

Research Background Note

Identifying the critical success factors for major government projects that incorporate IT or “digital” developments

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About this note

Brunel University London is preparing funding proposals to support a multi-disciplinary study to identify new critical success factors for major projects within the UK government involving information (or “digital”) technologies, by interpreting them as political interventions rather than rationalisable IT developments or institutional changes. This study is timely as two independent reports on recent project failures illustrate how changes to the high-level governance and management of such projects introduced since 2010 have significantly increased the risk of failure, rather than reduce it as intended. This note sets out an analysis of these reports as a preliminary step that illustrates the urgency and importance of resetting the project control system around factors that improve the chances of success. It concludes by proposing objectives for such a study.

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Introduction

Research into the causes of failure of government projects involving information technology (IT) has typically applied lenses derived from private sector practice or regarded them as IT projects, when in fact they are complex implementations of government policy carried out in a political setting. In the last decade, no research has attempted to systematically study the interrelationships and dependencies between the critical success factors (CSFs) that make such projects successful. Rather, much of the attention has been on failure. Further, as regards the UK, little attention has yet been given to analysing the impact of changes introduced since 2010 in comparison with the pre-2010 period.

Two government projects involving IT (or “digital”) have been studied in depth this year (2016) by independent institutions. These studies reveal issues about the management of such projects within central government that are systemic and extend beyond these individual cases. Many of the problematic issues relate to interventions introduced by the Cabinet Office after 2010 that were intended to improve the execution of such projects but in fact made matters worse. The Parliamentary Public Accounts Committee (PAC) investigated the implementation

of a system for calculating EU-funded subsidies to farmers (CAP-D) [1], and the Institute for Government published an analysis of the programme to reform the welfare benefits system (Universal Credit, UC) [2].

Prior to 2010, several decades of learning about how to manage policy implementation projects and IT had evolved into a complex system of interconnected processes, notably but not exclusively the Gateway review processes from 2000 onwards. This note concludes that while it was of course not perfect, nor always perfectly implemented, a number of changes made to parts of the system out of context of the whole, has damaged its effectiveness. Many stemmed from the dominance of the discourse around “digital”. Therefore, it is necessary to reassess how to improve the current situation, and this conclusion is part of the supporting argument for Brunel’s proposed research.

Method of this prior analysis of secondary sources

This conclusion is reached by drawing on five interconnected aspects of managing large projects that involve IT, to which many of the processes concerned relate, and using them as lenses to inspect the findings of the two independent reports. They are selected here as helpful for a textual analysis of these secondary sources: they are neither comprehensive for a general situation nor indicative of enquiries in the research that is proposed, as that is intended to go far more openly and widely into organisational, capability, policy, and political dimensions. They are as follows.

1. The contribution of IT to project objectives. What is the technology for? In central government, its crucial role is in enabling the administration of policy and legislation (such as collecting taxes or paying benefits). IT also provides tools for the professional work of civil servants and general organisational functions (HR, accounting, etc).
2. Project approval and assurance. How does an organisation approve and monitor major projects, including their IT components? What are the roles of business cases and assurance processes (in UK central government, the HM Treasury and Cabinet Office procedures)?
3. Programme and project management. How are programmes and projects defined, designed, governed and managed? What standards, methods and toolkits are in use?
4. The acquisition, implementation and operation of IT. How is IT organised, governed, managed, procured and implemented? What standards, methods and toolkits are in use?
5. Capability. How are the skills to do all the above acquired and maintained? How is the recruitment, management, organisation and deployment of human resources, and professional development, all done?

The contribution of IT to project objectives

The Government review of IT projects in 2000 [3] following repeated failures in the 1990s determined that government projects like the two examined were the implementation of policy and legislation, not “IT projects”. More precisely, they are complex realisations of policy instruments executed in an indeterminate political and legislative context [4]. They have different characteristics to implementing internal statistical modelling or accounting systems, for example.

Both project reports state or imply that there was a focus in the projects on the technical component, particularly the web front-end (a result of the ambition of “digital transformation” [4]). Debates about IT procurement and development methods (waterfall vs agile) appear to have been intense and contentious, and bled over into the dynamics of the projects as a whole. The PAC asserted that this caused a loss of focus on the policy objectives of the CAP-D project, and lack of clarity of these was also a reported feature of UC. The review in 2000 established that not being clear on what you are trying to achieve (the policy and administrative outcomes in this context) is a strong predictor of project failure.

Project approval and assurance

The role of the business case in a project is significant and its lack of prominence in the reports of these cases is noteworthy. HM Treasury (HMT) guidance [5] says that “the business case, both as a product and a process, provides decision makers, stakeholders and the public with a management tool for evidence based and transparent decision making and a framework for the delivery, management and performance monitoring of the resultant scheme”. It must answer the questions about the strategic purpose and outcomes, show how the project optimises Value for Money — the Economic Case for it— and that it can be delivered successfully — the Management Case. It also underpins project assurance reviews such as Gateways [6].

The HMT process for approving business cases is well-established [5], but in 2011 a separate IT spend control process run within the Cabinet Office (CO) became mandatory for projects over a certain financial threshold. This was applied to CAP-D and UC, and both reports say that approval was conditional on specific approaches to IT procurement and software development being adopted (both derived from web development practice but arguably unproven for the specific contexts of these two projects). This separate but powerful influence was indicated by the reports to be the root cause of many problems in the projects.

When there is an optimal solution to a problem as determined by a business case analysis of options, any constraint then superimposed on an input to the project (e.g. on IT, personnel, location, procurement, implementation methods, or timing) will lead to suboptimal outcomes. Both project reports describe approval delays and procurement challenges arising from such input constraints. In both cases these alone were highly disruptive, but in any situation they would inevitably reduce the benefits of the project relative to the optimal Value for Money of the Economic Case.

Programme and project management

Both reports state that teams developing the user-facing front end programs (the “digital by default”, i.e. web-based, components) were disconnected from, in fact in contention with, those working on back-end administrative processes. This indicates a failure of programme and project direction and management, and the organisation of technology as a project resource. These are scrutinised early in the Gateway Review process and emphasis is placed on getting them right, so this process seems no longer to be effective. It should examine whether capable people are in those roles, and whether tried and tested programme and project management techniques are being used, such as Managing Successful Programmes (MSP) and PRINCE2. Their implied absence here raises the question of whether such people and techniques were deemed unnecessary for “agile, digital” projects. In both cases, omissions in these regards has led to considerable senior management time being spent in resolving issues in the projects.

There is a clue to the source of some problems in the way the reports discuss the issue of the Senior Responsible Owners (SROs). They focus on the high rate of turnover, but what is significant is who was in the role and what they thought their role was. The original purpose [3] of the SRO role was to provide a firm anchor of overall responsibility for the achievement of the benefits intended for the project *within* the organisation’s core functions, as opposed to the project being semi-detached from the mainstream of its work. So typically an SRO would be a senior civil servant responsible for the policy or administrative functions within which the project lay, giving him or her the highest responsibility and power over the project. A project does not “bring in an SRO”: SROs exist in the department, initiate the project, and are not separately appointed.

The implication of the reported facts is that SROs were perceived, and acted, more like appointed project directors than owners representing the organisation. That would indicate messed-up project governance due to misunderstanding and/or misallocation of key roles.

Originally, the report from a Gateway Review (part of the Cabinet Office’s major projects assurance toolkit [6]) was solely for the SRO as the responsible party. During the life of both projects, changes to the process introduced dual reporting, to the Cabinet Office as well as the SRO, reflecting the CO’s new monitoring and intervention roles. This almost certainly changes the relationship between project teams being reviewed and the reviewers, with the latter potentially being seen as agents of the CO there to check whether the project is complying with CO rules. As reported in the independent review reports, participants in the UC project describe defensiveness on the part of the project team, and relations appeared to have been acrimonious at times in CAP-D. These aspects of the reports point to strategic ownership being absent and authority being distributed (the PAC described the Cabinet Office’s position as “power without responsibility” [1, Oral Evidence, Q85-Q92]). Both were issues that were addressed by the 2000 review [3] and the processes subsequently put in place.

The acquisition, implementation and operation of IT

As already set out above, numerous issues are reported as arising in the projects from externally directed approaches to IT procurement and the separation of teams working on back end processes and web application development. Further, the intention to apply “agile” approaches in the projects is revealed, but it is not wholly clear if expectation was for it to be applied solely to software development (the origin of the method lies in web application development) or the whole project. There is little evidence anywhere that these approaches are applicable beyond the scope within which they originated, in particular to policy implementation as opposed to web application development. The implication is that confusion reigned over the relationship of agile approaches to project management toolkits, like MSP and PRINCE2, and assurance processes like Gateways, whereas these each operate at different levels and are largely independent of each other.

Capability

Although some guidance [7] now exists, agile methods and the approach to procurement dictated by CO spend controls for these projects were new to government departments, according to the independent reports. In both cases a lack of relevant skills is reported as a problem. The logic of attempting to do things in a time-critical project using approaches no-one involved had the knowledge to apply is of course questionable. This is a tactical issue, but viewed strategically there is a clear need for professional development in a range of areas. For many years the government used the Skills Framework for the Information Age (SFIA) [8] as the basis for professional development [9], and SFIA version 6 was designed to embrace any skills that might relate to “digital” [10]. At some point after 2011 the established IT Profession [9] appears to have been set aside in favour of a new “digital, data and technology” profession that so far (based on available published information [11]) focusses narrowly on agile web front-end development. This has risked losing the momentum and institutional processes that had been established to address the very problems being encountered and the great breadth of capability required.

Conclusion and research objectives

The conclusion from this analysis of two project reports is not that all UK projects involving IT or “digital” would experience such problems. However, the post-2010 changes are embedded into the government system for managing projects. They have unwittingly, but of course with positive intentions, introduced perturbations into one or more elements of established processes and created incoherence and conflict within that system. They apply to governance and the higher levels of project management and assurance, mostly relating to the functions and directives of the Cabinet Office, including the Government Digital Service. They have significantly damaged the implementation of government projects and the two reports reveal that measures intended to save money have already cost the country hundreds of millions of pounds.

A reset, to use the Cabinet Office's term applied to the projects reviewed, is therefore needed, and Brunel's proposed research aims to assist that as expeditiously as possible.

Accordingly, the research study objectives will be to:

- 1) Develop a new Critical Success Factor (CSF) matrix through a focused and systematic review of academic and grey literature to conceptualise IT-enabled policy implementation projects within government
- 2) Map CSFs of such government projects using interpretive structural modelling (ISM) to identify and evaluate the interrelationships and interdependencies between the CSFs and their impact on project success
- 3) Create guidelines based on the validated CSF matrix and lessons learnt, targeted towards policy makers, IT managers and scholars.

References

1. House of Commons Committee of Public Accounts (2016). [*The Common Agricultural Policy Delivery Programme*](#). Twenty-sixth Report of Session 2015–16.
2. Timmins, N. (2016). [*Universal Credit: from disaster to recovery?*](#) Institute for Government, London.
3. Cabinet Office (2000). [*Successful IT – modernising Government in action*](#). HM Government, London.
4. Waller, P. and Weerakkody, V. (2016). [*Digital Government: overcoming the systemic failure of transformation*](#). Brunel University London Working Paper.
5. HM Treasury (2013). [*The Green Book: appraisal and evaluation in central government*](#). HM Government, London.
6. Cabinet Office (2015). [*Major Projects Authority: assurance toolkit*](#). HM Government, London.
7. HM Treasury (2015). [*Agile digital and IT projects: clarification of business case guidance*](#). HM Government, London.
8. SFIA Foundation (2013). [*Skills Framework for the Information Age*](#).
9. HM Government (2011). [*Government ICT Capability Strategy*](#).
10. SFIA Foundation (2013). [*Moving to SFIA version 6*](#).
11. HM Government (2016). [*Digital, data and technology professions*](#).

About the Author



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