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Elevated service offering in service value networks: Building dynamic capability

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**Abstract:** 

Service organisations create new service offerings that are the result of collaborative arrangements operating on a value network level. This leads to the notion of "elevated service offering", implying new or enhanced service offerings which can only be eventuated as a result of partnering, and one that could not be delivered on individual organisational merits. Thus, organisations are faced with important challenges and opportunities which require strategic focus.

This paper provides an integrated view of the outcomes of elevated service offering in a collaborative environment and focuses on the theory and concepts of the dynamic process of capability building. A model for creating elevated service offerings is developed, as well as a set of constructs that are instrumental to partnering, for example, organizational learning, entrepreneurial alertness, innovative capacity, and collaborative agility.

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### Introduction

In light of the deployment of e-commerce as a new form of entrepreneurial activity, service industries are radically transforming the manner in which they operate within the context of globalization and service delivery mechanisms, thereby creating new service industries and market opportunities. In the unfolding knowledge-based economy, and the increasing importance in services, Services Science is an emerging field which is intended to broaden and challenge traditional thinking about services, service offerings and innovation in services (Spohrer and Riecken, 2006). Amidst the volatile and turbulent environments prevailing in the service sector, innovations in technology, integration with computers and telecommunications and the use of internet are viewed not only as a powerful facilitating mechanism for service organisational growth, but in fact are seen as a driver which creates new service markets and seen as enablers for transforming the nature, content, context and scope of the service offerings within and across industry sectors (Agarwal and Selen, 2005, Agarwal and Selen, 2006).

Organisations operating in partnerships create important challenges and opportunities for themselves and their partners. The management of these partnerships calls for strategic and operational focus, mainly related to inter and intra management of relationships, knowledge, information and assets. Previous empirical studies demonstrate that organisational learning and relational capital constructs have been instrumental in gaining competitive advantage. In the context of information reach and richness across

organisations, recent research has also brought forward two important theoretical notions as key organisational capabilities: collaborative agility and entrepreneurial alertness.

In a continual search for competitive advantage, organisations try to develop new products or services as quickly as possible, with organisational learning being centre to partnering. Here, dynamic capability building is the force behind the notion of an elevated service offering. A suite of capability constructs, namely – relationship capital, organisational learning (both your and your partners' organisational learning), entrepreneurial alertness, collaborative innovative capacity, and collaborative agility will form the basis for developing a framework for creating elevated service offerings in a collaborative environment.

This paper focuses on the construct development and introduction of a conceptual model that eventually will be validated empirically. The empirical part, consisting of a triangulation research methodology using a qualitative case study approach, development of constructs using exploratory factor analysis followed by confirmatory factor analysis, and the use of Structural Equation Modelling to estimate multiple dependent relationships between the constructs of interest, is beyond the scope of this paper.

The proposed framework provides an integrated view of the drivers and outcomes of elevated service offering in a collaborative environment. The paper's primary focus is on the theoretical concepts and constructs underlying the process of dynamic capability creation in a collaborative environment within service organisations, leading to value creation in the form of an elevated service offering.

# **Conceptual Model for Elevated Service Offering in Service Value Networks**

Organisations, as a consequence of technological changes and wider knowledge attached to them, are nowadays facing an environment characterised by increasing levels of complexity, globalisation and dynamism. Therefore, they need to pay greater and focused attention to the development and preservation of internal skills and abilities, tacit interaction and relationship capital (cooperative competency). This implies changing both the knowledge base within an organisation, the way the organisations use existing knowledge to compete, and the way individuals interact and how management cultivates these attributes. Organisations get into relationships with other organisations, simply to use their own resources in a more economic way and to access part of the advantages created by the resources of the other party (Anderson and Narus, 1990). This partnering is important as it can either increases the turnover through the relationship or reduce the costs, which is why organisations accept the investments and adaptation required to form durable relationships (Ford, 1980). To gain a perspective on how a successful business model can generate extraordinary value, a classic example was the merger of AOL and Time Warner in 2000. Their success lied not only on the physical and financial assets, but the intangible assets that went largely unnoticed – an important intangible asset made up of AOL's leadership team and the loyal customer base, which played the most crucial role in making them the leaders in dominating the online industry (Boulton et al., 2000).

Several scholars have already demonstrated that capabilities are the pre-eminent source of a firm's success (Michalisin et al., 1997, Day, 1994, Teece et al., 1997, Bontis and Fitz-enz, 2002). Further, Grant (1996) argues that the success of any firm is dependent upon the knowledge or know-how of its people. McEvily and Chakravarty (2002) support Grant's (1996) views and suggest that these advantages are more durable than any other resource purely because they are utterly complex, specialised and tacit. Teece (2000) acknowledges and Galbreath (2005) empirically supports his arguments in saying that capabilities are not only tacit in nature but that they are inextricably embedded within organisational experience, learning, and practices adopted by the firm eg. relationship management, absorptive capacity, collaborative communication.

Successful supply chains/value networks depend on identifying how to leverage partner capabilities and strengths in order to create value, and in understanding what drives an organisations aptitude and capability in a dynamic and evolutionary manner. Examples include new business models by retail chains - Wal-Mart, Aldi and Lidl who create value whilst opting for low-cost strategy and compete with other established businesses in the industry for service outcomes (Christensen, 1997). Above all, the process of dynamic capability building and its impact upon service offering are crucial during these volatile times and ie CISCO leveraged its financial assets by attracting more talent and gain access to new technologies through stock offerings to organisations and their employees (Moore, 2005). In the context of services, the role of drivers, such as organisational,

structural and cultural drivers have a place, but it are the behavioural and psychological drivers that require even greater attention and focus.

It is important to examine the impact of these drivers to investigate how partnering organisations create value within the service value network, and to identify how such efforts and capabilities of partnering organisations enhance, develop and evolve in an urge to deliver enhanced service offerings. In dynamic service industries, organisations partner with each other to gain sustainable competitive advantage in order to combat the threats from competitors and to manage customer needs in more flexible and dynamic ways. Therefore the concept of strategic flexibility (Sanchez, 1995) broadly denotes such organisational ability to respond to rapidly changing markets. It is in this context that market factors, organisation orientation and culture along with structural, behavioural and human resource drivers are examined further. This is illustrated, for example, by the car leasing business model focusing on the distribution and sales of single-portion packages, allowing consumers to buy cars with lower purchasing power options (Prahalad, 2004).

Yet, our paper limits itself to the theoretical concepts and constructs related to dynamic capability building and processes that make our collaborative actions amenable to customers. For organisations operating within a value network, we propose a framework for building dynamic capability which leads to the delivery of an elevated service offering, as is illustrated in Figure 1.

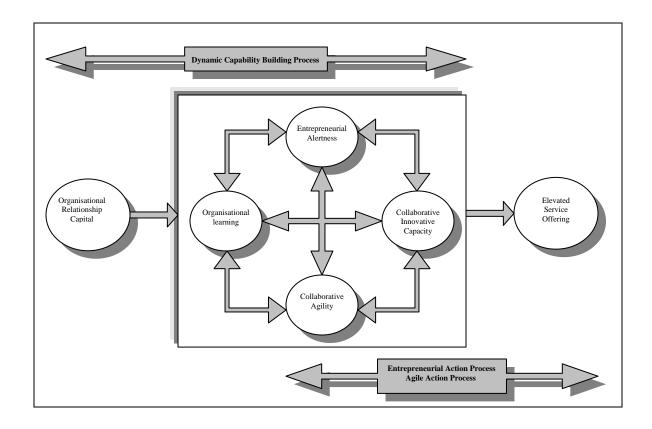


Figure 1: A framework for Elevated Service Offerings in a Collaborative Environment

The proposed framework includes the constructs of relationship capital (RC), collaborative organisational learning (COL), entrepreneurial alertness (EA), collaborative agility (CA) and collaborative innovative capacity (CIC). This model shows interrelationships between the constructs and how these constructs influence the service offering of an organisation operating under a collaborative environment leading to an elevated service offering (ESO) as an outcome. This implies new or enhanced service offerings that can only be eventuated as a result of partnering, one that could not be delivered on individual organisational merits. We now turn to justifying the theoretical underpinnings of this framework.

# **Theoretical Underpinnings**

Collaboration or relationship management includes establishment and maintenance of relationships with partners<sup>1</sup> - suppliers, customers and other stakeholders. It is a managerial capability and a skill which largely reflects knowledge sharing, communication and the learning ability of the firm (Dyer and Singh, 1998). Figure 1 shows the three strategic processes - dynamic capability process, entrepreneurial action process and agile action process, all which lead to elevated service offering. The effects of collaboration or relational exchange between organisations may influence collaborative organisational learning (yours and your partner organisations) which consecutively will influence collaborative innovative capacity leading to elevated service offering. The constructs of entrepreneurial alertness and collaborative agility are proposed as intermediary variables influencing organisational learning, collaborative innovative capacity and the outcome – elevated service offering. An example of such an elevated service offering is an advanced telehealth system through the joint efforts of NSW Health, CSIRO and WAHS in Australia, developed for supporting critical care services between a referral hospital and a rural hospital by transmitting very high quality, real-time multimedia information, including images, audio and real-time video, over an IP based network. This is a classic example that not only uses technology as a prime enabler, but also involves human beings - doctors, nurses and patients using the technology in complex emergency clinical environments. This requires the collaboration and learnings (both tacit and explicit) of all stakeholders, and it is only through the collaborative agility, innovative capacity and entrepreneurial alertness that this real-time trial was successful. Time-criticality in an emergency situation often deters people from

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<sup>&</sup>lt;sup>1</sup> Partner "implies supplier, customer, competitor or other party that makes a significant contribution"

trialling new ways of clinical practice with no room for human error. Yet, the above example was a real-time collaborative effort which demonstrated the dynamic capability building process, and agile and entrepreneurial action processes in real-time (Li et al., 2006).

# Organisational Relationship Capital (ORC)

Collaboration, partnering or networking is defined as "a firms's set of relationships with other organisations" (Perez Perez and Sanchez, 2002). Based on extant literature, there is evidence on the effects of relational orientation promoting organisational learning, which influences innovation, supply chain effectiveness and performance (Lai, 2004, Panayides and So, 2004, Prahinski, 2004). Panayides and Ho (2004) in their empirical study demonstrate that relationship orientation has a positive impact on key organisational capabilities, like organisational learning, innovation and improvement in supply chain effectiveness and performance. According to Harker (1999) relationship orientation refers to the proactive creation, development and maintenance of relationships with customers and other parties that would result in mutual exchange and fulfilment of promises at a profit. However, Panayides and So (2004) viewed relationship orientation as a philosophy of doing business and a culture that puts the buyer-supplier relationship at the centre of an organisation's strategic and operational thinking.

Further, the alliance literature has highlighted the important role of trust in alliances (Gulati, 1995, Dyer and Singh, 1998, Zaheer et al., 1998), and hence we classify a higher order construct namely, Organisational Relationship Capital (ORC) which is made up three sub constructs - *Relational Capital*, *Employee Capital*, *Prior Relationship*. The

underlying premise of the three chosen sub-constructs taken into consideration is the trust and interactions amongst individuals of partnering organisations.

Relational Capital refers to the wealth in the form of mutual trust, respect, friendship and high reciprocity amongst individuals at the personal level between partner organisations (Kale et al., 2000). According to Kale et al. (2000), relational capital resides upon close interaction at the personal level between alliance partners, has important performance implications and has empirically validated the impact on organisational learning and protection of assets.

Employee Capital refers to inter-organisational product, service and process knowledge present in their employees minds (Nonaka and Takeuchi, 1995, den Hertog, 2000) and the management driven reward systems with recognition mechanisms prevailing across partnerships a means for personal motivation (Wickham, 2006). Management which empowers employees, especially when dealing with customers and one which which provides employees an opportunity to work in interchanging roles across the partnerships, are all elements of employee capital (Lashley, 1999). All of these factors significantly enhance the mechanism of interaction, trust and knowledge sharing amongst alliances and hence are fundamental to ORC.

According to Ring and Van de Van (1992), two alliances are likely to trust each other more than other firms with whom they have had no alliances. Therefore, a high degree of interaction and trust is only possible through repeated alliances, which should then

facilitate a high degree of knowledge sharing and organisational learning. Not only that, trust is difficult to measure, hence it has been replicated through Prior Alliances (Gulati, 1995). Therefore the construct of *Prior Relationship* is based on a factor that produces trust and interaction as its proxy, which is believed to generate a high degree of learning and information or 'know-how' exchange between partners.

## Collaborative Organisational Learning

Collaborative Organisational learning (COL) has been discussed in the literature as an antecedent of innovation and is very much a dynamic capability. Scholars have stamped organisational learning as a system-level phenomenon (Lehr and Rice, 2002). This perspective is exemplified by Nevis et al. (1995), whereby organisations that are capable of capitalising their learning abilities can achieve sustainable performance improvements.

Llorens-Montez et al. (2005) through their empirical study demonstrate how teamwork cohesion promotes organisational learning which in turn impacts on technical and administrative innovation and organisational performance. In this empirical study organisational learning has been found to be a very important construct which can measure knowledge quality (Llorens-Montes et al., 2005). Further, Lopez et al. (2004) demonstrates that collaborative culture has a positive impact upon organisational learning and that collaboration is more effective than competition.

Teo and Wang (2006) defined organisational learning "as an organisations shared assumptions and mechanisms (in terms of process or culture) that contribute to its

capabilities to sustain and improve performance unfettered". In our context, organisational learning refers to the organisation-wide activity of creating and using knowledge over time to enhance competitive advantage. It is argued that organisational learning happens on both sides of the partnership, as such we have two sub-constructs of COL, namely **your organisational learning** and **your partners organisational learning**, both of which highlight the significant learning differences due to their own initiatives and partner organisation initiatives on the learning processes on both sides of the partnership, and hence constitute a higher order collaborative organisational learning construct.

# Collaborative Agility

"Agility" is defined as the ability of an organisation to seize competitive market opportunities and detect opportunities for innovation by assembling requisite assets, knowledge and relationships with speed and surprise (D'Aveni, 1994, Goldman et al., 1995). According to March (1991), agility encompasses exploration and exploitation of prospects, where "exploitation" is "the use and development of things already known through refinement and extension of existing competencies, technologies and knowledge", and "exploration" is "organisational experimentation with new alternatives and pursuit of knowledge about unknown opportunities for competitive actions". Sambamurthy et al. (2003) suggests that "agility encompasses a firm's capabilities which are related to interactions with customers, orchestration of internal operations, and utilization of its ecosystem of external business partners" and that "agility encompasses exploitation and exploration of market arbitrage and comprises of three interrelated

capability sub-constructs namely, Customer Agility, Partnering Agility and Operational Agility". The definition of Operational Agility requires amendment to include adaptations made in the context of cultural and organisational orientations. Thus we reclassify Operational Agility (Sambamurthy et al., 2003) and give it a wider connotation which will entail the orchestration of inter and intra-organisational operations and value systems and its management. In our context, in response to the contemporary market dynamics, the motive to collaborate is to search for new ideas and new learning in an urge to market elevated service offerings. Specifically, collaborative agility entails the swiftness and immediate response by value networks, which includes the time to leverage capability and time to deliver outcome (Ogulin and Selen, 2004). Thus, in our research, Collaborative Agility forms the basis of a dynamic and adaptive capability provided by service value networks in response to customer needs and demands.

As we all know, customers play the most strategic role and hence this warrants a customer orientation whilst managing the market dynamics in search of new service offerings. According to Nambisan (2002) customers present a triangular purpose in stimulating organisation's competitive actions, namely as a co-creator in the development and design of innovative products and services, source of innovative ideas, and as a user for prototype testing or helping other users in learning about the product or service. Not only that, according to Kohli and Jaworski (1990) customer agility describes the firms ability to use the customers expectations in deciphering market intelligence and identifying competitive opportunities. Further, ICT has been found as an enabler for building and enhancing virtual customer communities, and hence customer agility

(Holstrom, 2001, Kambil et al., 1984, Nambisan, 2002). Thereby *Customer Agility* is defined as follows: "the co-opting of customers in the exploration and exploitation of opportunities for innovation and competitive action moves". (Sambamurthy et al., 2003).

Customers are not the only partners you can collaborate with. Other partners may include an organisations supplier and several other stakeholders who are equally important to the operations. Therefore, networking with suppliers in search of competencies, assets, skills and knowledge will lead to organisational learning. Venkatraman and Henderson (1998) define *Partnering Agility* as the ability to leverage assets, knowledge and competencies of suppliers, distributors, contract manufacturers and logistics providers through alliances, partnerships and joint ventures. Sambamurthy et. al. (2003) define *Partnering* Agility as the ability of firms to exploit opportunities through efficient sourcing and staging manufacturing, logistics, or customer support assets and resources. Focussing on services and adapting this definition to suit services, Partnering Agility refers to "an organisations ability to explore and exploit opportunities through sourcing and staging service delivery processes, or customer interfaces and customer support assets and resources, and provides organisations with an ability to adapt or modify their extended networks when it needs access to assets, competencies or knowledge not currently resident in the networks" (Dyer and Singh, 1998). Partners included in here range from suppliers, intermediaries, third parties such as professional and trade associations, and Science Partners and Institutional mechanisms (Pittaway et al., 2004).

The third type of agility is related to the operational processes that form the basis of organisations. *Operational Agility* refers to the ability to rapidly change and redesign existing processes and create new processes for exploiting dynamic marketplaces (Sambamurthy et al., 2003). It refers to the organisational processes and ability to accomplish change with speed, accuracy and cost economy in the exploitation of opportunities and competitive actions. According to Amit and Zott (2001), ICT enhances operational agility by leveraging the information and knowledge access through the ICT network interconnections amongst partners. This enables faster and more informed decision making by management. In addition, ICT reduces asymmetry of information flow amongst partners, which acts as a mechanism for rapid and up-to-date supply of consolidated information through the use of electronic communication channels. As a consequence of this, and due to standardised interfaces existing amongst ICT applications across organisations, the business processes are becoming modular and atomized such that they can be easily juggled into end-to-end processes flowing transparently across organisational boundaries. In light of these developments we would like to modify the definition of operational agility to include structural adaptations and modular processes. Further, this operational agility will empower staff with an ability to understand and comprehend customer expectations and deliver customised services. Acting within the boundaries directed by new organisational networks, employees would be able to respond to a variety of customer demands with speed, accuracy and organisational decorum. Thus, in the face-to-face of technology mediated/driven customer-supplier interactions and the operational agility required with process and structural changes, *Operational* Agility refers to "the managerial capability to rapidly adapt and change network structures and organisational cultures, integrate modular processes to rapidly change and redesign existing processes and create new processes for exploiting a dynamic marketplace".

## Entrepreneurial Alertness

The entrepreneurship vision suggests that a new, better world is anticipated. According to Yu (2001), in the subjectivist perspective, an opportunity exists only if it is perceived and will not be discovered if the alertness system is switched off. Kirzner (1997) refers to entrepreneurial alertness as "an attitude of receptiveness to available, but hitherto overlooked opportunities" and further comment that alertness is like an "antenna that permits recognition of gaps in the market that give little outward sign" and hence entrepreneurs always position themselves on higher grounds so that they are able to capture the signals of market opportunities more easily when hit. Therefore, the essence of entrepreneurial management is to keep pace with the dynamism and be alert to opportunities even when the organisation is in a profitable situation. Thus, in an urge for innovation and achievement in this new world, success lies in the capability of service value networks' ability to gauge and bring about changes, while on the other hand anticipating those changes that cannot be executed immediately. Sambamurthy et al. (2003) define *Entrepreneurial Alertness* as the dynamic capability of an organisation to explore its marketplace, and detect areas of current and future market place threats and opportunities. As such, in the context of our research two specific capabilities describe entrepreneurial alertness, namely Strategic Foresight and System Insight.

Gibb and Scott (1985) define *Strategic Foresight* (which they termed "strategic awareness") as the ability to assess the total impact of a particular change or decision; to be able to project into the future the effects and consequences of a particular action and to think about these in strategic terms. According to Sambamurthy et al. (2003), *Strategic Foresight* is the ability to anticipate discontinuities, threats and opportunities of the future whilst making us more vigilant of the market place dynamics. When delivering services to customers, foresight is critical to entrepreneurial action taken by front-of-house staff in real-time, as it reflects the ability to anticipate and visualise market imperfections and at the same time gauge opportunities for IT-based competitive actions (Christensen, 1997). Costanzo (2004), through a case study in a UK based e-commerce bank, highlights the need for developing strategic foresight as a learning process, and enacts it as a "probing and learning" mechanism, a means by which it only allows time to simply learn and act at the speed at which the industry changes.

According to Sambamurthy et al. (2003), *Systemic Insight* is the ability to visualise and apply knowledge and experience in architecting competitive actions, that is to be in a situation where one can juxtapose the views from inside, respectively outside, of the system (looking in from the meta level) (Rubinstein-Nabarro, 1992). According to Vitale (1986), lack of systemic insight can lead to higher organisational risks when deploying new IT applications. Therefore, systemic insight is paramount, and is the ability to establish and visualise complex connections between dynamic capabilities such as relationship capital, organisational learning, innovative capacity and agility capabilities,

which in turn is enhanced through the systemic insight of the value network, and is deemed instrumental in architecting competitive actions and elevated service offerings.

## Collaborative Innovative Capacity (CIC)

Innovation is defined as the adoption of an idea or behaviour – whether pertaining to a device, system, process, policy, programme, product or service – that is new to the adopting organisation (Zaltman et al., 1973). Hurley et al. (1998) define *Innovativeness* from a collective perspective, as openness to new ideas as an aspect of a firm's culture. Wonglimpiyarat (2005) defines *Innovation* as an integrated process of enhancing the technology frontier (a means to develop), transforming this into the best commercial opportunities (a means to deliver) and delivering the commercialised product/process innovation in a competitive market (a means of market) with widespread use. Lumpkin and Dess (1996) define Innovativeness as an organisation's tendency to engage in and support new ideas, novelty, experimentation, and creative processes that may result in new services, an important way in which organisations create and manage new opportunities for the sake of competitive advantage and value addition. DTI Innovation report (UK, 2003) defines "Innovation" as the successful exploitation of ideas into new products, processes, services or business practices, and is a critical process for achieving the two complimentary business goals of performance and growth, which in turn will help to close the productivity gap.

Fuchs et al. (2000) examine *Innovation* in the context of dynamic capabilities and define innovation capability as higher-order integration capability, that is, the ability to mould

and manage multiple capabilities. According to them, organisations that possess this dynamic capability have the ability to integrate key capabilities and resources of their firms to successfully stimulate innovation. Organisations in search for newstream innovation leverage of their knowledge base (Cohen and Levinthal, 1990). In this context, Lawson and Samson (2001) define Innovation Capability as the ability to continuously transform knowledge and ideas into new products, processes and systems for the benefit of the firm and its stakeholders, and highlight the importance of synthesizing the two paradigms of mainstream and newstream innovation. Therefore, we define Collaborative Innovative Capacity (CIC) as a dynamic skill which is developed when collaborating with partners and comprises of an ability that evolves within individuals or groups. It is an ability to come up with innovative ideas which gives partnering organisations the capacity to introduce new products or services, new or modified processes, new or modified operating structures, new ways to market products or services, or ideas through integration of capabilities and resources in an urge to incite innovation. Further, in the context of service value networks, CIC broadens the horizons and equips partnering organisations with an ability to cross fertilise ideas, allows application of ideas within and across industry sectors, and one which promotes lateral thinking.

### **Elevated Service Offering**

The notion of a service concept was first coined by Sasser et al.(1978) who defined it as the bundle of goods and services "sold to the customer and the relative importance of each component to the customer". Since then the notion of the service concept has

changed to include a set of elements - core and peripheral services (Fitzsimmons and Fitzsimmons, 2004, Lovelock and Wright, 1999). Not only that, several terms exist in the literature, New Service Development (NSD) (Edvardsson et al., 2000, Johnson et al., 2000, Cooper et al., 1994), service design (Gummesson, 1991) and service innovation (Edvardsson et al., 2000, Sundbo, 1998). But the very common feature across all these terminologies is the service concept, which is a core element of processes for service design, development and innovation (Scheuing and Johnson, 1989, Tax and Stuart, 1997) According to Goldstein et al. (2002), the service concept not only defines the how and the what of service design, but it also ensures integration between the what and how, and helps mediate between customer needs and the organisation's strategic intent. Roth and Menor (2003) agree that the service design framework is not adequate, however, they argue that Goldstein et al.'s (2002) model is not consistent with Sasser's original intent. Karwan and Markland (2005) highlight the differences in the two definitions and suggest that Goldstein's overall approach is process oriented and has greater relevance and use when design matters are being addressed at a strategic level. Therefore, from our research perspective we will incorporate the definition of the service concept as given by Johnston and Clark (2001) and Goldstein et al. (2002).

It is to be noted that the terms "service package", "service or product bundle", and "service offerings" have been used interchangeably to describe the notion of a service concept (Fitzsimmons and Fitzsimmons, 2004, Lovelock and Wright, 1999, Heskett et al., 1990, Chase et al., 1998).

In our context of partnering organistions, an *Elevated service offering* (ESO) implies a new or enhanced service offering, which can only be eventuated as a result of a collaborative arrangement, one that could not otherwise be delivered on individual organisational merits.

We envisage ESO as a multi-dimensional higher order construct comprising of multiple dimensions (Goldstein et al., 2002) and made up of a new service offering, new organisational structure and delivery mechanism, and productivity and performance improvements. Since these sub-constructs are interdependent and interrelated to each other we envisage two components namely, **ESO-Strategic** which comprises of strategic elements such as new or modified service offering, new or modified customer interface and an expansion to new market segment and/or other industry sector. The second, ESO-*Operational* which is made up of a composite of three sub-constructs based on structural, performance and productivity elements. The structural aspect includes a new business operating structure or new service delivery process as an outcome. The performance aspects relates to service customisation, utilisation of assets, demand capacity, customer satisfaction and service reliability. The productivity aspect relates to items pertinent to lead time in commercialising offerings, service delivery lead times, on-time delivery of services and customer waiting time. Most of these measures have been taken from extant literature. (Roth, 1993, Sharifi and Zhang, 1999, Goldman et al., 1999, Van Hoek et al., 2001, Swafford et al., 2006, Heskett et al., 1990, Verma and Young, 2000, Prajogo, 2006).

# **Dynamic-Capability Building Process**

The theoretical underpinning for this study is based on the resource-advantage (RA) theory proposed by Hunt and Morgan (1995, , 1996) which Priem and Butler (2001) find more robust than the resource-based theory (Barney, 1991b). The RA theory proposes that superior performance results from a competitive advantage in resources, which was defined as "tangible or intangible entities available to firms that enable them to produce efficiency and/or effective market offerings that have value to some market segments" (Hunt and Morgan, 1996). Therefore, ongoing struggle to compete for a comparative advantage in resources is the norm. This proposed theoretical framework underpins the concepts outlined in the RA theory of strategic management by Hunt and Morgan (1996, , 1995) primarily for several reasons, namely:

- considered to be more robust as compared to the Resource based view theory (Barney, 1991a);
- this theory views organisations as combiners of heterogeneous, imperfectly mobile resources which are historically situated in space and time
- it holds across intra-industry demands in significantly heterogenous, different market offerings for differing market segments in the same industry
- it draws on evolutionary economics which views competition as a struggle, and it is this process of competition that produces innovation. Thus, the RA theory recognises people's entrepreneurial skills and organisations entrepreneurial management capabilities as organisational resources, which lead to economic change;

- it draws on the differential advantage theory where the organisations can have an efficiency advantage, that is the organisation can more efficiently produce value or have an efficiency/effectiveness advantage ie efficiently produce more value.

As evidenced by Austrian approaches, the RA theory explains the dynamism of market-based economies on the proactive, innovative activities of entrepreneurs in identifying opportunities and thus developing elevated market offerings (Jacobson, 1992). Thus, using the central focus of RA theory in our research, our intention is to consolidate and assimilate any type of collaborative firm resources to gain competitive advantage.

Generally, no disagreement over what encompasses tangible resources exists (Andersen and Kheam, 1998), as it is classified as one which includes financial assets and physical assets (Grant, 1991, Galbreath, 2005). Several classification schemes, however, exist for intangible resources, but Galbreath (2005) adapts to Hall's (1993) classification approach whereby intangible resources are identified as strategic assets (what the firm has) which include a) intellectual property assets (Hall, 1993), b) organisational assets (Barney, 1991a, Barney, 1991b); (Fernandez et al., 2000) and c) reputational assets (Roberts and Dowling, 2002), or skills (what the firm does) which include capabilities (Hall, 1993); (Amit and Schoemaker, 1993); (Day, 1994).

According to Barney (1991b) organisational creativity and performance is built through the deployment and use of idiosyncratic, valuable and inimitable resources and capabilities that might be heterogeneously distributed across the organisation. As such,

organisations need to build dynamic and inimitable activity business systems in response to market pressures. Further, Makadok (2001) highlights that organisations leverage two types of resources, namely resource-picking and capability-building. However, Sambamurthy (2003) argues the need for capability-building leveraged resources over resource-picking for the sake of supernormal performance. Capability-building leveraged resources have also been known as Dynamic Capabilities: "the organisational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die" (Eisenhardt and Martin, 2000). Sambamurthy (2003) defines capability-building leverage as "firms ability to integrate, build, and reconfigure internal and external resources in creating the higher order capabilities that are embedded in their social, structural, and cultural context (Grant, 1995, Teece et al., 1997). In the context of very dynamic markets, the logic of leverage and its relevance regarding strategic conduct has been questioned, and hence the need for understanding how organisations can develop capabilities to explore, exploit and capture market opportunities and relentless innovations with speed and surprise as an important imperative for organisational success (Brown and Eisenhardt, 1997, Christensen, 1997, D'Aveni, 1994, Goldman et al., 1995).

As presented earlier, collaboration, partnering or networking is an antecedent of organisational learning and organisational learning is a key factor influencing organisational assimilation and exploitation of knowledge-intensive innovations leading to sustainable competitive advantage. The Porter report (Porter and Ketels, 2003)

highlights that networking translates into innovative outcomes and that interorganisational networking is prime for the development of innovative capability.

According to the logic of dynamic capability leverage, this innovation capability is about both the generation and the exploitation of new products, services, processes and business practices (Pittaway et al., 2004). However, with the turbulence in the market and changing customer demands, organisations not only have to be innovative but they have to be agile and responsive to business needs. In this context, it is the expansion and development of these competencies and skills that are given prime attention namely, collaborative innovative capacity, entrepreneurial alertness and collaborative agility, which supplement each other and are adaptive and evolutionary in nature.

With the proliferation of information technologies, greater reach and richness of information and knowledge sharing across partnerships is possible through strategic decisions made to engage technologies which allow integration of its systems and processes with partnering organisations. It is through these interconnections that dissemination of information and knowledge is possible, which in turn makes organisations more entrepreneurial in nature with greater systemic insight, and at the same time arms management with decision tools that provides them the judgemental capacity and ability to foresee strategically.

# **Entrepreneurial Action Process**

Entrepreneurial action processes are fundamental to the logic of opportunity, however when deployed in conjunction with collaborative agility and collaborative innovative capacity, they enable spontaneous delivery of customised services to their customers. The empowerment and the level of autonomy possessed by the front-of-house staff is managed through the pre-defined boundaries of the partnering operational framework, one which arms employees with innovative and entrepreneurial competencies to deal with customer interactions. These knowledge-intensive customised and interactive service options are only possible through the competence and skills possessed by employees at the strategic, systemic and operational level.

For example, Ebay's competitive actions in web-based services are enabled through their ability to listen, gauge and engage their customers during the design of the service offering ie. customer agility. Hamilton & Selen (2004) address delivery of integrated services over the web in a service value chain by presenting a framework involving multiple partners (partner agility) in a real estate setting in Australia, exhibiting the benefits and value-add delivered by the integration of customer needs, product/process planning, and the supply chain elements of the real estate industry.

## Agile Action processes

Since "agility is all about customer responsiveness and mastering market turbulence" (Van Hoek et al., 2001), agility is an essential ingredient for competitiveness (Yusuf et al., 1999) one which is a "multidimensional competence" and gives an ability to excel

simultaneously on service quality, delivery, flexibility and cost (Narasimhan and Das, 1999). These days organisations are encountering increasing environmental change, and to combat these pressures, the agility paradigm is viable as it allows a mix of strategic responses and gives the service providers a unique configuration of service concept, resource competencies, strategic choices, and business infrastructure.

As pointed out by Sampson and Froehle (2006), the unified services theory applies to Porter's (Porter, 1980) generic strategies of cost leadership, focus and differentiation and hence suggests that organisations can stand out from their competitors by focusing on certain customer inputs, or by employing similar inputs from customers in different ways.

Whilst organisations are operating in partnerships, the value network enables greater flexibility in their processes (Swafford et al., 2006). Not only that, agile supply chains, through their ability to mobilise global resources and ability to track rapid changes and movements through ICT systems, have a stronger impact on competitiveness (Yusuf et al., 1999). ICT in the form of information reach and richness is seen as an enabler for agility and hence increases awareness amongst resources, especially when encountering customers face-to-face or other technology mediated interactions. Whilst our focus is on services, the service innovations and performance success very much depend on human interaction, and these human interactions play an important role in the success of service encounters of any relationship (Harris and Goode, 2004, Cook et al., 2002).

Further, leadership agility is the master competency required at all levels of an organisation; individual, group or inter organisational, one that requires anticipating and initiating change and one that delivers consistent effectiveness in turbulent times (Joiner and Josephs, 2006). Hence, from a service organisation perspective, collaborative agility when operating in conjunction with other dynamic capabilities – collaborative innovative capacity and entrepreneurial alertness, is seemed to foster greater innovation in service customisation and throughput.

The overall research framework is again summarized in more detail in Figure 2:

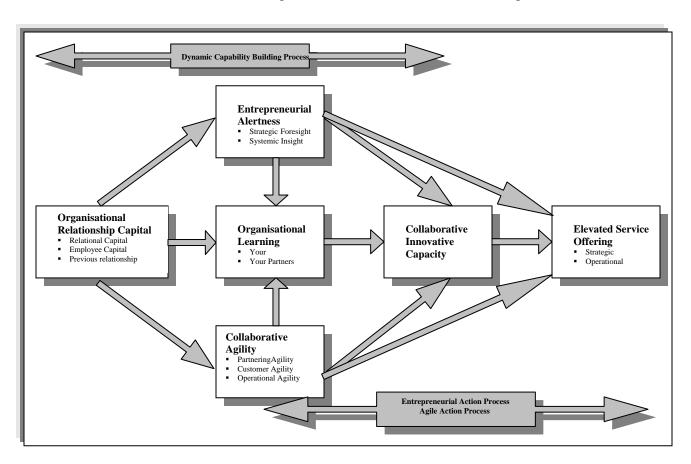


Figure 1: Dynamic Capability Building in a Collaborative Environment

#### **Discussion and Conclusion**

Service organisations increasingly organise themselves and operate on a value chain level, in response to new ways in which services can be marketed, branded, operated and delivered. This creates important challenges and opportunities which call for a realignment of strategic focuses, in particular with respect to the ability to build organisational capabilities which impacts the services modus operandi, service delivery channels, customer encounter and the restructuring amongst different service value chain industries.

This paper provides a theoretically founded research framework for building dynamic capabilities and associated actionable processes in the context of Service Value Networks. This study has accentuated the importance of dynamic capability building in the operations of service organisations and the notion of enhanced service offerings which were not possible on individual organisational merits. It provides initial insights for service organisations to collaboratively position, align, assess and validate the impact of their changing service offerings, whilst addressing the complexities of strategic alignment, value positioning, asset definition; as well as process, knowledge and relationship management, individually and collaboratively.

Significant qualitative and empirical work, including development of constructs, is currently in progress and aimed at providing evidence for relationships among important drivers for creating elevated service offerings in a service value network context. This paper summarized such a framework and built its theoretical foundation.

#### REFERENCES

- AGARWAL, R. & SELEN, W. (2005) Using Technovation For Service Classification: Some Industry Examples. *Proceedings of the 10th Annual Conference of APDSI (Asia-Pacific Decision Sciences Institute)*. Taipei, Taiwan.
- AGARWAL, R. & SELEN, W. (2006) The Impact of Technovation and Collaboration on Strategic Service Classification in the Digital Economy. *Global Conference on Emergent Business Phenomena in the Digital Economy (ICEB+eBRF 2006 conference)*. Tampere, Finland.
- AMIT, R. & SCHOEMAKER, P. J. (1993) Strategic assets and organisational rent. Strategic Management Journal, 14, 33-46.
- AMIT, R. & ZOTT, C. (2001) Value Creation in e-businesses. *Strategic Management Journal*, 22, 493-521.
- ANDERSEN, O. & KHEAM, L. S. (1998) Resource-based Theory and International Growth Strategies: An Exploratory Study. *International Business Review*, 7, 163-184.
- ANDERSON, J. C. & NARUS, J. A. (1990) A model of distributor form and manufacturer firm working in partnership. *Journal of Marketing*, 54, 42-58.
- BARNEY, J. (1991a) The resource-based model of the firm: origins, implications and prospect. *Journal of Management*, 17.
- BARNEY, J. B. (1991b) Firms resources and sustained competitive advantage. *Journal of Management*, 17, 99-120.
- BONTIS, N. & FITZ-ENZ, J. (2002) Intellectual Capital ROI: a casual map of human capital antecedents and consequences. *Journal of Intellectual Capital*, 3, 223-247.
- BOULTON, R. E. S., LIBERT, B. D. & SAMEK, S. M. (2000) A business model for the new economy. *Journal of Business Strategy*, 29-35.
- BROWN, S. & EISENHARDT, K. (1997) The art of Continuous change: Linking complexity theory and Time-paced Evolution in relentlessly shifting organizations. *Administrative Science Quarterly*, 42, 1-34.
- CHASE, R. B., AQUILANO, N. J. & JACOBS, R. (1998) Operations Management for Competitive Advantage, Boston, MA.
- CHRISTENSEN, C. M. (1997) The Innovator's Dilemma: When new technologies cause great firms to fail.
- COHEN, J. & LEVINTHAL, D. A. (1990) Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, 35, 554-571.
- COOK, L. S., BOWEN, D. E., CHASE, R. B., DASU, S., STEWART, D. M. & TANSIK, D. A. (2002) Human issues in service design. *Journal of Operations Management*, 20, 159-174.
- COOPER, R. G., EASINGWOOD, C. J., EDGETT, S., KLEINSCHMIDT, E. J. & STOREY, C. (1994) What distinguishes top performing new products in financial services. *Journal of Product Innovation Management*, 11, 289-299.
- COSTANZO, L. A. (2004) Strategic Foresight in a high-speed environment. *Futures*, 36, 219-235.
- D'AVENI, R. A. (1994) Hypercompetition: Managing the dynamics of strategic maneuvering, New York, The Free Press.
- DAY, G. S. (1994) The capabilities of market-driven organisations. *Journal of Marketing*, 58, 37-52.

- DEN HERTOG, P. (2000) Knowledge-intensive business services as co-producers of innovation. *International Journal of Innovation Management*, 4, 491-528.
- DYER, J. H. & SINGH, H. (1998) The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review*, 23, 660-679.
- EDVARDSSON, B., HGUSTAVSSON, A., JOHNSON, M. D. & SANDEN, B. (2000) New Service Development and Innovation in the New Economy, Lund, Sweden, Student litterature.
- EISENHARDT, K. & MARTIN, J. (2000) Dynamic Capabilities What are they? Strategic Management Journal, 21, 1105-1121.
- FERNANDEZ, E., MONTES, J. M. & VAZQUEZ, C. J. (2000) Typology and strategic analysis of intangible resources: a resource-based approach. *Technovation*, 20, 81-92.
- FITZSIMMONS, J. & FITZSIMMONS, M. (2004) Service Management: Operations, Strategy and Information technology.
- FORD, D. (1980) The development of buyer-seller relationships in industrial markets. *European Journal of Marketing*, 14, 339-354.
- FUCHS, P. H., MIFFLIN, K. E., MILLER, D. & WHITNEY, J. O. (2000) Strategic integration: Competing in the age of capabilities. *California Management Review*, 42, 377-400.
- GALBREATH, J. (2005) Which resources matter the most to firm success? An exploratory study of resource-based theory. *Technovation*, 25, 979-987.
- GIBB, A. A. & SCOTT, M. G. (1985) Strategic awareness, personal commitment and the process of planning in the small business. *Journal of Management Studies*, 22, 597-625.
- GOLDMAN, S. L., NAGEL, R. N. & PREISS, K. (1995) Agile Competitors and Virtual organisations: Strategies for enriching the customer, New York.
- GOLDMAN, S. L., NAGEL, R. N. & PREISS, K. (1999) Agile Competitors and Virtual Organisations: Strategies for enriching the customer, New York.
- GOLDSTEIN, S. M., JOHNSTON, R., DUFFY, J. & RAO, J. (2002) The service concept: the missing link in service design research? *Journal of Operations Management*, 20, 121-134.
- GRANT, R. M. (1991) The resource-based theory of competitive advantage: implications for strategy formulation. *California Management Review*, 33, 114-135.
- GRANT, R. M. (1995) *Contemporary Strategy Analysis*, Oxford, Blackwell Publishers Inc.
- GRANT, R. M. (1996) Toward a knowledge-based theory of the firm. *Strategic Management Journal*, 17, 109-122.
- GULATI, R. (1995) Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances. *Academy of Management Journal*, 38, 85-112.
- GUMMESSON, E. (1991) Qualitative Methods in Management Research, Newbury, CA.
- HALL, R. (1993) A Framework Linking Intangible Resources and Capabilities to Sustainable Competitive Advantage. *Strategic Management Journal*, 14, 607-618.
- HARKER, M. J. (1999) Relationship Marketing defined? An examination of current relationship marketing definitions. *Marketing Intelligence and planning*, 17, 13-20.

- HARRIS, L. C. & GOODE, M. M. H. (2004) The four levels of loyalty and the pivotal role of trust: a study of online dynamics. *Journal of Retailing*, 80, 139-158.
- HESKETT, J. L., SASSER, W. E. & HART, C. W. L. (1990) Service Breakthroughs Changing the rules of the Game, New York.
- HOLSTROM, H. (2001) Virtual Communities as platforms for product development: Am interpretive case study of customer involvement in online game development. IN STORY, V., SARKAR, S. & DEGROSS, J. I. (Eds.) *21st International conference on Information Systems*. New Orleans, LA.
- HUNT, S. D. & MORGAN, R. M. (1995) The comparative advantage theory of competition. *Journal of Marketing*, 59, 1-15.
- HUNT, S. D. & MORGAN, R. M. (1996) The resource-advantage theory of competition: dynamics, path dependencies and evolutionary dimensions. *Journal of Marketing*, 60, 107-114.
- HURLEY, R. F., HULT, G. & TOMAS, M. (1998) Innovation, market orientation, and organisational learning: an integration and empirical examination. *Journal of Marketing*, 62, 42-54.
- JACOBSON, R. (1992) The "Austrian" School of Strategy *The Academy of Management Review*, 17, 782-807.
- JOHNSON, S. P., MENOR, L. S., ROTH, A. V. & CHASE, R. B. (2000) A Critical Evaluation of the New Services Development Process: Integrating Service Innovation and Service Design. IN (EDS), I. J. A. F. A. M. J. F. (Ed.) *New Service Development* Thousand Oaks, California Sage Publications.
- JOHNSTON, R. & CLARK, G. (2001) Service Operations Management, Harlow, UK.
- JOINER, B. & JOSEPHS, S. (2006) Leadership Agility, Jossey-Bass.
- KALE, P., SINGH, H. & PERLMUTTER, H. (2000) Learning and Protection of Proprietary Assets in Strategic Alliances: Building Relational Capital. *Strategic Management Journal*, 21, 217-237.
- KAMBIL, A., FRIESEN, G. & SUNDARAM, A. (1984) Cocreation: A new source of value. *Outlook Magazine*, 2, 23-29.
- KARWAN, K. R. & MARKLAND, R. E. (2005) Integrating service design principles and information technology to improve delivery and productivity in public sector operations: The case of the South Carolina DMV. *Journal of Operations Management*.
- KIRZNER, I. M. (1997) Entrepreneurship Discovery and the Competitive Market Process: An Austrian Approach. *Journal of Economic Literature*, XXXV, 60-85.
- KOHLI, A. K. & JAWORSKI, B. J. (1990) Market Orientation: The construct, research propositions and managerial implications. *Journal of Marketing*, 54, 1-18.
- LAI, K. (2004) Service Capability and performance of logistics service provider. *Transportation Research*, 29, 65-83.
- LASHLEY, C. (1999) Employee empowerment in services: a framework for analysis *Personnel Review*, 28, 16-19.
- LAWSON, B. & SAMSON, D. (2001) Developing Innovation Capability in Organisations: A dynamic capabilities approach. *International Journal of Innovation Management*, 5, 377-400.

- LEHR, J. K. & RICE, R. (2002) Organisational measures as a form of knowledge management: A multitheoretic-communication based exploration. *Journal of the American Society for Information Science and Technology*, 53, 1060-1073.
- LI, J., WILSON, L. S., QIAO, R.-Y., PERCIVAL, T., KRUMM-HELLER, A., STAPLETON, S. & CREGAN, P. (2006) Development of Broadband Telehealth System for critical care process and lessons learnt. 5, 12.
- LLORENS-MONTES, F. J., RUIZ-MORENO, A. & GARCIA-MORALES, V. (2005) Influence of support leadership and teamwork cohesion on organisational learning, innovation and performance. *Technovation*, 1159-1172.
- LOPEZ, S. P., MONTES PEON, J. M. & VAZQUEZ ORDAS, C. J. (2004) Managing Knowledge: the link between culture and organizational learning. *Journal of Knowledge Management*, 8, 93-104.
- LOVELOCK, C. H. & WRIGHT, L. (1999) *Principles of services marketing*, Upper Saddle River, New Jersey.
- LUMPKIN, G. T. & DESS, G. G. (1996) Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21, 135-172.
- MAKADOK, R. (2001) Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, 22, 387-402.
- MARCH, J. (1991) Exploration and Exploitation in Organizational Learning. *Organization Science*, 2, 71-87.
- MCEVILY, S. K. & CHAKRAVARTHY, B. (2002) The persistence of knowledge-based advantage: an empirical test for product performance and technological knowledge. *Strategic Management Journal*, 23, 285-305.
- MICHALISIN, M. D., SMITH, R. D. & KLINE, D. M. (1997) In search of strategic assets. *The International Journal of Organisational Analysis*, 5, 360-387.
- MOORE, G. A. (2005) Dealing with Darwin How great companies innovate at every phase of their evolution, London, UK.
- NAMBISAN, S. (2002) Designing virtual customer environment for new product development: Toward a theory. *Academy of Management Review*, 27, 392-413.
- NARASIMHAN, R. & DAS, A. (1999) Manufacturing agility and supply chain management practices. *Journal of Production and Inventory Management*, 40, 4-10.
- NEVIS, E. C., DIBELLA, A. J. & GOULD, J. M. (1995) Understanding organisations as learning systems. *Sloan Management Review*, 36, 73-85.
- NONAKA, I. & TAKEUCHI, H. (1995) The knowledge-creating company: How Japanese companies create the Dynamics of Innovation, New-York/Oxford.
- OGULIN, R. & SELEN, W. (2004) Capability Leverage in informally networked supply chains: a conceptual model.
- PANAYIDES, P. M. & SO, M. (2004) Logistics Service Provider client relationships. *Transportation Research*, E, 1-22.
- PEREZ PEREZ, M. & SANCHEZ, A. (2002) Lean production and technology networks in the Spanish automotive supplier industry. *Management International Review*, 42, 261.

- PITTAWAY, L., ROBERTSON, M., MUNIR, K., DENYER, D. & NEELY, A. (2004) Networking and innovation: a systematic review of the evidence. *International Journal of Management Reviews*, 5/6, 137-168.
- PORTER, M. E. (1980) Competitive strategy: techniques for analysing industries and competitors.
- PORTER, M. E. & KETELS, C. H. M. (2003) Management Research Summary Forum Summary Report 6. London, Advanced Institute of Management Research.
- PRAHALAD, C. K. (2004) Fortune at the bottom of the pyramid.
- PRAHINSKI, C., BENTON, W.C. (2004) Supplier Evaluations: communication strategies to improve supplier performance. *Journal of Operations Management*, 22, 39-62.
- PRAJOGO, D. (2006) The implementation of operations management in service organisations. *International Journal of Production and Operations Management*, 26, 1374-1390.
- PRIEM, R. L. & BUTLER, J. E. (2001) Is the resource-based view a useful perspective for strategic management. *Academy of Management Review*, 26, 22-40.
- RING, P. S. & VEN, A. V. D. (1992) Structuring cooperative relationships between organisations. *Strategic Management Journal*, 17, 483-498.
- ROBERTS, P. W. & DOWLING, G. R. (2002) Corporate reputation and sustained superior financial performance. *Strategic Management Journal*, 23, 1077-1093.
- ROTH, A. V. (1993) Performance Dimensions in Services :An empirical investigation of strategic performance. *Advanced Services Marketing and Management*, 2, 1-47.
- ROTH, A. V. & MENOR, L. J. (2003) Insights into Service Operations Management: A Research Agenda. *Production and Operations Management*, 12, 145-164.
- RUBINSTEIN-NABARRO, N. (1992) Systemic Insight: A concept in Interacional Context Workshop presentation. delivered at the European Family Therapy Association
- International Congress: Feelings and Systems. Sorrento, Italy.
- SAMBAMURTHY, V., BHARADWAJ, A. & GROVER, V. (2003) Shaping agility through digital options: reconceptualizing the role of information technology in contemporary firms. *MIS Quarterly*, 27, 237-263.
- SAMPSON, S. E. & FROEHLE, C. M. (2006) Foundations and Implications of a Proposed Unified Services Theory. *Production Operations Management Journal*, 15.
- SANCHEZ, R. (1995) Strategic Flexibility in product competition. *Strategic Management Journal*, Summer Special, 135-159.
- SASSER, W. E., OLSEN, R. P. & WYCKOFF, D. D. (1978) Management of Service Operations, Boston, MA.
- SCHEUING, E. E. & JOHNSON, E. M. (1989) A proposed model for new service development. *Journal of Services Marketing*, 3, 25-34.
- SHARIFI, H. & ZHANG, Z. (1999) A methodology for achieving agility in manufacturing organisations. *International Journal of Production Economics*, 62.
- SPOHRER, J. & RIECKEN, D. (2006) Service's Science. *Communications of the ACM*, 49, 31-33.
- SUNDBO, J. (1998) The organisation of Innovation in services, Roskilde, Denmark.

- SWAFFORD, P. M., GHOSH, S. & MURTHY, N. (2006) The antecedents of supply chain agility of a firm: Scale development and model testing. *Journal of Operations Management*, 24, 170-188.
- TAX, S. S. & STUART, F. J. (1997) Designing and implementing new services: the challenges of integrating new service systems. *Journal of Retailing*, 73, 105-134.
- TEECE, D. J. (2000) Strategies for managing knowledge assets: the role of firm structure and industrial context. *Long Range Planning*, 33, 35-54.
- TEECE, D. J., PISANO, G. & SHUEN, A. (1997) Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18, 509-533.
- TEO, H.-H. & WANG, X. (2006) Organisational learning Capacity and Attitude toward complex technological innovations: An Empirical Study. *Journal of the American Society for Information Science and Technology*, 57, 264-279.
- UK, D. (2003) Competing in the Global Economy: the Innovation Challenge.
- VAN HOEK, R. I., HARRISON, A. & CHRISTOPHER, M. (2001) Measuring agile capabilities in the supply chain. *International Journal of Operations and Production Management*, 21, 126-147.
- VENKATRAMAN, N. & HENDERSON, J. C. (1998) Real strategies for virtual organizing. *Sloan Management Review*, 40, 33-48.
- VERMA, R. & YOUNG, S. T. (2000) Configurations of low-contact services. *Journal of Operations Management*, 18, 643-661.
- VITALE, M. R. (1986) The growing risks of information systems success. *Sloan Management Review*, 40, 33-48.
- WICKHAM, P. A. (2006) Entrepreneurship and Business Strategy, England, UK.
- WONGLIMPIYARAT, J. (2005) Does complexity affect the speed of Innovation? *Technovation*, 25, 865-882.
- YU, T. F.-L. (2001) Entrepreneurial Alertness and Discovery. *The review of Austrian Economics*, 14, 47-63.
- YUSUF, Y. Y., SARHADI, M. & GUNASEKARAN, M. (1999) Agile manufacturing: the drivers, concepts and attributes. *International Journal of Production Economics*, 62, 33-43.
- ZAHEER, A., MCEVILY, B. & PERRONE, V. (1998) Does trust matter? Exploring the effects of interorganisational and interpersonal trust on performance. *Organisation Science*, 9, 1-20.
- ZALTMAN, G., DUNCAN, R. & HOLBEK, J. (1973) Innovations and Organisations.