

BUYER-SUPPLIER PARTNERSHIP IN AGILE SUPPLY CHAINS: A CONCEPTUAL VIEW

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Abstract

The purpose of this paper focuses on achieving agility within the supply chain and seeks to examine the impact of developing an integrated buyer-supplier partnership on achieving agility. It also aims to investigate the moderating role played by information sharing and technology in achieving such a goal. Supply chain management and agility have both been received great attention in recent years. In a highly dynamic and complex business market place the customer is demanding more choice and companies need to possess the means to rapidly adjust to market changes in order to satisfy its customers in an effective manner. Agility has been introduced to the supply chain context to enable companies to face the business environmental changes and deal with them effectively. The methodological approach used in this paper is an analysis and critique to the existing literature, as an initial step for developing the empirical study for the paper.

Key words: *supply chain, Agility, information sharing, technology, buyer-supplier partnership.*

1. INTRODUCTION

Supply chain management, as a business and management concept, has received great attention from academics and practitioners. This is clearly demonstrated by the increase in the published articles by both practitioners and academics, the increase in supply chain management conferences, the increase in the development and delivery of training programmes for professionals, and even in the supply chain management courses taught in universities (Burgess et al., 2006). This emphasis on the supply chain and its management has increased when the practitioners and academics have recognised that it is a key factor necessary not just to compete, but even to stay in the market place. Companies consider supply chain management as a core means of success in the competitive business environment and the vehicle that can enable them to provide their product or service offerings to the market place in an efficient and effective manner (Jones, 1998; cited in Li et al. 2005). Cousins et al. (2006) argue that companies within both the private as well as the public sectors are recognising the importance of supply chain management and its role in achieving success inside their companies. Christopher (1992) argues that “competition in the future will not be between individual enterprises but between competing supply chains”. Van der Vorst (2000; cited in Van der Vorst, 2004) suggests that the business managers have recognised the importance of effective coordinating, integrating, and managing of core processes among all the supply chain members and consider it as the key factor affecting their firm’s success. Li et al. (2005) argue that most organisations are realising the importance of their supply chains and are increasing their efforts to enhance them. They argue that it is no longer enough for companies to improve their internal efficiencies, but that companies must also leverage their supply chains if they are to maintain a sustainable competitive position within their market place. Power et al. (2001, cited in Li et al., 2005) and Moberg et al (2002, cited in Li et al., 2005) similarly argue the importance of supply chain management to achieving sustainable profitable gains.

There are several factors that have led to the great importance of supply chain management, not least the emergence of the “globalisation” phenomenon and the “international economy”. These new bases of competition are affecting how organisations are dealing with organising and operating their supply chains (Jain and Banyoucef, 2008). Li et al. (2005) argue that competition, and especially global competition, is now an important challenge facing organisations to provide their products and offering their services in the suitable place, at the suitable time, with the lowest cost. Lin et al. (2006) suggest that the competition faced by companies is now also affected by innovative technologies, business environmental changes, and the great variety in customer needs and wants. This view is echoed by Moron and Swierczek (2009) who argue that the factors that have led to the prominence of supply chain management are twofold: economic and technological environmental changes. These changes are forcing companies to be able to provide greater ability to serve customers; to gain greater control over new business markets; to deal with growing informational and technological pressures; to examine and respond to the growing trends in new management approaches for lower operational costs; and to deal more effectively with investment costs as well as research and development costs (Moron and Swierczek, 2009).

Although supply chain management has received much research and business focus, the success stories of its effective management are still relatively few. For example, Boddy et al. (1998; cited in Li et al., 2005) reported that more than half of their survey respondents were not applying their supply chain partnering successfully. It appears that supply chain management’s application in an effective manner is still not widespread. It has been suggested that this is as a result of the supply chain management complexity and the lack in the research for identifying the means and methods that can help the organisations to implement its management effectively (Li et al., 2005). Moreover, Cousins et al. (2006) argue that although supply chain management has been studied from different disciplines and from different theoretical perspectives which leads to richness in the field, it also however leads to unclear literature as well as overlapping constructs and inconsistent results. Cousins et al. (2006) also argue that this unclear state and existing gap in the literature on supply chain management may be due to the lack of common literature linking the supply chain management literature and that of the buyer-supplier relationship literature. From their point of view, whilst there does exist some theories linking supply chain management and buyer-supplier relationship together, in general the field is significantly underdeveloped. Van der Vort, (2004) suggests that among the factors that make it difficult for companies to implement supply chain management successfully are the lack of trust between the company and its partners; different objectives; different managerial philosophies; and different reward systems.

The preceding arguments highlight the fact that great attention has been given to supply chain management as a business concept and indicates that that companies need to aware of its importance in helping them to stay competitive in their market place. However, there still exists a gap in the supply chain management literature regarding how the companies can effectively implement it in a way that can enable them to respond as quickly and effectively as they can to the changes in the current highly dynamic and competitive business world. Moreover, the above literature indicates the importance of relationships among all members of the same supply chain and especially the relationship between the buyer and its supplier as one core element in any successful supply chain.

Some solutions for the problem of how to deal with the environmental changes and uncertainty has been provided in some research contributions. Sherehiy et al. (2007: 445) suggest that organisations can face these business conditions through the use of several paradigms, such as ‘adaptive organisation’, ‘flexible organization’ and ‘agile enterprise’. Most of the research on determining the means through which the companies can face business changes includes “adaptivity” (Sherehiy et al., 2007). Flexible organization is also defined as being able to adapt its internal resources and activities to deal with the business changes (Reed and Blunsdon, 1998; cited in Sherehiy et al., 2007). During the 1990s, the new approach for responding to the business environmental changes has been introduced as “agility”, which has also been defined to include the ability to “adapt”. Since the late

1990s, agility has received increasing attention inside the business world as well as the academic research arena.

The “agility” concept has been firstly introduced to be applied to the manufacturing function. The origin of agile manufacturing was first introduced by a set of researchers at Iaccoca Institute, Lehigh University 1991 (cited in Yusuf et al. 1999). Since then the concept has also been introduced to be applied to the whole organisation as a way of doing business. Following recognition that supply chains have become the most important players for competition in this dynamic business environment, the agility approach has been introduced to supply chain management as a means for the companies to benefit from the winning strategy behind such approach in their supply chains (Harrison et al. 1999, cited in Sharifi et al., 2006). The main rationale behind the process of applying agility to supply chains is to provide a solution for the companies and other members within the supply chains to respond to the business market changes (Lee and Lau, 1999, cited in Sharifi et al. 2006; Christopher and Towill, 2000).

In the literature, several, if not all the studies on supply chain agility emphasise the importance of the relationship between the supply chain members. For example, Goldman and Nagel (1993, cited in Moron and Swierczek, 2009) argue that for a supply chain to be agile, the companies within this supply chain should focus on building relationships among themselves, and to give attention to technology as well as their attention to production techniques and tools. Moreover, Meredith and Francis (2000; cited in Moron and Swierczek, 2009) suggest that agility enables companies to think in a new way in doing their businesses, where they should focus more on working in teams rather than on a functional basis, and to move from arms-length relationships to work interdependently with other supply chain members.

An examination of published work indicates that the literature on supply chain agility is limited. This can be due to the fact that agility as a business concept is considered as a new philosophy, especially in the supply chain literature. As previously mentioned, there are studies on supply chain agility that discuss and emphasise the importance of the relationship between supply chain members as a key factor for agile supply chain. However most of these studies are dealing with these relationships in a very general manner. The literature lacks analysis and insight on how companies can effectively form such relationships within their supply chains and especially with their suppliers as one core factor for successful supply chain management. The literature also lacks insight on the nature and type of relationship that can effectively and successfully enable the companies to help each other in achieving and enhancing agility within their supply chains.

Against this background, the present authors aim to investigate the importance of the relationship that may exist between a company and its supplier. The proposed research especially seeks to focus on the influence of maintaining a buyer-supplier partnership as a unique dyadic dual-nature form of buyer-supplier relationship on the ability of the manufacturing company to achieve agility within its supply chain. The research will also aim to investigate the moderating impact of information sharing/technology in such relationship.

The next section reviews literature on the concepts of buyer-supplier partnership in supply chain context. This is followed by a review of the literature on agility and agile supply chain. The subsequent section examines the link between both concepts from the literature and develops a set of hypotheses and a conceptual framework as the basis for further research. Finally a conclusion is provided.

2. THEORETICAL FOUNDATION AND LITERATURE REVIEW

2.1 A REVIEW ON BUYER-SUPPLIER PARTNERSHIP IN THE SUPPLYCHAIN CONTEXT

Nowadays manufacturing companies are recognizing that to become world-class companies they should focus on maintaining an ability to build and develop a high level of trust and cooperation with their supply companies (Humphreys et al. 2003). Harland (1996; cited in Veludo et al., 2004) argue that there is a strongly growing trend towards developing and building an appropriate type of

relationship. This need assists to develop what is called “Partnering”, and it is argued that partnership can be considered as the preferred relationship strategy where there is a high level of beneficial mutual interdependence and where the failure of one party to perform or operate in an effective way can affect negatively the performance of the other party (Veludo et al., 2004). Therefore in a partnership, both partners should work closely and interdependently, and act as one integrated entity. The successful implementation of supplier management can lead to enhancement in the manufacturing company’s performance levels in such issues as reducing costs; improvement in quality; and product design (Monczka et al., 1993; Primo and Amundson, 2002; cited in Goffin et al. 2006). Goffin et al. (2006) argue that to achieve all these advantages, companies are now recognizing the importance of working together with their suppliers in what is called “partnership” (e.g. Fretty, 2001; Kerns 2000; cited in Goffin et al.; 2006).

Generally, partnership can be defined as characterized by its attributes, however the literature lacks one commonly accepted definition for partnership based on empirical evidence (Lemke et al., 2003). Partnership can be defined as a dual relationship based on commitment that exists over an extended period of time, information sharing, risks and benefits sharing (Ellram and Hendrick, 1995; cited in Lemke et al.; 2003)

In a study by Lemke et al., (2003), summarizing some of the partnership attributes for defining it as a concept, they argue that among the attributes are: “closeness” (Scott and Westbrook, 1991), “commitment” (Ellram and Hendrick, 1995/ Ellram, 1995; Graham et al.; 1994; Gentry, 1996); “dependency” (Brennan, 1997; Scott and Westbrook, 1991; Stuart, 1993; Webster, 1992); “focus on continuous improvement” (Gentry, 1996); “long-term view” (Graham et al., 1994; Gentry 1996; Stuart, 1993); “resource exchange” (Saxton 1997); “sharing information” (Ellram and Hendrick, 1995/Ellram, 1995; Graham et al., 1994; Gentry, 1996); “sharing of risks and rewards” (Ellram and Hendrick, 1995/Ellram, 1995; Graham et al., 1994; Gentry, 1996); trust” (Scott and Westbrook, 1991; Webster, 1992); “ value of the resource access” (Saxton, 1997); and “voluntary” (Graham et al., 1994). Maheswari et al., (2006: 280) define supply chain partnership as “a strategic coalition of two or more firms in a supply chain to facilitate joint effort and collaboration in one or more core value creating activities such as research, product development, manufacturing, marketing, sales and distribution, with the objective of increasing benefits to all partners by reducing total cost acquisition, possession and disposal of goods and services”.

In a study by Campbell, (1997), four definitions for buyer-supplier partnerships have been specified. The first one is “self-centered” partnership, where the partnership is a simple good working relationship between the company and its supplier. In this partnership, the supplier is only determining what the company limitations are and trying to help it to overcome them. The second type of partnership is the “personal loyalty” where the relationship is like a marriage in which the company and its supplier depend on each other throughout the whole time. Both the partners are determining the barriers of each one of them and each is trying to help the other partner to overcome them. The third type of partnership is the “mutual investment” in which the buyer-supplier relationship involves more involvement by both the company and the supplier in each other’s processes. It includes shared information exchange, common problem solving; sharing risks and rewards. The fourth type of buyer-supplier partnership is “political control” in which the relationship between the buyer and the supplier involves high level of mutual beneficial dependency level. It includes high level of cooperation and integration and in which the supplier can be considered as one part of the company, so that all the processes; activities; and tasks are integrated.

Veludo and Macbeth (2000; cited in Veludo et al., 2004) determine the dimensions of partnering as trust, win-win benefits from sharing in waste reductions and market gains; long term relationship, process coordination; problem solving sharing and high level of flexibility. In a study by Ryu et al. (2009) the partnership process is said to include attributes such as trust, commitment and collaboration.

Several researchers have focused on the benefits of working closely with supply chain partners. Among these benefits (cited in Chen et al., 2004) are: the few number of suppliers to contact during ordering; less inventory management costs (Trevelen, 1987); increase in order volume and learning curve leading to increase in economies of scale (Hahn et al.,1986); decrease in lead times resulted from dedicated capacity and work-in process inventory from the company's suppliers; decreasing in the logistical costs resulted from the proximal distance between the company and its suppliers (Bozarth et al.,1998); enhancing in product design relationship between the company and its supplier (De Toni and Nassimbeni,1999), increased in trust resulted from open, frequent communications (Newman, 1988); increase in supplier reliability in production and delivery (Anderson et al.,1994); and greater ability to serve customer and to penetrate new markets (St. John and Heriot, 1993).

As outlined above, several researchers have discussed different attributes for partnership. From this review it is reasonable to argue that trust, commitment, and collaboration can be considered as the most commonly used. For the purpose of the research, these three attributes will be used as attributes for supply chain partnership and measures through which to determine the extent of partnership that exists between a manufacturing company and its suppliers.

Trust is considered as an important attribute for any relationship. In a study by Wison and Moller (1991; cited in Fynes and Voss, 2002) where they reviewed the literature on relationship, they found that trust can be considered as the core element for relationship. It has been defined by Rousseau et al. (1998) as a "psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (cited in Corsten and Felde, 2005). Trust is also the belief of one partner in the benevolence and credibility of the other partner (Ganesan, 1994; cited in Terawatanavong et al., 2007). It is defined by Morgan and Hunt (1994) as the confidence of one partner in the reliability and integrity of another partner in a business exchange (cited in Ulaga and Eggert, 2006). It is also the belief of a company that it can satisfy its needs for the future through the practices performed by other partner (Anderson and Weitz, 1992; cited in Ulaga and Eggert, 2006). Anderson and Narus (1990; cited in Fynes and Voss, 2002) have defined it as "the firm's belief that another company will perform actions that will result in positive actions for the firm as well as not take unexpected actions that would result in negative outcomes for the firm"..

Trust in buyer-supplier relationship can enable the relationship to be more stable with less transactional expenses; promote desirable behaviors; reduces the degree of legal contracts, and assists to solve problems and conflicts (Sahay, 2003; cited in Ryu et al.,2009). Terawatanavong et al. (2007) argue that trust can also be considered as the governance mechanism (Heide,1994) that can limit the opportunism level in an exchange that is characterized by uncertainty and high level of dependence (Ganesan,1994). Corsten and Felde (2005) suggest that trust ensures that every partner will stand to the relationship agreements; will not take negative actions to the other partner (Anderson and Narus,1990); will perform the required roles and responsibilities; and will stand to the assumptions of cooperative and integrative behavior (Cannon and Perreault,1999).

Commitment is another very commonly accepted partnership attribute, and generally in any business relationship. Commitment is defined by Ryu et al. (2009: 499) as "the belief of an exchange partner in an ongoing relationship". It is also defined by Dwyer et al. (1987; cited in Fynes and Voss, 2002) as the implicit and explicit belief of continuous relationship with business exchange partners.

Commitment is a partnership attribute or dimension that ensures stability to the relationship as well as sacrifice (Anderson and Weitz, 1992; Jap and Ganesan, 2000; cited in Terawatanavong et al., 2007). Ryu et al., (2009) argue that commitment can be considered as a means that secures the partners' efforts and ensures that every partner is willing to have some potential risky actions in the short run for the survival of the relationship, and that no partner will take any opportunistic behavior. They also argue that supply chain partnership can be well integrated through the key factor "commitment" and therefore it has been considered as an important mediating variable between important antecedents and outcomes (Morgan and Hunt, 1994; cited in Ryu et al., 2009). Morgan and Hunt (1994, cited in Ulaga and Eggert, 316) argue that reviewing commitment literature shows that it is "a common theme

emerges from the various literature on relationships: parties identify commitment among exchange partners as key to achieving valuable outcomes for themselves, and they endeavour to develop and maintain this precious attribute in their relationships” Morgan and Hunt (1994; cited in Ryu et al., 2009) argue that partners within the same supply chain should maintain high level of trust and commitment to collect all the efforts in order to develop a satisfied relationship and achieve high performance level.

Collaboration has been given great attention by academic researchers for a long time. It can be considered as a “specific form of relation exchange” (Cannon and Perreault, 1999), which involves jointly developing and maintaining value (Kanter, 1994 cited in Corsten and Felde, 2005). Heide and John (1990; cited in Corsten and Felde, 2005) define collaboration as the “joint action” in the company relationship with its supplier and which places emphasis on integrative product and process development activities. Ryu et al. (2009) state that “collaboration from the supply context includes the exchange of information associated with materials, products, activities, production processes, problem solving as a team, production planning and the replenishing of scheduling ,goals, and responsibilities (Kulp et al., 2004; Vachon and Klassen,2008)”. Corsten and Felde (2005) further suggest that collaboration can be considered as a process which need to be associated with a “high level of purposeful cooperation” (Spekman, 1988), and focus on joint processes through the sharing of “co-specialised assets” investments (Dyer, 1996), or as Heide and John (1990) have referred to it, “joint action”.

2.2 A REVIEW ON AGILITY AND AGILE SUPPLY CHAIN

The thinking behind solutions to help the companies to deal and respond to business environment has since the 1990s focused on the agility concept as a means for responding to business changes (Nagel and Dove; Goldman et al, 1995; cited in Ismail and Sharifi 2006). Jackson and Johansson (2003) argue that agility as a business concept cannot be considered as an aim for any company, however it can be considered as a requirement needed by any company to have a high degree of competitiveness inside this highly dynamic and complex business environment. Agility has been widely recognized as a winning approach for companies and can be considered as the main strategy for staying in the dynamic business environment (Ismail and Sharifi, 2006).

Agility as a concept has been first introduced to be applied to the manufacturing function, where it was defined by Kidd (1994, cited in Jackson and Johansson, 2003: 482-483) as “...agile manufacturing can be considered as the integration of organisation, highly skilled and knowledgeable people, and advanced technologies, to achieve co-operation and innovation in response to the need to supply our customers with quality customised products”. Brown and Besant (2003; cited in Narasimhan et al., 2006) define agile manufacturing as the ability to deal with the changes in the business environment market quickly and effectively.

More recently it has been introduced to the whole company where it has been defined by Goldman et al. (1994, cited in Swafford et al., 2006) as the organisation which has a dynamic nature and an ability to gain a competitive advantage through this dynamic nature which enables it to focus on developing knowledge and flexible processes to be able to react to the environmental market changing conditions.

With the attention given to agility during the 1990s, parallel attention has been given to the important role played by supply chain management as a unit of competition (Bowersox et al.,1998; Christopher 1998: cited in Ismail and Sharifi,2006). Thus as a result of the attention placed on agility and supply chain management, agile supply chain has appeared as a philosophy and has been considered as a winning strategy of business competition (Ismail and Sharifi, 2006). Swafford et al.,(2008) argue that one important driver for agile supply chain is “mass customization”, where the company need to provide “customerised” products and services at a cost equal to or even close to the costs associated to “mass production”. They suggest that companies within an agile supply chain are able to deal with unexpected changes and are more able to match demand to supply, and therefore agile supply chain is a market-oriented philosophy.

Applying agility to the supply chain context has been supported by Harrison (2000), where he argues that it is not logical to limit the impact of the concept only inside the production department, and that this concept should be extended to the whole company's supply chain. Christopher (2000) and Van Hoek, (2001) have exceeded the concept of agility to the organisation's processes and relationships with other members within the supply chains to be able to respond quickly and effectively to the unexpected business environmental conditions (cited in Baramichai et al., 2007). Baramichai et al. (2007: 335) define supply chain agility as "an agile supply chain is an integration of business partners to enable new competencies in order to respond to rapidly changing, continually fragmenting markets. The key enablers of the agile supply chain are the dynamics of structures and relationship configuration, the end-to-end visibility of information, and the event-driven and event-based management....".

Ismail and Sharifi (2006) define agile supply chain as the whole supply chain and its members' ability to adjust their network rapidly and their operational activities to be able to face the dynamic and changing needs of their demand. Prater et al. (2001) define supply chain agility as the company's ability to match its physical resources in sourcing, manufacturing, and delivery with its speed and flexibility capabilities.

All the definitions of agility at all its levels: manufacturing, company; and supply chain, suggest that this business philosophy is a broad, multi- perspective concept that includes several components and elements (Swafford et al., 2006). Ismail and Sharifi (2006) suggest that the theoretical basis for applying agility to supply chain is similar to the basis of applying agility to manufacturing systems. Yusuf et al. (1999) argue that the competitive foundations for agility are: speed; flexibility; innovation; proactively; quality' and profitability. Ren et al., (2000) studied the effects of the agility attributes on the organizational competitive dimensions, and they found that speed, proactivity, and flexibility have the largest effects on the overall organizational level of competitiveness. Sharifi and Zhang (1999) suggest that the agility concept is dealing with two characteristics; reacting to environmental business change in the right way, at the right time and dealing with them to benefit and gain advantages out of them. They also argue that this requires an organization to be able to sense, perceive, and anticipate the environmental changes. Paulraj and Chen (2007) argue that agility is usually discussed as means for flexibility; time; delivery; and responsiveness of companies. Prater et al., (2001) argue that speed and flexibility are the two core elements for agility.

Jackson and Johansson (2003) suggest that agility requires four main organisational capabilities: the first is "product related change capabilities" including the strategies and the activities needed to face the changes and dynamic characteristics of business environment. The second is "change competency within operations" including the operational tools and techniques needed to adjust and respond to long and short term changes within the production function. The third capability is "cooperation" including the activities of the organizational functions to integrate with each other and the ability of the company to integrate externally with other supply chain partners such as the customers and suppliers. The final capability is "people, knowledge, and creativity" which includes the ability of the company to focus on its human resources and skilled people to be able to create; innovate; and respond to business changes.

Swafford et al. (2006) determine several benefits for agile supply chain, such as: it assists the manufacturing firm to gain higher levels of its overall agility level; it assists the firms to respond and deal rapidly to the marketplace changes in an effective manner and therefore this can enable the organization to achieve higher competitive level; organisations that operate in an agile supply chain can have more ability to be market sensitive; more able to match demand to supply; more able to achieve less cycle times; and agile supply chain can enable organizations to be more innovative and produce new products and all these consider agility as a key factor for organisations to achieve high global competitive level. Among the benefits also are increase in the company's abilities to respond proactively to business changes and enhancing its ability to catch new business opportunities (Ismail and Sharifi, 2006).

Although nowadays every company in the highly dynamic and complex business environment should have its unique capabilities that can enable it to achieve agility and make it differ from its competitors, there still exist some capabilities or attributes for agility that can be considered as distinguished or unique or core elements for achieving and maintaining agility (Sherehiy et al. 2007).

The research proposed in this paper will use the most widely accepted and commonly used elements for agility. From the literature as examined above, it can be clearly shown that flexibility; speed; and responsiveness are the most important elements for achieving agility.

Flexibility is considered as a core element of agility (Christopher and Towill, 2001). Agility as a philosophy includes flexibility as a business concept (Narasimhan et al., 2006; cited in Swafford et al., 2008). Flexibility concept can be considered as a “prerequisite” for agility (Jackson and Johansson, 2003). Prater et al., (2001:824) define it as the extent to which a company is able to adapt the time needed to ship or receive its products. They suggest that flexibility is a combination of two capabilities: “promptness with; and the degree to which a firm can adjust its supply chain speed, destinations and volumes”. It has been also defined by Vokurka and Fliedner (1998) as the organisation’s ability to switch from one activity to another rapidly and as a routine step activity. Zhang et al.(2003; cited in Bernardes and Hanna, 2009) define it as the ability of the company to achieve the customer increasing demand expectations without extra costs, time, organizational instability or performance reductions. Flexibility according to Sharifi and Zhang (1999) means the ability to produce different products and achieve different aims by using the same physical tools and facilities, including product volume flexibility; product model flexibility; organizational flexibility and people flexibility.

A distinction is always made between agility and flexibility concept. Several researchers have argued that flexibility is focusing on adaptability and versatility abilities of the company (Kidd, 2000) while agility is focusing more on speed capability (cited in Swafford et al., 2008).

Quickness (speed, time) is one of the most important elements of agility. Almost all the researches on determining agility elements are considering speed as a core agility element, such as Yusuf et al. (1999). It has been defined by Sharifi and Zhang (1999) to represent the ability of the company to perform all the overall activities as well as its operational activities in the shortest time possible including: rapid introduction of new products into the market; rapid operational time; rapid delivery for all products and services. Prater et al., (2001) define speed as the time measure that a company can spend to ship or receive its products.

Responsiveness is considered by Hoek et al., (2002) as main element for agility where they argue that agility is customer responsiveness and the managing of market changes. The aim of any company is to meet the customer requirements and therefore it has to be able to respond to any demand changes. Several researches consider responsiveness as an element for agility (for example Goldman et al. (1995) and Dove (1999; 2001); cited in Ganguly et al.,2009). It has been defined by Tunc and Gupta (1993; cited in Bernardes and Hanna, 2009) as the organisation’s ability to react and deal to meet the customer’s demand in an effective time manner. It also has defined by Shafiri and Zhang (1999) as the ability to determine changes; react to them rapidly and includes estimating, perceiving and identifying market changes; rapidly react to them; and trying to recover.

2.3 THE IMPACT OF RELATIONSHIP AND PARTNERSHIP ON AGILITY IN THE SUPPLY CHAIN CONTEXT

Many researchers have focused on the importance of developing and maintaining effective and successful relationships with supply chain partners and especially with their suppliers for achieving agility in general and in achieving agile supply chains. They consider this as a core element or core strategy planned and performed by any company that needs to be agile and achieve agility within its supply chain. However few literature studies exist on the impact of partnership between the company and its supplier as a unique and at the same time simple type of relationship on the company’s ability to achieve agility within the supply chain. The existing literature studies are emphasizing and focusing

on this impact with little theoretical and empirical examination for this effect and its extent which is required by the company to be able to achieve agility within its supply chain.

Among these researchers are Power et al. (2001) who argue, from their results, that the supplier involvement in the company's implementation to the soft and hard approaches used by the company to achieve customer satisfaction is considered as one important factor differentiating "more agile" companies from those "less agile" companies. The "less agile" companies include supplier involvement only in achieving improvement in productivity and process activities rather than assisting in satisfying the company's customer. Also they suggest that collaboration plays an important role in achieving supply chain management "best practice" (Bovel and Martha, 2000), and in developing a highly integrated and efficient logistical network structures (Stock et al., 1998).

Goldman et al. (1995) argue that there are four dimensions for agility including: "enriching the customer" where the company need to deliver value and to focus more on the customer rather than on product; "cooperating to enhance competitiveness" where the company has to cooperate and integrate with all supply chain partners to be able to share resources with other organizational entities in order to deliver value rapidly and effectively; "organizing to master changes" where the company should have high level of flexibility in its structure that can enable it to change and to accept the change; "leveraging the impact of people and information" in which the company has to focus on the development of human skilled resources and to focus on the important role played by information sharing and technology (cited in Sherehiy et al, 2007).

Christopher (2000) argues that relationships between companies and their suppliers are considered an important ingredient of agility. Brown and Bessant, (2003, cited in Narasimhan et al., 2006) argue that among the important practices associated with efforts of the company to achieve agility in manufacturing is "supplier alliances". Among the attributes and practices for agile organizations specified by Yusuf et al. (1999) is forming and developing of partnerships and close relationships with both customers as well as suppliers.

The study by Moron and Swierczek (2009) shows the important role of relationship with suppliers and consider it as an important element in achieving supply chain agility. They argue that eliminating the barriers, sharing goals, developing and maintaining long-term partnerships and the interchange of human resources among the company and its supplier can enhance the integration and the shared mutual benefits (Meredith and Francis, 2000; Aithen et al. 2002). They suggest that a great dependence on suppliers and other partners becomes necessary, and therefore, a suitable type of relationship is needed. They argue that there should be no boundaries between the company and its suppliers and that attributes such as trust and commitment should maintain in this relationship.

Ismail and Sharifi (2006) argue that agile supply chain has several methodologies, where the methodologies include all the means to improve the internal firm's agile capabilities through sharing of resources among the supply chain partners. The agile supply chain methodologies are concerned with adapting the supply chain to the required changes and new nature of competition; applying new production processes to all supply chain members and managing the relationships among all the supply chain partners. Ismail and Sharifi, (2006) model for the agile supply chain, they emphasize on having and developing good relationships with supply chain partners, and they consider the effective and successful developing and managing of supplier as a strategy among the strategies for achieving agile supply chain. Kehoe et al., (2004; cited in Ismail and Sharifi, 2006) suggest in their demand network model that developing a supply chain or network is based on the interaction of two core elements: the "physical or informational resources" and the "relationships". Therefore effective supply chains should include the successful management of physical and informational resources combined interactively with and supported by successful management of relational interactions in which opportunism is decreasing and trustful relationship is increasing.

From the above arguments, the first main hypothesis proposed for the study is as follows:

H1: buyer-supplier partnership has a direct impact on a manufacturing company's ability to achieve agility within its supply chain.

In addition to this, there is literature showing the impact of buyer-supplier relationship and partnership on flexibility; speed; and responsiveness which are used in this research as measures for agility.

In a study by Ryu et al. (2009) to investigate the antecedents of buyer-supplier partnership and to determine its effect on supply chain performance, the measures used for supply chain performance are the product life cycle time; productivity; efficiency; and revenues. They also use, for buyer-supplier partnership measures, commitment; trust and collaboration. They conclude that partnership can have an impact on supply chain performance including product cycle time. Paulraj and Chen (2007) argue that several researches have discussed the important role played by time-based performance measures at the strategic level (Droge, Jayaraman and Vickery, 2004; Nahm, Vonderembse, Rao and Ragu-Nathan, 2006). Ismail and Sharifi (2006) suggest that from their review of the supply chain literature they can define supply chain as structures developed as a result of interactive "collaboration" of some organizations with the purpose of achieving a common goal to deliver high customer value. This highlights the important role played by collaboration in helping the company to respond to its customer and its role in supply chain context. Chen et al. (2004) suggest that the proper and close relationship with a limited number of suppliers (Bensaou, 1999) can be directly related to the company's ability to achieve customer responsiveness (Stanley and Wisner, 2001) and financial performance (Car and Pearson, 1999).

Also in a study by Chen and Paulraj (2004), where they examine the effect of the strategic purchasing on three relationship dimensions including: communication; limited number of suppliers; and long-term orientation, they conclude that these three relationship aspects have a positive impact on customer responsiveness. O'Toole and Donaldson (2000; cited in Kannan and Tan, 2006) argue that mutual cooperation as a relationship type has great performance for the non-financial performance measures such as lead time; flexibility; and responsiveness; quality and collaboration. Handfield and Bechtel (2002) suggest that building enough of trust in a company relationship with its supplier can enhance the supplier responsiveness level. Finally, Ryu et al. (2009) in their research study argue that a partnership between a company and its supplier, which includes attributes such as trust, commitment and collaboration, has an important and direct impact on supply chain performance.

All these research studies show the importance of relationship and partnership on the company's and its supplier flexibility; speed; and responsiveness abilities. Therefore, the following hypotheses have been developed for the proposed study:

H1a: buyer-supplier partnership has a positive impact on the buyer and the supplier flexibility abilities.

H1b: buyer-supplier partnership has a positive impact on the buyer and the supplier speed abilities

H1c: buyer-supplier partnership has a positive impact on buyer and the supplier responsiveness abilities.

2.4 THE MODERATING IMPACT OF INFORMATION SHARING AND TECHNOLOGY ON AGILE SUPPLY CHAINS

Although inter-firm relationship role for firms is well recognized, there is a great failure rate in achieving its benefits (Muckstadt et al., 2001; cited in Hsu et al., 2008). A core reason can lie in the failure to provide sufficient information sharing and flows within their supply chain, which in turn may be due to an inability or unwillingness to provide this infrastructure, or a lack of knowledge on how to do this. Hsu et al. (2008) argue that the firms with inadequate or insufficient information sharing will be limited in achieving the supportive benefits from the relationships with other supply chain partners. With the growing technological advances and the emergence of the global information infra-structure, the companies should possess the suitable competitive inter-organisational informational systems to enable them to achieve the rapid and effective response to the customer

needs and changing expectations (Hsu et al., 2008). Information sharing in a supply chain is to provide important and suitable information to the supply chain partners. The information shared may be either tactical, that is to say related to issues such as purchasing; operations schedules; logistics; or may be strategic such as long term objectives of the company or information related to marketing and customers (Hsu et al., 2008).

Among the benefits of sharing information are that all the supply chain partners can develop more opportunities such as matching the available information to modify their courses of actions and future planning and can also have its positive and direct effect on the company and its supplier relationships (Hsu et al., 2008). The information and communication tools can enable the business activities to be integrated across the whole supply chain through the information flows which is required to coordinate the business process as a whole (Rippa, 2009). This is through the acquiring, sharing and accessing of data through the whole supply chain to develop information useful for all parties in the same supply chain (Rippa, 2009). Among the information technological services is the “Internet” which is considered as an opportunity for the firms to share demand and data across the supply chain. Therefore, the internet availability is considered as an opportunity to enhance and break down the functional and organisational barriers and increase information flows (Rippa, 2009). Ryu et al. (2009) argue that managing information and information flow in an effective manner means not only the availability of information exchanged (Zand, 1972) but also a more accurate and detailed body of information which will influence the supply chain partners’ performance as well as leading to successful relationships (Dyer, 1997).

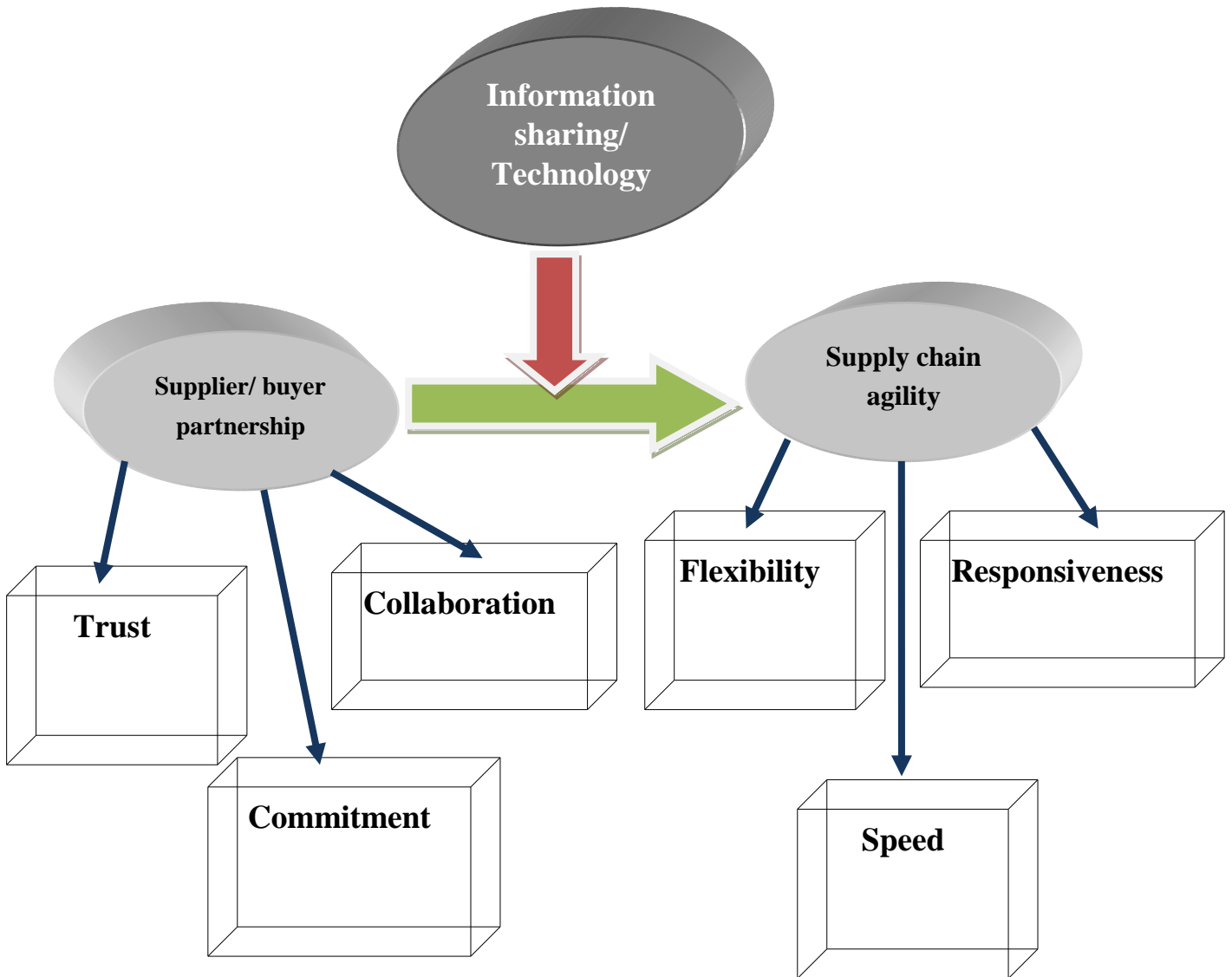
Schonsleben (2000) suggest the importance of information technologies to agility since they argue that agile companies are competing through the use of “knowledge and competency” (cited in Power et al. 2001). Power et al., (2001) also argue that in their analysis for “less agile” and “more agile” companies, the “more agile” companies are more willing to use high technology. Martin and Grbac (2003) argue that information sharing has a positive impact on supplier flexibility and that supplier flexibility has a positive effect on profit, customer loyalty, and responsiveness (cited in Kannan and Tan, 2006).

Based on these arguments, the second main hypothesis developed is as follows:

H2: information sharing/technology has a moderating impact on achieving supply chain agility.

Based on our review of the literature and the development of the aforementioned set of hypotheses relating to the connection between agility in the supply chain context and the buyer-supplier relationship architecture, the proposed conceptual framework in Figure 1 is put forward.

FIGURE 1: THE PROPOSED CONCEPTUAL FRAMEWORK



3. CONCLUSION

Nowadays the business environment is characterized as being highly dynamic and complex. Companies face several threats and challenges inside their market place. This makes firms' search for new means and tools to be able to survive inside their businesses increasingly imperative. Great attention has been given to supply chain and its management as the unit of competition in the highly changeable business environment. A parallel attention has also been given to agility concept as the means for the companies to face these changes. Therefore a new concept called "supply chain agility" has been introduced, and a high degree of importance has been attached to it. There is to date, however, very little literature on supply chain agility. Some theoretical frameworks determining the elements required by the companies to achieve supply chain agility do exist, however few are empirically tested. There are several studies on agility emphasizing the importance of developing a strong relationship between the company and its supplier, without determining the suitable type of relationship, and the extent of its importance in helping the company and the supplier in achieving agility within their supply chain. The aim of the research proposed in this paper is to determine the extent of the importance of developing a strong relationship between the company and its supplier on their abilities to achieve agility within supply chain, and especially developing a mutual beneficial partnership as one unique type of relationship. It also aims to investigate the impact of information sharing/technology in helping companies to achieve supply chain agility through buyer-supplier partnership. The proposed conceptual framework will be empirically tested from both perspectives: the manufacturing company (buyer) and the supplier. It will be examined in the manufacturing sector using a survey questionnaire as the means for data collection. The questionnaire will be distributed among the CEO, managers, purchasing managers, marketing managers, and production managers inside manufacturing companies. Thus, the proposed research aims to provide insight into the importance of supply chain agility and the importance of buyer-supplier partnership in achieving it. The research also aims to provide the importance of sharing and using of information technology among supply chain partners to help companies in achieving successful agile supply chains.

References

- Baramichai, M., Zimmers, E., Marangos, C. A. (2007), "Agile supply chain transformation matrix: an integrated tool for ceating an agile enterprise". *Supply Chain Management: An International Journal*. 12/5 pp.334-348
- Bernardes, E. S. and Hanna, M.D., (2009), "A theoretical review of flexibility, agility and responsiveness in the operations management literature". *International Journal of Operations & Production Management*, Vol.29, no.1, pp.30-53
- Burgess, K., Singh, P.J. and Koroglu, R. (2006), "supply chain management: a structured literature review and implications for future research", *International Journal of Operations & Production Management*, Vol. 26, no.7
- Campbell, A.,(1997), "Buyer-supplier partnership: flip sides of the same coin?". *Jounal of Business & Industrial marketing*, vol.12, no.6, pp. 417-434
- Chen, I.J. and Paulraj, A. (2004) "Towards a theory of supply chain management: the constructs and measurements". *Journal of operations management*, vol.22, pp.119-150
- Chen, I.J., Paulraj, A., and Lado, A. A. (2004), "Strategic purchasing, supply management, and firm performance". *Journal of Operations Management*, vol.22, pp.505-523
- Christopher, M. (1992) "*Logistics & Supply Chain Management*", Pitmans, London, UK.
- Christopher, M.(2000), "The Agile Supply Chain: Competing in Volatile Markets". *Industrial Marketing Management*. 29,pp..37-44
- Christopher, M., and Towill, D., (2001), "An Integrated Model for the Design of Agile Supply Chains". *International Journal of Physical Distribution and Logistics Management*..vol.31, issue 4, pp.235-246
- Christopher, M., and Towill,D.R.(2000)"Supply chain migration from lean and functional to agile and customized". *Supply Chain Management*. Vol.5,no.4,pp.206-213.
- Corsten, D.,Felde, (2005), "Exploring the performance effects of key-supplier collaboration". *International Journal of Physical Distribution &Logistics Management*, vol.35,no.6, pp.445-461
- Cousins, P. D., Lawson, B. and Squire, B. (2006), "supply chain management: theory and practice-the emergence of an academic discipline?". *International Journal of Operations & Production Management*, Vol. 26, no.7, pp.697-702
- Fynes, B. and Voss, C. (2002), "The moderating effect of buyer-supplier relationships on quality practices and performance". *International Journal of Operations & Production Management*, vol.22, no.6, pp. 589-613
- Goffin, K., Lemke,F, and Szwejczewski, M. (2006), "An exploratory study of close supplier-manufacturing relationships". *Journal of operations management*, vol.24, pp.189-209
- Handfield, R.B. and Bechtel,C., (2002), "The role of trust and relationship structure in improving supply chain responsiveness". *Industrial Marketing Management*, vol.31, pp.367-382
- Harrison, A. (2000). "The Agile Supply Chain". Available on line; <http://www2.theiet.org/OnComms/pn/manufacturing/agility.pdf>.
- Hsu, C.C.,Kannan, V.R., Tan K.C. and Leong, G. K.,(2008) "Information sharing, buyer-supplier relationships, and firm performance". *International Journal of Physical Distribution &Logistics Management*, vol.38, no.4, pp.296-310

- Humphreys, P., Shiu, W.K. and Lo, V.H.Y., (2003) "Buyer-supplier relationship: perspectives between Hong Kong and the United Kingdom". *Journal of Materials Processing Technology*, vol.138, pp.236-242
- Ismail, H.S. and Sharifi, H., (2006). "A balanced approach to building agile supply chains". *International Journal of Physical Distribution & Logistics Management*, vol.36, no.6, pp.431-444
- Jackson, M., and Johansson, C., (2003), "An agility analysis from a production system perspective". *Integrated Manufacturing Systems*. 14/6 , 482-488
- Jain, V. and Benyoucef, L. (2008) "managing long supply networks: some emerging issues and challenges". *Journal of manufacturing Technology Management*, vol.19, no.4, p.469-496
- Kannon, V. and Tan, K.C, (2006), "Buyer-supplier relationships: the impact of supplier selection and buyer-supplier engagement on relationship and firm performance". *International Journal of Physical Distribution & Logistics Management*, vol.36, no.10, pp.755-775
- Lemke, F., Goffin, K. and Szwejczewski, M., (2003), "Investigating the meaning of supplier-manufacturing partnerships". *International Journal of Physical Distribution & Logistics Management*, vol.33, no. 1, pp.12-35
- Li, S., Rao, S.S., Ragu-Nathan, T.S., Ragu-Nathan, B., (2005), "Development and validation of a measurement instrument for studying supply chain management practices". *Journal of Operations Management*. 23, 618-641
- Lin C-T., Chiu, H., Tseng, Y-H, (2006) "Agility evaluation using fuzzy logic". *International Journal of Production Economics*. 101, 353-368
- Maheshwari, B., Kumar, V. and Kumar, U., (2006), "Optimising success in supply chain partnerships". *Journal of Enterprise Information Management*, vol.19, no.3, pp.277-291
- Moron, D.K. and Swierczek, A. (2009), "The agile capabilities of polish companies in the supply chain " an empirical study". *International Journal of production Economics*, vol.118, pp.217-224
- Narasimhan, R., Swink, M. and Kim, S.W. (2006) "Disentangling leanness and agility: An empirical investigation". *Journal of Operations Management*. 24, pp.440-457
- Paulraj, A., and Chen, I., (2007), "strategic Buyer-Supplier Relationships, Information Technology and External Logistics Integration". *The Journal of Supply Chain Management*, spring.
- Power, D.J., Sohal, A.S. and Rahman, S. (2001), "Critical success factors in agile supply chain management". *International Journal of Physical Distribution & Logistics Management*, vol.31, no.4, pp.247-265
- Prater, E., Biehl, M. and Smith, M. A. (2001), "International supply chain agility: Tradeoffs between flexibility and uncertainty". *International Journal of Operations & Production Management*, Vol.21, no.5/6, pp.823-839
- Rippa, P. (2009) "Information sharing in buyer-supplier relationships". *Dep. Of Business and Managerial Engineering, Universita di Napoli Federico II. Working paper.*
- Ryu, I., So, S. and Koo, C., (2009) "The role of partnership in supply chain performance". *Industrial Management & Data Systems*, vol.109, no4, pp.496-514
- Sharifi, H. and Zhang, Z. (1999), "A methodology for achieving agility in manufacturing organisations: An introduction." *international journal of production economics*, vol. 62, p. 7-22.
- Sharifi, H., Ismail, H. S. and Reid, I. (2006) "Achieving Agility in Supply Chain Through simultaneous 'design of' and 'design for' supply chain. Vol.17, no.8, pp.1078-1098

- Sherehiy, B., Karwowski, W., Layer, J., K., (2007) "A review of enterprise agility: Concepts, frameworks, and attributes". *International Journal of Industrial Ergonomics*. vol.37, pp.445-460
- Swafford, P., M., Ghosh, S., Murthy, N., N., (2006) "A framework for assessing value chain agility". *International Journal of Operations & Production Management*. vol.26, no.2, pp.118-140
- Swafford, P.M., Ghosh, S. and Murthy, N. (2008), "Achieving supply chain agility through IT integration and flexibility". *International Journal of Production Economics*, vol.116, pp.288-297
- Terawatanavong, C., Whitwell, G.J. and Widing R.E., (2007) "buyer satisfaction with relational exchange across the relationship lifecycle". *European journal of Marketing*, vol.41, no.7/8, pp.915-938
- Ulaga, W. and Eggert, A. (2006) "Relationship value and relationship quality". *European Journal of Marketing*, vol. 40, No. 3/4, pp.311-327
- Van der Vorst, J.G.A.J. (2004), *Supply Chain Management: theory and practices*, in: *The Emerging Science of Chains and Networks: Bridging Theory and Practice*, (eds) T. Camps, P. Diederer, G.J. Hofstede, and B. Vos, Reed Business Information, chapter 2.1, pp. 105-128
- Van Hoek, R., I., Harrison, A., Christopher, M. (2001), "Measuring agile capabilities in the supply chain". *International Journal of Operations & Production Management*. Vol.21, no.1/2, pp.126-147
- Veludo, M., Macbeth, D.K., and Purchase, S. (2004), "Partnering and relationships within an international network context". *International Marketing Review*. Vol.21, no.2, pp.142-157
- Vokurka, R. J. and Flidner, G., (1998), "The journey toward agility". *Industrial Management & Data Systems*, vol.98, no. 4, pp.165-171
- Yusuf, Y.Y., Sarhadi, M., Gunasekaran, A., (1999) "Agile manufacturing : The drivers, concepts, and attributes". *International Journal of Production Economics*. Vol.62, pp.33-43