefits sought over departmental objectives

How is the success of the procurement process evaluated?

The success is evaluated by the number of contracts that are signed annually. The Director of FPD knows the real level of success as dealing with the details of the work is his/her responsibility. We have been successful in general. But the current SAF procurement has taken much longer than expected. It is a complicated procurement project and many changes occurred. The main one to divide it into two separate projects soon after it was initiated.

Agency:
What role do you play in the procurement process?
My role mainly concentrates on solving problems either by advice or contacts. Some projects are planned ahead with the army. Depending on the good relationship with their heads, but others tend to emerge because the personal

relationship with their heads is not so strong. I am responsible for the procurement process and direct it. But mainly, as I said, I find that I am solving problems concerning the potential suppliers or the armed forces. Many of these problem arise because the armed forces requirements change, sometimes many times. The SAF procurement process has many examples of change, some caused by lack of proper planning by the armed forces themselves and others because of poor information or the behaviour of the supplier.

How do you influence the procurement process?

A director role goes into two directions:

    a. Work to facilitate as much as possible bearing in mind the needs of the army.

    b. Socially, within the department which to me is more difficult having to be a motivator, problem solver, teacher, a role model, listener and a sometimes a counsellor.

Unexpected Events/Emergence Questions

Structure: This accounts for emergence/complexity. Question should be based on the flow chart – procurement process; for data on what happens unexpectedly that affects the implementation of the FPD Guidelines or planned events.

Describe the environment of the procurement process?

It's a long bureaucratic process that is followed "procurement process guideline" that starts from the request from the end users until fulfilling their requirements. The main problem is that the end user does not always tells us exactly what they want. Even when they do they change their mind. This SAF procurement has countless examples; as I said earlier, the main one was to split the procurement project into the construction of the factory and the production line. These kind of changes come from all the legal, audit and financial departments with who we have to work. Even the suppliers change what they are expected to do or promised to do. We had great problems in the SAF project trying to get the and technical and service design proposals and payment promise.

What outside the FPD can affect the procurement process?

Many factors can appear in the middle of a process and cause a problem or an unlimited delay. Sometimes the cause can be small and silly yet has its toll in the process. Factors like the lack of knowledge by the army and sometimes the

supplying companies. As I said, the Parliament may change which causes uncertainty for some very expensive procurement project, like the SAF procurement project that you are studying. The supplying companies themselves may lack knowledge of how to fulfil an order or they find our procurement regulations difficult to follow. In SAF, the supplier did not fully comply in one or two cases of required documents in the Design Service contract.

What factors in the environment affect the procurement process? How do these factors affect the procurement process?

Any affect means longer process and extra delay. The armed forces lack of knowledge, they do not have precise knowledge of what equipment or supplies they need. They often change the equipment and supplies requirements. The Parliament can change, it was dissolved as you know during the SAF Procurement Project, which caused much uncertainty. We did not know whether the project would still continue. There are effects of lack of knowledge. The armed forces, like the military, not being exact in their requirement affects the way suppliers behave. Like a knock on effect of uncertainty.

What changes occur in business procurement processes?

As the procurement process is already set, any change in it tends to make it longer. The more you want to make sure that you are doing the right thing, the more cowardly decisions you take thus giving us more steps to be followed. There are many changes which we find difficult to take action. The End User changes their requirement or the supplier does not comply with our procedure. When we deal with them, as in the SAF procurement, we try to keep to FPD Guidelines but to complete tasks we have to things differently. As your research is showing us, these are emergent events that we had not planned.

There are major consequences for the resources available to complete the process. The significant unexpected events have meant time – a very important resource often not recognised, I have to allocate new personnel to deal with approvals and our chief coordinator is tied up with managing the approvals letters. All the time, the cost keep rising. All these resources are limited and I have to account for them.

Describe how job roles have changed?

The major job role of FPD has not changed at all. It is the small circles around it that have been rolling for years. Additional new jobs have been added. Examples here is Translation section has been established and recruit professionals in order to facilitate and speed up the process, we also added to their responsibilities writing and reviewing the draft contracts. There are changes in the activities of particular job roles, which depend on the particular procurement contract we are negotiating and writing.

What changes occur in resources supporting business procurement process? (Feldman, 2004)

The world is changing and any business field including the military experience faces challenge in its market. A thing that should make us alerted to the changes. On the other hand, the financial support of FPD depends mainly on the plan set by the Government. As threats still are made against Kuwait, then the work of FPD will continue a head. When threats to our security are high we receive additional resources in budget.

What changes occur in the business rules?

This business hovers around money, so no matter how the rules change, you can always change them when talking about money. This also depends on the specific procurement. In the SAF procurement, we aim to follow the FPD Guidelines, our business rules, but as I said earlier the End User or supplier change the way we work when they change their minds or do not comply with required procedures. We have had a lot of that in SAF.

What changes occur in routines of the procurement process? (Feldman, 2000)

From the 90s when the Assistant Undersecretary wanted a set process, we have developed the FPD Guidelines to produce procurement contracts. For the last few years, we have maintained a considerable percentage of sustainability. But we have had to make changes to procedures. To confirm to FPD Guidelines we follow them but to make sure we progress we have added additional tasks. We see a lot of this in SAF, where we sent official letters as required by FPD Guidelines but also emailed or couriered them to progress speedily. We have had many such occasions in SAF. The procurement process has changed since it started and your research is showing us that we need to re-design it, especially to account for uncertainty and unexpected events.

What changes occur in the management structure of FPD?

The Assistance Undersecretary has been the same for the past 4 years, as well as the Director for nearly the same period.

How does FPD deal with the uncertainty in the internal and external environment?

Being experienced to a certain level in this field, such uncertainty is easily adjusted. We discuss and consult the affected departments and sections. So, additional meetings are required. Our cooperative culture helps but individuals can be difficult. As you know, we cannot predict what will happen. By following the FPD Guidelines we try to control uncertainty, but it still occurs. You are calling this 'emergence' in your research, which I think is true in the case of the SAF procurement. External environment we cannot control. Internally, we try to think and plan ahead, based on the SAF Guidelines. Our stable management structure helps, because we are experienced we can find ways to deal with uncertainty. But as I said earlier, to make sure you are doing the right thing we do make cowardly decisions. This is caused by uncertainty.

What problems occur in the procurement process?

There are no major problems happening in the process, as explained earlier due to the fact that the process is already set. Yet, some minor problems happen and they find their way to solution. Minor issues arise. SAF has many such issues. They conflict with what we should do according to FPD Guidelines, but we comply with it and do take other action to resolve the problem. In SAF, there are many examples of unscheduled meetings with suppliers and End Users to resolve such problems, as we discussed during our action research meetings.

Why do the problems occur?

No matter how accurate you create a system, the world we live in is changing all the time, therefore we get a touch of it from time to time. I think this cannot be predicted and we have to learn to manage it. We expect your research to help us. As you know, we implemented incremental changes which you call 'deferment points'. This prepares us to manage the problems.

What unexpected events occur?

Major and minor events. In SAF the procurement was split into two separate projects very early on, a major unexpected event. We were not prepared for it and, actually, did not like it. We had to then negotiate two contracts. This was

very challenging because this was a new supplier and we had no experience or knowledge of dealing with them. They were very difficult to negotiate the contract.

Agency:
Describe the level of knowledge you need to do your tasks in the procurement process? (Marjanovic, 2006)
Our type of knowledge is accumulative, yet we do require great abilities and training in the following fields of

- Negotiation
- Financial knowledge
- General technical knowledge
- Human resources
- Planning

Varied and deep knowledge is needed to negotiate and write high value contracts. Our management has excellent experience. We have accumulated the knowledge through experience. I think this research is adding process knowledge too. This is important for efficiency.

How do you come to realise the problem/unexpected event?
I realise it by experience and great communication inside and outside the department. Of course, when the new event is not in the FPD Guideline it is by definition unexpected. This is how we know it is happening.

What kind of actions do you think you should be allowed to do and why?
To make changes in the process where some of the steps to be done are for the good. We are not permitted. When we do have to do it, as in the case of SAF, much consultation and authorisation is required. The idea of deferment points as a formal step is helpful. We can then take the necessary steps without worrying about breaking the Guidelines. This should be part of the procurement process because of uncertainty.

Local Action Questions
Structure: This accounts for agency/deferred action. Question should be based on the flow chart – procurement process; need data on what action agents take when problems/unexpected events occur.

How are the problems and unexpected events managed?

Discussions are to be carried out between the director and the person in control of the project, who has the problem. Upon reaching a solution, action is taken. If the problem is big, then the suggested solution is to be discussed with the Assistant Undersecretary for his approval. The SAF procurement has experienced many such actions already. We have had to call meetings to handle the unexpected events. This takes time and causes delays to the completion of the procurement.

What events that occur unpredictably that cannot be planned?

Even if they are unforeseen, we still deal with it as a problem to be taken care of. The End User changing their requirement is plannable; we discussed that in the research meeting, as deferment points. Then we do not need to call special meetings. I think events that we cannot see coming, they cannot be planned. I think we have been taking 'deferred action' in cases where events were not planned. So, we need to look at this carefully for our procurement process.

Agency:
What do you do when problems/unexpected events occur to resolve them? what action do you take?

Already explained in the first q 1 and 2

Describe the things you do that are not part of the planned procurement process?
Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?
Unplanned actions are usually problems to be dealt with as a separate issue as explained earlier. Any changes in the proposals or the requirements mean extra actions to be taken. Explanations to be made, and approvals to be gained again. In SAF, we have been doing that constantly. We had to arrange special couriers, emails and meetings. Adjustments to contractual documents are not permitted, but there were delays in receiving them from the supplier. We did not like it but had to bear it.

Emergent Business Process Design Questions
Structure:

What aspects of the procurement process work best? Why?

The major requirement in the process is speed which can only be achieved within the department. Because we cannot control others, our part of the process works well. We have good senior members of the team. Their expertise

makes the process work well. We consult with each other well too. The responsibilities and contractual documents required is well set out in the Guidelines. All this eases the processes along.

What is the opportunity for improvement?

To re-plan the process and make sure to implement it. We want to take the opportunity of your research to re-design the whole process; but not fundamentally. We want to add your idea of deferred action to our process. What we called incremental change, the deferment point in the SAF process has worked well; this knowledge helps to understand that the procurement process will face unexpected events and we can deal with it as deferred action. We can allocate appropriate resources.

What aspects of the procurement process are difficult? Why?

The lack of technical knowledge is a challenge. To be updated with new knowledge in this field is another challenge. We should have more staff training specifically directed at learning about procurement. To maintain enthusiasm and hard work is the biggest challenge ever.

In what ways is the design of the procurement process limited?

Many points in the process need confidence, independence and legal knowledge management to be reviewed and amended. This is problematical when things change or unexpected events occur. So, knowledge is a major limitation. Often, we learn how to deal with something when it occurs. Contracts should be standard, but because there is much variation one set of Guidelines is difficult to implement for all our procurement projects. Many steps of the Guidelines have been altered or appended in the SAF project.

How are the major limitations being addressed?

No real solutions were made so far, just attempts. Yet a ray of hope is now shinning to modify the process. Your research is helping us to learn about problems, make them explicit. It is interesting the stakeholders too. As you know, we will now study the Guidelines carefully and will aim to re-design the process.

Is the procurement process goal achieved efficiently? If not, explain why not.

The goals are achieved, yet I we want them achieved sooner. The time delays mean more people remain allocated to specific procurement projects. In the

case of SAF, people have been working on it for five years. They are not efficient because of the delays caused by the uncertainty.

Is the goal achieved effectively? If not, explain why not.

Yes, as much as we can we do our job to achieve our goal effectively. By editing each step in the procurement process myself as Director and controlling the time taken for each procedure. The SAF project is showing there are problems with this. We need better process to cope with uncertainty.

In what ways can the procurement process save money, time and effort?

We need to improve tendering and financial negotiation. End user needs to give us full package of requirements to be clearly specified right from the beginning. But SAF, and other procurement project in the past, show that this is not possible. We need to use resources efficiently by managing the SAF type uncertainty.

Is the quality of the work appropriate? How can the quality be improved?

Yes. Our quality standard is defined by the FPD Guidelines. All the process documents, tendering, contracts, purchase, credit etc. need to meet the Guidelines as a minimum. We should do more to improve quality, can be better with training courses and to be knowledgeable with the markets through attending exhibitions. Knowledge is key. Adding better knowledge of the process for process workers, stakeholders and me the process owner, is necessary. Also, being able to cater for the uncertainty can prepare us better to complete procurement projects.

What improvements to communications between sections need to be made?

Continued meetings should be held on a monthly or a quarterly basis. Meetings with specific outcomes and actions are the information hub of the process. We can share information to ensure progress and quality. In SAF we have so far used the meetings to handle the unexpected events. But we need a better method and we expect your research to deliver that through the deferred action idea. It is promising.

What improvements need to be made in the information provided about the procurement process?

The end users could provide the FPD with full explanation presentation regarding big projects. The old style steering committee used to do that. But we

focus on implementing the Guidelines. We should develop the idea of information hubs to communicate better. Another area is to use more information technology. We need a contract information system or CIS. Like legal information systems that lawyers use.

Can the environmental changes be predicted and planned? How?
Environmental changes can be planned to a certain extent, yet unpredicted users do happen. We have not tried to manage change we simply cope with it within the Guidelines.

How can the environmental changes be controlled?
It is not easy to control any change, but by earlier planning of any project as soon as we receive the request from the end users we can do that. In SAF we tried it. But the end user changed the requirements suddenly early by requiring two separate procurements – the factory construction and the design service. The many years of SAF experience shows that it is not really possible to predict environmental change, we need to manage it better.

How can unexpected events be incorporated in the procurement process?
If they are of use, why not. But if they are not, then they should not be taken into consideration. Your research is helping by introducing the idea of deferred action. Using deferment points in the SAF process helped us to at least recognise that unexpected events happen and we need a way to manage them.

Agency:
What parts of the process do you seek to eliminate, and why?
- Loosen the list of legal department, and stick to the study of the legal and legislation.
- The financial allocation can be taken only from the Budget department, and we should not repeat ourselves into going to the financial department.
- Technical studies should not take more than 3 months.

What do you think are the opportunities for improving the procurement process?
I am hopping and optimistic. I and my trusted colleagues are trying to find out some ways to improve the procurement process by managing teams to study the current process and try to find out the gaps and the procedure that can be eliminated. Your research is particularly important. We are learning much about

the impact of uncertainty, unexpected events on the procurement process. It seems one major gap we have is no formal way to deal with unexpected events. The idea of deferred action is promising but we still need better clarification and understanding. As you know we tried the deferment point technique in SAF. We are expecting to set up the Procurement Process Group as part of your research.

Who should participate in designing the procurement process?
All the departments that have role in the procurement process: FPD, Financial Dep., Legal Dep., J4 end users and Budget Dept.

Are you satisfied? What improvements need to be made? What suggestions do you have to improve it?
No, but I am hopping and optimistic.
Many improvements should take place, I intend to form a Procurement Process Group to study the current procurement process and work to develop it, as a critical part of your research and the action we take resulting from it. There are many improvements required communication, staff motivation, efficiencies. Learning to manage uncertainty is key.

Interview Questions
Interviewee: 11
Position: Supervisor

Date: 13 Sep 2012
Time: 9:45 Am

<u>**Planning Questions**</u>
Structure: This accounts for structure/planned action). Question should be based on the flow chart – procurement process)

What is the business of KMOD/FPD?
The business of foreign procurement, they are responsible on providing Kuwait forces, naval, air force and land forces procuring their needs from all military suppliers by contracting with foreign companies.

What procurement process does KMOD/FPD use to complete its responsibility?
It's not actually fixed, but certain basic procedures that should be done for all projects, some procedures can interfere with this line throughout the process, each project has its special case, but there is a common procedure for all project. In SAF, we used many special cases of the procedure.

What is the primary goal/outcome of the business procurement process?
Is to procure the need of all the forces from all divisions (air land and navy).

What are the business rules to perform the procurement process effectively?
If I understood the question right, I think that to make the work goes in the proper way and to improve it as an employee we are really concerned about having all the requirements for the procedures fully completed from the end user. If we want the process probably in all the stages everybody needs to know what exactly they are doing then work will be performed effectively.

Because we are following the rules. And we are forced to follow it. If the contract is above 100 thousand Kuwaiti dinar we have to go to them.

The legislation office also we have to go to them for their approval if the contract value is above 75 thousands. Also we go for Ministry Of Finance if the contract period is above 3 years.

What level of knowledge does KMOD/FPD have to plan the procurement process?

Unfortunately there is no any training course, or negotiation skills but these are things that we need to improve in the system. People here need to be bilingual, need to have negotiation skills, need to have good communication skills with the end user and with all the outside departments that we are dealing with. These are skills need to be improved. There are no employees with knowledge, but they improve it by experience.

How is the procurement process planned?

I don't think we have a huge role in that, all the Departments have certain rules, certain auditing process and we are actually following that. So, let's say why do we go for audit bureau. Because we are following the rules. And we are forced to follow it. If the contract is above 100 thousand Kuwaiti dinar we have to go to them. The legislation office also we have to go to them for their approval if the contract value is above 75 thousands. Also we go for Ministry Of Finance if the contract period is above 3 years.

How is the procurement process implemented?

As we said before. We don't have huge role in doing the steps but we have certain steps that need to be done for all projects, any procurement is required we go through the steps and follow all the role in the country regarding the auditing of that process. It does vary in projects. With SAF there were delays because of changing requirements and supplier details. There was much variation in the process compared to the stipulated Guidelines. This variation happened because of changing requirements which happened many times. We are unable to deal with these changes in the current process and they delay the completion of the process.

What are the major weaknesses of the procurement process?

Since the employees themselves don't have the proper training for dealing with the process, so the first thing need to be done is to study the requirements and the needs of the process itself and how can we reflect that on the training course and accept the proper quality for the job itself. The geographical location even for the department itself should change, since it is inside a military site, the connection with the foreign companies is difficult, the communication with other departments or other, not as simple as it is required. We need very simple access to the companies' representatives and to any other sectors that we deal with.

How is the success of the procurement process evaluated?

I think the evaluation is to get to the aim of the procurement itself by signing the contract at the end of the process. This is the way that we can measure the success.

Agency:
What role do you play in the procurement process?

I am a controller of the Kuwait air forces contract.

How do you influence the procurement process?

I try in my position to easy up the process and facilitate my employees job my coordinating with all the sector that we need to communicate with.

Unexpected Events/Emergence Questions
Structure: This accounts for emergence/complexity. Question should be based on the flow chart – procurement process; need data on what happens unexpectedly in the planned events.

Describe the environment of the procurement process?

Some of the project has a political situation, these kind of project gets affected of the politics in the country, otherwise and in the usual they don't be affected, the only thing that might be effected is the signature of the contracts itself since it is must be signed by the minister himself. By delaying the process if there is any absence. We experienced it in SAF

project. The supplier companies too delay. They don't agree with the details, and change of requirements.

What outside the FPD can affect the procurement process?

All the decisions and actions from outside department that the procurement process is attached with and dealing with affect it. Such as decisions made by Audit Bureau, or any law changes from the legal department.

What factors in the environment affect the procurement process?

As we said we're not an individual sector that works by themselves we're dependent on a lot of sectors so any changes that touches any sectors around us may effect on the process of the project because u need the end user and the finance department and the leg department, so these sectors if they have any changes in their structure or own positions.

Many things change, I mean the circumstances change. This means the context changes and this means the procurement process itself changes.

How do these factors affect the procurement process?

Any factor either in or outside the environment affects the procurement process by exceeding the process time and delaying the procedures. Sometime stopping it itself.

What changes occurs in business procurement processes?

The SAF project is a good example. I believe that every project have his own nature, so yes we have fixed process fixed steps that we apply for all projects but each project has its own nature, technical, political weight, according to that each project has its own differences.

Describe how job roles have changed?

We are depending on the roles of the country themselves, up to this moment there is no changes accurse, but let's have an example let's say at 1992, when the offset obligation was established and approved and applied to the contract articles, we are involved in it since we are the

contracting section, any changes in the country it means it will affect us direct.

What changes occur in resources supporting business procurement process?

Well what I can say to be as an employee the changes, there are changes regarding the project itself which is as we said b4 regarding the requirement or the process itself how does it affected by the other department and the completion of the requirement. In the general management of the ministry and the outside directories change. So to me it's only these two parts. These changes do affect the pp, it delays it and these kind of changes might give a misunderstanding for certain procedure or missing certain steps and agreements have been done with old management and because we depend of a lot of meting and documentation that might get lost on the way during the changes.

What changes occur in the business rules?

Since the procurement process is already planned and fixed if we can say, then no changes occurs in it. But in other hands there are some changes occur by adding more steps to the planned procurement process according to the need of each project, as in the major SAF project. Some projects need more approvals and study than others in some cases.

What changes occur in routines of the procurement process?

It depends on the project itself again, like SAF. Each project has its own category. But the routines are the same mainly. I cannot say really changes, because we follow the procedures.

What changes occur in the management structure of FPD?

Many changes occur in the management structure, since it is the coordinator and the general manager for all the works of the department who suggests the regulations and the directions that regulate the administrative, financial and technical works for the supervisees.

How does FPD deal with the uncertainty in the internal and external environment?

Sometimes we deal with it with trial and error, other time we try and do brain storming and to do a process that might help proceeding in the project itself or it might not. Specifically, If the changes were new and we did not face it b4

What problems occur in the procurement process?

Sometimes the requirements are not complete and not clear from the end user themselves or changes on the requirements, sometimes they exceed the needs in certain times. There are some projects if we have technical assistant project and it's a contract and we are done with it signing it. Later time they ask to extend the contract but in late stages that we fall in a gap that we could not proceed in the contract itself because of not having the requirements in the proper time. The continuality of such projects, the need should be raised in the proper time or we will lose the continuality of the contract. In the employees bases, sometimes you will get unexpected decisions from the committee related that will affect the process itself, inquiries will be required from the superiors stops the process itself.

Why do the problems occur?

Because we don't have a fixed situation for each project, each project has its own nature, we might improve that but we will never get away from having these problems. As mentioned, the SAF project is a good example.

What unexpected events occur?

There are a lot of unexpected events that could occur such as delaying the contract from one stage to another for instance, another event when the end user ask to change their requirements in late stages of the contract or sometimes after signing the contract. also changing the team that is acquainted to the contract details with another one transformed from a different department (SAF)

Agency:
Describe the level of knowledge you need to do your tasks in the procurement process?

Need to have negotiation skills, legal knowledge, specialized training courses in contractual articles. Technical background also might be useful.

How do you come to realise the problem/unexpected event?

I think, any action that is not in the plan is considered as an unexpected event.

What kind of actions do you think you should be allowed to do and why?

I think in certain position need to be given more freedom in arranging meeting, approving the results of these meetings, taking action accordingly because in our job to gather all the points and to close up all the gaps and since we are connected to a lot of sectors, gathering people as a team of a project, I think to get the solution quickly. We really need a true process.

<u>Local Action Questions</u>
Structure: This accounts for agency/deferred action. Question should be based on the flow chart – procurement process; need data on what action agents take when problems/unexpected events occur.

How are the problems and unexpected events managed?

Since each project has its own situation, any change occur our superiors will gather the team related to that project and there will be brain storming to discuss the steps that might solve the situation and we start secure that.

When events that occur unpredictably that cannot be planned?

When the events are rules or laws that comes from the legal department. Or some events that has political sense. Or some financial issues that is out of our hands.

Agency:
What do you do when problems/unexpected events occur to resolve them?

There are lots of events that cannot be planned and lots of the time we need the legal dept. to help, how to deal with it in legal bases.

When unpredictable events occur, what action do you take?

It depends on the event. Anything inside FPD we can deal with it easy and can take actions on it. Even if it is outside but does not affect the project we also can solve it. Many times when we face unpredictable issues with the concerned Departments we call them for a meeting and do the best to solve it.

Describe the things you do that are not part of the planned procurement process?

Again, meetings, visiting the project sites also is important. Gathering information of the companies (technical and financial) it helps a lot in the negotiation part.

Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?

Tracking the procedures and following the process is one of the things that staff do to try speeding up the procurement process. Also, meetings are set to clarify any obstacle in each sector and department.

Emergent Business Process Design Questions
Structure:

What aspects of the procurement process work best? Why?

I think all the procedures that are in FPD work best, because whenever the procedure in our hands we will be able to control the time, the quality and the direction of the process itself, whenever it goes outside then we lose the control of it.

What's the biggest opportunity for improvement?

The biggest opportunity for improvement is first to fix the problems that are not related to the process, the geographical position of FPD, improving the quality of people, increase communications, increasing the skills needed; these will increase the quality a lot.

What aspects of the procurement process are difficult? Why?

Many aspects of the procurement process are difficult specially the aspects that involve waiting for the respond of external departments that needs decisions from other departments.

In what ways is the design of the procurement process limited?

I think whenever it comes with the roles of the country, when it is categories by law that we should go to AB this is something that we cannot change, whoever a role in a country applies or ministry I think here yes we cannot move forward.

How are the major limitations being addressed?

So far, no real solutions

Is the procurement process goal achieved efficiently? If not, explain why not.

Not always, sometimes it does and sometimes it doesn't, the obstacles that we face in the process itself have a lot of effects on the success of reaching the end of the process. We can say the SAF project was not efficient, but we achieved it in the end.

Is the goal achieved effectively? If not, explain why not.

Again not really, the goal is to procure and if we didn't reach that even the process took all the steps and took its time but still we did not achieve the goal.

In what ways can the procurement process save money, time and effort?

Reorganizing the process, updating the employees and pulling them up with training courses, communications with other sectors more. We need to account for uncertainty and unexpected events. How can we deal with it?

Is the quality of the work appropriate? How can the quality be improved?

Quality has lots of segments, we should improve the quality of the employees first then they effect on the quality of the process itself. That will be done through special business process training courses.

What improvements to communications between sections need to be made?

It is really important to increase communications between sections since we do not work alone, frequent meeting are important to do better job. Awareness is really required.

What improvements need to be made in the information provided about the procurement process?

Meeting with the concerned Department discussing various issues, is a must to understand any Project requirement.

Can the environmental changes be predicted and planned? How?

In my opinion we cannot deal with the problem in general, we can deal with the process which is fixed, dealing with it to decrease the time of the actual process, so whenever an unexpected event would occur then it will not affect the timeline of the project, if we shorten the actual process that we have control on then we can manage the unexpected problem in a shorter time.

How can the environmental changes be controlled?

It is not easy to control environmental changes. But high level management could be required if the environmental change could not be controlled. So as it seems it depends on the change and how does it effect on the process.

How can unexpected events be incorporated in the procurement process?

The best way in my opinion in raising the common unexpected events that we face often to the legal department to find us the right to add them to our guideline. We need to be able to take our action, decisions. We needed this in the SAF project.

Agency:
What parts of the process do you seek to eliminate, and why?

I think our process goes under a lot of approvals from committee, AB needs to be revised and minimized maybe not eliminated totally but minimized. For an example, the ministry's committee should reply in a short time.

What do you think are the opportunities for improving the procurement process?

Taking real action in re-designing the procurement process guideline that are build up according to actions that are changed nowadays, to another

one fits the situation we are in, the changing, uncertain situations of the procurement projects like SAF.

Who should participate in designing the procurement process?

In this aspect has more than one section and directory might participate, from the FPD themselves most of the people must work on it, the people who has more experienced in the procurement process, the legal point of view is important, the finance department, the end user, everybody has a role in the process should participate to redesign the process.

Are you satisfied? What improvements need to be made?

I am not satisfied, as a foreign procurement employee for long time and having my position, which is a critical situation that nobody would like to be in, because you are in the face of procuring all the need of the Kuwait air force, contracts needs services and facing all the obstacles that we face, no I am not satisfied, need a lot of time to spent in re-designing the process, communicating better, solving lots of issues, the value of the place and the role of FPD should be emphasised.

Interview Questions
Interviewee: 01
Position: Process Worker

Date: 4 Oct 2012
Time:10:00 Am

Planning Questions
Structure: This accounts for structure/planned action). Question should be based on the flow chart – procurement process)

What is the business of KMOD/FPD?
It provides the artilleries to land, air and marine forces, enhancing the level of combats readiness for Kuwaitis' various forces, in benefit of securing and protecting the homeland by raising the all armed needs. By buying all equipment and supplies they need.

What procurement process does KMOD/FPD use to complete its responsibility?
A specific structure "procurement process" was established as the FPD Guideline for quite a while, and most of FPD employee are in peaceful agreement with it.

What is the primary goal/outcome of the business procurement process?
The aim is trying to facilitate all the process involving purchasing the weapons and spare parts that are needed, as contracts with suppliers. We source and cooperate with the foreign markets and attached to the concerned sectors according to decrees of laws and regulations.

What are the business rules to perform the procurement process effectively?
We use the Guidelines to accomplish the goals, i.e. procure supplies. This is going through the right channels, approvals etc., monitored by the Director and Senior Managers. They emphasise low cost and speed. End Users want speed.

What level of knowledge does KMOD/FPD have to plan the procurement process?
Employees try to do their best, each in their various sections, but at the end all Depts. agree upon one thing and that is recruiting their employees with the best of knowledge, reaching for perfection. We need better knowledge. My part in the SAF project shows we need more

knowledge, especially when Guidelines do not help. Things happen suddenly and we need to fix it.

How is the procurement process planned?

The Guidelines were planned years ago by committee, who observed the work needed and released the Guidelines. The procedures direct us to work in the best interest of our jobs and FPD.

How is the procurement process implemented?

The first step is receiving the request of what's needed by one of the military forces, followed by the request of logistic and supply; translated in the end in a contract, that will go through approval processes, till its finalized. It is not always like that. The SAF project has had changes, some very difficult one to work on. We wait for management to decide what to do. It is wasting time.

What are the major weaknesses of the procurement process?

Time, time in the worst enemy of our procedures, the lack of technology is another element that prolongs time. Not to mention the need of the approvals of other various depts., each with its impacts and comment upon the process. They are not coordinated well.

How is the success of the procurement process evaluated?

We measure it depending on answering the question of how long did the contract take to complete. I know managers have other measures.

Agency:
What role do you play in the procurement process?

Process worker

How do you influence the procurement process?

Work on the process procedures to my best ability.

Unexpected Events/Emergence Questions
Structure: This accounts for emergence/complexity. Question should be based on the flow chart – procurement process; need data on what happens unexpectedly in the planned events.

Describe the environment of the procurement process?

As a fact the environmental circumstance could be divided to external and eternal circumstance, and in my opinion the internal the circumstances are the easier because they can be handled and vies versa. The SAF process shows there is much change. Approvals take longer because of it.

What outside the FPD can affect the procurement process?
The process has to confront a lot of external sectors, companies, markets, and our concerning Departments each has its opinion upon how to accomplish efficiency, the disagreements that rises as a result of that is the obstacle to finishing the process in a short time; in addition to the legal legislative departments procedures and financial depts. needs, observing the contract steps .

What factors in the environment affect the procurement process? How do these factors affect the procurement process?
In general, any environmental factors' effect does not work in the benefit of the procurement process, because each new one's impact work upon delaying it, not accelerating its process. I said earlier, the concerning Departments and suppliers they have had impact on the SAF project. We can learn from it.

What changes occur in business procurement processes?
In the plan established, noting is changed, but in the mentally of those who are implementing the process we all seek changes to occur in the benefit of accomplishing the procedures. Things arise we cannot predict, and so we seek changes. The Director and Senior managers had many, many meetings in the SAF project to handle change. We had a big problem when we got two procurement projects instead of one, because they split it early into two separate requirements. Then, there was delay in the Service Design contract because the supplier could not agree on the details. There are many changes.

Describe how job roles have changed?
The request of the job needed to be done is the one that dominate, employees are chosen on the qualifications required to do the job to fitful

the mission of FPD. In other words, those employees who are characterized with efficient performance are the one that get picked. The job role does not change, but how the job is done changes when unexpected events arise.

What changes occur in resources supporting business procurement process? (Feldman, 2004)

No new people are given, even when there is delay because of unexpected events. It means more delay because same people have to do more. Providing technology and employees who can use it is the key.

What changes occur in the business rules?

In my opinion all who are in business rules do not encourage change, because of its consequences and the new establishments that follow. There is need to change some business rules. We saw SAF needed flexibility, like respond to supplier immediately. We could not because we had to wait for approvals — the core of our business rules.

What changes occur in routines of the procurement process? (Feldman, 2000)

All of us fallow the same procedures and because it didn't go through any changes for long, nobody seems to care about how long does it takes actually. But, the actual practice is different. The procedure we follow does change, especially when unexpected events happen. The set procedure is followed but with variation. In SAF, many times things were done differently because of changing requirements.

What changes occur in the management structure of FPD?

There is some plan to change it. But everything is in words to come. It's all on paper, nothing is going into the channel of doing yet.

How does FPD deal with the uncertainty in the internal and external environment?

As I said before, the eternals cause delays and need new requirements. We cannot manage it well. The internals is better we can manage it in shorter time. There were many meetings in SAF, we had to wait to see the outcome and required actions. We should think about them first and include them in our process. The research group is looking into it.

What problems occur in the procurement process?

The structure of the process implementation is well designed, I mean the Guidelines, but its old. Its needs to be more flexible, enhanced with new technological software, tracking systems and providing of co-operation, responsibilities among all the process elements.

Why do the problems occur?

Because there is no time limit/deadline for a project. And the term priority is not taken into consideration at all levels. And Lack of team work and technological support.

What unexpected events occur?

Externals interfere who have no concern, asking about the contract, to monitor it, which is fake most of the time (national assembly). Moreover, the constant changes that takes place either in terms of the company negotiations with the ministry or with the proposal submitted in the first place.

Agency:
Describe the level of knowledge you need to do your tasks in the procurement process? (Marjanovic, 2006)

Daily there is new software that facilitates everything, why not take the benefit? We need IT support. There is talk of the contract information system. It is a good idea. We should do it.

How do you come to realise the problem/unexpected event?

When any action happened and it is not addressed in the procurement process guideline we follow, we consider it as unexpected.

What kind of actions do you think you should be allowed to do and why?

I myself emphasize that each should have limits on their authority, so if one took a wrong decision other wont fallow. In SAF, I would like to make suggestions but that was not possible. We had to follow the Guidelines.

Local Action Questions

Structure: This accounts for agency/deferred action. Question should be based on the flow chart – procurement process; need data on what action agents take when problems/unexpected events occur.

How are the problems and unexpected events managed?

Problems happen; solutions must take place. The question is how long would it take to solve a problem. The Director and Senior Managers meet, which was many times in SAF. But this is not right. We need to do it in the process somehow.

What events that occur unpredictably that cannot be planned?

Some refusals from other Departments, like the legal department or the Audit Bureau. How can we predict that? It's not possible.

Agency:
What do you do when problems/unexpected events occur to resolve them? What action do you take?

Unexpected problems are unwelcome; but if it did take place I prefer to involve those who have better experience and better judgment, and I would certainly hope it's an eternal problem so it could be taken care of as soon as possible. I think teamwork is important.

Describe the things you do that are not part of the planned procurement process?
Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?

I myself like to dig into archives exploring how some of the similar problems were solved and how can it be solved now in the light of new technology if it was utilised in our Depts.

Emergent Business Process Design Questions
Structure:

What aspects of the procurement process work best? Why?

I try to make the aspects that involve my team as the best, fastest track.

What's the biggest opportunity for improvement?

Teamwork, supported with training courses and latest technological system and software's associated with motivation and attention to efficiency.

What aspects of the procurement process are difficult? Why?

The waiting to approve improvements and signatures; finding the tenders and agreeing the contract. It has much uncertainty.

In what ways is the design of the procurement process limited?
It's not limited, it just needs to be enhanced as I said with technology, to speed up the process.

How are the major limitations being addressed?
N/A

Is the procurement process goal achieved efficiently? If not, explain why not.
Measure it by asking how long did it take.

Is the goal achieved effectively? If not, explain why not.
As long as we are still talking about 3 years of finishing the contract, looking back ward how much money was spent during this time, not to mention that it takes longer in other contracts, that the answer is no we are not efficient. We need better process where we all work together.

In what ways can the procurement process save money, time and effort?
Restraints, if we manage to compose some kind of audit committee that speed up the process and put restrictions if it took more than it should, we are good.

Is the quality of the work appropriate? How can the quality be improved?
Meetings, observing what was accomplished and where is the delay. We will be a step ahead of each obstacle if it appears.

What improvements to communications between sections need to be made?
Enhancing this part with obligatory courses, and weekly meeting. I think will solve this problem .

What improvements need to be made in the information provided about the procurement process?
Meeting with the concerned Department is a must to understand the Project requirement. Conduct meeting with the concerned department whenever there is a new assignment.

Can the environmental changes be predicted and planned? How?

Externally yes, and sometime involves the authorization of higher rank managers working together.

How can the environmental changes be controlled?
Impact of environmental changes can be controlled by high level management. We need to learn more about this. We don't do enough to manage this kind of change.

How can unexpected events be incorporated in the procurement process?
According to my experience, and by practice there are some unexpected events we faced more than once, in this case I think adding this event to the procurement process Guideline will be a good solution to make the process move smoothly.

Agency:
What parts of the process do you seek to eliminate, and why?
The parts that take long time to proceed and have no value, like the draft contract that we do have the most of articles from the legal department and later on when we send it to them they send us back with lots of comments.

What do you think are the opportunities for improving the procurement process?
Establish a new structure that does not include routine or paper work. Make it depend on the decision one at least have of the sectors that are involved now.

Who should participate in designing the procurement process?
If any individual or Department participates in the process, than I think we should welcome them to help design the process.

Are you satisfied? What improvements need to be made? What suggestions do you have to improve it?
I won't be underestimating the effort of any of my colleagues or other departments.

Interview Questions
Interviewee: 02

Position: Process Worker

Date: 20/09/2012
Time: 10 am

Planning Questions
Structure: This accounts for structure/planned action). Question should be based on the flow chart – procurement process)

What is the business of KMOD/FPD?
FPD is one of the civilian division of Kuwait ministry of defence that procure materials, equipment, technical supports, training, spare parts as per the requirements of the stakeholders in an effective and efficient manner taking into consideration the time and flexibility of the projects. The objective is effectively met but there are many ways to reduce the time and cost involved to meet the project or procurement process. We are currently working on the SAF project.

What procurement process does KMOD/FPD use to complete its responsibility?
We at FPD have a Guideline it's the procurement process procedures contains lots of steps that all follows starting from step one which is receiving a letter from end users passing through all steps reaching signing the contract until accomplishing the whole requirements of the contract.

What is the primary goal/outcome of the business procurement process?
The objective of this procedure is to ensure expeditious procurement of the approved requirements of the Armed Forces in terms of capabilities sought and time frame prescribed by optimally utilising the allocated budgetary resources

What are the business rules to perform the procurement process effectively?
These are rules followed by the organisation to improve productivity and performance, keep customers. As FPD is involved with contracts, it should have rules about saving money, getting value, etc. We have to comply with the governmental laws and with the GHQ. When we deal with new things happening that is not part of the Guidelines, we must always seek permission from CDs or GHQ or other involved people. My role is junior but I know that there is much delay because of these unexpected changes and that management

have to make changes to the procurement process. We cannot dismiss these unexpected events.

What level of knowledge does KMOD/FPD have to plan the procurement process?
To be honest, no one join FPD has knowledge in PP or specialist in that, but by practising and following BP in the field they gain the knowledge, in addition each employee has his own knowledge in his field such as engineers, accountants and people who have law degrees, here they can help and add their knowledge to the stage in PP that is specialized in their field of knowledge.

How is the procurement process planned?
From the day I joined FPD, a form is given to me that has the planned PP, and I knew that this plan exits since 1998 by FPD staff who strive to build a PP plan to help the process move tight and smooth.

How is the procurement process implemented?
No such implementation is really done, we are following the planned PP with all its steps and details. The SAF project is showing this now. But we as employees working daily in this PP, we try our best to fulfil each step and push it foreword in a good shape.

What are the major weaknesses of the procurement process?
There are many weaknesses of the procurement process that affects negatively the process such as weak supervision, time consuming resulting in getting approvals from various sections or departments and lack of technology. In addition to that, taking approvals from various sections which is considered as time consuming. We have had to wait long for SAF approvals. Adding to that, traditional ways of procurement with very little use of technology.

How is the success of the procurement process evaluated?
I can say that the success of the procurement process can be evaluated through getting the contract signed in a short period of time.

Agency:
What role do you play in the procurement process?
 Process worker

How do you influence the procurement process?
We as process workers, working in the PP and following its steps have a direct influence on it.

Unexpected Events/Emergence Questions
Structure: This accounts for emergence/complexity. Question should be based on the flow chart – procurement process; need data on what happens unexpectedly in the planned events.

Describe the environment of the procurement process?
KMOD requirements change, new minister of defence, suppliers' ability to deliver changes, government wants efficiency, and any other things that affect the procurement process. We have all this in the current SAF project.

What outside the FPD can affect the procurement process?
SAF project has many such factors. The approval of some of the contract procedures that is supposed to be monitored by the Legal Legislative Department as well as the Auditing Bureau delay is a matter that could not be controlled because of the constant mobility of procedures issued by legislation institution.

What factors in the environment affect the procurement process? How do these factors affect the procurement process?
The main factors can affect the environment of the procurement process, are the parliament and changing the ministry and that will cause delay in the process and that will affect purchasing and that will reflect on raising the combat readiness of all armed forces.

What changes occurs in business procurement processes?
Mainly no changes occurs in business procurement process, we follow a plan. But when any additional request either from end users, as in SAF, or from the foreign companies that we consider as additional step to the plan, these changes affect how we implement the Guidelines.

Describe how job roles have changed?
No changes occurred in job roles since I join FPD.

What changes occur in resources supporting business procurement process? (Feldman, 2004)
I think that the major resource affects PP is the people who work in it, so when hiring qualified employees who have a background of the process then they can affect positively and move the PP quickly.

What changes occur in the business rules?

No such changes happened from the department, but any governmental decisions can affect the business rules and change it. External affairs may be a reason of changing business rules.

What changes occur in routines of the procurement process? (Feldman, 2000)
Since we follow procurement process guideline that should be done by following the same process repeatedly. So, any new order or action is considered as a change have occurred in the 'planned' or routine procurement process. There are many examples of this is the SAF project. End use changed their requirements several times.

What changes occur in the management structure of FPD?
Since I join FPD, 4 years ago, no changes occur in the management structure.

How does FPD deal with the uncertainty in the internal and external environment?
FPD follows the traditional way of working, by following the rules and regulation of procurement of KMOD at present. When talking about internal environment I can say it is easy dealing with it because the control is in the management hands. But dealing with the external environment is the headache that FPD face always because we cannot control any external change and it should be in the high authority's hands. All the changes in the SAF procurement were handled like this.

What problems occur in the procurement process?
Lack of responsibility or commitment by the management as well as the employees is a major problem, Lack of information/knowledge about the project handled by the middle management. In other words, there is no transparency related to the project. No tracking system, it has to be done manually at all the levels or departments concerned. No attempts have been made to restructure the departments considering the technology used these days. And poor quality, financial mismanagement, and over expenditures are frequently observed.

Why do the problems occur?
Because there is no time limit/ deadline for a project and the priority is not taken into consideration at all levels.

What unexpected events occur?
FPD faces unexpected events:

- when the companies do not submit the proposals
- when the companies try to negotiate several contract articles

Agency:
Describe the level of knowledge you need to do your tasks in the procurement process? (Marjanovic, 2006)

I have been working in this field since a very long time and my experience talks about my knowledge. But I am willing to learn and improve my knowledge about procurement at the same time.

How do you come to realise the problem/unexpected event?

When any action happened and it is not addressed in the guideline, we first check if we faced the same before or its new action, if yes we did we go back to our records and check what action was taken, if the unexpected event is within FPD departments it is easy to deal with and take action. But if it is outside FPD departments it should take more effort to deal with.

What kind of actions do you think you should be allowed to do and why?

It depends on the problem, if it is under my control I can take action and try to solve it. And discuss it with my supervisor for sure.

Local Action Questions
Structure: This accounts for agency/deferred action. Question should be based on the flow chart – procurement process; need data on what action agents take when problems/unexpected events occur.

How are the problems and unexpected events managed?

Some unexpected problems can be solved immediately and by any employee but others should take the management advice. Most of the unexpected events in SAF were handled by management.

What events that occur unpredictably that cannot be planned?

Refusal from other departments like Audit Bureau.

Agency:
What do you do when problems/unexpected events occur to resolve them? What action do you take?

Try to look if this unexpected event happened before so we take the same action. We look for precedents.

Describe the things you do that are not part of the planned procurement process?
Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?

Contacting the end user to clarify some issues, meeting the company representatives to discuss the draft contract and setting meeting between all concerned Departments when needed to solve any obstacle.

Emergent Business Process Design Questions
Structure:

What aspects of the procurement process work best? Why?
Process which are decided by FPD management are faster and better rather than the process where the approvals of the concerned Departments are awaited.

What's the biggest opportunity for improvement?
At present all improvements in the procurement process if any are addressed at its own pace (manually section wise, taking into consideration the agreement of the concerned departments)
- Introduce the use of technology as required.
- Time limit for projects.
- Restructure the department as required to improve quality and reduce time and cost. Etc.
- Relationship between the various sections related to the projects have to improve.

What aspects of the procurement process are difficult? Why?
- Process where the approvals of the concerned departments are awaited
- Finding the tenders,
- Agreeing the contract.

In what ways is the design of the procurement process limited?
there are steps that we cannot skip or shorten because they are important lack of knowledge, skills, and resistant to change.

How are the major limitations being addressed?
(not answered)

Is the procurement process goal achieved efficiently? If not, explain why not.
No, since there is no time limit. Process events should be time-blocked.

Is the goal achieved effectively? If not, explain why not.
No, since there is wastage of time, money, etc.

In what ways can the procurement process save money, time and effort?

Reduce or set time limit for projects.

Introduce Internet, intranet (software) as legal and official. We needed this for the major SAF project. We need a legal/contract information system.

Is the quality of the work appropriate? How can the quality be improved?

No. It can be improved by holding presentation/meeting between various concerned Departments so that the project requirement is understood clearly by all the employees involved in the project. Each and every employee should be assigned specific tasks and should be held responsible (time limit).

What improvements to communications between sections need to be made?

- Meeting should be held regularly
- Transparency of projects is very essential.
- Contact numbers of concerned people for every project should be available before start of project.
- Regular meeting are held with the section heads to instigate the status of the projects
- Have to create awareness with regards to responsibility, attendance, etc.

What improvements need to be made in the information provided about the procurement process?

Meeting with the concerned department is a must to understand the Project requirement. Conduct meeting with the concerned department whenever there is a new assignment.

Can the environmental changes be predicted and planned? How?

I think yes, the environmental changes can be predicted and planned according to work history, we can know what will happen if such change accurse.

How can the environmental changes be controlled?

Environmental changes cannot be controlled easily, we should plan for it in previous.

How can unexpected events be incorporated in the procurement process

Make a list of all unexpected events that we faced before and see how it can fit in the procurement process.

Agency:
What parts of the process do you seek to eliminate, and why?

There are some steps in the plan I wish that we can skip, and others also I wish that we can manage it by giving a time limit to it.

What do you think are the opportunities for improving the procurement process?
Change the current procurement process plan to a new timed procurement process plan, I mean to set a time for each step according to the practice. Allow for the unexpected events, as I said, by making the list and using it in the process.

Who should participate in designing the procurement process?
All the concerning Departments and all people works in the PP should participate in terms of having a good designed procurement process.

Are you satisfied? What improvements need to be made? What suggestions do you have to improve it?
Not really, various improvements can be done such as time blocks for the whole project. Create Responsibility among the employees involved, Reduce the communication gap. Improve awareness among employees regarding the importance of the project. And reduce the time taken for approvals by use of internet/intranet.

Interview Questions
Interviewee: 04
Position: Coordinator

Date: 19-09-2012
Time: 7:00 pm

Planning Questions
Structure: This accounts for structure/planned action). Question should be based on the flow chart – procurement process)

What is the business of KMOD/FPD?
Procure and provide the materials, equipments, technical support, spare parts etc. to the Military Armed forces i.e. land air and naval force.

What procurement process does KMOD/FPD use to complete its responsibility?
KMOD/FPD already has a Guideline and I too follow the same Guidelines and there are no changes made until now since last 5 years.

What is the primary goal/outcome of the business procurement process?
The objective of this procedure is to ensure efficient and effective procurement of the requirement list by the armed forces.

What are the business rules to perform the procurement process effectively?
There is only one rule i.e. to follow the Guidelines by taking approval from all concerned depts. before signing the contract. This involves proper legal procedures and financial standards. These have to be met in any procurement contract we set up.

What level of knowledge does KMOD/FPD have to plan the procurement process?
Employees of KMOD are highlighted about all the rules and regulations of the department as well as the procurement Guidelines are explained to them. We work on procurement contracts and develop knowledge by experience. Of course, we share this knowledge and so individually build more knowledge. These rules and guidelines have to be followed very strictly under any circumstances.

How is the procurement process planned?

The procurement process was planned way back during the establishment of the FPD and till date the same is followed.

How is the procurement process implemented?

The procurement process begins with the receipt of requirement from the armed forces and then the procurement is carried out as per the Guidelines. The Director of FPD receives a letter and begins the process. The work is allocated to the section heads. There are meetings to discuss how it should be done. The main landmarks are the approvals. We progress to the next step only after approval is obtained from the concerning Departments. Every step of the guideline has to be followed.

What are the major weaknesses of the procurement process?

The procurement process from the start till the signing of the contact takes around 2 to 3 years. There are various facts involved for this, manual paper work, inefficiency of staff and out dated method. So, the long time is a weakness. Also, in the SAF project we really found many unexpected events which the Guidelines could not cope. The Director has set up research group to examine this. Environmental changes also play a big role as a set back to the procurement process such as change in the government, transfer of Officers, voluntary retirements, etc.

How is the success of the procurement process evaluated?

The contract process can be evaluated by getting all things worked out as per plan. i.e. coordination, communication etc., which results in signing of the contract within a short duration of time. The only criteria is to complete the contract as per the given guidelines.

Agency:
What role do you play in the procurement process?

Coordinator.

How do you influence the procurement process?

By coordinating with the various depts. & maintaining regular follow ups.

Unexpected Events/Emergence Questions

Structure: This accounts for emergence/complexity. Question should be based on the flow chart – procurement process; need data on what happens unexpectedly in the planned events.

Describe the environment of the procurement process?

The procurement process is affected by various reasons like changes in the parliament, changes in the dept. heads, retirement of the personnel and lack of responsibility of the employees. These changes are very difficult to manage. Lack of announcement of the replacement officers.

What factors in the environment affect the procurement process?

Various departments have to be contacted for approval such as the legal dept., audit bureau, finance dept., GHQ etc. changes in the personnel of these depts., lack of coordination results in delays and all the correspondence is done by letters alone which are forwarded by regular mail only.

How do these factors affect the procurement process?

Various factors internally as well as externally affect the procurement process like lack of responsibility internally and externally, changes in the parliament (ministers), retirement of personnel etc. The procurement process is delayed. It results in poor communication. transfer of the personnel, lack of responsibility and enthusiasm, lack of adoption for change ,etc.

What changes occurs in business procurement processes?

From years we have been following the same Guidelines. But the SAF project showed us that in practice the changes I mentioned affect how it is carried out. There is no change in the guidelines which I have noticed since the time I have joined FPD. However certain actions are taken based on the situation but here too the guidelines have to be followed.

Describe how job roles have changed?

For me I have been performing the same task since years until and unless I have to perform the responsibility of my colleague during their leave.

Follow up of the contracts is very essential or else it leads to confusion and wastage of time.

What changes occur in resources supporting business procurement process?

There are not many changes in the resources. However, there need to be changes like recruiting professionals, use of technology in terms of internet and intranet, etc. Contact details of all the concerned departments with their contact numbers should be maintained as per the list of contracts.

What changes occur in the business rules?

Business rules changes as per the orders of the superiors and it is mandatory we follow them. This happened a lot in the SAF project. I would do something and be told to do something else. It does upset the coordination I did. Even the superiors have to take in consideration the guideline before issuing orders. They have to consult with the management and only then a decision can be made.

What changes occur in routines of the procurement process?

Practically changes occur very rarely like a new section or certain employees are given the task to coordinate of follow up between the company or FPD or to deal with all matter related to a specific department. This happened in SAF as you know. However, major changes have not occurred in the planned procurement process since years.

What changes occur in the management structure of FPD?

Since years we have the same management structure although they say that re-structuring of the management is possible in near future. I think it is to do with the new research they are doing and the Procurement Process Group that has been set up.

How does FPD deal with the uncertainty in the internal and external environment?

FPD follows the same Guideline in all circumstances whether certain or uncertain. i.e. approvals from all the departments are compulsory there is no exception, So we do not deal with it well and that's why our procurement is delayed more than it should. There was a lot of uncertainty with the requirements and supplier in the SAF project. We could have handled it better if we know about it and know what to do.

. FPD has to consult with the concerned departments before taking any decision. However, the staff of FPD try to coordinate with the concerned departments through phone, meetings or any source available so that the procedure can be followed efficiently and quickly.

What problems occur in the procurement process?

Lack of responsibility and commitment of the staff because there is no time limit prescribed. There are various other problems such as taking approvals from various departments is time consuming since the work is done manually as we lack use of Internet because emails are considered as unofficial and cannot be produced as a legal document. Some events are not predictable, like change in staff, transfer of personnel change of parliament, allocation of budget etc. Communication between the concerned departments also is a major issue due to non availability of the contact personnel in-charge.

Why do the problems occur?

The problem usually occurs due to lack of priority by the staff at all levels. This is added by unexpected events, especially in the SAF project. But usually in smaller procurements too. There is no time limit set for the work to complete. Communication gap at all levels.

What unexpected events occur?

Retirement or transfers of the employees without proper replacement.

The companies do not respond and the political changes. Change of Minister.

Allocation of Budget.

Queries and Investigations from external institutions.

Agency:
Describe the level of knowledge you need to do your tasks in the procurement process?
Knowledge of all the rules and regulations of FPD. Implementation of the procurement process as per the FPD Guidelines.

How do you come to realise the problem/unexpected event?
If there is dissolution of the parliament, unexpected transfers and retirement of the employees. Queries and Investigation requests from external institutions. Delay in approvals due to clarifications.

What kind of actions do you think you should be allowed to do and why?
It depends on the problem and approval of the superiors. I'd like to take initiative to coordinate when I think I see a problem emerging. But we have to follow orders. I think use of technology in form of internet and intranet should be allowed for communication.

Local Action Questions
Structure: This accounts for agency/deferred action. Question should be based on the flow chart – procurement process; need data on what action agents take when problems/unexpected events occur.

How are the problems and unexpected events managed?
Mostly they are solved by the management after consultation among them. They used many meetings in the SAF project, which I helped coordinate. Coordination between the concerned departments or companies etc. is a major factor to solve problems and unexpected events.

What events that occur unpredictably that cannot be planned?
Refusal of approvals from external departments due to lack of information and explanations. I don't think we can plan for that. Sometimes, I think suppliers are so unpredictable too. Change of minister, transfer of personals or voluntary retirement. Also queries and investigation requests from external institutions.

Agency:
What do you do when problems/unexpected events occur to resolve them?

We try to retrieve information if similar cases have taken place in the past; if yes then implement the same action. Also we contact the concerned departments to solve the issues.

When unpredictable events occur, what action do you take?

The managements consult among themselves and then decide on an action to be taken. Also we contact the concerned department, if required.

Describe the things you do that are not part of the planned procurement process?
Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?

Meet the company representatives to discuss the draft contract. Coordinate with the armed forces and the company to arrange meetings etc. within a short period of time. Contact and Coordinate with the external institutions to gain approvals. Example; if an external institution requests to investigate a project from the initial stage then we have to coordinate and provide all the details of the project which helps to clarify their doubts. All this has to be done efficiently, it can be done through formal letters alone but we have to coordinate and arrange meetings and plan accordingly to solve the issues.

Emergent Business Process Design Questions
Structure:
What aspects of the procurement process work best? Why?

Processes which are decided and planned by FPD are faster. Taking approvals from external departments are time consuming.

What's the biggest opportunity for improvement?

Introduction of technology i.e. Use of internet will reduce wastage of time. Prescribe time limits for project in advance. Restructuring the procurement process to improve and reduce time, and find ways to manage the change we saw in the SAF project. Reducing the

communication gap between the concerned departments by conducting meetings before the start of projects.

What aspects of the procurement process are difficult? Why?

Taking approvals from the concerned departments is time consuming and difficult to predict. Because we cannot predict their course of action or queries. Contacting the concerned personnel for the projects is also is difficult because there is not list provided by the concerned departments.

In what ways is the design of the procurement process limited? (for example lack of knowledge, skills)

There are procedures to be followed which are compulsory and cannot be avoided. Also, the employees and staff working on the process itself needs to improve their knowledge and skills. Even in emergency cases the procedures have to be followed. Taking approvals from the external Departments is a must, it cannot be avoided. There is no list of requirements provided for approvals by them. The staff should be trained to improve their Communication skills and negotiation skills. Time limit should be set for every event of the procedures and the concerned person should be held responsible for their course of action.

How are the major limitations being addressed?

Limitations cannot be addressed as they are very much compulsory. But the Procurement Process Group is changing things. We used something called deferment, which I think helps the process. It helps to reduce time. However, we try are best by contacting the concerned persons if there is any problem or clarification request from the external departments for approvals. Regular meetings are held between the staff and the Management to discuss the current project and the course of action to be taken.

Training is provided to the staff to improve their IT skills.

Is the procurement process goal achieved efficiently? If not, explain why not.

No, because it takes nearly 2-3 years for one contract to be signed.

Is the goal achieved effectively? If not, explain why not.

No. because the procurement plan is too long and there are many hurdles till the contract is signed e.g. Various approvals to be taken, change in requirements etc. delay takes place due to various facts:

The staff are not motivated and there is no sense of responsibility.

There is no time limit set for the completion of the project.

Lack of Technology i.e. Emails are not considered as legal and hence cannot correspond through emails.

Communication gap between the concerned departments.

 Approvals from the external departments is time consuming because FPD is not provided with the list of requirements to obtain the approvals.

No transparency between the concerned departments. Communication gap between concerned departments.

In what ways can the procurement process save money, time and effort?

If the procurement process changed by minimizing some steps or speeding up others, that would save money (some companies raise the price of their proposals when the contract is not signed quickly because of the inflation) and also time and effort will be saved when the process moves faster.

Use of technology (internet, email) is the most important factor to improve the procurement process. Setting a time limit for the project can create a sense of responsibility among the worker and they should be held responsible for delays, if any. Other than these I feel are important such as taking approvals are a must and cannot be avoided.

If proper training is provided to the staff to improve their communication and negotiation skills. Transparency between the concerned departments. Proper knowledge of the project should be provided to the staff before the implementation of the projects to understand the exact requirement and its importance.

Is the quality of the work appropriate? How can the quality be improved?

The quality of work is also not appropriate because there is lack of responsibility as there is no time limit set for the contracts. Lack of technology e.g. Internet and emails are still not considered.

What improvements to communications between sections need to be made?

Use of technology is a must. (emails should be considered as legal it can surely reduce time and money). Point of contact should be mentioned by the departments for the specific contracts. Proper training should be provided related to communication and negotiations. Latest technology should be introduced, emails should be considered as official this could lead to saving time cost and efforts. Proper training should be provided to the staff to improve their communication and negotiation skills. Time limit should be set for projects to create a sense of responsibility between the staff. Regular meetings should be held to motivate the staff. Regular follow up should be maintained for the projects.

What improvements need to be made in the information provided about the procurement process?

Set Meetings with the concerned departments should be considered to understand the Project requirement and to let them know exactly the Guideline we follow. Transparency is a must between the concerned departments; this can be created by means of regular meetings.

Proper information should be provided to the staff regarding the projects as well as its importance.

Management should conduct regular meetings with the staff to motivate them.

Can the environmental changes be predicted and planned? How?

It is very difficult to predict the environmental changes and hence it cannot be planned.

E.g: Change of government cannot be predicted. Voluntary retirement of the employees. Requirements/ queries of the external departments cannot be predicted.

How can the environmental changes be controlled?

Certain environmental changes can be controlled such as voluntary retirement of the employees cannot be predicted but if the departments are informed in advance about the retirement and replacement of the personnel then delays can be avoided. The Procurement Process Group is applying some research too. This deferred action is good because it provides some flexibility. If the list of requirements is provided by the external departments to obtain approvals then the delay can be avoided.

If the requirements are properly evaluated taking all the departments into consideration then changes in the requirement can be avoided.

How can unexpected events be incorporated in the procurement process?

Unexpected events can be handled well if certain measures are taken. The lethal among all is the point of contact of the departments. It gets difficult to trace the right person usually. Also a time limit set for a project can create a sense of responsibility among the staff. Also use of technology (intranet, email) can reduce the delay in signing the contracts. If the external departments provide FPD with the list of requirements to obtain approvals then unexpected events won't arise.

In case of retirements and transfers, a replacement of the personal should be announced before hand.

Agency:
What parts of the process do you seek to eliminate, and why?

Taking approvals from the government bodies outside the Ministry of Defence. It is time consuming. There is no time limit set. Introduce technology such as emails to correspond rather than the manual work.

What do you think are the opportunities for improving the procurement process?

Introducing internet, correspondence through emails should be made official, Proper training should be provided to the staff to improve their skills of negotiation and communication. We need to manage the changes arising unexpectedly too. That is very important. Proper knowledge of the project and importance should be provided to the staff before implementation of the project.

Who should participate in designing the procurement process?

Only the Management of the Foreign Procurement Department to set Guidelines taking into consideration all the necessary formalities essential. The management of FPD and the various departments involved in the implementation of the project.

What suggestions do you have to improve it?

Establish a proper Guideline taking into consideration the unexpected events. Use of telecommunication is a must and hence the contact names and numbers of the concerned personals should be provided beforehand. Training should be provided to the staff and the important factor is setting a time limit for the projects. The external departments should provide a list of requirements needed to obtain approvals.

Use of technology such as emails for correspondence.

Are you satisfied? What improvements need to be made?

If the above changes are made I will be satisfied and the results will be satisfactory.

Interview Questions
interviewee: 05
Position: Assistant Manager

Date: 2Sep 2012
Time: 11:00 AM

Planning Questions
Structure: This accounts for structure/planned action). Question should be based on the flow chart – procurement process)

What is the business of KMOD/FPD?
Enhancing the procurement of defence equipment, artilleries, etc. to strengthen the defence system through procuring supplies/materials etc. from local and foreign vendors/suppliers for the Kuwait armed forces monitored by law, regulations, and the ministerial decisions that monitor such processes.

What procurement process does KMOD/FPD use to complete its responsibility?
According to my experience working for 15 years in my position, a plan was set before I came and we follow its procedures ever since. According to that I made it my duty to keep all my employees acquainted to the procurement process so they could monitor how far does each stage takes to be named successfully accomplished.

What is the primary goal/outcome of the business procurement process?
The goal of this department aims at planning, directing, coordinating and carrying out all the activities related to the purchasing of the weapons and the spare parts from the foreign markets in cooperation with the concerned sectors according to the decrees, laws, decisions and the regulations that monitoring this process.

What are the business rules to perform the procurement process effectively?
We could consider that there are rules followed by the organisation to improve productivity and performance, keep customers. As FPD is involved with contracts, it should have rules about saving money, getting value, establishing a cooperative comprehensive atmosphere among employees, in order to provide a common core, that would be used to avoid imposed rules, in my opinion should be the aim of accomplishing a successful process.

What level of knowledge does KMOD/FPD have to plan the procurement process?

As KMOD/FPD recruit employees who are specialised in different specific faculties, therefore they utilize their experience implementing their knowledge establishing a process or trying to formulize it to work in benefit to the division sake.

How is the procurement process planned?

Since the establishment of the foreign procurement department, a plan was set by a supervision committee who were composed of various members of departments such as (military headquarters, legal department, financial department, Audit Bureau) and were in-concern of contributing to formalize procurement process. The result is the Guidelines. It is a step by step process we must use for procurement. All procurement must to done this way. It is the plan.

How is the procurement process implemented?

First we start with receiving a request from logistics and supply, then we go through the planned procurement process as known. But not always according plan. We still have to get the approvals. This happens each time something surprising happens that is not part of the Guidelines. We had several changes by the end users, they keep changing the requirement. SAF project was delayed by many such unexpected events, but we still need the approvals to take next step.

What are the major weaknesses of the procurement process?

The problem lies in the fact that the process takes approximately three years from the day when the project is set until it got signed as a final stage of approving upon the process of the contract represented. There are a lot of various problems that could confront such process: high cost due to paper work and inefficient tendering process, labour intensive due to works for receipt, recording and distribution of tenders, bad communication and administration of the tender process, inefficient tendering process and comparing bids is time consuming. SAF project had all these. The requirements changed early, making it into two procurement projects. The End User changed their requirements and suppliers did not meet our process requirements, but eventually they had to and sometimes we compromised. But still approvals had to be obtained.

How is the success of the procurement process evaluated?

In my opinion, passing obstacles in the benefit of signing the contract with no extension of time is what should lay upon in measurement of our evaluation.

Agency:
What role do you play in the procurement process?
Assistant Manager

How do you influence the procurement process?
By trying to follow up and controlling the procedures aiming to restrict time lose.

Unexpected Events/Emergence Questions
Structure: This accounts for emergence/complexity. Question should be based on the flow chart – procurement process; need data on what happens unexpectedly in the planned events.

Describe the environment of the procurement process?
The short time requested to accomplish any of the procurement process which is considered the aim that we are trying to achieve, is jeopardized because it could be effected by the change of the minister required in KMOD, not to mention that sometimes we confront the gap of interval of composing a new governmental ministries that have to be chosen by the prime minister and wait to fulfil their oath, so there signature could be determined on a contract. In addition, there is the involvement of employees' sequence which is considered as an unstable environment. This kind of unstable environment is the main problem in the SAF project and our process is not flexible to cope with it. Our research group is investigating how we can manage this unstable environment.

What outside the FPD can affect the procurement process?
All the outside agencies that FPD deal with can affect the procurement process, because we need improvements from them such as legal department, financial department, logistics and supply, AB, not to mention that they themselves could be effected by changeable regulations. This kind of change always happens, as I said we have unstable environment and so do they. Their unstable environment affects us.

What factors in the environment affect the procurement process? How do these factors affect the procurement process?

Many factors can affect the environment. Like dissolving parliament, new elections, Iranian threats, and activities in the gulf and changing of the ministers. Any factor either inside or outside the environment can effect on the procurement process causing delay in signing the contract. We had to have many special meetings in the SAF project because of this kind of change. This kind of change also changes the setting, I mean the context of the procurement process.

What changes occurs in business procurement processes?

Changes doesn't occur in business process itself, but changes effect on it, such as managers movements, new employees, utilization of IT and providing stability of the external environmental factors. We have to get the approvals. I think we should make it changeable because of the unstable environment.

Describe how job roles have changed?

I distribute Job roles according to evaluating the competent efficient performance of each of employee upon his task. The activities in the process remain the same. I see who can manage the instability better.

What changes occur in resources supporting business procurement process? (Feldman, 2004)

To support the business procurement process, qualified employees must be hired; latest utilities and latest software should take place.

What changes occur in the business rules?

Business rules change according to the superior level involve avoiding dealing with some vendors depending on external affairs and governmental decisions.

What changes occur in routines of the procurement process? (Feldman, 2000)

KMOD/FPD co-operate with foreign companies to provide it supplies (army, naval, air forces). Depending on that a section of translation was established in 2010 to translate contract, internal memos and any foreign company documents to fulfil the need of the process. There was also the establishment of reviewing contracts section who is reviewing all contracts articles before sending for signature.

What changes occur in the management structure of FPD?

A plan of restructuring the organization chart of FPD is in the process of being implemented in future to come. For instance, a manager assistance position is understudy for the past four years.

How does FPD deal with the uncertainty in the internal and external environment?

Since FPD follows the traditional way of working, at present even if you consider uncertainty and contingencies, we still have to abide by the rules and regulation of procurement of KMOD. However, priority will be given according to the sensitivity and urgency of the requirement. In terms of external environment factors we have no control off unless the contract is of interest to higher authorities (Minister of Defence) to involve in. In contrast, internal environmental factors will require intensive efforts from the various departments to be solved.

What problems occur in the procurement process?

Most important problem is that the procurement process has to go through different channels of scrutiny and approvals which is very much time consuming. Since all the work is manual, full of traditional bureaucratic steps and procedures, moreover, there is lack of communication, basically between all the sections/departments. So eventually, we will confront much time consuming, approvals from various concerned departments, agreement for the contractual terms by various departments. Internet or intranet is not considered legal to speed up the process. There is communication gap between departments.

Why do the problems occur?

Problems varies between employees fulfilling their social needs, technological forces for example failure of computers, fax disfunctioning and lack of ink in printers. Organizational forces.

What unexpected events occur?

There are a lot of unexpected circumstances that could occur delaying that transferring the contract from one stage to another for instance, changing the team that is acquainted to the contract details with another one transferred from a different department (SAF), another event when the end user ask to change their requirements in late stages of the contract or sometimes after

signing the contract. Some cases could be literally interrogated by the national assembly who is not in agreement with some of the contract procedures.

Agency:
Describe the level of knowledge you need to do your tasks in the procurement process? (Marjanovic, 2006)
First of all, I have to be aware of all rules and regulations that pp go through, I have also got to be acquainted to all departments that the contract is submitted to know what signatures are needed and know how long does it take to get it, I also have to know what is the convenient substituted in case a gap occurs and acknowledge what to change it with.

How do you come to realise the problem/unexpected event?
Reading newspaper finding out an unexpected interrogation of the minister by the national assembly, could cause the delay of a contract in a certain department.

What kind of actions do you think you should be allowed to do and why?
If the problem involve external environment factor, there is no other choice but to wait since it involves a higher level to be solved. If it is internal then I can act and speak with my Director. We can then arrange special meetings.

<u>**Local Action Questions**</u>
Structure: This accounts for agency/deferred action. Question should be based on the flow chart – procurement process; need data on what action agents take when problems/unexpected events occur.

How are the problems and unexpected events managed?
As the problem occurs those who are unconcern should be involved looking for solution in service of the contract hopping to solve the problem as soon as it appears. We have special meetings. In the SAF project we had many such meetings.

What events that occur unpredictably that cannot be planned?
Events takes place as the process go through dealing with it depends upon when do they appear, there is no a certain time for them to occur. The SAF project had all the unexpected events I mentioned. May be that why it took so long to sign off.

Agency:
What do you do when problems/unexpected events occur to resolve them? What action do you take?

It depends on the problem itself, if it is internal problem within the department then solving it will be within my privilege, yet if it involves external events then the involvement of those who are in higher position will be needed.

Describe the things you do that are not part of the planned procurement process?
Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?

We are trying our best to overcome some procedures that are not included in the planned procurement process that could facilitate the process such as meeting with the end users to clarify the delayed issues, meetings with the companies to clarify the contractual procedures. We experienced this in SAF and now our research group will formalise it.

Emergent Business Process Design Questions
Structure:

What aspects of the procurement process work best? Why?

The best aspect comes when it involves my department, where I am in control of the process dominating all it movements to end up with the best result. all effects are could be changed according to my decisions.

What's the biggest opportunity for improvement?

Maintain a better relationship with companies (transparency and easy communication with the companies) to understand the requirements of the stakeholders in a much better way. They keep changing requirements as in the SAF project. Nevertheless, maximising use of Technology. Improve communication relationship. Awareness of responsibility and commitment. Etc.

What aspects of the procurement process are difficult? Why?

All aspects that involve waiting for the respond of external divisions or outside decisions from other departments are considered difficult. Accepting the contract and start finding out about its foreign market tenders bringing it to the department could be considered as one of the most difficult part the procurement process start with. The unstable environment make it difficult.

In what ways is the design of the procurement process limited?

The involvement of the legislative regulations could be considered as one of the major obstacles that attend in designing the procurement process. In addition to the lack of management knowledge that must be reviewed to know about. Not to mention the confrontation of restrictions toward change. We need to change and we need a flexible process.

How are the major limitations being addressed?

Globally new business process models are discovered, the lack of getting acquainted to them utilizing it or implementing it upon all our departments to speed our process is limitation in its literal significant. Our new process group is researching this with 'deferred action'. We tried it in some parts of SAF and it worked. Now they will formalise it I think.

Is the procurement process goal achieved efficiently? If not, explain why not.

There is no <u>doubt</u> that all our staff in FPD involved in various departments are trying to achieve their work efficiently, yet if a gap occurs then we all work to defeat it would be taken in prevention of delay.

Is the goal achieved effectively? If not, explain why not.

The goal is achieved, the question lies within how long it would take to accomplish this goal.

In what ways can the procurement process save money, time and effort?

As we accelerate in signing the contract saving money, time and effort will be provided, maintaining the suitable price for the proposal. Not to mention that once we try to utilize IT technology a lot will be facilitated. We need a flexible process.

Is the quality of the work appropriate? How can the quality be improved?

Measuring the appropriate quality of work is an abstract aspect but definitely through acknowledging new business processes would implement improvement. It can be improved by holding presentation/meeting between various concerned departments so that the project requirement is understood clearly by all the employees involved in the project. Each and every employee should be assigned specific tasks and should be held responsible (time limit).

What improvements to communications between sections need to be made?

There is no doubt that stable regular meetings will help providing communication between staff in various sections. In addition to essential Transparency of projects a step to successful process will lead to richness in establishing contact between concerns employee will provide accomplishment. And enhance responsibility among all. It will also create awareness and insight to the status of any contract.

What improvements need to be made in the information provided about the procurement process?

Generally, meeting with the concerned department involving various issues, is a must to understand any Project requirement. Nevertheless; conducting meetings with the concerned departments whenever there is a new assignment to be aware of its needs. We need some way to understand and manage requirements.

Can the environmental changes be predicted and planned? How?

In my opinion,, yes but in limited measurements. Environmental changes can be predicted once you get acquainted to work history, depending on that we can know what will happen as changes occur in consequence. I am not saying that predicting environment changes is not easy but gaining experience in a daily process could provide planning in sake of work benefits.

How can the environmental changes be controlled?

Environmental changes could be controlled once we have a previous plan, on the other hand high level management could be required if the environmental change could not be controlled. So as it seems it depends on the situation.

How can unexpected events be incorporated in the procurement process?

By considering the unexpected events as a procurement process procedure, I mean the events that we face often. By doing such we can move faster in the procedures. This is what the new process group is looking at now. I think it will be much better.

Agency:
What parts of the process do you seek to eliminate, and why?

If it was up to me, I would have shorten the procurement process procedures by keeping all contract steps within the ministry of defence. It does not have to be exposed to external institutions for example the audit B since KMOD contract carries military features.

What do you think are the opportunities for improving the procurement process?
The attempt of trial and error, would definitely occur here, but with no doubt that the Use of technology would lead to save cost and time. Blossoming in creating new designs to shorten the procurement process procedures in period of time. The delays make the process longer and delays are caused by unexpected events and no time limit. We need to manage both.

Who should participate in designing the procurement process?
First of all, a survey should be made to work as a feedback from all members of those who are involved in the procurement process. Specifically those of high levels, must work in designing the procurement process divided into groups, studying specific issues to get the best result contributing in the eventual design. In other word all the concerning departments should participate in terms of having a good designed procurement process.

Are you satisfied? What improvements need to be made? What suggestions do you have to improve it?
Satisfaction is a privilege that could not be provided in all its terms, yet it is always necessary to work in the benefit of reducing time and cost, providing quality of services and creating responsibility among all employees involved aiming to reduce gap communication between them and enhancing awareness among all to aim for better efficient process.

<u>**Interview Questions**</u>
Interviewee: 07
Position: Operational Process Employee

Date: 12 Sep 2012
Time: :10:45 Am

<u>**Planning Questions**</u>
Structure: This accounts for structure/planned action). Question should be based on the flow chart – procurement process)

What is the business of KMOD/FPD?
Procuring goods, materials, spare parts etc. from local and foreign suppliers in favour of the Kuwait armed forces. By signing a contract with foreign companies for supplies.

What procurement process does KMOD/FPD use to complete its responsibility?
The procurement follows certain procedures addressed and planned according to a plan since the establishment of FPD.

What is the primary goal/outcome of the business procurement process?
The objective of this procedure is to ensure expeditious procurement of the approved Requirements, to meet the requirements specified of the stakeholders based on qualitative, technical and pricing considerations.

What are the business rules to perform the procurement process effectively?
The concept of efficiency and effectives have not substantially change since 2002, Guidelines, although greater emphasis has been placed on risk management and liability.

What level of knowledge does KMOD/FPD have to plan the procurement process?
Knowledge of the law, organisation, production, selling, marketing needed to declare seizing level of knowledge in general.

How is the procurement process planned?
The establishment of FPD plan is considered recent, but it all follows the details of the process. Yet in consideration of a new plan must be put in mind to be developed through years to come. The Guidelines are followed

and have to be followed, as well as the legal requirement to follow it. We follow the Guidelines but many problems occur. The Guideline plan is detailed and needs to be strictly followed. We do our best.

How is the procurement process implemented?

The main anchor, was set by all legal bodies cooperated with FPD that have a say in the process.

What are the major weaknesses of the procurement process?

There are many weaknesses of the procurement process that affects negatively the process, Time constraints and transparency of the projects. and Traditional ways of procurement with very little use of technology.

How is the success of the procurement process evaluated?

Signing the contract in short time by setting time schedule of the project.

Agency:
What role do you play in the procurement process?

Operational process employee

How do you influence the procurement process?

Working within the overall process and being aware of all its steps. I follow instructions.

Unexpected Events/Emergence Questions
Structure: This accounts for emergence/complexity. Question should be based on the flow chart – procurement process; need data on what happens unexpectedly in the planned events.

Describe the environment of the procurement process?

Any KMOD requirement change, new minister of defence, suppliers' ability to deliver changes like the SAF project, government wants efficiency, and any other things that affect the procurement process.

What outside the FPD can affect the procurement process?

The confrontation of legislative department as well as the audit bureau delay in terms of its interval period is a challenge that confronts all contracts it terms of their period process. In SAF I had many problems like this.

What factors in the environment affect the procurement process? How do these factors affect the procurement process?
Internal environment is easy to be dealt with, but external ones the one that delay in the process and that will affect purchasing and that will reflect on raising the combat readiness of all armed forces. As I said, government and suppliers' changes, it affected SAF many times.

What changes occurs in business procurement processes?
Mainly no changes occurs in business procurement process, we follow a procurement process plan. But the details change like in SAF.

Describe how job roles have changed?
Job roles have not changed but its sequence of obligation have grown as we try to develop our plan. New duties have been added to my job.

What changes occur in resources supporting business procurement process?
Once it has been decided that we utilize the IT and software technology, support would come out strengthen the process.

What changes occur in the business rules?
Business rules changes according to the superior level involve avoiding dealing with some vendors depending on external affairs.

What changes occur in routines of the procurement process?
We follow the same process repeatedly. Clearly, we know from the timeline of the process, that many, many changes occurred. So, changes have occurred in the 'planned' or routine procurement process. Like I said, the SAF project had many changes. The superiors dealt with it by special meetings.

What changes occur in the management structure of FPD?

A plan of restructuring the organization chart of FPD is in the process of being implemented in future to come. For instance, a manager assistance position is understudy for the past four years. Maybe things change when the new process is designed.

How does FPD deal with the uncertainty in the internal and external environment?

The more internal the requirements will demand, the faster it will be dealt with, in contrast, the more external it will attend the longer time it will take to be solved.

What problems occur in the procurement process?

There are no major problems, yet if it took place it will be due to poor quality, financial mismanagement, and over expenditures are frequently observed. moreover, there is the lack of responsibility and commitments coming from management as well as employees. Not to mention that there is no tracking system.

Why do the problems occur?

Because there is no time limit or deadline for any project to determine priority and butting in mind consideration at all levels. Generally, things have their own way of going wrong. It is not deliberate. Yet, it is a certain that problem will occur. Many unexpected things happen.

What unexpected events occur?

- when the companies do not submit the proposals
- when the companies try to negotiate several contract articles
- after procuring, the material items , the requirements of the end users could increase.
- Discovering after the completion of the procurement process that the satisfaction of the end user could not be seek
- When the end user receive their requirements it could be found later that some of their request does not match its features

Agency:
Describe the level of knowledge you need to do your tasks in the procurement process?
No doubt that there must be an enhancement to have full knowledge of the procurement process including the rules and regulation of the department in terms of development.

How do you come to realise the problem/unexpected event?
By staying in touch and keeping good relation with all departments internally and externally.

What kind of actions do you think you should be allowed to do and why?
It depends on the problem, if it is under my control I can take action and try to solve it

Local Action Questions
Structure: This accounts for agency/deferred action. Question should be based on the flow chart – procurement process; need data on what action agents take when problems/unexpected events occur.

How are the problems and unexpected events managed?
Some unexpected problems can be solved immediately and by any employee but others should take the management advice.

What events that occur unpredictably that cannot be planned?
Any unpredictable event that comes from high authorities or any project that has a political sense we cannot plan. Also of any new rules and regulations occurs we cannot plan it in this cases.

Agency:
What do you do when problems/unexpected events occur to resolve them? what action do you take?
Ask those who in concern, trying to look if this unexpected events happened before so we take the same action. Actions are taken based on the problem itself. Managers did the changes in the SAF project, many of them. End user changed requirements and managers had to make two procurement projects.

Describe the things you do that are not part of the planned procurement process? Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?

Any changes in the proposal submitted will require an effort in the process procedures, for instance, contacting the end user to clarify some issues or meet the company representatives to discuss the draft contract. So many like it happened in the SAF project.

Emergent Business Process Design Questions
Structure:

What aspects of the procurement process work best? Why?

Process which are decided by FPD management are faster and better rather than the process where the approvals of the concerned departments are awaited

What's the biggest opportunity for improvement?

Introduce the use of technology as required. Time limit for projects. Restructure the department as required to improve quality and reduce time and cost. The new process group will help. Etc.

What aspects of the procurement process are difficult? Why?

All aspects that involves waiting for the respond of external divisions or outside decisions from other departments are considered difficult. We should work together, all concerns Departments.

In what ways is the design of the procurement process limited? (for example lack of knowledge, skills)

Stability is well known to be better for all employees, that is why there is a resistant to change and some of the steps in the procurement process that we cannot skip or shorten because they are important.

How are the major limitations being addressed?

All limitations are been addressed in attempts not in actual official documents. There all involve personal efforts represented from all who are in concern for the sake of modification and efficient process. The new research they are doing is benefitting. We did not manage it very well early in the SAF project. Then the research on deferred action made changes, good changes.

Is the procurement process goal achieved efficiently? If not, explain why not.
Yes because we are doing things right by following the FPD Guideline and moving from step to step with the control of our supervisors

Is the goal achieved effectively? If not, explain why not.
We all at FPD willing to achieve the goal effectively with the assistant of our manager.

In what ways can the procurement process save money, time and effort?
Shortening the period of each step in the procurement process would reduce the money spent by

Is the quality of the work appropriate? How can the quality be improved?
No. It can be improved by holding presentation/meeting between various concerned departments so that the project requirement is understood clearly by all the employees involved in the project. Each an every employee should be assigned specific tasks and should be held responsible (time limit).

What improvements to communications between sections need to be made?
- Contact numbers of concerned people for every project should be available before start of project.
- Regular meeting are held with the section heads to instigate the status of the projects will create awareness with regards to responsibility, attendance, etc.

What improvements need to be made in the information provided about the procurement process?

Meeting with the concerned department is a must to understand the Project requirement. Conduct meeting with the concerned department whenever there is a new assignment.

Can the environmental changes be predicted and planned? How?

Yes, but limited, when the problem occurs sometimes we refer to history and see how did they respond to a similar problem, other times we deal with the problem creating new solution to clear it. In SAF, we had to do both, mainly Director and managers.

How can the environmental changes be controlled?

It can be controlled by the management and if we have any suggestions we can raise it to the supervisors to solve it, it is not easy controlling any change without having right people with good knowledge.

How can unexpected events be incorporated in the procurement process?

Myself and co-workers always share unexpected events, and we thought of taking the approvals from the management to suggest adding them to the procurement process after taking the approvals, I think applying this idea would save time and effort.

Agency:
What parts of the process do you seek to eliminate, and why?

All parts of the process are important I think. But I seek to limit the time of its process.

What do you think are the opportunities for improving the procurement process?
- redesign the process procedures in terms of shortening the period of time
- change the current procurement process plan to a new timed procurement process plan, I mean to set a time for each step according to the practice
- take account somehow of the unexpected events, make the process flexible

Who should participate in designing the procurement process?
All who have a role in the procurement process.

Are you satisfied? What improvements need to be made? What suggestions do you have to improve it?
As I said, satisfaction is partial, since the significant of perfection differs from one person to another. Lots of improvements can take place. Adding the common unexpected events to the FPD Guidelines. New employees should be trained very well.

Interview Questions
Interviewee: 08
Position: process worker

Date: 1Oct 2012
Time: 11:15 PM

<u>Planning Questions</u>
Structure: This accounts for structure/planned action). Question should be based on the flow chart – procurement process)

What is the business of KMOD/FPD?
The business of the KMOD/FPD is procuring materials, equipment, technical supports, training, spare parts for the Kuwait arm forces in all theirs divisions by tenders with foreign companies through contracts as per the requirements of the stakeholders in an effective and efficient manner.

What procurement process does KMOD/FPD use to complete its responsibility?
KMOD/FPD follows the Guideline called the procurement process procedures that contains several steps starting from the request from the end users ''Kuwait arm forces'' passing through internal and external departments that examine each step and give approvals to it to move forward ending up with signing the contract until accomplishing the whole requirements of the contract.

What is the primary goal/outcome of the business procurement process?
The goal of the business procurement process is to ensure expeditious procurement of the approved requirements of Kuwait arms Forces in terms of capabilities sought and time frame prescribed by optimally utilising the allocated budgetary resources.

What are the business rules to perform the procurement process effectively?
There are rules followed by the organisation to improve productivity and performance. As FPD is involved with contracts, it should have rules about saving money, getting value, Establishing a cooperative comprehensive atmosphere among employees, in order to provide a common core, that would be used to avoid imposed rules, in my opinion should be the aim of accomplishing a successful process.

What level of knowledge does KMOD/FPD have to plan the procurement process?

Employees who join FPD has their own knowledge of their major or field of study the did. No one has the knowledge of the procurement itself but by practising and following business process in the field they gain the knowledge.

How is the procurement process planned?
In 1998 FPD staff builds up a business process for procuring, and since that date slight amendments have been done to it. And we follow this plan.

How is the procurement process implemented?
We at FPD are following a planned PP with all its steps and details. but we as employees working daily in this PP, we try our best to fulfil each step and push it forward.

What are the major weaknesses of the procurement process?
There are many weaknesses of the procurement process that affects negatively the process such, weak supervision, time consuming resulting in getting approvals as in the SAF project from various sections or departments and lack of technology. also taking approvals from various departments takes long time.

How is the success of the procurement process evaluated?
The procurement process can be evaluated through getting the contract signed in a short period of time.

Agency:
What role do you play in the procurement process?
 Process worker

How do you influence the procurement process?
working in the PP and following its steps have a direct influence on it moving it faster or making it slow. In the SAF process, they made me change my tasks many time because End User requirements changed.

Unexpected Events/Emergence Questions
Structure: This accounts for emergence/complexity. Question should be based on the flow chart – procurement process; need data on what happens unexpectedly in the planned events.

Describe the environment of the procurement process?

Following a procurement process plan from step one which is the request of the end user passing through getting approvals from various departments, signing the contract until fulfilling the contract. This did not happen well in the SAF project. Approvals were obtained, but the steps changed from how they are set out in the Guidelines.

What outside the FPD can affect the procurement process?

Most of our procurement projects are affected. The SAF project was heavily affected because it was large. New minister of defense, suppliers' ability to deliver changes, governmental decisions , and the approval of some contract procedures that is supposed to be monitored by the Legal Legislative Department as well as the Auditing Bureau.

What factors in the environment affect the procurement process? How do these factors affect the procurement process?

all factors either inside or outside the environment can effect on the procurement process causing delay in signing the contract such as:

- dissolving parliament,
- new elections,
- Iranian threats,
- activities in the gulf
- changing of the ministers.

What changes occurs in business procurement processes?

Cannot say changes happened since I joined in business procurement process, because we follow a plan. But when any additional request either from end users or from the foreign companies that we consider as additional step to the plan. Or when we can say that they are changes in the quality of employee that can affect the business procurement process.

Describe how job roles have changed?

I did not see any changes in job roles since I joined FPD.

What changes occur in resources supporting business procurement process? (Feldman, 2004)

The main resources that affects PP are the employees who work in it, when hiring qualified employees who have a background of the process then they can

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affect positively and move the PP quickly. Also technology should be added to the process to make it faster and more accurate.

What changes occur in the business rules?

Business rules changes according to the superior level involve avoiding dealing with some vendors depending on external affairs and decisions made by government level.

What changes occur in routines of the procurement process? (Feldman, 2000)

Slight additions have been made to the planned procurement process that we can consider as changes. Such as editing the draft contract by a specialist section who are reviewing all contracts articles before sending for signature.

What changes occur in the management structure of FPD?

Since I joined FPD, 3 years ago, no changes occur in the management structure. But lately there are some plans to be taken in terms of improving the quality of the procurement process.

How does FPD deal with the uncertainty in the internal and external environment?

We at FPD still have to abide by the rules and regulation of procurement of KMOD. Internal environmental factors will require intensive efforts from the various departments to be solved according to the sensitivity and urgency of the requirement. But external environment factors we have no control off so it is difficult to deal with it indoors.

What problems occur in the procurement process?

Let me mention what I remember:
- Lack of information/knowledge about the project handled
- Lack of responsibility
- Lack of communication, basically between all the sections/departments
- approvals from various concerned departments, agreement for the contractual terms by various departments
- Poor quality, financial mismanagement
- Lack of technology
- Lot of change in End User requirements
- Supplier changing terms

Why do the problems occur?

Lots of reasons that I cannot count, but can mention some such as the poverty administrative regulation, no time limit/ deadline for the projects, the term priority is not taken into consideration at all levels. They are unexpected.

What unexpected events occur?

FPD faces unexpected events ,

- when the end users change their requirements in late stages.
- when the companies try to negotiate several contract articles that cannot be change according to legal issues.
- When any employee who is in charge of a contract is absent for long time and do not handle his work to his colleague.

Agency:

Describe the level of knowledge you need to do your tasks in the procurement process? (Marjanovic, 2006)

I am willing to learn and improve my knowledge about procurement processes.

How do you come to realise the problem/unexpected event?

When any action happened and it is not addressed in the Guideline,

What kind of actions do you think you should be allowed to do and why?

Any problem under my control I can take action and try to solve it. And discuss it with my supervisor to take approvals on it.

Local Action Questions

Structure: This accounts for agency/deferred action. Question should be based on the flow chart – procurement process; need data on what action agents take when problems/unexpected events occur.

How are the problems and unexpected events managed?

Meetings are the best way to manage unexpected events, each member gives his solution and the end we come up with a decision that will be raised to the higher authority for agreement if needed. A lot happened in the SAF project, many meetings like this.

When events that occur unpredictably that cannot be planned?

- Cancelling the project because of an order from high authorities and governmental decisions.
- Financial issues such as the country's budget.

Agency:
What do you do when problems/unexpected events occur to resolve them? what action do you take?

I focus on the problem. Find out where does it come from, find solutions and raise them to the management level to take action.

Describe the things you do that are not part of the planned procurement process?
Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?

For me, I like to meet people "end users or companies" to move the contract faster and to solve any obstacle face to face. That helps a lot.

Emergent Business Process Design Questions
Structure:

What aspects of the procurement process work best? Why?

All steps under FPD control can be moved quickly, but any step that goes out for approvals takes time and we cannot control it.

What's the biggest opportunity for improvement?

Lots of opportunities are there for improvement:
- Introduce the use of technology.
- Deal with unexpected events.
- Set a time limit for projects.
- Restructure the department as required to improve quality and reduce time and cost.
- Increase communication relationship between the various sections related to the projects have to improve.

What aspects of the procurement process are difficult? Why?

All aspects that involve waiting for the respond of external divisions or outside decisions from other departments are considered difficult. Because we have no control on the outside departments.

In what ways is the design of the procurement process limited?

Nothing is impossible; I think we can design the procurement process as we stick to the rules and regulations.

How are the major limitations being addressed?
We need new business process, the process group is apply some research. It will benefit to control unexpected events.

Is the procurement process goal achieved efficiently? If not, explain why not.
yes, every employee is doing his best trying to achieve their work efficiently, and facing any unexpected events that occurs and prevent achieving procurements goal efficiently.

Is the goal achieved effectively? If not, explain why not.
No, because of the appearance of the unexpected events that prevents achieving procurement goal effectively.

In what ways can the procurement process save money, time and effort?
If the procurement process moved quickly without ant problem or unexpected event which is rarely happens. In this case saving money, time and effort will be achieved.

Is the quality of the work appropriate? How can the quality be improved?
Not really, I cannot say that the quality is appropriate, yet I cannot say it is poor. Reaching the best quality is not easy, but by holding presentation/meeting between various concerned departments, let the employees join special training courses in the field and adding IT software to the work will help improving the work quality.

What improvements to communications between sections need to be made?
One of the major improvements as mentioned previously is communication between sections, to speed up the procurement process we should increase the meeting and the relationship between sections to avoid any delay that accrue of misunderstanding of the procedure. So I suggest the following :
1. Meeting should be held regularly
2. Transparency of projects is very essential.
3. Contact numbers of concerned people for every project should be available before start of project.

What improvements need to be made in the information provided about the procurement process?

Again, Meetings with the concerned department is a must to understand the Project requirements.

Can the environmental changes be predicted and planned? How?

According to my experience in the field, I think environmental changes can be predicted and planned according to work history, but in limited measurements. I am not saying that predicting environment changes is are easy to be planned but gaining experience in a daily process could provide planning in sake of work benefits.

How can the environmental changes be controlled?

Changes are not easy to be controlled by any employee but any change happens will be studied and raised to the management level to take action on it. Also any employee can raise his suggestions and solutions to that change and it will be studied by the management. The process can include how to control change. As I said, the process group is looking at this. I am not sure what they call it.

How can unexpected events be incorporated in the procurement process?

When we collect all the unexpected events and plan in previous how to manage them according to the procurement process Guideline we are following and that happens according to practice in the field.

Agency:
What parts of the process do you seek to eliminate, and why?

Many steps in the plan I wish that we can skip or merge, and others also I wish that we can manage it by giving a time limit to it.

What do you think are the opportunities for improving the procurement process?

Redesign the current procurement process, include response to unexpected events, add time limit to each step and use technology to speed up the flow.

Who should participate in designing the procurement process?

All the concerning departments and all people works in the PP should participate in terms of having a good designed procurement process

Are you satisfied? What improvements need to be made? What suggestions do you have to improve it?

Various improvements can be done. Such as Time frame for the whole project. Create Responsibility among the employees involved, increasing Communications and relationships. Awareness among employees regarding the importance of the project. And Reduce the time taken for approvals by use of internet/intranet.

Interview Questions
Interviewee: 09
Position: Interpreter

Date: 13 Sep 2012
Time: 11:45 Am

<u>**Planning Questions**</u>
Structure: This accounts for structure/planned action). Question should be based on the flow chart – procurement process)

What is the business of KMOD/FPD?
Improving the procurement of defence equipment and upgrading and enhancing the abilities of land, air and Navy forces.

What procurement process does KMOD/FPD use to complete its responsibility?
KMOD follows pre-set procedures that have to work through.

What is the primary goal/outcome of the business procurement process?
The primary goal is to obtain the best quality and service at minimum cost and obtaining proposals from the suppliers to meet the requirements and the specification of the stake holders.

What are the business rules to perform the procurement process effectively?
The rules are to get the approvals from the concerned departments before signing the contract with the second party.

What level of knowledge does KMOD/FPD have to plan the procurement process?
As an employee I must have the knowledge of low, contractual procedures and what we learn from experience.

How is the procurement process planned?
The procurement process was plan from various sectors such as (the legal department-military head quarters-financial department-Audit Bureau- advice and legalization)

How is the procurement process implemented?

The first stage by receiving a request from logistic and supply and then we go through our procedures.

What are the major weaknesses of the procurement process?
- Lack of knowledge in some employees
- Lack of technology
- The long-time of the documentary cycle

How is the success of the procurement process evaluated?
By getting the approvals from various concerned departments in short time

Agency:
What role do you play in the procurement process?
Interpreter

How do you influence the procurement process?
By setting a time schedule to my team and finish our role as soon as we can

Unexpected Events/Emergence Questions
Structure: This accounts for emergence/complexity. Question should be based on the flow chart – procurement process; need data on what happens unexpectedly in the planned events.

Describe the environment of the procurement process?
A lot of departments compose the environment of the procurement process, yet KMOD requirements change, new minister of defence could also be changed, and suppliers ability to deliver change. We had to write the contract several times, make changes too many times in the SAF project. Initial suppliers could not endure our procurement process and withdrew. The current supplier has made several changes to the terms and conditions; this has required letters of approval to be generated, and these letters usually go back and forth for clarification. This makes much delay in the procurement process.

What outside the FPD can affect the procurement process?

all approval of the contract procedures that is supposed to be monitored by the Legal Legislative Department as well as the Auditing Bureau delay is a matter that could not be controlled because of the constant mobility of procedures issued by legislation institution. Again, much of this happened in SAF.

What factors in the environment affect the procurement process?

New elections, dissolving parliament and political conflicts

How do these factors affect the procurement process?

We are affected by changeable procedures as we work legally as a connected network; our work depends on the other Governmental departments that we deal with such as legal department.

What changes occurs in business procurement processes?

No changes occurred in business procurement process because we follow certain procedures and plans.

Describe how job roles have changed?

Job roles have not changed.

What changes occur in resources supporting business procurement process?

The support would be provided through enhancing IT technological training courses for employees to qualify their work and proving the latest software should take place.

What changes occur in the business rules?

We are affected by the governmental changes and ministerial decrees. For us it means, making different language versions of the contracts and other documents for suppliers.

What changes occur in routines of the procurement process?

Since our translation department was established, no changes has taken place.

What changes occur in the management structure of FPD?

There is an organizational structure of FPD is in process these days. The changes for example, that there will be two manager assistant instead of one.

How does FPD deal with the uncertainty in the internal and external environment?

If the uncertainty appear internally solving it would be easier because it will be involved with making decisions within the department. But if it was external, then it would be difficult to deal with since it is out of FPD control.

What problems occur in the procurement process?

The delay in process documents receipt (the agreement from the concerned departments), payment transactions, communication problems and time constraint. We did many variations to the SAF documents because of changes like this.

Why do the problems occur?

- Problems occurs in my opinion because there is no time limit for the project.
- Lack of communication between the FPD and other concerned departments
- There is no tracking system to follow up with.
- No recognition of change in the process.

What unexpected events occur?

All this happened in SAF and other projects:

- When the companies ask for extension in submitting the proposals.
- When the companies do not submit their proposals at the dead line.
- When the end user changes their specification after we already asked the companies for proposals.

Agency:
Describe the level of knowledge you need to do your tasks in the procurement process?

Must have a full knowledge of the rules and regulation of the procurement process

How do you come to realise the problem/unexpected event?
Work experience and great communication with the other departments.

What kind of actions do you think you should be allowed to do and why?
There is some process we can delete or nor necessary to go through it to speed up the procurement process.

<u>Local Action Questions</u>
Structure: This accounts for agency/deferred action. Question should be based on the flow chart – procurement process; need data on what action agents take when problems/unexpected events occur.

How are the problems and unexpected events managed?
Some unexpected events can be solved by setting a meeting with the concerned department to review and discuss the problem and trying to find a solution. We did many different translations for the SAF project.

What events that occur unpredictably that cannot be planned?
- **When we get the refusal from other departments such as Audit Bureau**
- When the company send many amendments for the contracts and the negotiation take long time some times
- When the budget is not enough for the project after getting all the approvals

Agency:
What do you do when problems/unexpected events occur to resolve them?
Some unexpected events can be solved by setting a meeting with the concerned department to review and discuss the problem and trying to find a solution.

When unpredictable events occur, what action do you take?

Within my authorities I try study the unpredictable event and raise it to higher level to solve it.

Describe the things you do that are not part of the planned procurement process?
As a translator in the translation department, we review the draft contract.

Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?
Recently, FPD established a call centre that work in the purpose of responding to all foreign companies in aim of providing then with answers to save time.

Emergent Business Process Design Questions
Structure:

What aspects of the procurement process work best? Why?
All procedures that are taken within the frame of FPD departments work best, because we can control the process by speeding its steps.

What's the biggest opportunity for improvement?
Develop an updated ability that speed up procedures and facilitate it.

What aspects of the procurement process are difficult? Why?
Signing routines and paper work. Because of the long time these steps take to be done.

In what ways is the design of the procurement process limited?
for example lack of knowledge, skills

How are the major limitations being addressed?
So many limitations, such as: financial, technical mistakes, legal knowledge has not been addressed yet.

Is the procurement process goal achieved efficiently? If not, explain why not.

Management is trying to keep up and modify the procurement process. The research group added deferred action in the SAF project. They will make this part of the procurement process.

Is the goal achieved effectively? If not, explain why not.
Management is trying to keep up and modify the procurement process

In what ways can the procurement process save money, time and effort?
To have the knowledge of all aspects of the process, and to know what we shall and shall not do from the beginning.

Is the quality of the work appropriate? How can the quality be improved?
Well, it is now better than before, with the deferment points. It gives managers more flexibility to react to change. Eventually it will get better through training. Trying to utilize software to improve quality.

What improvements to communications between sections need to be made?
Monthly meetings to provide updating, discussions and changes of events.

What improvements need to be made in the information provided about the procurement process?
Training courses from the very beginning to those who are specialized in the procurement process in all areas of contractual bases.

Can the environmental changes be predicted and planned? How?
It can be planned but by careful study, as the research group is doing.

How can the environmental changes be controlled?
I think the environmental changed can be included in the process.

How can unexpected events be incorporated in the procurement process?
By adding them to the procurement process Guideline. We should study the unexpected events that we face, collect them all and see how can we find a place in the procurement process for them. I think this way will save time for some events that we face mostly. The new process will do this.

Agency:
What parts of the process do you seek to eliminate, and why?

We cannot eliminate any part of the process because every step is important.

What do you think are the opportunities for improving the procurement process?
- Using technology to save time and money,
- using the email as official letter to save time, and to communicate with the companies and other departments.
- Setting time schedule for each process

Who should participate in designing the procurement process?

All parties involved in the procurement process should participate in designing the procurement process.

What suggestions do you have to improve it?
- Re-plan the process, make it efficient and include unexpected change
- Updating it with technology
- Training employees

Are you satisfied? What improvements need to be made?

I'm satisfied because hopefully changes will be made to the process.

Interview Questions

Interview Questions
Interviewee: 10
Position: Clerk/coordinator

Date: 20-09-2012
Time: 8:15 am

<u>**Planning Questions**</u>
Structure: This accounts for structure/planned action). Question should be based on the flow chart – procurement process)

What is the business of KMOD/FPD?
FPD deals in procuring defence related equipments, machinery, ammunitions, technical support maintenance support for the armed forces (air, land and naval).

What procurement process does KMOD/FPD use to complete its responsibility?
Basically follow the rules and regulation of FPD. I was trained by my superiors and I too follow the same. The main process is the Guidelines, but we do not call it a 'process'. The Director and a researcher are changing that now, and we will focus on the FPD Procurement Guidelines as a process.

What is the primary goal/outcome of the business procurement process?
Our objective is to procure and support the armed forces in a satisfactory manner. Efficiently and smoothly.

What are the business rules to perform the procurement process effectively?
FPD has its own rules and Guidelines which have to be followed in all cases. We cannot go out of these Guidelines. The business rules are legal and financial. I know from working on the SAF project that sometimes we had to adapt the rules to progress the project along. Though the rules do not change, we had to bend to meet the changes in the project.

What level of knowledge does KMOD/FPD have to plan the procurement process?

All the employees are aware of the Guidelines. The only thing is that we have to make sure that we implement it accordingly. Our training is mostly on-the-job. We acquire this knowledge by experience.

How is the procurement process planned?

I have no idea who planned it but I know that it was planned many years back and we follow it.

How is the procurement process implemented?

Implementation is done exactly as per the rules and Guidelines of FPD right from the request of requirement till conclusion of the contract. In the SAF project there were many unexpected events, which we managed but we had to still comply with the Guidelines. I guess the details of how we did it changed in SAF. The Director and Senior colleagues work with us to make sure the Guidelines are strictly followed. But as I say the SAF project has meant we had to make many changes in how we implemented them. There have been time delays, more resource needed and many unplanned meetings.

What are the major weaknesses of the procurement process?

The main weakness is that the procedures are very much time consuming. I tell you it takes nearly minimum 2 years to sign a contract. FPD follows the traditional way, where letters are still by snailmail. Emails are not used. In other words lack of technology. This is why the SAF project has taken nearly five years to complete. We need a better information system, as your research shows, a contract information system. But this system must be able to change, as I mentioned above in implementation question.

How is the success of the procurement process evaluated?

If the contract is signed exactly as per the Guidelines and without any problems or delay, it is gauged as successful. Also, the number of contracts FPD completes counts. The Director and Senior Managers are responsible.

Agency:

What role do you play in the procurement process?

Clerk – Coordinator. I am responsible for many aspects of the contract-writing process and coordinating the activities of others Departments involved, legal and financial mainly.

How do you influence the procurement process?

I do the correspondence with the supplier companies, maintain proper records, coordinate between the end user, GHQ and supplier companies. I do not have direct influence, but I make sure that all these coordinating activates are done well. I guess my role is important because if I do not coordinate it well especially when unexpected events arise then it could halt the process.

Unexpected Events/Emergence Questions

Structure: This accounts for emergence/complexity. Question should be based on the flow chart – procurement process; need data on what happens unexpectedly in the planned events.

Describe the environment of the procurement process?

It's been good working in FPD. However things are not same always, many unexpected events occur which affects the work of FPD, the contracts are delayed due to delay in approvals. The suppliers are learning about our procurement process, but they should know it before they agree. So, they take their time and make changes. Like transfer of employees, vacations, change of the Minister and so on. The SAF project has had many delays caused by requirements changing, supplier negotiations stalling, agreeing draft contracts etc. Our biggest change was when early on the SAF project was split into two. Things keep changing and we have to manage to implement the Guidelines in this changing context. This is also true of other procurement projects I worked on.

What factors in the environment affect the procurement process?

As I said, the transfer of employees in the external departments, retirements, vacation all this affects by delay in approval. Lack of technology, such as emails are not considered and letters are sent by mail only. No proper tracking, communication gap. We do not have

control over all this. Our aim is to get the approvals according to the Guidelines and speedily, but these kind of changes cause significant delays. I think the procurement project you are studying, SAF, is a very good example. We need better procedures to deal with this change in the environment.

How do these factors affect the procurement process?

They affect by delay in approvals and without approvals from all the concerned Departments a contract with the company cannot be signed. Following the Guidelines is a must.

What changes occurs in business procurement processes?

Changes! I have not heard of any changes since the time I have joined the FPD. We have not changed the Guidelines. But if you mean changes we would like, then yes there are many. In SAF, I had to coordinate with everyone when unexpected changes happened. I think this kind of action that we take is important, but we must still stick to the Guidelines. The Director has set up research groups to find out what needs to be changed. I think the SAF project has been a good case example of the kinds of changes we need to make.

Describe how job roles have changed?

Job roles do not change in FPD until unless the employee is transferred to another section. i.e. from Land forces section to the administration section or the mailing division.

What changes occur in resources supporting business procurement process?

Not many changes I have noticed. Technology used is the same, I mean computers are used to for correspondence, but Internet cannot be used (emails) for sending the letters or any documents. No proper training related to procurement is provided to the staff.

What changes occur in the business rules?

Business rules do not change. Only on the instruction of the superiors. They have been flexibly implemented in the SAF project because the End User changed the requirement and supplier company could not agree on

our detailed requirements. All the approvals have to be obtained nevertheless.

What changes occur in routines of the procurement process?

Usually there are not many major changes in the routines. My coordinating role stays the same, dealing with the same people and Departments. Sometimes the people change, so I need to set up new working relationships.

What changes occur in the management structure of FPD?

The management structure has never changed. It is the same from many years.

How does FPD deal with the uncertainty in the internal and external environment?

There are no special rules for emergency. The Guidelines have to be followed in all circumstances. Means the work has to be done step by step and it cannot be omitted. The Director and Senior colleagues have special meetings when things change; it happened many times in the SAF project. Usually, the Director and Senior colleagues deal with the unexpected events. I have to coordinate many meetings and ensure documents circulation among them. The SAF project took a lot of my time doing that. We need a better way to handle such change.

What problems occur in the procurement process?

Many problems happen. There is no time limit prescribed for the project hence there is no priority given by the employees. Lack of commitment by some. Taking approvals from the Department usually leads to delay. Lack of technology for correspondence is an issue that no one has taken up, I mean higher up. As I said earlier, taking approvals was difficult at almost all stages of the SAF project. I had to spend much time coordinating important meetings to keep moving the project along.

Why do the problems occur?

As there is no time limit there is no commitment from the employees at all level and departments. We should add set periods of time for each step of the Guidelines.

What unexpected events occur?

Transfers, vacations, retirements and change of minister are some. End User requirements change. Supplier companies change their commitments sometimes too. This is very difficult to manage because the End User has already began planning on earlier commitments.

Agency:

Describe the level of knowledge you need to do your tasks in the procurement process?

Should know the rules and Guidelines of FPD and follow them accordingly. I need to know each step of the Guidelines because I coordinate the Departments involved. In a way, I am driving the whole processes by coordinating.

How do you come to realise the problem/unexpected event?

When there is delay in approvals from concerned Departments and delay in signing the contract by the Minister. The SAF project had many issues. When supplier companies do not comply with the required documents, it holds up the process. Usually, I know when the steps of the Guidelines are not happening.

What kind of actions do you think you should be allowed to do and why?

Without the approval from the superior the staff cannot do anything on their own. As a coordinator, I should be given scope to take initiative to arrange matters or alert superiors when I detect a problem.

Local Action Questions

Structure: This accounts for agency/deferred action. Question should be based on the flow chart – procurement process; need data on what action agents take when problems/unexpected events occur.

How are the problems and unexpected events managed?

In the SAF project, by consultation among the managers and the concerned Departments, where I coordinated the meetings and arranged the documents.

What events occur unpredictably that cannot be planned?

Delay in receiving the approvals from the concerned Departments leads to delay in the process. Response from the Departments cannot be predicted. Never knowing what information they might request. We are one major step in the whole procurement process, so we depend on the other concerned Departments.

Agency:
What do you do when problems/unexpected events occur to resolve them?
I consult with the managers.

When unpredictable events occur, what action do you take?
It depends on case to case basis and only the mangers are authorised to decide on the course of action to be taken.

Describe the things you do that are not part of the planned procurement process?
Give examples of workarounds in the procurement process (not part of planned process) designed by staff, if any?
Arrange meetings on urgent basis through telecommunication. Coordinate with the supplier company on the contractual terms, basically the annexes. I had to do a lot of this for the SAF project.

Emergent Business Process Design Questions
Structure:
What aspects of the procurement process work best? Why?
When the Guidelines are followed and things work without any hurdles. In my experience this has not happened frequently. The worst case has been the SAF project.

What's the biggest opportunity for improvement?
Proper training of the staff to negotiate with the company professionally. Use of technology. I think the research group is looking into this. We also need to change the procurement process because it is old.

What aspects of the procurement process are difficult? Why?

All procedures related to the external Departments are time consuming. We do not have control over their work. So, I guess our bit works well but not the whole procurement process. Department still work separately.

In what ways is the design of the procurement process limited? (for example lack of knowledge, skills)

The design itself is limited. One cannot manipulate according to the needs. All the procedures have to be followed in all circumstances. I mean, the kind of change we faced in the SAF project. The Guidelines are limited in that they do not allow flexibility to such change.

How are the major limitations being addressed?

Limitations can be addressed only if there is approval from all the related Departments. Which will never happen. Unless, the research group can change things.

Is the procurement process goal achieved efficiently? If not, explain why not.

Not efficiently because there are always delays which take place. Contracts are not signed for more than couple of years. I said earlier, we depend on other concerned Departments and the unexpected changes, like changing requirements of End User.

Is the goal achieved effectively? If not, explain why not.

No. rarely one in a hundred case the contract is signed on with any hurdle. There are always delays receiving approvals from the concerned Departments.

In what ways can the procurement process save money, time and effort?

As a fact government procurement are typically large and complex; adding the bureaucratic laws and regulations that govern such procurement, then we a have a condition that create lengthy and expensive. In order to reduce the obligations of both time and money we

need the enhancements of technology and team work. All this needs to change.

Is the quality of the work appropriate? How can the quality be improved?

In my opinion increasing the flexibility of the speed of the business process, supply of the chain of management with effective use of team work and utilizing outsourcing increase of technological courses will definitely provide quality in work. Flexibility is the key, as I said earlier, we cannot control other concerned Departments and unexpected events. We would have benefitted from this in the SAF project.

What improvements to communications between sections need to be made?

In my opinion if we enlisted our employees in some of the courses that creates a culture that promote healthy relations attitude, motivation and behaviour that enables mangers and assistants to communicate easily with each other, than we are defiantly accomplishing success that would facilitate relations between sections .

What improvements need to be made in the information provided about the procurement process?

Knowing about it, fallowing all the procurement process, a step that must be seized by all who are involved in the process to participate achieving success. We need to make the process acceptable to people. It's like I said, better training. But have to get the process right, I mean allowing for the changing conditions. That makes the communication and information flow harder.

Can the environmental changes be predicted and planned? How?

I think yes it can be planned, environmental changes are common in project implementation, that is why applying previous strategies, intensive meetings with those who are involved in the procurement process are the best way to deal with environmental changes. The research group is looking at building such change into the process, I think that is what we need to do. It shows that giving people flexibility to act is necessary, but within the approvals required in the Guidelines.

How can the environmental changes be controlled?

It depends on the change, if it is internal then those who are involved in the process would solve it in shorter time, in contrast if it was external. Since it would involve waiting for the suggestive solutions of external departments. Many Departments were involved in the SAF project and we could not control their actions. I true process would cut the Department boundaries. That is what we need. Then everyone will work to one goal.

How can unexpected events be incorporated in the procurement process?

Common unexpected events that takes place in most of procurement projects, in a way we are familiar to them as a result of my opinion, enclosing such unexpected events to the procurements process as a new procedures so we go through them without the need of taking approvals in each project as a case. It is necessary to have such a mechanism to cope with change, as the SAF project created severe delays when authority was necessary for every unexpected event.

Agency:
What parts of the process do you seek to eliminate, and why?

All the procedures that take long time to move the project. Such as studying the contract by the legal department and they are the department that we take the contract in the beginning from.

What do you think are the opportunities for improving the procurement process?

Enhancing the process with software programs would defiantly speed up the process and save time and effort. This is what the research group is calling the contract information system. My job is to pass information and coordinate the concerning Departments. The contract information system would support my work by centralising all the documents in a database, and any changes would be immediately visible to all the concerning Departments.

Who should participate in designing the procurement process?

All the Department that are involved the procurement process, in and out FPD.

Are you satisfied? What improvements need to be made? What suggestions do you have to improve it?

Yes but not 100%, many improvements can be done. Such as setting time frame for each step in the procurement process. Decreasing the Communication gap between FPD and the department we deal with is an important improvement in my opinion. Awareness among employees regarding the importance of the project.

DATASET 4 ARC One Learning Outcomes

Action Research Cycles	Learning Outcome
Cycle One	Understanding the concepts of emergence and deferred action in the context of SAF procurement process.
Experiential Learning (leading to learning in organisational context)	The procurement general guidelines are insufficient for unique business processes. The FPD PP guideline is fragmented along departmental lines.
Human Resource Implications	The need for proper knowledge of the PP among process workers. Lack of qualified personnel. Lack of communication skills.
Technology	Use of latest technology must be formalized.
Action research cycle (leading to knowledge in the form of propositional learning, reported as outcomes of the research)	Propositional learning: Conceptualising unique business processes as complex adaptive systems leads to the recognition of emergence and the need for deferred action.
Input for the next cycle 2	
1. Validated interpretation	Unpredictable events occur in the Procurement Process and are acted upon.
2. Refined questions	How can emergence be formalized? What action can be taken when emergence (deferment points) occurs?
3. Refined methodology	Setting up of the formal Procurement Process Group
4. Redesign the FPD PP guidelines for Deferred Action Trials	The deferment points were tried in ongoing projects.

Based on Kumar (2012)

Appendix B: Cycle Two – Institutionalization of Emergent SAF

Business Process (EBP Design)

DATASET 5 FPD PPQG Sample

Procurement Process Quality Group

Date: 11 Sep 2012	Scoping the FPD Guidelines PP Project; Organizing for improvement
Purpose of Meeting	The need for the idea to redesign the FPD PP guidelines. By establishing a team.
Record of Discussion	This is the first meeting for the idea of creating a team to work on studying the current procurement process and try to redesign it and eliminate any procedure that is delaying it. This idea came from 4 people (the assistance undersecretary, the director of the contract department, myself and a supervisor of divisions in KMOD/FPD) we planned to take a step in designing the PP, so in the first meeting the idea in general, who should join the team , from which departments, how many members from each department, and how long this team will take to design the pp. also I added that the meetings should take place weekly in addition to any more needed in between, the undersecretary gave us the full authority to work on this project as he will be the leader of the team. The director suggested at least 2 members from each department but I objected because we need 4 active employees at least from our sector to get more ideas. They agreed upon my idea.
Action to be taken	A letter of this idea is prepared by the secretary of the Director of the contract department and signed by her and the assistant undersecretary and sent to the undersecretary for his approval on building a team from all the concerned department in the PP to redesign the procurement process
Reflection	According to the current FPD PP and EBP experience and data collected on SAF project, I think there are lots of procedures that can be eliminated and others can be improved, adding new procedures after taking approvals is needed in some stages. Team leader should be able to take immediate decisions without the need for authority. always worthwhile to get another person's opinion about the claim – they can provide a fresh perspective. Team members should discuss the matter with each other. Often discussing the matter with someone not close to the

	problem can prevent a potential dispute from developing into a dispute.
Date: 20 Sep 2012	**Selecting Process owners**
Purpose of Meeting	Discus the approval letter of establishing the team work received by the undersecretary. And decide who would be involved in the team work.
Record of Discussion	We received a letter from the undersecretary approving the idea and supporting it, and gave orders to select the team members
Action to be taken	Letters are prepared by the secretary of the director of the contract department and signed from her and the assistant undersecretary to all concerned departments "legal, financial, logistic and supply, and end users) are set and sent for their action to provide us with 2 members from each department that are involved directly in the PP and influenced in it
Reflection	In this stage, I thought of setting a guideline of the group mentioning the role of each member. The reason for the team is to achieve its aim. The team will be maintained after the design of the new EBP, so it should be composed of permanent members.
Date: Feb 2012	**Forming the Team**
Purpose of Meeting	Forming the team and set the goal and responsibilities of the team work
Record of Discussion	Defining purpose, goals and objectives and being explicit about the group or individual task. Developing clear and understandable **roles** for all group members; Understanding and talking about the **authority** structure(s); We received letters from finance and legal department on the reply to our letter mentioning the names of the members that will join the team Our goal in this team is to take decisions on any action immediately, that is why we need all the group members' decision makers. We checked the names and added them to the team members and still waiting for all departments to reply. Send a letter to the finance Department to change the

	team members. Sending back a letter to the finance department, mentioning the need of decision makers not new employees or beginners. Each member should provide their individual agenda, suggestions and meetings should be held weekly, and if necessary hold others if required. Each member is required to attend.
Action to be taken	Check the receipt of the letters from all departments & Approve the team members and Distribute the role of each member. Minutes of meeting should be signed at end of each meeting and action points to be completed by next meeting to be recorded.
Reflection	Alternative dispute resolution paths are mediation and obtaining an expert opinion. We approved that each new element of the EBP reflecting deferred action should be implemented in ongoing procurement projects, because this would provide immediate feedback to design the EBP successfully. Group members may be changed if they are not active. The actions from the previous meeting should be recorded on a form distributed to each member and they should record their ideas and implementation. If there is a strong dispute in the Group there be an independent external adjudicator. All members should be aware of all FPD Procurement Process guideline, they should study it before we start meetings. Knowledge is an important factor to be considered. Plan: Make every effort to help the Contractor meet their contractual obligations. Compromise on matters that will not adversely impact the project outcome while maintaining control over the contract, cost, quality and timing.
Date: March 2012	**Boxing in the process**
Purpose of Meeting	Study and diagnose the FPD PP guidelines, divide the procedures into categories (cannot delete, must delete) and add deferment points.
Record of Discussion	Discuss and document the FPD PP in which we are creating redesign for it. This will allows us to have a full comprehension of every single step involved in the task we

	are building. Discuss the new process with process workers who will actively implement the new EBP; this will clarify to them the newly designed EBP model and improve its efficient and effective implementation.
Action to be taken	Under secretary and Directors of the Concerning Departments determined the new EBP, by keeping statutory (legal) and regulatory steps and adding new ones including deferment points. Collect and study all unexpected and emergent events FPD faced and send to certain departments to get approvals.
Reflection	They had to comply with statutory requirements but were given scope to add new steps and remove inefficient and ineffective ones, including deferment points, which is a fundamental change in the FPD PP Guidelines since its inception in 1990s.
Date: March 2012	**Deferred systems design**
Purpose of Meeting	Design the new EBP or deferred system
Record of Discussion	Discuss as many of the real dilemmas, issues, situations and constraints within the group. Incorporate deferment points designed in an Action Research Cycle One. Identified deferment points or emergence in previous FPD projects. Then these were incorporated into the FPD Guidelines. FPD PP Group identified relevant places in the PP to insert the deferment points.
Action to be taken	The FPD PP Guidelines was rewritten and the new deferred design steps inserted. These included: (1) Establishing End User Requirements; (2) Finalizing Company's Proposals; (3) Finalizing Draft Contract and Legal Matters; (4) Meeting Audit Bureau Requirements; (5) Tendering Committee Interventions; (6) Political and Governmental Changes and Requirements.
Reflection	The design was iterative to make it the most appropriate. Designing requires understanding the problem well, which was gained through the data collected in ARC One and ARC Two that helped to identify emergence in the procurement process.
Date: April/May 2012	**Implementation**
Purpose of Meeting	To discuss the implementation and evaluation of new EBP.

Record of Discussion	The three current procurement projects where the new EBP was implemented were discussed. The Group felt that the new EBP overcome the time delays and saved effort. Time and effort were over expanded in the previous Guidelines. By being time efficient and reducing effort the FPD goal of meeting military needs was being meet efficiently and effectively. By saving time, it is possible to avoid companies raising prices because of inflation or increases in their own costs.
Action to be taken	To seek final sanction to institutionalize the new EBP in the FPD.
Reflection	The Group learnt an important lesson about rational planning. The FPD Guidelines are rationally planned and the FPD and the stakeholders were incognizant of the effect of emergence on rational planning. The research and the implementation of the new EBP based on deferred action, improved our understanding of the poverty of rational planning. The effect of emergence on rationally planned business processes needs to be considered and included in the business process.

DATASET 6 ARC Two Reflective Diary

Sheet 1	
EBP Design Activity	**Setting up the EBP FP Group**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	**N/A**
Model Feature	**N/A**
Model Attributes	**N/A**
Model Method	**N/A**
Time Duration: **Start time:** **End time:**	**N/A**
Resources	**N/A**
Process Enactment Problem (Designing)	**Emerging Issues** Stakeholder meeting; Identifying experts in PP, with good knowledge. GHQ sent people with no knowledge of PP.
Organizational Change	**Re-design of PP Guidelines**
Experiencing, Reflecting, Interpreting and Tacking Action	People with no knowledge in business processes and procurement processes were recommended to constitute the PP Group but the FPD, the key player, decided not include them.
Evaluating the Action and Assessing the Learning Points	The FPD wrote back to the authorities saying the people with knowledge of process design should form the PP Group. Knowledgeable people are key for successful design of the EBP.

DATASET 6 ARC Two Reflective Diary

Sheet 2	
EBP Design Activity	**Revising the FPD Guidelines**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	Consultant for Legal Department
Model feature	Re-design PP into a flexible process but keep key legally required features.
Model attributes	Managers be allowed to make deferred design decisions in emergent situations
Model Method	By legal and regulatory sanction
Time Duration: **Start time:** **End time:**	N/A
Resources	**Appropriate personnel**
Process Enactment Problem (Designing)	**Emerging Issues** Through the experience of working on the FPD Guidelines, problems were identified. The long time to gather approvals that are involved in each project; delaying it to reach its final stage lead us to discover that some steps could be eliminated, exchanged to work in the benefit by shorting the process. Depending on that, the idea of establishing a team to work came to the surface with the aim to institutionalize the EBP**.**
Organizational Change	To radically change the FPD PP Guidelines to reflect organisational emergence of the procurement process.
Experiencing, Reflecting, Interpreting and Tacking Action	Brief or terms of the Group. The Group should be able to make decisions on redesigning without approvals. The leader of Group, Assistant Under Secretary should be able to take decisions.
Evaluating the Action and Assessing the Learning Points	Teamwork can lead to better decisions and surfacing of problems and better resolution. The need for formal request from the concerning Departments who will join the Group. To keep matters formal.

Sheet 3	
EBP Design Activity	**Allocating the work**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	Appropriate managers and clerks in the concerning Departments.
Model feature	Breakdown and description of work to revise the FPD PP Guidelines.
Model attributes	Detailed stages of work
Model Method	Allocating work by function but within the new FPD PP (Emergent)
Time Duration: **Start time:** **End time:**	One Month March 2012 April 2012
Resources	
Process Enactment Problem (Designing) .	**Emerging Issues** Finance to examine financial aspects, legal to examine legal aspects, End User to be involved in the Group to understand FPD work & to work out how to speed up their responses to FPD requests. FPD is the key player here assisted by representatives from the Legal Department, Finance Department, and the end users. Also engage and manage additional resources when needed; the dispute manager identifies the additional specialists required during a dispute management process and they may include: legal consultants and procurement process consultants End User unable to fully appreciate the process need to consultant and deal with supplying companies. The military do not understand the civilian nature of the FPD organisation; the military expect their orders to be obeyed and fulfilled.
Organizational Change	Amendments to functional work steps required for each concerning Department to reflect the EBP.

Experiencing, Reflecting, Interpreting and Tacking Action	The main goal of the team work is to redesign FPD PP guidelines. With ambition as our motivator, we seek perfection even if we are aware of the impossibility behind it, yet we try. The goal of this group is to reach a revolutionary new process in which many steps are to disappear thus making the whole procurement process shorter, less costly (man power) and time saver. In order to satisfy the needs of the end users, in the most efficient and cost-effective manner. Business process redesign is the method by which an organisation understands and defines the business activities that enable it to function. Process redesign is concerned with redesigning a business' processes to ensure that they are optimized, effective, meet customer requirements, and support and sustain organisational development and growth. A well-designed process will improve efficiency and deliver greater productivity.
Evaluating the Action and Assessing the Learning Points	The quality of teamwork depended on communication, coordination, balance of member contributions, mutual support, effort, and cohesion. When these were good the team worked better, more effectively.

Sheet 4	
EBP Design Activity	**Deferred Systems Design Principle 1: Underspecification**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	Process workers
Model feature	Specification of the EBP or planned action
Model attributes	Specified elements should reflect core structure of the EBP. Underspecification of organisational behaviour
Model Method	Underspecification
Time Duration: **Start time:** **End time:**	*3 weeks* 4 March 2012 23 march 2012
Resources	Director of FPD, Supervisor of Land Forces Contracts (Researcher), three process workers
Process Enactment Problem (Designing) .	**Emerging Issues** Differentiating meta-level specification and operational level specification of the procurement process was problematical Since the procurement process is subject to emergence, the actual enactment or implementation of the process in the future will change, so each process activity cannot be by definition pre-specified.
Organizational Change	Organisational planned action is specified in terms of deferred action theoretic as meta-level specification. The procurement process, or deferred system, cannot be completely specified in dynamical environments. The procurement process is designed and implemented in terms of meta-level specification and operational level specification
Experiencing, Reflecting, Interpreting and Tacking Action	Separating core set of planned organisational behaviours that cannot be permitted to change was cognitively difficult for FPD management. Management is used to dealing with emergent issues as part-and-parcel of the procurement process. The approvals aspects of the procurement process had to be separated and were defined as meta-level specification.
Evaluating the Action and	Underspecification is organisationally efficacious. Underspecifying

Assessing the Learning Points	organisational behaviours is necessary in emergent organisation. This can be achieved by thinking of organisational behaviour in terms of meta-level specification and operational level specification.
Developing, Confirming Theory	The deferred systems design underspecification principle is confirmed by the SAF project experience. The redesign of the procurement process in terms of meta-level specification and operational level specification was logically inherent in the actual activities of the process owner. The approval necessary for procurement are better interpreted as the meta-level specification of the process.

Sheet 5	
EBP Design Process	**Deferred Systems Design Principle 2; Functional Deferment Points**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	Appropriate managers and clerks.
Model feature	Determining Emergent Issues that required deferred action
Model attributes	Deferment Points corresponding to experienced emergence
Model Method	Deferment Points
Time Duration: **Start time:** **End time:**	3 Weeks 4 March 2012 23 March 2012
Resources	Director FPD, Supervisor of Land Forces Contract (researcher) 3 Process Workers
Process Enactment Problem (Designing)	**Emerging Issues** Review previous procurement projects, including SAF; Identify emergent issues; Determine deferment points Given unpredictable events in the procurement process because of emergence, process owner and workers should be enabled to design and implement process activity locally. The issue of who should be permitted to take decisions arose. It was decided that the process owner in consultation with concerning Department heads should be permitted to take decision locally.
Organizational Change	Incorporating deferment points into the FPD PP Guidelines
Experiencing, Reflecting, Interpreting and Tacking Action	After identifying the deferment points from the previous procurement projects, these structural points of emergence, were then tried in existing ongoing projects.
Evaluating the Action and Assessing the Learning Points	Each new aspect of the new EBP, including deferment points will be trailed in existing ongoing projects. In some projects the workshop teams will spend most time analysing existing processes, whilst in others they will spend most time designing improved ones, according to the nature and perspective of the project. The results of the analysis phase are then fed into the design phase, whose purpose is to:

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	• investigate options for achieving improvement by redesigning the processes currently in operation • identify and prioritise areas for improvement • implement process design according to an agreed schedule of the project
Developing, Confirming Theory	Reflecting on the SAF project experience and gathering evidence from previous procurement projects, provided evidence for the need to design deferment points in the procurement process.

Sheet 6	
EBP Design Activity	**Deferred Systems Design Principle 3:Self-organising**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	Appropriate managers and clerks.
Model feature	Self-organising behaviour
Model attributes	The deferred system should be self-organisation. Organisational behaviour should be self-organising.
Model Method	Autonomous local action
Time Duration: **Start time:** **End time:**	3 Weeks 4 March 2012 23 March 2012
Resources	Existing infrastructure of FPD and procurement process. Additional information technology as required subject to authorisation
Process Enactment Problem (Designing)	**Emerging Issues** Learning new management behaviour. Cognizance of and cognitive ability to self-organise is challenging. Such self-organising requires a collective memory of the KMOD/FPD context and its statutory and legal framework of the procurement process
Organizational Change	The emergent procurement process is self-organising. It is responsive to environmental change.
Experiencing, Reflecting, Interpreting and Tacking Action	Review of previous FPD procurement projects reveals actions taken over the whole procurement process that can be interpreted as self-organising in response to environmental change.
Evaluating the Action and Assessing the Learning Points	Responding to environmental change is necessary to make the procurement process efficient. Thinking that adherence to the set FPD Guidelines, as done previously, is efficient is not true. Efficiency and effectiveness of the procurement process is enhanced by responding to environmental change through self-organising.
Developing, Confirming Theory	The theory of deferred action is based on the general complexity theory,

	which confirms that physical and biological systems, as well as socially embedded systems like culture and language, are emergent and self-organising. The evidence from the SAF project and other previous projects reveals that the procurement process is adapted to meet changing conditions; this adaptation is self-organising.

Sheet 7	
EBP Design Activity	**Deferred Systems Design Principle 4:Adaptation**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	Appropriate managers and clerks.
Model feature	The structure and activities of the procurement process is changeable within the meta-level specification parameters.
Model attributes	The procurement process adapts within the parameters of the approvals
Model Method	Deferred design decisions
Time Duration: **Start time:** **End time:**	3 Weeks 4 March 2012 23 March 2012
Resources	Existing infrastructure of FPD and procurement process. Additional information technology as required subject to authorisation
Process Enactment Problem (Designing)	**Emerging Issues** Maintaining the legal and statutory form of the procurement process The Director of FPD welcomed adaptation as a way of enabling her to make the necessary decisions to complete the procurement. The challenge arose in creating a system capable of responding environmental change; and making decisions that do not change the system
Organizational Change	The new awareness among FPD management, process owner, and concerned Department that their previous behaviours were actually forms of adapting to environmental change.
Experiencing, Reflecting, Interpreting and Tacking Action	The practice of adapting is new to FPD. To implement it requires change in mindset. The progressive Director of FPD wants to include adaptive behaviour in the procurement process. She is making use of deferred design decisions.
Evaluating the Action and Assessing the Learning Points	Adaptation by deferred design decisions is a valuable addition to the procurement process. The FPD Director, as the process owner, feels empowered, and can use deferred design decisions to ensure that her vision of 'zero obstacles' to the proper functioning of the Kuwait Armed Forces

	is achieved.
Developing, Confirming Theory	A deferred system, such as the FPD procurement process, is a complex adaptive system, based on the general theory of complexity. The redesign of the FPD procurement process reflects such a deferred system, based on the evidence of the SAF project and other prior FPD procurement projects.
Theoretical Anomalies and Discussion	None Identified. The issue of an adapting business process is new in the literature. The reference in the literature to adapting business processes is limited to the work on deferred systems (Patel 2007; Patel et. al., 2009).

Sheet 8	
EBP Design Activity	**Deferred Systems Design Principle 5: Ethics**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	N/A
Model feature	The social system, the procurement process, is designed jointly by reflective designers and active designers.
Model attributes	Reflective designers and active designers constitute the designers of the procurement process.
Model Method	Reflective designers and active designers
Time Duration: **Start time:** **End time:**	3 Weeks 4 March 2012 23 March 2012
Resources	Relevant legal and stakeholder authorities and senior management of the FPD and concerning departments.
Process Enactment Problem (Designing)	**Emerging Issues**
Organizational Change	Ethical behaviour is now distributed in the procurement process, as it should be.
Experiencing, Reflecting, Interpreting and Tacking Action	Empowering the process owner to take local action also requires awareness of ethics. Keeping the deferred decisions in the hands of senior management ensures proper implementation of ethics and empowers them. FPD is creating a culture of responsibility and the deferred design decision method is an integral part of it.
Evaluating the Action and Assessing the Learning Points	Empowering the process owner is productive because it creates job satisfaction. It also adds value because taking deferred design decisions makes the procurement process efficacious, adding efficiency and effectiveness in a changing environment.
Developing, Confirming Theory	The Director of FPD spoke of 'cowardly decisions' in the interview. Part of the fear was unethical actions. The use of the ethics principles makes decisions transparent and legitimate, enabling the procurement process to grow or adapt.

Theoretical Anomalies and Discussion	None Identified. The ethics principle is borrowed by the theory of deferred action from Banathy's (1996), who argued that people should be empowered to design social systems themselves. Patel (2006) incorporated it into the deferred action theoretic. The principle is logically consistent with the idea that systems are complex adaptive systems, where the adaptation is done through self-organising, which requires distributed ethical action.

Sheet 9	
EBP Design Activity	**Deferred Systems Design Principle 6:Deferred Design Decisions**
Primary Actors	Assistant Under Secretary of FPD, Director of FPD, Supervisor of Land Forces Contracts, Assistant Under Secretary of Legal Department and Assistant Under Secretary of Finance Department.
Secondary Actors	Appropriate managers and clerks.
Model feature	The ability of senior management to respond to environmental change by taking decisions locally.
Model attributes	Taking local decisions
Model Method	Deferred design decisions
Time Duration: **Start time:** **End time:**	3 Weeks 4 March 2012 23 March 2012
Resources	Senior managers and relevant information
Process Enactment Problem (Designing) **Requires change in behaviour.**	**Emerging Issues** Managers commented that taking decisions locally is new to them. They feel uncertain doing so. Deferred decisions require new coordinating between managers and process workers, not specified in the planned action. This is not ad-hoc behaviour, but deferred action or deferred behaviour.
Organizational Change	Use of deferred design decisions. Decision making is formal, as stipulated in the planned action (new EBP Guidelines) and deferred, also stipulated in the new EBP as deferment points.
Experiencing, Reflecting, Interpreting and Tacking Action	Managers said it was radically new for them. They need to get used to it. The deferred action trials will be a test.
Evaluating the Action and Assessing the Learning Points	Deferred design decisions are necessary. FPD, concerned departments and stakeholders agree. The use of deferred design decisions makes the procurement process more responsive
Developing, Confirming Theory	The experience of SAF project and evidence from previous FPD procurements projects shows the need for deferred design decisions. In one sense deferred design decisions was practiced when changes in had

	occurred in procurement projects and approvals sought to respond to them, but it was not recognised as such. Deferred design decisions are now recognised formally in the new FPD Guidelines.
Theoretical Anomalies and Discussion	None identified. Action is taken in social systems which is not part of the plan. Researcher's term this 'instrumentalism' or 'contingency planning'. Patel (2006) terms is 'natural design', as what humans do naturally to survive. They respond to their environment by adapting to their situation. Since the plans humans make, or the systems they create, are not perfect, lacking complete specification, and unable to predict all eventualities, methods are needed to respond to the actual situation in which human find themselves. The deferred action theoretic formalise such natural design as 'deferred action' and incorporates it into formally designed systems as 'deferment points' at which 'deferred design decisions' are taken.

Sheet 10	
EBP Design Activity	Implementing the new emergent procurement process
Primary Actors	Director of FPD, Concerning Department Heads, Section Heads, Supervisors
Secondary Actors	N/A
Model feature	Deferred Action
Model attributes	Responses to emergence
Model Method	Deferment Points and Deferred Design Decisions
Time Duration: **Start time:** **End time:**	April-May 2012 April 2012 May 2012
Resources	Appropriate managers, supervisors and personnel
Process Enactment Problem (Designing) **N/A**	**Emerging Issues** Resistance in groups is natural. There were problems communicating across boundaries or functions of the process. These disagreements and difference in opinions were resolved by reasonable discussion. The FPD leaders or champions of change needed to understand the nature of resistance and how their actions and the changes they are implementing effect the people and organizations they are trying to change. The new aspects of the EBP made tasks, roles and authority relationships unclear. The new deferred aspects had to be carefully incorporated to create the new EBP to reflect organizational emergence and benefit everyone involved. For the implementation to be successful it was necessary to adhere, and where necessary, to change the organizational culture.
Organizational Change	Conceptualisation of the procurement process as a complex adaptive system. Implementation of deferred systems design as the FPD PP Guidelines, taking deferred design decisions through deferred action.
Experiencing, Reflecting, Interpreting and Tacking Action	Explore the deferred system, looking for incongruence, inappropriate roles, tasks and decision boundaries. Use evaluation interviews to rectify these.
Evaluating the Action and	The FPD Guidelines are rationally planned and the FPD and stakeholders

Assessing the Learning Points	were incognizant of the effect of emergence on rational planning. By including deferment points in the FPD Guidelines, it improved the efficiency of time taken and effort involved. The effect of emergence needs to be considered in rational plans.
Developing, Confirming Theory	The deferred action trials reflected well the actual situations encountered in the trailed procurement projects. Unpredictable events occurred which were addressed using deferred design decisions. In one procurement project.
Theoretical Anomalies and Discussion	None Identified. The deferred action trials confirm the explanation of organised action provided by the deferred action theoretic (Patel, 2006). The experience of the new emergent procurement process by process owner and process workers, as evidenced in the interview data, is that it facilitates their work in response to unpredictable events and makes the procurement process time and effort efficient. The new emergent procurement process properly reflects actuality within the constraints of the formal statutory and legal requirements.

DATASET 7 Deferred Action Trials and Six Deferment Points

DEFERRED ACTION TRIALS

The PPQG meetings were useful to identify deferment points. During the discussion researcher pointed out potential deferment points that could be written into the new FPD EBP. The FPD PP Guidelines was rewritten and the new six deferment points enabling deferred design were inserted. The new FPD EBP was trailed on four procurement projects, shown in the table. The table shows the actual deferment points used to make deferred design decisions in the second column and explains the outcome in the third column.

The deferment points are:

(1) Establishing End User Requirements;

(2) Finalising Company's Proposals;

(3) Finalising Draft Contract and Legal Matters;

(4) Meeting Audit Bureau Requirements;

(5) Tendering Committee Interventions;

(6) Political and Governmental Changes and Requirements.

Project Name (On going projects)	DA Trials New Deferred Design	Outcome
Supply of Spare Parts	Establishing the End User Requirements	There were some queries from the Company because the specifications and conditions were not clear in the Statement of Work (SOW). These were addressed as deferred action.
	Finalizing Company's Proposals	Since the SOW was unclear on the specification and conditions; the Director decided to consult as deferred action with the company to finalize the proposals.
	Finalizing Draft Contract and Legal Matters	All the requirements to draft the contract were considered and hence the contract was finalized without much issue by the company. So, there was no deferred action involved.
	Meeting Audit Bureau Requirements.	All the documents required for the approvals were provided to Audit Bureau in one letter and hence the approval was obtained within a short period. So, there was no deferred action involved.
Integration and Installation Contract	Establishing the End User Requirements	The End User decided to change the requirements. The Section Head in consultation with the FPD Director met with them as deferred action and clarified the new requirements.
	Meeting Audit Bureau Requirements	The new documents were sent to Audit Bureau, who requested as meeting before granting the approval. This was enacted as deferred action and hence the approval was obtained speedily.
	Political and Governmental Changes	Since all the documents were kept up to mark and sent to the Minister office for signing there was no delay in signing of the contract. There was no deferred action involved.
Supply of Vehicles	Establishing End User Requirements	The SOW was unclear lacking some essential details of specifications required by the end user. Even the terms and conditions to submit the proposal was unclear without doubts. The Section Head sought the FPD Director's approval as deferred action to meet with the end user to clarify requirements.
	Tender Committee Intervention	The SOW was sent to the tender committee along with the report from GHQ about the technical proposals which resulted in quick decision and approval of the

		proposal. This intervention was as deferred action.
	Finalizing the Company Proposal	The proposal did not mention some critical end user specification, hence it was necessary to intervene as deferred action. The FPD Director acted as the lead with support from the Section Head to finalize the proposal.
	Finalizing Draft Contract and Legal Matters	The Draft Contract is in the process of finalizing because all the legal requirements of the draft contract are considered and will be negotiated with the company accordingly. Expectation is high of the draft contract being finalized soon. The Legal Department raised some issues which the FPD managed as deferred action; the FPD Director met with the Legal Department Director to resolve the issue.
Maintenance Project	Establishing End User Requirements	As deferred action the SOW was amended beforehand taking into consideration the site survey and the meetings with the company to clear their doubts and queries. Resulting in sufficient time for the company to prepare their proposals.
	Finalizing the Proposals	Since all the requirements and specification queries were answered in the site survey and the meetings as deferred action, the evaluation of the proposals were quick. The report of the submitted proposals from the company was established within a short period.

DATASET 8 Evaluation Interview Questions

Evaluation Questions

These questions are for evaluating the new EBP designed to account for complexity and emergence. These questions collect data on the new EBP design.

Describe the difference that the new EBP now makes to the procurement process?

Do you think unexpected/emergent events can be managed better with the new EBP?

What do you think would be the benefits of an EBP procurement process?

What kind of unexpected/emergent problems can be resolved by using an EBP?

What are the problems that could occur by implementing EBP?

Interview Questions

Interviewee: 06
Position: Manager (Director)

<u>Evaluation Questions</u>

Describe the difference that the new EBP now makes to the procurement process?

We expect the new EBP could help to improve the quality of our work. We now recognise that the planned procurement process is effective when it recognises emergence and deferred action. This is significant understanding for us. We struggled to cope with it previously, thinking our planning is not effective. Equally significant is that our procurement process will adapt to the environment, rather than remain rigid. It will be an adaptive EBP. This does not mean we sideline the Guidelines, it is adaptive within the Guidelines.

It is to our expectations and responding well to unexpected events. We now have more flexibility, not because of more autonomy, but because we understand better how planning can work alongside emergence. The first AR Cycle helped by thinking about deferment as active action within the Guidelines, or as we now say deferred action. Then, the second AR Cycle meant we put it formally into practice. The procurement process is now transparent where emergence is concerned. We know about it and understand it, and can deal with it with deferred action.

The new EBP has made our cowardly decisions more transparent by incorporating them into the procurement process. I said about cowardly decisions earlier, with any work where money is involved, some people in leading positions tend to be too afraid to act boldly in taking decisions, as they fear the consequences of it. If you are not with a great experience in this field, then you try your best to cover your back by taking extra steps (in accordance

with the Law). I do not object to abiding by the law, but I think that we need sometimes to be courageous in taking decisions in favour of the work.

Formally recognising deferred action in our procurement process is a way to make those cowardly decisions not cowardly anymore. Now we recognise them as necessary because of emergence and need to take them. As our research groups and Process Group have shown, we need to adapt to the environment in order for our decisions to be effective.

What do you think would be the difference to the PP if we allowed it to change according to environmental changes?

It is very difficult to set these changes in writing as it is a well-known fact that with the change in command, we stand on a 50/50 ground. If the new command wishes a change in the known policy, then not much can be done. Yet if the new command maintains the same policy, then progress will be a sustainable policy. The procurement process needs to change accordingly. It will work better because we will fulfil the End User requirements efficiently.

Do you think unexpected/emergent events can be managed better with the new EBP?

Definitely yes because the new PP is still taking shape and is open for good suggestions and ideas. The idea of deferred action means that all the concerning Departments are aware that unexpected change happens and we need to deal with it flexibly. The SAF project wouldn't have taken so long.

What do you think would be the benefits of an EBP procurement process?

The result will be a faster and time/money saving process. As I said, we now have common understanding of emergence. We do not need to fear unexpected events, we can face them with deferred action, formally recognised. The long delays we experienced in SAF should not occur in future similar large projects. The procurement will be a true process we will all work together across concerning Departments. We will comply with the Guidelines, but we will also not be cowardly to make the right decisions.

What kind of unexpected/emergent problems can be resolved by using an EBP?

I think all kinds. Unexpected or emergent problems cannot be predicted, it comes suddenly whether we use FPD PP guidelines of the new EBP. But I can say it will be less by using EBP because our goal in the beginning is to formally manage emergent problems. The ideas of deferment points and deferred action will help. The political change, End User change, supplier change, and even internal change, all can be handled as deferred action, because we recognise emergence formally, and we know that our procurement process has to adapt to it.

What are the problems that could occur by implementing EBP?

The main stakeholders have recognised that process is important and we have set up the Procurement Process Group with the sanction of the Ministry of Defence. The Assistant Undersecretary gave the authority. It will be a problem to get Concerning Departments to work together in the process. There were long delays in the SAF process because Concerning Departments resisted change. Now the formal Procurement Process Group, authorised by the Ministry of Defence will be the basis of cooperation between us all. We know about deferment points, but finding them and incorporating them into our Guidelines formally at a later stage will be a challenge. Test and trial is the only way that will help us to evaluate our work. Upon discovering any problem, we are sure that a solution can be found.

Interview Questions

Interviewee: 11
Position: Supervisor

Evaluation Questions

Evaluation Questions

Describe the difference that the new EBP now makes to the procurement process?

Changing the FPD procurement process according to the environment changes is a great step for improving the FPD Procurement process and speeding it up, such action will be associated with big difference that will occur such as saving time and effort.

Do you think unexpected/emergent events can be managed better with the new EBP?

I think that those unexpected emergent events should not attend in the first place, in my opinion we should avoid falling in such mistakes that delays the whole process. And study the preparation of those unexpected events, to create a live test and demonstration to what it could result in as each event acquires.

What do you think would be the benefits of an EBP procurement process?

EBP would help defining the system requirements and assist in prioritizing requirements, the result of implementing EBP will help us understand the new methods of paving the way to acknowledge the new utilization of models to get better development.

What kind of unexpected/emergent problems can be resolved by using an EBP?

In my opinion, no doubt that EBP would help us eliminate some of the routine procedures that extend the process. It will clear out the unexpected to enable us to solve the problem.

What are the problems that could occur by implementing EBP?

There are many but we will deal with them. We overcome the first when the formalisation of the EBP was agreed by the stakeholders. We need ways to find deferment points to really make it work. We used previous procurement projects and SAF itself to see what events were unexpected and used them in the SAF project. As I said, we need better decisions to make the work high quality, move away from cowardly decisions. Making EBP work means practicing it well. We need managers to learn more about it and work within the Guidelines.

Interview Questions

Interviewee: 01
Position: Process Worker

Evaluation Questions

Describe the difference that the new EBP now makes to the procurement process?
I think if we consider the environmental allowance to go with the PP it will speed up the process instead of waiting to the bureaucratic approvals of other departments constantly. The PP can react better to unexpected events. In the SAF project the deferred decisions helped to speed some approvals. We have more knowledge of unpredictable events because of the deferred action aspect of the process. It has shorten the period of each step, because some steps take very long time and I think it does not need this long time

Do you think unexpected/emergent events can be managed better with the new EBP?
As I said, yes. I think that if it worked or did not work in the benefit of the process at least it will establish an elimination of ambiguity if the event attended and also publish some kind of evaluation criteria to each individual event. There was a reduction in the special meetings when deferred decisions were included.

What do you think would be the benefits of an EBP procurement process?
I think EBP would save time and reduce money, also it will reduce the effort we as employees do by following the very long PP guideline procedures. It is helping us to reduce uncertainty by knowing that we need to respond to it. It is helping manage it. Procurement of services should be conducted in a way that imposes the same level of accountability and responsibility on a service provider as would exist if the agency carried out the service itself.

What kind of unexpected/emergent problems can be resolved by using an EBP?
Most people does not respond good to the idea of change, since they are familiar with the current process, than they are not open to new methods. The normal categories political, supplier and end user

requirement changes, all can be included. The deferred action means managers can make decisions quickly and keep in the Guidelines.

What are the problems that could occur by implementing EBP?
Much more learning is needed. We are used to waiting, now we have to act quickly. People have to be more aware of cooperation across concerns Departments. We need better way to find the deferment points, by studying previous procurement projects to see what unexpected events occurred. The concepts of efficiency and effectiveness have not substantially changed since the 2002 Guidelines, although greater emphasis has been placed on risk management and liability.

Interview Questions

Interviewee: 02
Position: Process Worker

Evaluation Questions

Describe the difference that the new EBP now makes to the procurement process?

The allowance of such difference could create a qualitative performance in terms of how to act toward this PP and could end up applying detached strategies that should be used as each environmental change occurs. Quality of work has improved because we can act faster, we don't have to wait for special meetings and react. Instead of reacting, we can plan for unexpected events.

Do you think unexpected/emergent events can be managed better with the new EBP?

Yes it can managed better, when we collect all common unexpected events that we often face in most of our project that work as a Guideline alert to add it in the FPD procurement process. We are looking at previous procurement projects to collect our experience of unexpected events. These will be used to understand unexpected events.

What do you think would be the benefits of an EBP procurement process?

Reduce acquisition time and cost, and improve services of performance to the end-users. The quality of our work is better. We will be efficient and react better to unexpected events. Let's say we are managing uncertainty.

What kind of unexpected/emergent problems can be resolved by using an EBP?

End user changes in requirements. This is very important because they change their requirements once the procurement has started. The delays in the SAF project become less with deferred action. Also, suppliers' changes to details of contracts are better managed by deferred decisions. Again, earlier SAF's suppliers delayed progress because of this, but when we started to use deferred decisions, it was easier to deal with it.

What are the problems that could occur by implementing EBP?

Making the EBP permanent, maybe the new unexpected event of using EBP will require the consents of more legislative dept. which will require longer time for the process. Also, increasing cooperation between concerns department is difficult. We need training to work together in the process.

Interview Questions

Interviewee: 04
Position: Coordinator

Evaluation Questions

Describe the difference that the new EBP now makes to the procurement process?
I think considering the idea in the first place would work as a practice in terms of working for the benefit of the process or against it. In SAF we did better work, because decisions about unexpected things become quicker. I think quality of the contract has improved, we do not need many alterations now. That is most important.

Do you think unexpected/emergent events can be managed better with the new EBP?
Yes, Instead of dealing with each unexpected event as an individual case and taking approvals on it in each project, we collect them all and take the approvals needed from all the concerned departments then add them to the FPD procurement process. This is the deferred approach. It is working better. Managers are making deferred decisions but still we have to get approvals, so it is working better.

What do you think would be the benefits of an EBP procurement process?
EBP procurement process will facilitate the performance objectively and achieve success in terms of providing principles that will be not difficult to user participations. Yes, are performing better. As I said, quality of contracts has improved, we are making fewer changes. SAF started to see less change after the deferment points i.e. deferred decisions.

What kind of unexpected/emergent problems can be resolved by using an EBP?
EBP implementation is a potential model that could increase the productivity of our performance, guiding us through area of sudden unexpected events that will help us eventually resolving any emergent problem. They are talking of extending it to other government departments too.

Interview Questions

Interviewee: 05
Position: Assistant Manager

<u>**Evaluation Questions**</u>

Describe the difference that the new EBP now makes to the procurement process?
The difference to the PP if we allowed it to change according to environmental changes; is a description of a complete model procurement process that can be used as a guide by governments, adding important changes according to the environmental changes. And eliminate all steps that are not applicable to all procurements. This has worked in later parts of SAF. The environmental change was handled with deferred decisions. It reduced waiting times. Now, managers are working better I think.

Do you think unexpected/emergent events can be managed better with the new EBP?
Throughout the years, those unexpected events occurred repeatedly which made them lose the features of being unexpected, so it could be dealt with as a common known event, the problem lies in how long would it take us to manage it better. So, we have to learn how to react, i.e. make the right decisions.

What do you think would be the benefits of an EBP procurement process?
The implementation would obtain a frequent update to those who are involved in the process enhancing their applying to ensure timely and realistic decisions. We had better quality in SAF when we used deferred actions. The contract quality improved, few amendments after we started deferred decisions.

What kind of unexpected/emergent problems can be resolved by using an EBP?
The idea of an expected emergent EBP as a whole is jeopardized to failure since it is under experiment, and will get year to be implemented efficiently. Yet the fact of improving the process would become a fact that could not be denied.

What are the problems that could occur by implementing EBP?
Reacting faster means process workers have to work faster too. This is a problem is our culture. People are not easy to change. We had long delays before in SAF. Now we have to move with the deferred decisions. Many of our people are still too slow. I think we need training on this EBP.

<u>**Interview Questions**</u>

Interviewee: 07
Position: Operational Process Employee

<u>**Evaluation Questions**</u>

Describe the difference that the new EBP now makes to the procurement process?
In my opinion it may go both ways, if the difference has the impact of being negative it will delay the process, but in the same time it could go with the current draft, actually this could enhance the productivity of the process to the positive way. It has helped in SAF, made it efficient. I got work done better when I didn't have to wait. It's like I knew what was needed. But will it work in other procurement projects.

Do you think unexpected/emergent events can be managed better with the new EBP?
If those unexpected events kept being repeated it could end up resulting in creating some kind of preparation methods of how to manage dealing with those events in the benefit of EBP. This is the deferment point they call. I think it can be managed. We have less special meetings in later SAF.

What do you think would be the benefits of an EBP procurement process?
In my opinion, it will Increase productivity and reduce costs. I experience we are working better in the process, more like a team.

What kind of unexpected/emergent problems can be resolved by using an EBP?
I think the problems will appear only in the beginning of implementing the EBP, by time everyone involved in it will get used to it with time. Still, some people in concerns department are slow. I think we need training.

What are the problems that could occur by implementing EBP?
I don't know exactly. Coordination is easier but still cooperation is not there. As I said, we need training.

Interview Questions

Interviewee: 08
Position: Process Worker

Evaluation Questions

Describe the difference that the new EBP now makes to the procurement process?
Merging both PP and environmental changes is creating a model that could work widely as the new Guideline. In SAF, after we started deferment points, it was easier for managers to respond to environmental change. They made decisions instead of arranging special meetings to see what to do. Now, the unexpected events are not so unexpected, if you know what I mean. If we make it work well here it can be used by all governmental organizations.

Do you think unexpected/emergent events can be managed better with the new EBP?
In my opinion those events could conclude in issues leading to inefficient functional specifications that could not work for the benefit of the process. The deferment point helped in SAF but it could change things.

What do you think would be the benefits of an EBP procurement process?
EBP is maintaining employee competency and knowledge of new technology through the attendance of comprehending EBP procurement courses. By seeing the new emerging events we do not appear incompetent. This is good for my morale.

What kind of unexpected/emergent problems can be resolved by using an EBP?
Unexpected problems are featured with not being predicted and invisible. So EBP could work as a defending preparing method toward solving it. We saw how it helped in the later years of the SAF project. My work did not change so much, there was change but I did not feel out of control.

What are the problems that could occur by implementing EBP?
We are learning. We do not know how it will work with the Guidelines. The SAF project had less meetings in the later part because of the EBP. I think managers are sometimes unsure. You know having new power is itself uncertain, if you know what I mean. Deferred decisions are like taking approval from themselves, when they are not used to it.
Interview Questions

Interviewee: 09
Position: Interpreter

Evaluation Questions

Describe the difference that the new EBP now makes to the procurement process?
Providing background information of the environmental changes and adding it to the FPD Procurement process will result in good procurement practices. We have just started to use it. It is helping by making us aware of change. I think interpretation activities will be better, we can go ahead and start which gives us more time to produce quality contracts. Before, we had short time to complete.

Do you think unexpected/emergent events can be managed better with the new EBP?
In my opinion, it is being done in the new EBP. Now, all those involved are being included as a true process. As I said, our work is better quality. They are looking at past procurement projects to identify likely unexpected events, which they include as deferment points. You know, where we can expect the unexpected. Managers then make decisions when they arise, instead of waiting for other authorities.

What do you think would be the benefits of an EBP procurement process?
I think that applying EBP would support the essential management, having knowledgeable skill procurement employees that will be specialized understanding the business process practices. It should improve the time it takes to complete the process and manage the unexpected events better. Managers can now make deferred decisions, they like that. SAF suppliers were worried about details and instead of waiting, managers acted by deferred decisions. It makes our work better too.

What kind of unexpected/emergent problems can be resolved by using an EBP?
Most categories, like political changes in Ministry or government and supplier unable to meet requirement and end user changing requirements. Difficulty will be getting some approvals to add or eliminate some procedures. But this will be supported by stakeholders' involvement.

What are the problems that could occur by implementing EBP?

As I said, managers are learning about taking deferred decisions. They are unsure. I see that in the translations we do. They need to be more confident.

Interview Questions

Interviewee: 10
Position: Clerk/coordinator

<u>Evaluation Questions</u>

Describe the difference that the new EBP now makes to the procurement process?

Overall, I am not sure it could be beneficiary, but despite the fact that those changes are common and departments are familiar with, it could go both ways, either to postpone the process until the final stage more than it's already being delayed or it could save time to shorten up the period of the PP. In SAF it did work by giving managers deferred decisions. The deferment points identified areas of potential change, and when they occurred managers made deferred decisions. But sometimes they were reluctant, because they are not used to it. So, they will need to become confident.

Do you think unexpected/emergent events can be managed better with the new EBP?

Yes, by practice, I think when we add the emergent events to the FPD procurement process formally we can then deal with it easily and quickly. You know, it helped in later parts of SAF. Now, making it formal as the research group is doing will help. The deferment points make it manageable, I mean unexpected events.

What do you think would be the benefits of an EBP procurement process?

I think it will represent a great deal of knowledge and experience reducing regulations and routine policies. Mainly, we can plan the unexpected, which sounds strange. But deferment points is not exactly predicting, only making space to act to unexpected events. That means we have better knowledge and my coordination activities are easier to do because managers are not waiting or uncertain.

What kind of unexpected/emergent problems can be resolved by using an EBP?

EBP process will go through different channel of scrutiny, no wonder that some of channels could accept and some could rejected. I mean, the concern departments now need to work in the process, not separately. So, they too will need to identify and manage their unexpected events. They need to be committed like we are in FPD.

What are the problems that could occur by implementing EBP?

As I said, concerns department are new to EBP. They need to work with us. They learnt about EBP in the SAF project. Now they need to practice it for all our procurement, especially large projects like SAF where much unexpected can happen. Another problem is finding the deferment points. We are looking at past procurement projects to see what happened that was different from the Guidelines, what we did and when it happened. This will help build a bank of unexpected events. This will be formalised in the new EBP.

DATASET 9 ARC Two Learning Outcomes

Action Research Cycles	Learning Outcome
Cycle Two	Managers encounter many changes in which they find it difficult to take action. ('The more you want to make sure that you are doing the right thing, the more cowardly decisions you take thus giving us more steps to be followed." Director of FPD)
Experiential Learning (leading to learning in organisational context)	Complying by set rules in the context of unexpected events, leading to change in the FPD Guidelines.
Experience of Deferred Action	Managers can make decisions in response to environmental change. This helps to achieve the FPD goal. ("Our main goal is to provide the army with zero obstacles. The goal is to facilitate the armed forces' work and the outcome is to secure the required defence equipment." Director of FPD)
Organizational Change	FPD PP Guidelines enacted as CAS Complex Adaptive System. The PP is set across the concerned functional Departments and Authorities. ("No matter how accurate you create a system, the world we live in is changing all the time, therefore we get a touch of it from time to time. I think this cannot be predicted and we have to learn to manage it." Director of FPD)
Action research cycle (leading to knowledge in the form of propositional learning, reported as outcomes of the research)	Propositional learning: Process efficacy requires contextual decision-making by managers to respond to environmental changes.
Further Research and Impact	
Extend the research to other divisions of KMOD to understand and device metrics of emergence and deferred action for effective contextual decision-making. The researcher's interest in researching TODA metrics and adding sophisticated measurements of the FPD EBP.	

Based on Kumar (2012)

Appendix C: Actors In the Problem Situation and Redesign of EBP

Actor	Role
Undersecretary	Undersecretary is responsible for all aspects of procuring and supplying military requirements from foreign markets in accordance with the decrees, laws, regulations and the ministerial decisions that monitoring this process.
Assistant Undersecretary	Assistant Undersecretary sets the administrative and the supervising regulations for all employees of the FPD. She assists Undersecretary to supervise, plan, coordinate, follow up and evaluate procurement work and is aided by the Technical Office. Assistant Undersecretary assists the Undersecretary to complete administrative work and supports with secretarial work. Technical Office provides consultation support on the requirements and supplies contracts of the different military arms of the KMOD.
Director of FPD	Director of Contracts and Foreign Procurement Division(FPD), who is responsible for procuring and providing the military requirements from foreign markets. Director of the FPD is the coordinator and the general supervisor for all the works of the division. She is the authority on the relevant regulations and provides the directions that regulate the administrative, financial and technical works of the Controllers under her authority. The Director also stipulates their working techniques. Director has a Controller for each of the land, air and sea military forces.

Controller of Land Forces Contracts	Responsible for all contractual procurement for the land forces. Controller of the FPD supports the director in the processes of planning, directing, coordinating and carrying out all the activities related to the purchasing of the weapons. He clarifies and communicates the requirements of the military forces in coordination with the concerned sectors.

Appendix D: Ethical Approval

Brunel Business School
Research Ethics Form
PhD Students and Staff

Any research that involves human participation, the collection or study of their data, organs and/or tissues, and that is carried out on Brunel University premises and/or by Brunel University staff or Brunel University students under the supervision of Brunel University staff requires ethical approval.

This document is designed to help you ensure that your research is conducted in an ethical manner. It is the "Ethical Clearance" part of your research (whether it requires funding or not). You need to submit this form with your research documents. In addition to this and other requirements for your project, you might need to submit three documents – see Ethics Submission Guidelines for PhD-Staff for consideration by BBS Research Ethics Committee (via your supervisor if you are a PhD student:

1. A Participant Information Sheet (created by you)
2. A Participant Consent Form (created by you)
3. A Company Confidentiality Agreement Form (created by you, not always required)

Section A – Information About You and Your Research Project

This is used to identify you and to give us a brief overview of your project.

Name: Shamayel Al Sabah	**Contact email address:**
Date: Click here to enter a date.	
Name of Supervisor (if PhD student): Dr Nandish V Patel	
Title of Research Project: Designing Emergent Business Process: Action Research on the Small Ammunition Factory of the Foreign Procurement Division of Kuwait Ministry of Defence	
Describe the Data Collection Process (200 words): Action research will be carried out. Data will by collected by interviews and the action researcher's reflective diary.	

Section B – Identification of Ethical and Risk Issues

Most research projects involve a number of potential risks (either to participants or yourself). The more risk factors that can be identified at the start, the easier it will be to guard against them. Answer the questions below to identify potential risks in your project. Please refer to the guidelines if you are unsure about your answer to any of these questions. Please indicate your answer by selecting either "Yes" or "No" options.

1. Is it possible participants might have been told to co-operate rather than freely volunteering? Sometimes it is difficult to ensure interviewees do not feel "obligated" in some way. You will need gatekeeper consent for this.	Yes ○ No ⦿
2. Is it possible that participants might be under eighteen years of age? Normally minors are not legally able to give their consent to participation.	Yes ○ No ⦿
3. Is it possible that participants might be required to discuss sensitive issues (e.g. private or of criminal nature)? Such discussion could put yourself or the participants in danger.	Yes ○ No ⦿
4. Is it possible that your research might cause clinical or psychological harm to participants or yourself? This may include discussion of topics of sensitive nature or prolonged strenuous psychological or physical pressure for participants and/or yourself.	Yes ○ No ⦿
5. Are all or some of the participants unable to give their own consents Including organisations with gatekeepers (e.g. schools and prisons); or vulnerable participants (e.g., children, people with learning disabilities, your own students).	Yes ○ No ⦿
6. Will you be recording the identity of any participants (e.g. their name or employee number)? Sometimes it is difficult to guarantee anonymity. If so, you will need explicit consent.	Yes ○ No ⦿
7. Is it possible that identity of participants could be traced (e.g. their name or employee number)? Sometimes anonymity can be broken by combining information from more than one source. If so, you will need explicit consent.	Yes ○ No ⦿
8. Will you be storing traceable participant data on a laptop or in a file at any point during and/or after the duration of your project? There is a risk if a laptop or file is lost or stolen.	Yes ⦿ No ○
9. Is it possible that your company will want the research kept confidential? Some companies allow research only on condition that the results are not made public. If so, you will need to fill in Company Confidentiality Form.	Yes ○ No ⦿
10. Is it possible that copyright material might be copied? It may be necessary to get permission to use it.	Yes ○ No ⦿
11. Will the study involve recruitment of patients or staff through the NHS? If you answered 'Yes', you will have to submit an application to the appropriate external health authority ethics committee, **after** you have received approval from the School Research Ethics Committee.	Yes ○ No ⦿

- If you have answered 'No' to all questions, you may upload **the completed form to your supervisor via uLink** (see submission guidelines)**.**
- If you have answered 'Yes' to **any** of the questions **1 – 5**, you will need to describe more fully how you plan to deal with the ethical issues raised by your research. You should use the University Ethics Application form by clicking on this link: Application Form for Research Ethics Approval. You will need to submit the form via uLink.
- If you have answered 'Yes' to **any** of the questions **6 – 10**, please tell us in the box below how you are planning to mitigate against these risks. On completions you may upload **the completed form to your supervisor via uLink** (see uLink submission guidelines).
- If you answered 'Yes' to **question 11**, you will have to submit an application to the appropriate external health authority ethics committee, **after** you have received approval from the School Research Ethics Committee.

Describe which risks (6-10) you have said "Yes" to and your mitigation plans:
Item 8. The data will be kept on my private portable and backup USB. Both are kept in my possession and home for my private use only. No one else has use of my computer.

Section C – Declaration

Please note that it is your responsibility to follow the University's Code of Research Ethics and any relevant academic or professional guidelines in the conduct of your study. **This includes providing appropriate information sheets and consent forms, and ensuring confidentiality in the storage and use of data.** We should be notified of any significant changes in the protocol over the course of the research and may require a new application for ethics approval.

You need to indicate that you have carried out various activities prior to submitting this form along with your proposal.

I have read through and understood the Brunel University Code of Ethics (available at: http://intranet.brunel.ac.uk/registry/minutes/researchethics/CoEv6.pdf**).**	Yes ⦿ No ○
I have written and attached a Participant Information Sheet ONLY needed if your research involves direct data collection from people.	Yes ⦿ No ○
I have written and attached a Participant Consent Form ONLY needed if your research requires *explicit* consent.	Yes ○ No ⦿
I have written and attached a Company Confidentiality Agreement Form Only needed if your research involves a company that is concerned about information being made public.	Yes ○ No ⦿

For PhD students ONLY

I confirm that I am the supervisor mentioned in Section A and that I have discussed and fully support the application submitted by the PhD student named in Section A and confirm that the information entered is correct. This to be answered by a supervisor in case the applicant is a PhD student.	Yes ○ No ⦿

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