

Developing diffusion process models and strategic performance theory for a new venture

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Developing Diffusion Process Models and Strategic Performance Theory for a New Venture

A dissertation submitted in fulfilment

Of the requirements for the degree of

Doctor of Philosophy

THE UNIVERSITY OF
NEW SOUTH WALES



SYDNEY • AUSTRALIA

By

Samir Gupta

School of Marketing

2002

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**Developing Diffusion Process Models and
Strategic Performance Theory for a New Venture**

2002

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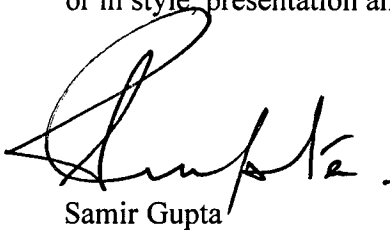
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DECLARATION

I hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, nor material which to a substantial extent has been accepted for the reward of any other degree or diploma at UNSW or any other educational institution, except where due acknowledgement is made in the thesis. Any contribution made to the research by others, with whom I have worked at UNSW or elsewhere, is explicitly acknowledged in the thesis.

I also declare that the intellectual content of this thesis is the product of my own work, except to the extent that assistance from others in the project's design and conception or in style, presentation and linguistic expression is acknowledged.

A handwritten signature in black ink, appearing to read 'Samir Gupta', with a large, stylized initial 'S'.

Samir Gupta

ACKNOWLEDGEMENTS

Like any other dissertation, this has been a long but an enjoyable experience. The risk in deciding to change my career has been enormous for which I must thank those who had faith in me. During this process I have received unconditional commitment from my supervisors for without their guidance and continuous encouragement I would not have survived and completed this task. To them, my sincere thanks.

I would like to dedicate this dissertation to my parents Dr. Ashok and Chitra Gupta and to my wife Shonali and daughters Renuka and Anita. I am also grateful to my sister in providing constant encouragement.

Receiving an award from ISBM's 2001 Business Marketing Doctoral Support Award Competition (Penn State, SMEAL College of Business) was a great honour. I acknowledge the reviewer's comments for the Research Proposal. These comments were most useful in developing my dissertation. I also acknowledge the various people in the industry who provided support and direction for this research.

I would like to take this opportunity to thank my colleagues who have helped me in my pursuit and for their helpful comments and reading drafts of chapters. I would also like to express my appreciation to my teachers in the Ph.D. program in the School of Marketing for their guidance and training.

ABSTRACT

According to Schumpeter (1934), new industries emerge when individual entrepreneurs and innovators discover a new technology that is superior to existing technology. Of late B2B e-market phenomenon has evolved embedded in superior technology. Many of these firms are new ventures that allow buyers and sellers in a network to exchange marketing information. Businesses persist in adopting such a phenomenon due to the predicted lucrative nature, yet this phenomenon faces an uncertain future. Managerial practices therefore require explanatory theory. As such, the aim of this thesis is to develop theory. This research is grounded in diffusion theory and borrows from strategic management and network literatures. The focus of the thesis is to gain an understanding of (a) the creation processes (b) the relationship amongst the network actors, (c) the strategic impact of the innovation, and (d) to contribute to the new venture literature.

Being a new phenomenon, case study data were collected to refine the working propositions developed from literature. Process research was used to address all research questions. However, the question relating to the strategic impact would require further research. Nevertheless, managers will be able to use the diffusion process models to understand the diffusion process. The model could be used to develop 'what if' scenarios when contemplating the creation of new ventures. Concerns of external validity were traded off against opportunities to gain insight into yet incompletely documented phenomena. Future research would benefit from data that went beyond the launch stage and included comparative data to address strategic impact. Furthermore, data from comparative B2B e-market models would enhance the theory developed in this thesis.

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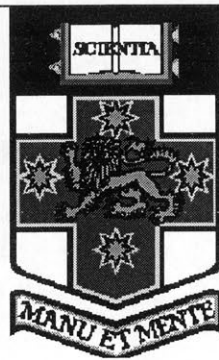
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"Entrepreneurship means new venture creation... Members of the E-Generation of entrepreneurs have become the creators and leaders of entire new industries... These new industries have transformed the economy in the true creative birth and destruction process first articulated by Joseph Schumpeter".

(Timmons 1999, p.5 & 7)

Chapter 1



CHAPTER 1

1.0 Overview

INTRODUCTION: This chapter provides a background to the thesis. It then positions the research in relation to other scholarly work and offers a framework for the thesis. The research objective and research questions follow. The chapter concludes by describing the theoretical and managerial contributions this thesis strives to make and how the ensuing chapters are organised.

1.1 Background to the thesis

In the early 1900s, the rapid diffusion of radio technology was considered the original world-wide-web and became a consumer and business phenomenon (Hanson 2000). The number of broadcasting stations in the United States grew from five at the end of 1921 to more than five hundred and seventy five by the end of the following year (Hanson 2000). The diffusion of radio technology presented both an opportunity and an uncertainty to marketing professionals. Since its introduction in 1989, the world-wide-web, based on Internet technology, has experienced similar growth and opportunities for marketers (Andruss 2000). Businesses are harnessing a number of applications based on this innovation. They range from communication to economic exchanges and the management of business networks (Hoque 2000). The latter has given rise to electronic commerce (Cameron 1997; Hoque 2000). However, of late, the application of electronic commerce in the business-to-business (B2B) environment has led to the creation of a new way of bringing businesses together. These online “e-market firms” are owned and operated by various organisations as either independent firms, or as a consortia-led firm, or as a private/proprietary organisation. In this thesis, e-market firms are limited to B2B e-markets that are operated as independent firms. Sellers offer these firms (whose clients include small and medium enterprises - SMEs) various products and services (e.g. printing services).

A B2B e-market firm is defined as an Internet-based business-to-business electronic market that represents an inter-organisational information system that facilitates interactions among buyers and sellers (Bakos 1991; Choudhury, Hartzel, and Konsynski 1998). This thesis considers a B2B e-market as both a firm, and an innovation (where the

embedded innovation represents an inter-organisational information system). As such, the thesis investigates the creation processes of a B2B e-market firm. The thesis also considers this innovation as a radical or competence-destroying innovation (Christensen 1997; Day and Shoemaker 2000) and seeks to understand the strategic implication of the innovation on the B2B e-market firm and the suppliers and business buyers.

According to Bryant (2001) there were 283 B2B e-market firms as at 17 November 2000 in Australia and New Zealand (based on data collected by the Boston Consulting Group). The same research organisation claimed that there were more than 700 e-market firms in the United States in 2000 (Holmsen 2000). Research organisations seem to come up with their own numbers and versions of how B2B e-commerce will generate productivity gains, but no two organisations seem to quite agree on forecasts. For example, Boston Consulting Group forecasts that by 2004, B2B e-commerce will generate productivity gains equivalent to one to two percent of sales and by 2010 this figure could grow to six percent or roughly one trillion dollars in the United States (Holmsen 2000). In contrast, research firms like Forrester state that B2B e-commerce will hit three trillion dollars in 2004 (Kafka 2000). What they do agree on, however, is that the innovation of e-commerce will have a profound impact on the way businesses will transact.

Regardless of the current uncertainty that faces B2B e-markets, the concept is enjoying immense popularity due to the nature of its communication technology capabilities, such as time compression, overcoming geographical boundaries and extending organisational relationships. Time compression refers to clear communication network links between businesses. The technology has the capability of overcoming geographical boundaries and the technology can alter the structure of organisational relationships both within and between firms and other entities (Hammer and Mangurian 1987). This

consequence is similar to the radio technology of the early years of the twentieth century. This technology compressed time, overcame geographical boundaries and created and extended relationships in networks. In addition it opened new doors for marketing, such as, for example, in information on advertising. However, as with the beginnings of the radio technology, marketers are uncertain of the future of B2B e-markets (Hanson 2000).

The stakes for this emerging technology are very high given its predicted economic potential, yet of necessity, most businesses have not been able to draw on significant research in this area (Wise and Morrison 2000). Although Wise and Morrison (2000) make this claim without substantial empirical evidence, a growing body of literature from multiple disciplines is coming to terms with this new phenomenon. Scholars have addressed the concept of attaining critical mass in the adoption of interactive innovation (Rogers 1995), while others have addressed the significance of participants in networks (Biemans 1989). Still others have provided research into the strategic significance of innovation in networks (Gulati, Nohria, and Zaheer 2000) and the strategic significance of the Internet as a radical technology (Christensen 1997; Day and Shoemaker 2000). More recently, scholars have addressed the concept of B2B e-markets (Bakos 1991), and have investigated organisational participation in a B2B e-market firm owned and operated by independent operators for a specific industry (Grewal, Comer, and Mehta 2001).

Although this literature forms a valuable foundation, the processes for creating a new venture B2B e-market remain unclear (Gupta, Cadeaux, Woodside, and Dubelaar 2002). Many practitioners seek guidance in this environment. In particular, the contribution of the participants to the new venture creation process is not well understood (Grewal *et al.* 2001; Symonds 1999). Further, empirical information on the impact of the radical innovation on the B2B e-market firm and its suppliers and business customers can provide important

insights to better comprehend the dynamics of such innovations in networks (Gulati *et al.* 2000).

The objective of this thesis is to understand the dynamics of a B2B e-market diffusion process and investigate any strategic significance of the embedded technology for the suppliers and business buyers of the e-market. As such the aim of this thesis is to develop theory and not test theory.

1.1.1 Theoretical domain

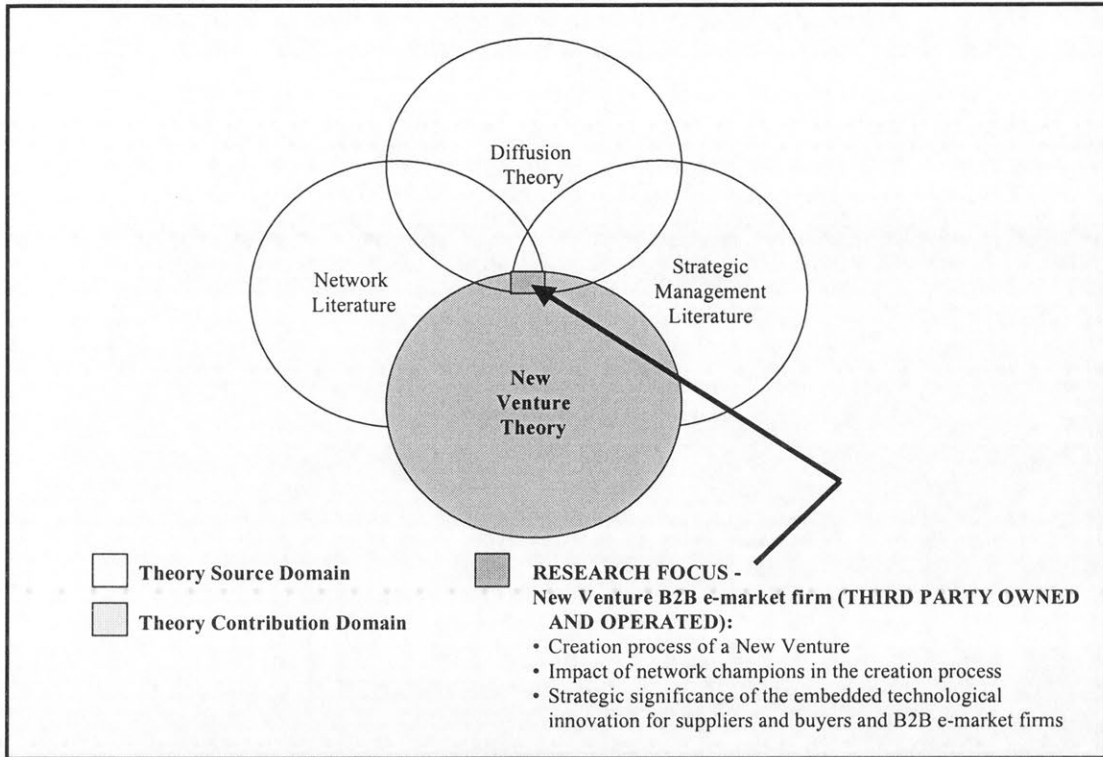
Diffusion theory is important to this research undertaking for three reasons. First, this thesis aims to understand the process of creating such new ventures by observing the nuances of planning and implementation decisions. Second, it intends to understand the roles played by buyers, suppliers and third parties as participants in the creation process for e-markets. Third, the thesis examines how embedded competence-destroying innovations (CDI) such as those arguably found in B2B e-markets, in contrast to competence-enhancing innovations (CEI) like electronic data interchange (EDI), can yield competitive advantage for suppliers and buyers who adopt B2B e-market firms over those who do not.

The diffusion of innovation literature suggests that innovations such as the Internet are likely to be evaluated differently by different members of the population. The concept of lead users (von Hippel 1986) is not new. Urban and von Hippel (1988) define lead users as those who (a) present strong needs that will be general in a marketplace months or years before the bulk of that marketplace encounters them and (b) are positioned to benefit significantly by obtaining a solution to those needs. Von Hippel (1986) claims that in the "high technology area, the world moves so rapidly that the related real-world experience of

ordinary users is often rendered obsolete by the time a product is developed or during the time of its projected commercial lifetime". In contrast to von Hippel (1986), Biemans (1989) claims that manufacturers should not just focus at the potential contribution of customers, but also focus on the contribution made by third party participants. Building on the concept of lead users and third party participants, this study adds the concept of the involvement of network champions (Woodside and Wilson 1994). Network champions are likely to serve, in part, as brokers and deal makers to bring about new relationships amongst firms at multiple levels. In particular, the concept is one of a catalyst who builds new linkages among multiple firms that have not previously communicated with one another (Woodside 1994). Thus this concept will be helpful in explaining the relationship of the participants in the business network.

The concept of electronic commerce is recognised as a new field of study and, as such, the theoretical foundations are unclear (Turban, Lee, King, and Chung 2000). What is clear is that this new phenomenon is based on several disciplines (Turban *et al.* 2000). Due to the multidisciplinary nature of the research objective, this research is grounded in *diffusion theory*. However, it borrows from network and strategic management literatures as shown in Figure 1, and contributes to new venture theory. This figure depicts the theory source and contribution domain together with the focus of the research. The reason for grounding this research in a multidisciplinary context is that no one literature adequately addresses the three facets of the research, that is, the creation process, involvement of participants and the strategic impact of B2B e-market firms (Woodside, Gupta, and Cadeaux 2003).

Figure 1: Key theoretical domains, contextual domain and research focus



The diffusion theory explains the creation and implementation processes of an innovation. It offers a limited explanation on (a) how and why new ventures like B2B e-market firms are created and (b) the triggers that initiate the adoption of the embedded technology by suppliers and buyers. This research also draws on network literature to conceptualise the framework within which B2B e-market firms are created.

In order to establish that B2B e-markets exist in networks of suppliers and buyers and how the embedded innovation provides strategic opportunity for firms that join it, this thesis draws on network literature (Achrol 1997; Achrol 1991; Achrol and Kotler 1999; Achrol 1999; Achrol, Reve, and Stern 1983), literature on innovation within networks (Biemans 1989) and literature on adoption of new technology in networks (Majumdar and Venkataraman 1998). The economic framework proposed by Stern and Reve (1980) for

comparative analysis of marketing channel focuses on interactions internal to the channel. This framework was extended to focus on a dyadic structure in its external context (Achrol *et al.* 1983). Of late, however, networks and alliances have risen to prominence due to industry restructuring (Achrol 1997; Powell, Koput, and Smith-Doerr 1996). Based on network theory, Achrol (1997) argues that large organisations are downsizing, vertically disaggregating, and outsourcing services and products that are non-core activities. In order to have access to supplier and buyer organisations, firms are turning their attention to marketing exchange firms (Achrol 1991). In contrast, it has been argued that, currently, firms in a wide range of industries are executing nearly every step of the production process, from discovery to distribution, through some form of external collaboration (Powell *et al.* 1996). Most common rationales offered for this upsurge in collaboration involve some form of risk sharing, obtaining access to new markets and technologies, speeding products to markets and pooling skills (Eisenhardt and Schoonhoven 1996). In light of the research objective, this thesis borrows from network literature to fully understand the B2B e-market phenomenon.

B2B e-market firms provide economic benefits to suppliers and buyers within the network. Cadeaux (1997a) argues that a network of firms that are involved in the production and marketing of goods and services yields a variety of basic yet distinct economies for their participants. Arguably, suppliers and business buyers who adopt a B2B e-market share information and perform marketing and logistics activities in this network.

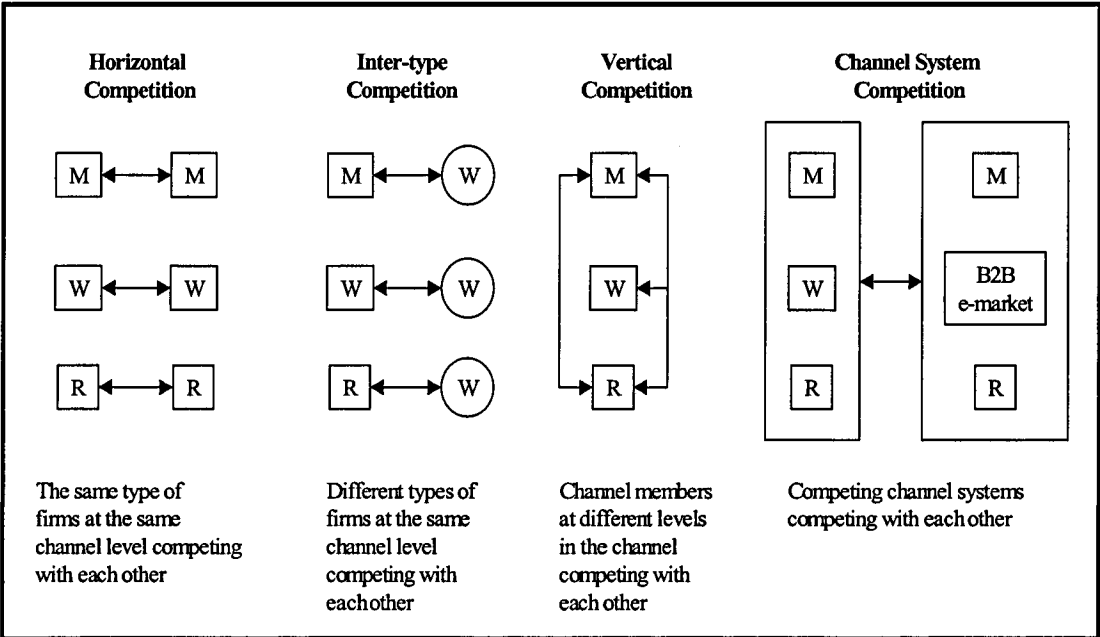
In addition to the network literature, this research also borrows from strategic management literature in order to provide a foundation for understanding how underlying technological innovations provide competitive advantage for firms that join B2B e-markets. The thesis builds on research conducted by Schumpeter (1966), Tushman and Anderson

(1986), Henderson and Clerk(1990) and Christensen (1997) Gulati (1999). Whilst suppliers and buyers that adopt B2B e-market firms may enjoy operational benefits, B2B e-market firms themselves may have a strategic competitive advantage over conventional channels. Operational benefit is defined as saving costs through the characteristics of the innovation, that is, search costs etc. In contrast, competitive advantage in general can be defined as advantage that cannot be imitated or can only be mimicked at a very high cost, such as the development of the innovation in this case (Davis and Devinney 1997).

In channel literature, four types of competition can effect channel strategy (Palamountain 1955). These include horizontal competition, inter-type competition, vertical competition and channel system competition. Horizontal competition occurs between firms of the same type e.g. car manufacturer versus another car manufacturer. Inter-type competition occurs between different types of firms at the same channel level e.g. the discount store versus a departmental store. Vertical competition occurs between channel members at different levels in the channel, such as retailer versus wholesaler, wholesaler versus manufacturer or manufacturer versus retailer (Rosenbloom 1999). The final type of competition that can effect channel strategy is channel system competition (McCammon 1965). This type of competition refers to complete channels competing with other channels. Such channels are vertical marketing systems and are grouped into three types (a) corporate (b) contractual and (c) administrative (McCammon 1965). In corporate channels production and facilities are owned and operated by the same firm. In contractual channels, independent channel members, that is producers or manufacturers, wholesalers and retailers are linked by a contract. Administrative channel systems on the other hand are a result of strong domination by one of the channel members over other members. Figure 2 depicts the marketing channel competition and how channel systems compete with each other. One can

argue that in a B2B e-market environment, the B2B e-market firm replaces the role of the wholesaler. As such, the strategic competitive advantage is over complete channel systems, in particular where the channel is owned and operated by the same firm, in contrast to a channel that is independent of suppliers and buyers, such as the B2B e-market.

Figure 2: Types of marketing channel competition



Source: Adapted from - Rosenbloom (1999) Marketing Channels: A Management View, Fothworth TX, Dryden Press

The fact that competence-destroying (as opposed to competence enhancing) innovation provides a competitive advantage for firms is amply demonstrated (Tushman and Anderson 1986). Yet Achrol (1999) offers no empirical evidence or theory to suggest the type of opportunity electronic marketing may provide. Scholars have limited understanding of how B2B e-markets can achieve competitive advantage. Achieving competitive advantage through strategic innovation is not a new phenomenon. For example, the transistor and the integrated circuit are results of the impact of radical innovation in the electronic industry. As such, this industry was transformed as a result of this innovation that

represented a technological discontinuity, that is, competence destroying rather than competence enhancing innovation. This thesis seeks to understand the strategic significance for firms that join B2B e-markets and the impact of competency destroying innovation on B2B e-market firms.

In a B2B e-market environment, search costs for buyers to obtain information on prices and product offerings available in the market are reduced. Bakos (1991) argues that, according to economic theory, this reduction in search cost plays a major role in determining the implication of B2B e-market firms for market efficiency and competitive behaviour. However, this concept of B2B e-market is limiting as it focuses on the buyer and not the seller (Bakos 1991). For example, buyers invite sellers to quote on products that they are ready to purchase. They can use the information to compare prices and products and use the logistics information to gauge availability and time of delivery. Arguably, suppliers too can claim an increase in efficiency. They may use the B2B e-market to inform buyers of their product range, product specifications, recommended retail price, the nearest distribution point and to receive and reply to requests for quotes on-line. For sellers, the information in the quotes provides access to 'ready to buy' business customers and the buyer information that may include annual turnover and other information buyers care to offer. One can therefore argue that both buyers and sellers can gain some benefits through the efficiency offered by this electronic exchange.

The concept of centralised exchange is not new and has been discussed at length in the channel literature, for example, Stern and El-Ansary (1992). Rosenbloom (1999) describes electronic marketing channels (such as B2B e-markets firms) as Internet based systems, to make products and services available so that the target market with access to computers can shop and complete the transaction via interactive electronic means.

However, in essence the transaction remains incomplete, as the physical distribution of the goods does not take place in such an environment but rather information only is exchanged (Rosenbloom 1999). In general, Bucklin (1973) argues that the separation of physical distribution from consumption because of economic rules of specialisation necessitates the performance of various marketing functions to meet the demand for service outputs. Marketing channels that provide higher levels of service outputs reduce buyers' search waiting time, storage and other costs by reducing their involvement. Other things being equal (especially price), buyers will prefer to deal with marketing channels that provide a higher level of service (Stern and El-Ansary 1992). One can therefore argue that, although B2B e-markets do not physically transfer goods, they use the technology to provide an efficient marketing channel and those suppliers and buyers in the networks may realise economic benefits rather than competitive advantage.

Technology has had unique influences on marketing practices (Grewal *et al.* 2001). For example, the influence of integrated information and communication technology Buzzell (1985) has revolutionised retailing by the use of scanner data, which also has resulted in improving market research. In terms of facilitating buyer-seller interactions, EDI helps firms build closer relationships (O'Callaghan, Kaufmann, and Konsynski 1992). The most recent phenomenon is the emergence of the Internet that has had unique implications for various branches of marketing, including consumer behaviour (Hoffman and Novak 1996a), business (Kaplan and Sawhney 2000; Klein and Quelch 1997) and international marketing (Quelch and Klein 1996). However, one can argue that B2B e-market firms based on the Internet technology are just another type of a marketing channel and therefore not unique.

When technology becomes commonplace and loses the uniqueness that characterises competitive advantage, profits will be competed away unless accumulated experience gained by firms is used to sustain competitive advantage (Davis and Devinney 1997). Accumulated experience is defined as that experience gained by an individual or an organisation in performing tasks more efficiently (Davis and Devinney 1997). One can argue that the B2B e-market has the facility to share information through innovation and through accumulated experience from sharing information.

B2B e-market systems may eventually become a strategic necessity and neither size nor being the first mover will guarantee a competitive advantage (Bakos 1991). As such, B2B e-market firms would need to develop (at a high cost) an information system and use the accumulated experience in order to gain competitive advantage. Clemons and Row (1987) maintain that substantial advantage requires the control of unique resources (Clemons and Weber 1990). Although the unique resources may cease to be unique over time, it can be argued that B2B e-market firms may attempt to bias the final outcome in their favour by continuously reviewing their objectives based on accumulated experience and developing strategies that will encourage competitive advantage. For example, B2B e-market firms may work in tandem with the financial sector (e.g. banks) and provide services to their business clients by using their unique resources (software). In this example the software "works" in the background of the bank's service screen and business clients have the option of availing themselves of additional services (e.g. purchase and supply of Maintenance, Repair and Operating or MRO's) with other businesses. Furthermore, B2B e-market firms can add unique value to the services. This can be executed by providing additional information to their suppliers and buyers (e.g. information on successful quotes, information on buying capacity of buyers using annual turnover information, buyers ready

to purchase particular goods and services, sellers' offers of specialised goods and services). B2B e-market firms have a rich store of customer information that can be shared immediately between participants and can attach product information with the communication to which the customer can respond in real time (Cadeaux and Gupta 2001a).

As stated before, the concept of a centralised exchange (such as a B2B e-market) and its comparison with decentralised exchanges in the channel literature is not new. However, the technological innovation that is embedded in a B2B e-market firm allows it to open new doors to new business opportunities, thereby replacing existing competencies in a process of creative destruction. Although empirical evidence is still lacking, theoretical arguments about dynamic competitive strategy, particularly the Schumpeterian perspective of creative destruction, suggest that this technology constitutes a radical innovation capable of destroying the competencies of industry incumbents and offering a number of generic benefits to its adopters (Cadeaux and Gupta 2001b). In the Schumpeterian sense, the B2B electronic marketplace is more than a simple (marketing) process innovation that opens new sources and mechanisms of supply, but is an innovation that could both open new markets and create and destroy industry structures. Thus, although the B2B electronic marketplace is neither a new good that is itself sold on the market nor a new method of production, it nevertheless potentially entails three of Schumpeter's five forms of innovation as outlined by Dixon (2000): it opens new sources of supply, it opens new markets, and it creates or destroys competitive positions and industry structures (Cadeaux and Gupta 2001b). For example, "Firms in Africa can now bid online for procurement contracts tendered by America's General Electric" (Woodall 2000 p. 37). B2B e-marketplaces, though only one manifestation of the IT "revolution," are distinctly suited for

the creation of such effects on firms, industries, regions, and nations (Cadeaux and Gupta 2001b).

1.1.2 Contextual domain

The study of networks in the creation of new ventures (Birley 1985) and the informal strategic networks that are significant in the creation process (Borch and Huse 1993) have provided some insights into networks and their implications in forming new venture firms. Timmons (1999 p7) argues that in “the true creative birth and destruction process, first articulated by Joseph Schumpeter, these new firms replace and displace older ones. At the heart of these new ventures companies are entrepreneurs”.

Economic revolutionaries have become the creators and leaders of entirely new industries and firms and as such, have given rise to new ventures. B2B e-market firms are start-up new ventures. Prior research in new ventures focused mainly on a single aspect of a new venture where the purpose was to demonstrate how entrepreneurs or their firms differ from non-entrepreneurs (Gartner 1985). Such research did not adequately describe the creation process. Building on previous research, Carter *et al.* (1996) examined the start-up sequence for a new venture using longitudinal secondary data. The findings indicate that "nascent entrepreneurs" were able to make their business come to fruition. Nascent entrepreneurs are defined as those individuals who were identified as taking steps to form a new business but who had not yet succeeded in making the transition to new business ownership (Gartner 1985). These entrepreneurs undertook activities such as acquiring facilities and equipment, seeking financial support, forming a legal entity, organising teams, bringing together facilities and equipment and devoting full time to the business. That study (Gartner 1985) did not focus on behaviour patterns of the entrepreneurs or the

skills, prior knowledge and experience that entrepreneurs require in starting a new venture. Skill, prior knowledge and experience attributes of an entrepreneur could have significant influence on the outcome of the new venture creation process. Further, the study by Carter *et al.* (1996) focuses on the pre-birth stages of the new venture creation process.

Scholars(Carter *et al.* 1996; Gartner 1985)have focused on the start-up phase of a new venture but do not address subsequent stages such as the decision and commercialisation stages of the process. This thesis examines the entire creation process, from its pre-birth stage to its commercialisation stages (Biemans 1989).

Scholars have begun addressing the creation of new ventures(Gartner, Starr, and Bhat 1999; Raphael, Brander, and Zott 1998), identification of factors that spell success in corporate ventures (Miller and Camp 1985), determinants that identify the impacts of external technology acquisition (Jones, Lanctot, and Teegeen 2001), and the role of networks in the entrepreneurial process (Birley 1985). However, research in new venture success has tended to focus on new venture opportunities at a particular point in time, rather than on evaluating the process that entrepreneurs undertake before, during and after the implementation stages of the process (Cooper 1993). Although the empirical study by Birley (1985) provides some insight into the role of the participants in the network, his study did not focus on the time ordered sequence (in the diffusion sense) of the participant's impact on the process. The actual process for the creation of new venture dot com firms remains less well understood, probably because these processes in such firms have been hurriedly developed in a rush to get online (Gupta *et al.* 2002).

Entrepreneurial marketing can transform markets using product innovations that represent technological discontinuities (Cadeaux 2000). One reason could be that entrepreneurial marketing actions arise from the application of systematic knowledge or

expertise (Cadeaux 2000). For example, in a new venture B2B e-market environment, entrepreneurs of dot.com firms can use their Internet knowledge and by selecting or deselecting suppliers and buyers or by introducing the B2B e-market phenomenon they can potentially change or disrupt existing arrangements in a supply chain.

The new venture literature has also opened up a body of research that addresses the acquisition of external technology by new ventures (Jones *et al.* 2001). The preceding literature provides a foundation in addressing the research question of how entrepreneurs create new ventures like B2B e-market firms and how competence-destroying innovation facilitates the creation of new ventures. The next section positions the thesis by providing the scope of the research and identifies the theoretical and managerial significance of the study.

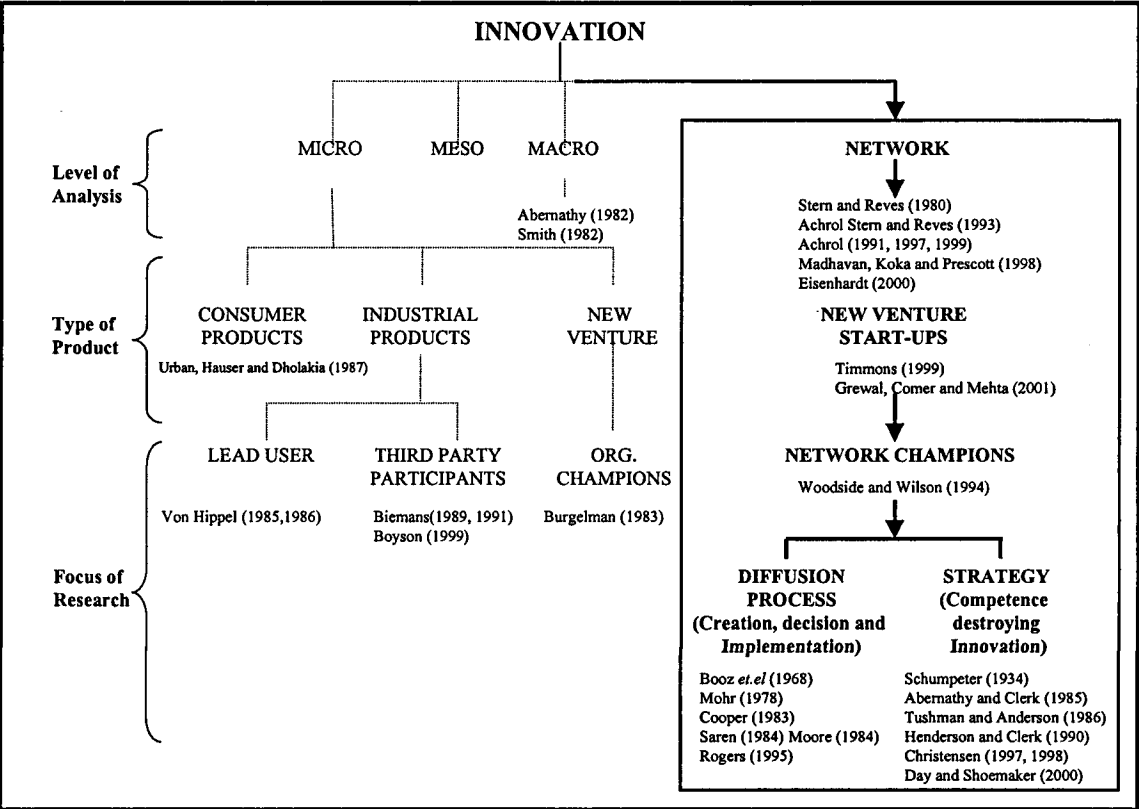
1.1.3 Research focus: Positioning the research

Relative to other relevant studies of diffusion of innovation, the position of this research is illustrated below. Figure 3 depicts the level of analysis, the type of product and the focus of analysis in relation to other scholarly work.

Scholars have developed new product development process models as an ordered sequence of activities by which innovation moves through a process (Booz and Hamilton 1968; Mohr 1978; Moor 1984; Rogers 1995; Saren 1984). Some activity-stage models, for example, Cooper (1983) have incorporated feedback loops and thus implicitly acknowledged the need for evaluation during the stages. However, the models do not have a feedback loop to the performance objectives of the firm. Moreover, the models suggest that the innovation flows through a single firm. This study extends the diffusion process

model by including firms in a network and a feedback loop to the objectives in the focal B2B e-market firm.

Figure 3: Position of the investigation related to other research



Source: Adapted from Biemans, W.G. (1989) Developing Innovations Within Networks: With an application to the Dutch medical equipment industry. Groningen: University of Groningen, Netherlands. p. 9)

Scholars have studied the success of innovations of scientific instruments by lead users (von Hippel 1976) and by user and third party participants (Biemans 1991). Von Hippel (1986) found that the innovation process for scientific instruments was user dominated, where users and not the manufacturer of the instrument developed 77% of the innovations studied. Von Hippel (1986) study also suggests that average users have poor ability to identify novel products and that lead users and not average users are well positioned as they have real-world experience with the needs that future profitable products must serve and the attributes that they must contain. Biemans (1991) study of medical

equipment innovations, on the other hand, involved users of the innovative instruments and expanded the lead user concept developed by von Hippel (1986) to include third party participants in the development process. Both of the studies are of importance and yield a compact body of theory. In industrial marketing, product development could be initiated by the manufacturer or by the user as in the case described by von Hippel (1986) or alternatively product development could be described as an interaction between user and manufacturer (Biemans 1989). The main criticism of these perspectives is that each focuses on only one or few actors thus providing a narrow view of the product development process (Biemans 1989). Biemans (1989) argues that in an industrial network environment, third parties, such as government organisations, and knowledge brokers may be involved in the diffusion process. In the network concept, the individual buyer-seller relationship is put into the context of other external relationships the firm may have, as well as with those users within the firm. Burgelman's (1983) study examines the relationship of product championing and organisational championing and argues that product champion and organisational champion drive innovation from within a firm. Product 'champions' are leaders who are most deeply involved in turning a new idea into a concrete new project in which technical and marketing development could begin to take shape. Organisational champion is defined as those who are involved in establishing contact with top management to keep them informed and enthusiastic about a particular area of development. However, when a firm is embedded in technological innovation and depends on suppliers, buyers, and technology developers, the concept of product development in a network is less well understood. Furthermore, it is also less well understood how this technological innovation may influence and build new linkages between suppliers and buyers using the B2B e-market.

The studies by von Hippel (1986) and Biemans (1989; 1991) focus on the product level, while Burgelman's (1983) study focuses on product development within an organisation level. This thesis, in contrast, expands on the concept of lead users and third party participants by including network champions, who are involved in the development process, act as catalysts to build new linkages among multiple firms and are positioned outside the focal business (Woodside and Wilson 1994).

Most innovation literature discusses either consumer product innovation, for example, Urban, Hauser and Dholakia (1987), or industrial products (Biemans 1989; Biemans 1991; von Hippel 1986; Woodside 1994; Woodside and Wilson 1994), or new venture start-up firms (Christensen 1997). This thesis, however, examines how embedded competence-destroying innovations (CDI) like the new venture B2B e-market, can gain competitive advantage over those that are built on competence-enhancing innovation (CEI) like electronic data interchange (EDI).

Innovation is defined as an idea, practice or object that is perceived as new by individuals (Rogers 1995). Davis and Devinney (1997) expand on Rogers' definition and suggest that innovation is a new or different solution to a new or existing problem or need. Davis and Devinney (1997) distinguish between process and product innovation. Process innovation is when a process represents improvements that lead to greater efficiency and lower costs. Product innovation refers to innovations that relate directly to the needs of customers. This thesis argues that the product (B2B e-market firms) based on innovation (Internet) is a new phenomenon. As such it requires an in-depth understanding of the creation process, that is, how suppliers and buyers perform marketing activities, the strategic implication for firms in the network and the triggers that describe the success of such new ventures. This thesis therefore, focuses on product innovation.

1.2 Framework for the study

The framework for the study is developed through extensive review of past and current literature. The case of a B2B e-market firm and the uncertainty that exists highlights the fact that little attention has been given to the process of how these firms (based on technological innovation) are created. Current literature is addressing the B2B e-market phenomenon (Bakos 1991; Grewal *et al.* 2001; Kaplan and Sawhney 2000; Wise and Morrison 2000). However, the current literature in diffusion, new venture and strategic planning lacks the theoretical base about how and why B2B e-markets are created and the strategic advantage of such firms over those that are created based on CEI. The aim of this thesis is to develop process theory that focuses on the creation process. Therefore reference to comparative or variance research is made to provide an example, as this thesis does not compare various types of models of B2B e-market firms, nor does it compare firms based on CDI and CEI.

1.2.1 Theoretical underpinning

Diffusion is the process by which an innovation is communicated through certain channels over time (Rogers 1995). In particular, the diffusion process is the spread of a new idea (over time), that is, from its source of innovation or creation to its ultimate adoption or commercialisation. This process then involves a number of activities that are necessary in the development of new products. For the purpose of this dissertation, the focus is on the creation activities (over time) of a B2B e-market firm that is embedded in a new product (the Internet).

The essence of the diffusion process is the human interaction in which one person communicates a new idea or process to another person (Rogers 1995). Although diffusion research seems well established in marketing and in economics (Dosi 1991; Mahajan, Muller, and Bass 1990; Yu, Kaniovski, and Kaniovski 1991), research into diffusion of competence destroying innovation (the Internet) in firms (B2B e-market) and within a set of firms, that is, firms in the network, is less well understood (Gulati *et al.* 2000).

Drawing on patterns of innovation in a variety of industries, Christensen (1997) argues that firms with large market shares initially reject competence-destroying innovation (CDI) as leading firms allow strategically important innovations to languish. Christensen (1997) demonstrates that, by adopting CDI, agile firms can develop planned strategies based on their perception of leading firms' inaction. Trudel (2001) argues that business consultants, strategists and business in general recognise Christensen's (1997) theme- technological disruption yields competitive advantage, yet is typically missed by incumbents. Trudel (2001) claims that it is exactly this opportunity that leads to the formation of many successful high-tech new ventures like Sun, Apple and Microsoft. Christensen (1997) examines the business failure of excellent firms like IBM (mainframe) Sears (retailing), DEC (microcomputers) and the steel industry, and provides a number of arguments on the failure of such industries to recognise CDI. Firstly, managers think they control the flow of resource in their firms, but really do not. Instead customers and investors do. Secondly, small markets don't meet the growth needs of large companies and hence established firms will not invest adequate resources in disruptive technologies, that is, in lower-margin opportunities. For example, customers do not ask for mobile or cell phones, CDs or digital photography. Instead they ask for refined versions of what they have been receiving. If firms just cater for this type of customer they will cease to exist, as did

DEC and WANG. Thirdly, markets that don't exist can't be analysed, and in particular, technology, like all knowledge assets, can't be analysed and valued as real estate. Finally, early customers for new technology seldom represent the mass market. As such, CEI improves service delivery to existing markets; in contrast CDI is initially irrelevant to existing markets but improves faster than market requirements until it can invade the market from below (Lewis 1998). For example, mainframe computers experienced sustained innovation for years, steadily improving their market share. In contrast, mini-computers based on CDI were incapable of handling main frame tasks at first, yet they found new markets and new applications. Digital and Data General got their start not by competing with IBM but by finding new markets for their products that were too small for IBM to care about. Arguably, start-up new venture firms that adopt CDI can gain competitive advantage over those incumbents that rely on CEI by opening new doors.

The new venturing and strategic marketing literature explain how entrepreneurial marketing actions can transform markets (Cadeaux 1997b), particularly if based on CDI as opposed to competence enhancing innovation (Davis and Devinney 1997; Timmons 1999). However, the strategic management literature fails to adequately address how CDI will impact on firms in the network (Gulati *et al.* 2000). This thesis aims to identify and isolate several such sources of competitive advantage for firms in networks and develop a theoretical foundation.

1.2.2 Key definitions used in the study

Newness of the concept of a B2B e-market and the uniqueness of the environment it operates in requires a set of working definitions to clarify certain characteristics of terms

used in the study. Rather than attempt to generate new definitions that could lead to confusion, the definitions outlined herein are used in this thesis.

1.2.2.1 B2B e-market

The phenomenon of B2B e-market firm is based on the Internet. Although both academic literature and business magazines have put different labels to this phenomenon as identified before, they define it the same way. For example, B2B e-market is defined as "an inter-organisational information system that allows the participating buyers and sellers to exchange information about prices and product offering" (Bakos 1991 p 296). The phenomenon is also defined as "Internet technology that can be used to create a virtual, electronic marketplace where buyers and suppliers can interact and transact" (Malone 2001). Although the definitions focus on technology and creation, they are limiting as they do not focus on the B2B e-market being a new venture start-up firm. Many terms, variations or combinations lead to confusion about this phenomenon. However, in order to provide a consistent term that identifies this phenomenon between businesses, the term B2B e-market is selected for this thesis.

Before Tim Berners-Lee developed the Internet information service known as the Web in March 1989, electronic data interchange (EDI) was implemented by large businesses that could afford it and used almost exclusively for inter-business transactions (Cameron 1997). It was not until the creation of the first graphical web browser in 1993 that the interest in the Web accelerated and broadened its application. Unlike EDI (a closed system), electronic commerce based on the Internet (an open system) was developed to automate business transactions and logistics for all levels (small, medium and large) of businesses (Lawrence, Corbitt, Fisher, and Tidwell 2000). Because the web has a universal

interface that can connect different file types on various hardware platforms, it was economical and could be used by different types of computer technologies. Table 1 provides a comparison of traditional with Internet electronic-commerce network capabilities.

Table 1: Comparison of Traditional and Internet e-Commerce

Traditional Electronic Data Interchange (EDI)	Internet e-Commerce Electronic Commerce Networks
Closed standards limit participation to individuals and or companies that have access to proprietary software and networks.	Open standards enable global connectivity. Anyone with a browser and Internet access can participate.
Proprietary ownership of the network enables owner to set commerce standards and policies.	Shared ownership of the network; collaboration is required to define and manage commerce standards and policies.
Rigid software limits functionality and flexibility.	Modular, flexible software enables business flexibility.
The high cost, long time frame and specialised expertise required to develop commerce solutions provide powerful barriers to entry.	Lower cost and expertise and shorter time frames to develop business solutions increase the ease of developing a competing system, which, in turn, lowers barriers to entry.

Source:(Applegate, McFarlan, and McKenney 1999) Corporate Information Systems Management: The Challenges of Managing in an Information Age, Boston, Irwin McGraw-Hill

As an electronic exchange that occurs over the web using the Internet, electronic commerce includes any commercial transactions between one or more participants. It includes both business-to-business (B2B) and business-to-consumer (B2C) transactions. Firms mainly in business networks have developed B2B electronic marketplaces to conduct electronic transactions or exchange channels.

The term “electronic marketplace” is variously defined as “electronic hub”, “B2B exchange”, “electronic exchange”, or even “virtual exchange” in the business press, in

textbooks and in academic journals. One definition of an electronic marketplace is that it is a third party Internet based intermediary that links buyers and sellers within a specific industry (vertically) or a specific business function (horizontally) as a public marketplace. It is a so-called many to many exchange (Hoffman and Novak 1996b). A public marketplace is defined as across the Internet in contrast to electronic data interchange (EDI), which is a closed marketplace (that is, one to one). Thus, an e-marketplace does not operate in a closed business-to-business situation but rather in an open network environment (Cadeaux and Gupta 2001b). Still others have defined electronic marketplaces as electronic network channels that enable numerous industry partners to operate as one in a supply chain and which allow electronic trails of items ordered through the entire shipping, logistic and billing processes (Hoque 2000; Messmer 2000b). Turban, Lee, King and Chung (2000) define an electronic marketplace as an electronic market. According to Hoque (2000), Messmer (Messmer 2000b) and Turban *et al.* (2000), a market is a network of interactions and relationships where relationships are created and products, services and payments are exchanged. An electronic marketplace has also been defined as an electronic network channel that enables numerous industry specific partners to operate as one in a supply chain network (Messmer 2000a; Upton and McAfee 1996). Sculley and Woods (1999) define electronic marketplace as a firm that brings multiple suppliers and buyers together (in a "virtual" sense) in one central market space and enables them to buy and sell from each other.

Electronic marketplaces are created in networks and used by participants in the network. An electronic marketplace is not a tangible place but rather an Internet based electronic technology that is used by firms to process information in a network. In general, process and product innovations are not dichotomous categories (Davis and Devinney

1997). In particular, an electronic marketplace is both a process and an enterprise innovation. It is the electronic commerce infrastructure that brings buyers and sellers together. The enterprise innovation lies in the electronic commerce technology that has the capacity to store information for participants. The popular press has defined electronic marketplaces by ownership. It distinguishes amongst those that are run by a third party, by an industry consortium, or by private companies. Examples and descriptions of each of the three categories are summarised in Table 2 below:

Table 2: Business Models for B2B e-Marketplaces

Business Model	Description	Example
Independent marketplace	Owned and operated by a third party that is not considered to be trading partner, often a B2B e-Market start-up.	Ventro (formerly Chemdex)
Consortia-led marketplace	Ownership is shared between industry-leaders and a technology partner.	GM/Daimler Chrysler/Ford "Covisint"
Private/Proprietary marketplace	Owned and operated by a single large firm.	Wal-Mart

Source: Adapted from eMarketer, 2000 July 2, 2000

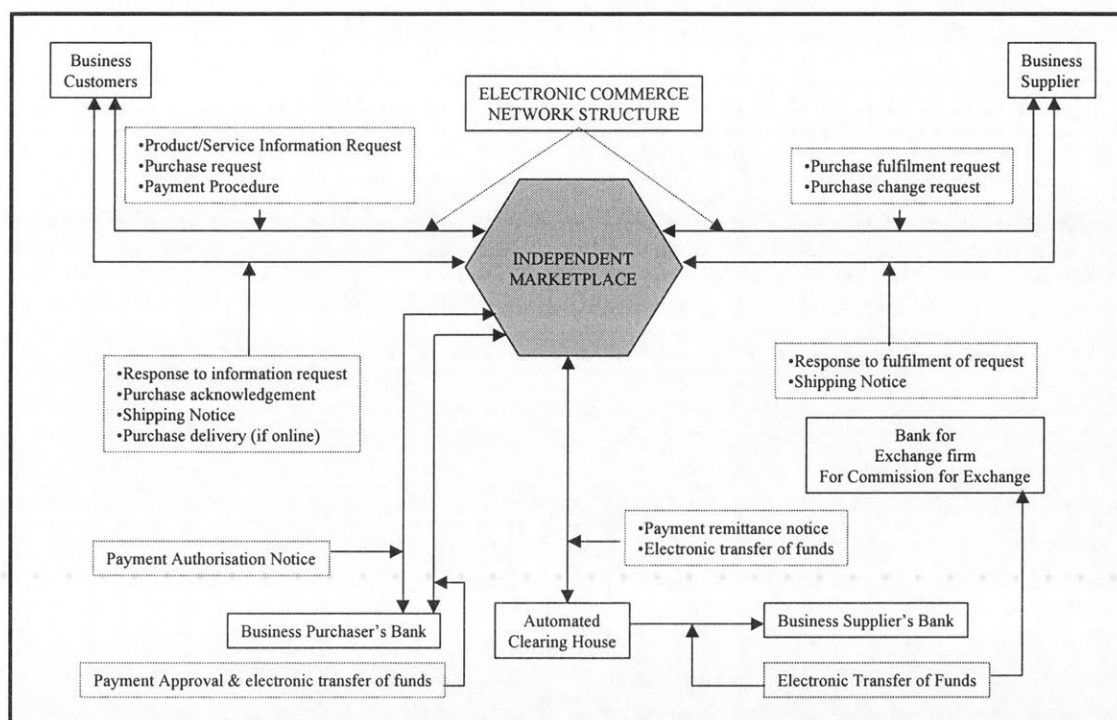
Some authors argue that new firms are unconstrained by prior competencies and history and can take advantage of technological opportunities and the lethargy of organisations burdened with the consequences of prior success (Tushman and Anderson 1986). In particular, it can be argued that B2B e-markets are new venture start-up firms that are unconstrained by prior competencies like electronic data interchange. It is the latter concept that dominates the strategic significance of the embedded technology of the B2B e-

market firm in this thesis. Therefore, unlike the definition offered by Bakos (1991), which focuses on information, and the one offered by Malone (2001) which focuses on the technology that creates a electronic marketplace, the definition that is used for the purpose of this thesis focuses on structure, as a B2B e-market is characterised as a new venture independent start-up firm that brings business buyers and sellers together in a network in order to facilitate marketing and logistics. The specific marketing activities include comparing information on price and product description, while logistics activities (limiting to an e-market environment) include structured tender documents, quoting on these documents and assessing information on delivery times and product availability.

***Definition:** A B2B e-market is characterised as a new venture independent firm where buyers and sellers perform marketing and logistics activities using the embedded technological innovation on which it is based.*

Figure 4 shows the process of the network structure of electronic commerce and a independent B2B e-marketplace. The figure depicts the linkage between suppliers, buyers and third party participants, such as financial institutions.

Figure 4: Electronic commerce network structure and the B2B e-market



Source: Modified from (Senn 1996) "Capitalization of Electronic Commerce", *Information Systems Management Summer*.

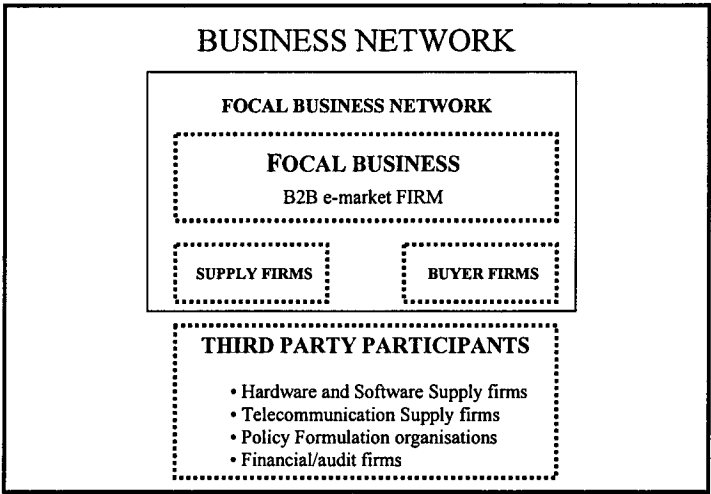
1.2.2.2 Business network

Several models and frameworks have contributed significantly to the understanding of working relationships between firms in business markets (Anderson and Narus 1990; Hallen, Johanson, and Seyed-Mohamed 1991). Each approach focuses on the dyadic relation between two firms. Recent developments in business practice, however, strongly suggest that firms are beginning to operate in networks (Achrol 1997; Achrol and Kotler 1999) and in alliances (Sivadas and Dwyer 2000) due to restructuring and deconstruction of organisation structures in order to be competitive. Achrol (1991) states that a marketing exchange company, like the B2B e-market, can be thought of as a grand marketing information system that performs marketing activities amongst the network partners.

"Deconstructed" firms are emerging in which a firm focuses on core activities and outsources other routine activities using the marketing information systems that were traditionally done within the firm(Achrol and Kotler 1999; Anderson, Hakansson, and Johanson 1994). By forming networks, firms are working closely together to manage the flow of goods in the supply chain (Achrol and Kotler 1999; Lambert and Cooper 2000) and to collectively allocate tasks to specialist firms (Cadeaux 1997a). These multiple firms may not have previously communicated and in order to co-ordinate and enhance diffusion, thus, catalysts are necessary (Woodside 1994). With the introduction of new technology, like the B2B e-market consisting of a network of multiple firms (buyers and sellers) linked by information technology, network members can share skills, logistics and marketing information.

A network is defined as a set of two or more connected exchanges (Cook and Emerson 1978). Biemans (1989) extends this definition by including the concept of third parties in the network. This thesis expands this definition to include network champions (as seen in Figure 5) who serve as a catalyst to build new linkages amongst multiple firms that have previously not communicated with one another (Woodside 1994).

Figure 5: Participants in the business network



***Definition:** A business network is composed of a focal business, supply and buyer firms and third party participants. The focal business network is comprised of the focal business, supplier and buyer firms.*

1.2.2.3 Network Champions

The necessary involvement of third parties in the adoption by manufacturing firms of new technology demonstrates that theory and research need to include diagonal relationships in network analysis of innovation adoption (Biemans 1989; Biemans 1991). Research that confirms and extends the importance of third party involvement in business-to-business networks in the adoption of innovation would suggest the need to extend the concept of network (Woodside 1994). In order to explain networks, Woodside (1994) suggests the concept of network champions who serve as a catalyst in building new linkages among multiple firms.

The concept of champions is not new. The role of champions in new product development (NPD) and, in particular, champions for CDI, has been the topic of discussion since 1963 (Schon 1963). The concept has profound positive impact on the NPD process, yet empirical data that examines how champions influence others in the network, the effect champions have on projects and the relationship champions have with the people on the project is limited (Markham and Griffin 1998). The concept of champion has been documented in the product innovation management literature and is defined as a true entrepreneur who is spirited, almost independent and fully capable and willing to pursue the risk of creating a new venture (Calish and Gamache 1984).

Burgelman's (1983) study on innovation reveals that champions influenced top management's acceptance of a project by making apparent the strategic importance of such

projects. As stated in Chapter 1, this thesis builds on Burgleman’s (1983) study and the concept of lead users (von Hippel 1986) and third party participants (Biemans 1989), and adds the concept of network champions.

Although the term champion is widely used, a review of the literature reveals ambiguities in both the scope and coverage and nature of the definitions of champions offered by various scholars (Markham, Green, and Basu 1991). For example, one empirical study found those champions to be innovative, prone to take risks and exhibit a transformational leadership style (Howell and Higgins 1990). In contrast, Chakrabarti (1974) identified the characteristics of champions as technical competence, knowledge about the company, knowledge about the market, drive and aggressiveness and political astuteness and Markham’s (1998) empirical study indicated additional characteristics, level of investment, level of support and level of new product integration and strategy innovativeness. Characteristics developed by Markham (1998) and those that were identified by Chakrabarti (1974) are outlined in Table 3.

Table 3: Characteristics of Champions

(Chakrabarti 1974)	(Markham 1998)
<ul style="list-style-type: none">• Technical competence• Knowledge about the company• Knowledge about the market• Drive and aggressiveness• Political astuteness	<ul style="list-style-type: none">• Level of investment• Level of support• Level of new product integration and strategy innovativeness

In the empirical study completed by Markham (1998), investment was measured by budget allocation in comparison with other projects undertaken by the firm. The same study measured support by supportive behaviour, (i.e. support to the project or no support to the project), and new product integration by research experience (i.e. familiarity and knowledge of the innovation, actual experience of the innovation, business experience of the product or process development). Given the measures, the study (Markham 1998) covers the first three characteristics developed by Chakrabarti (1974) while the remaining two (drive and aggressiveness, and political astuteness) may be seen as the entrepreneurial characteristics. Although these characteristics provide a good foundation of champions, little is known about the role of champions that are external to an organisation who act as a catalyst in building new linkages amongst multiple firms in networks. Woodside (1994) argues little is known about the existence of these "network champions" and their relationship with other members in a business-to-business environment particularly in the adoption of innovation. This thesis extends the concept of lead users (von Hippel 1986) and third parties (Biemans 1991), for example, information technology consultants and internet service providers, by understanding the relationship of a network champion with other champions in the focal B2B e-market firm, such as a business development champion and product development champion. Within the focal business, a business development champion is defined as one who is involved in establishing contact and developing the business. A product development champion is defined as one who turns a new idea into a concrete new project in which technical and marketing development could take place (Burgelman 1983).

For the purpose of this study the network champions vary in terms of (a) levels of investment, (b) support, (c) business knowledge and (d) experience of product and process.

These attributes are extended in this study to include a 'catalyst' that has network knowledge (Walter and Gemunden 2000). A "catalyst" in this study is defined as a person who builds new linkages amongst multiple firms that may or may not have previously communicated with one another (Woodside 1994).

***Definition:** Network champions are external players to the focal business who act as catalysts in building new linkages amongst multiple firms that may or may not have communicated with one another, have detailed knowledge of the market, can see the needs of the marketplace and invest in the project and share risks.*

1.2.2.4 Competence destroying innovation

Entrepreneurial marketing actions transform markets and market structures (Cadeaux 2000). Entrepreneurial marketing is defined simply as those marketing actions whose outcomes can or do transform markets (Cadeaux 2000). They often involve the introduction of product innovation that represents a technological discontinuity which, if 'competence destroying' rather than 'competence enhancing' can create a new product or service and disrupt industry structures (Tushman and Anderson 1986). This kind of change is at the heart of Schumpeter's theory of innovation and economic development in which 'creative destruction' is the vehicle of growth (Schumpeter 1934). For example, competence-destroying innovation (product) includes jet engines in contrast to turbofan engines (in aircraft) that were competence enhancing innovation (Davis and Devinney 1997). In contrast, turbofan engines were incremental innovation developed from propeller driven engines (Christensen 1997). B2B e-market firms can be characterised as having embedded

innovation (the Internet) that can transform markets and market structures (Christensen 1997).

***Definition:** Competence destroying innovation is characterised as innovation brought about by destroying previously dominant technologies such that the skill and knowledge base required to operate the core innovation shifts. Such innovations open new opportunities for new venture entrepreneurs.*

The next section identifies the research objective and the questions that will be investigated in this thesis. Following which, this thesis will discuss the broad framework between the analytical concepts and the contributions that this thesis is going to make to new venture literature.

1.3 Research objective and questions

The research objective of this thesis is to understand the dynamics of a B2B e-market diffusion process and investigate any strategic significance of the embedded technology for its suppliers and business buyers. The broad research question is to understand the dynamics of the diffusion process of a B2B e-market in business networks. In particular, the objective is to understand how and why new venture B2B e-markets are created in networks, the influence of business network participants and whether firms in networks can gain strategic advantage by joining a B2B e-market. The specific questions are:

1. *How and why are B2B e-markets created?*
2. *What are the decision processes that a firm uses when contemplating the creation of a B2B e-market?*
3. *What are the implementation processes that a firm uses to create B2B e-markets?*
4. *What are the processes that suppliers and business customers use to diffuse/adopt B2B e-markets in focal business networks?*
5. *How do firms in focal business networks use B2B e-markets to perform marketing and logistics activities?*
6. *How do business network participants contribute to the diffusion process?*
7. *How do participating firms in focal business networks gain competitive advantage in a B2B e-market environment?*
8. *What are the success and failure factors of the B2B e-market technology?*
9. *What are the key organisation factors that influence focal business network partners to adopt or to not adopt B2B e-markets?*

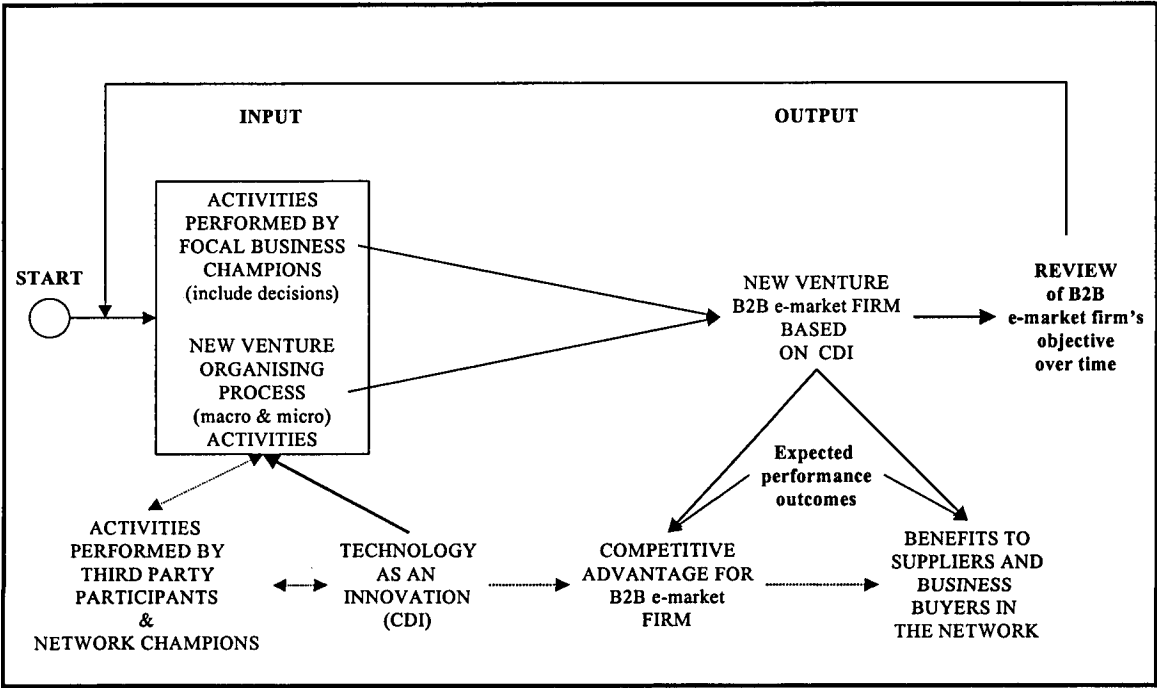
Note: There is no order of importance, rather the questions are grouped into three broad categories that is, the creation process, role of participants and the strategic impact.

1.4 Broad framework between analytical concepts

A framework depicting a broad relationship between the analytical concepts is shown in Figure 6. The activities can be viewed as inputs, and the outcome of the inputs is conceptualised as the new venture. This new venture based on CDI may have a competitive advantage (as characterised being a form of CDI) and provide benefits to the suppliers and

buyers in the network through lower search costs, easier requisition process, speed of access to markets and unrestricted boundaries.

Figure 6: Broad Framework between analytical concepts in the creation of New Venture B2B e-market



The review of the objective process depicts that the objective of the B2B e-market firm is reviewed over time. The review process is necessary because the expected performance outcome of the focal business network firms could be triggered by changes such as, for example, changes in the technological innovations and or market requirements over time.

The input consists of activities that are performed by champions in the creation process. These consist of creation activities such as micro activities, that is, activities that are performed from birth to maturity of the new venture. The new venture organising

process activities include those activities performed by third party participants and other participants within the focal B2B e-market firm. This framework, however, does not depict the nature of the relationships between the champions but rather the activities whose outcome is the creation of a new venture and the expected performance outcomes.

1.5 Contributions

In the short term, this study is expected to make a number of contributions to New Venture theory. First, it will be the initial in-depth study of how and why B2B e-markets are created. Second, the study will provide an understanding of how participants affect the diffusion process of technological innovation within the context of business network. Finally, the study will contribute by understanding the impact of CDI on B2B e-market firms and its suppliers and buyers. In so doing, the dissertation will refine working propositions that are developed from the literature and identify new constructs and their attributes.

In the long term, the objective is to open up new avenues for research that will be of interest to academic researchers in studying diffusion processes in networks, to new venture theorists, and to practitioners and strategic management scholars. From a managerial perspective, in the short-term, e-commerce modelling can contribute to the knowledge necessary to reduce uncertainty and risk, and in the long term can offer opportunities and reduce ambiguous market signals for participating firms who choose to use CDI.

Capitalism is a form or method of economic change and is dynamic by nature. The fundamental impulse that sets and keeps the capitalist engine in motion comes from the

dynamic process of creating new consumer goods, new methods of production, new distribution systems, new markets, and new ventures (Schumpeter 1966).

Diffusion of innovation is at the core of the dynamic processes that underpin social and economic exchange, and technology changes (Nakicenovic and Grubler 1991). Therefore diffusion phenomena are not limited to the spread of new process technologies and the market penetration of new products but also extend to changes in the form of vertical and horizontal business networks (Nakicenovic and Grubler 1991). For the purpose of this dissertation, diffusion of innovation focuses on the creation process of a new venture B2B e-market firm, which is embedded in technological innovation (the Internet). This process consists of micro and macro activities. Most theorists of process have a macro perspective, that is, organisational changes in structure or process are studied over long periods of time from birth to maturity. Other scholars have used a micro perspective that is, where organisational changes are studied at the gestation, pre-birth and birth stages (Katz and Gartner 1988). In order to achieve a full understanding of how and why new ventures are created this study combines the macro and micro perspectives. In so doing, this thesis provides a theoretical base for new venture start-up firms by identifying working propositions from theory and refines these working propositions using case data. The refined working propositions also identify new constructs or verify the constructs that have been identified in the literature.

As organisation structures move into networks of firms and B2B e-markets are created, this area of research is of interest to (1) managers of B2B e-market firms, (2) managers of supplier and customer firms, and (3) managers of third party firms such as policy makers and information technology consultants. An important concern for managers is how to create effective strategies that embrace vertical, horizontal and third party

involvement (Biemans 1989; Symonds 1999). Managers may be uncertain about key success or failure factors or the key organisational factors that may influence suppliers and buyers to adopt (Wise and Morrison 2000). Wise and Morrison (2000) claim that managers of firms that are able to spot disruptive trends and are willing to reconfigure their objectives can seize new opportunities. However, the ability to understand the dynamics of new markets and capitalise by analysing the environment in which new opportunities lie becomes considerably more important (Wise and Morrison 2000). This research aims to contribute to the new venture theory by providing a theoretical base, such as an integrated map of activities that managers may use to analyse or replicate for their environment.

1.6 Conclusion

Chapter 1 introduces the concept of B2B e-market firms. It identifies the importance of the topic, provides a background and positions the research against other related studies. In doing so, the research is grounded in diffusion theory and borrows from other related literature in order to understand the dynamics of the diffusion process of B2B e-market firms, and states that the embedded competence destroying innovation may have strategic significance for buyers and sellers. The chapter discusses the theoretical and managerial contribution of the research and develops a conceptual framework for the study. Due to the unique nature of the study, working definitions of terms that are used have been developed from the literature. A "Glossary of Terms" (see Table of Contents) is included for all the definitions that have been used in this thesis. This chapter concluded by identifying, detailed research questions based on the research objective.

1.7 Organisation of the thesis

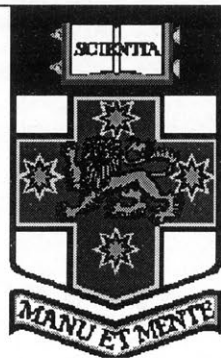
Chapter 2 provides a comprehensive literature review. This chapter also develops working propositions based on the literature. The literature review will provide a critique of the research evidence in order to justify and elaborate on the research questions. That chapter is divided into process, participants and strategic significance and each section begins with the relevant research questions and concludes with a working proposition.

Chapter 3 discusses the research method that is used in this investigation. As the intention of the research is to generate theory and not test existing theory, a case study method is used primarily because the concept is unique and new constructs and variables are yet to be defined in this environment. The research method uses Decision System Analysis to plot the process to show the part played by network champions, while cognitive mapping is used to demonstrate the strategic implications and the contributions made by network champions to strategy.

Chapter 4 performs a cross-functional analysis that includes data from individual sites. In so doing, it refines or confirms working propositions and further identifies and refines definitions of constructs and their attributes.

Chapter 5 addresses the limitations of the research, discusses the findings, and provides direction for future research.

Chapter 2



CHAPTER 2

2.0 LITERATURE REVIEW

INTRODUCTION: The literature review that follows describes, evaluates and critiques scholarly work in the areas of diffusion theory pertaining to process; the network literature dealing with relationships between actors; and the strategic management literature that focuses on the strategic significance of adopting a radical innovation. The purpose of this review is to build arguments based on this scholarly work in order to develop working propositions.

In addition to critiquing the academic literature, the review process will discuss and develop arguments that are drawn from the researcher's own observations in this new area of research. The literature review tries to clearly distinguish critiques of prior scholarly studies from the observations (e.g. preliminary interviews) of the researcher in order to develop arguments in the absence of formal empirical studies.

The review is divided into three areas of investigation, namely process, participants and strategic significance of product innovation. The working propositions developed in this chapter will be refined or confirmed in Chapter 4 based on case data in order to develop theory, which is the main objective of this thesis.

2.1 Process

2.1.1 *Creation Process of new venture*

2.1.1.1 Formation of new ventures

Formation of new ventures based on innovation is composed of a set of stages or phases ordered along the temporal dimensions of their anticipated approach (Zaltman, Duncan, and Holbek 1973). The study of innovation as a process should be distinguished from the result or event approach as the latter (e.g. of diffusion or date of adoption) are related to characteristics of the organisation or its members (Zaltman *et al.* 1973) which is not the focus of this thesis. Zaltman *et al.* (1973) argue that when investigating the results of the innovation, both decision and implementation process becomes obscure. This view has been criticised because it treats innovation as a single event rather than a continually changing process (Ginzburg and Reilly 1957; Gross, Giacquinta, and Bernstine 1971). Rather, innovation should be viewed as an interrelated and complex set of evolving activities that shift over time (Gross *et al.* 1971). Thus, in a process approach, innovation is viewed as an unfolding process consisting of several stages in a certain order of interrelated events (Zaltman *et al.* 1973). While Zaltman *et al.*'s (1973) description for each stage is contingent adoption, that is, decision to adopt may be optional, consensus-based, or authority based, researchers have shown that the common pattern within organisations is consensus-based at management level, followed by authority-based at user level (Cooper and Zmud 1990). However, in new venture start-up firms such as B2B e-markets, the stages are "blurred". In this environment the decision to adopt and implement innovation is a collective approach based on the experience of the decision-makers, the information the

creators receive from the practitioners in the market, from technological experts and other third party firms (e.g. Internet Service Providers).

Prior studies in diffusion of innovation identify four key elements. These consist of the process by which an *innovation is communicated* through certain *channels over time* among members of a *social system* (Rogers 1995). In general terms, innovation is defined as an idea or practice or an object that is perceived to be new. Diffusion is a particular type of communication in which information about the new idea is exchanged (Rogers 1995). The 'time' element involves the innovation-decision process by which an individual passes from first knowledge of an innovation through its adoption or rejection (decision) to its commercialisation stage. It also involves the innovativeness of an individual or unit of adoption, that is, the relative earliness/lateness with which an innovation is adopted, compared with other members of the system (Rogers 1995). The 'time' element also investigates the innovation's rate of adoption in a system, usually measured as the number of members of the system that have adopted the innovation at any point in time as a percentage of the potential number of adopters (Rogers 1995). These members may be individuals, informal groups or organisations. However, for the purpose of this thesis, the time element selected is the innovation-decision process and not the measurement of the rate of adoption. Rather, this study focuses on understanding a process, that is, how and why new venture B2B e-market firms are created in the focal business network social system over time.

The problem with most research on organisation creation is that researchers have studied organisations only after they have come into existence (Katz and Gartner 1988; Kimberly and Quinn 1984; MacMillan 1983). Katz and Gartner (1988) argue that traditional organisational theory models (e.g., Greiner (1972)) and the strategy model of organisational

stages (Porter 1980) or the traditional entrepreneurship models of organisational stage (Timmons, Smollen, and Dingee 1977) are less important than originally thought. Katz and Gartner (1988) suggest that organisation creation models developed by Van de Ven and Rogers (1988) are more useful because they describe micro activities. Katz and Gartner (1988) argue that research will benefit by understanding the combination of all activities in the creation process, for example, the activities prior, during and at the implementation stages of the new venture, that is, macro and micro activities. Macro activities are characterised as organisational changes in structure or process that are studied over time, from birth to maturity, while micro activities, characterised as organisational changes in structure or process, are studied primarily at the gestation, pre-birth and birth stages (Katz and Gartner 1988). For the purpose of this research, the selected organisation is investigated from the time of its inception to its final implementation.

Both macro and micro development theories that use longitudinal data to track change are essential to consider when developing a process theory (Van de Ven and Rogers 1988). Macro theory describes and explains an overall developmental process (Van de Ven and Rogers 1988). Van de Ven and Rogers(1988) posit that a macro theory indicates the general trends in the creation process over extended periods and offers an explanation of why the long-term developmental path unfolds as it does, such as, for example, in theory of creative destruction (Schumpeter 1950). Micro theory of immediate action describes and explains the operative processes that create development patterns over the short term. Macro theory details interaction amongst players, ideas and the contexts that give rise to an innovation (Van de Ven and Rogers 1988). Based on the micro and macro development theories, this thesis maps the creation process of a B2B e-market firm in order to establish why and how it is created.

The distinction between macro and micro activity theory has been blurred in most development work ((Poole and Van de Ven 1988). In most macro long-run theories, immediate activity is only implicit and remains vague at best (Poole and Van de Ven 1988). As a result this theory remains overly simplistic particularly in real-time situations. Micro theories, however, do not consider how immediate actions interact and aggregate into a larger context and as a result micro theories tend to have an overly simplistic view of the long run. However, both macro and micro perspectives are necessary in developing an adequate theory of innovation, because innovations are extended over long periods, yet driven through time by immediate action (Van de Ven and Rogers 1988). In order to develop theory in new venture B2B e-markets, this research includes both macro and micro perspectives in order to understand how two or more immediate activities can be combined over a time ordered sequence and the impact of third party firms in networks. In keeping with the diffusion theory, this study extends prior research by combining macro and micro activities and supporting the research using empirical data.

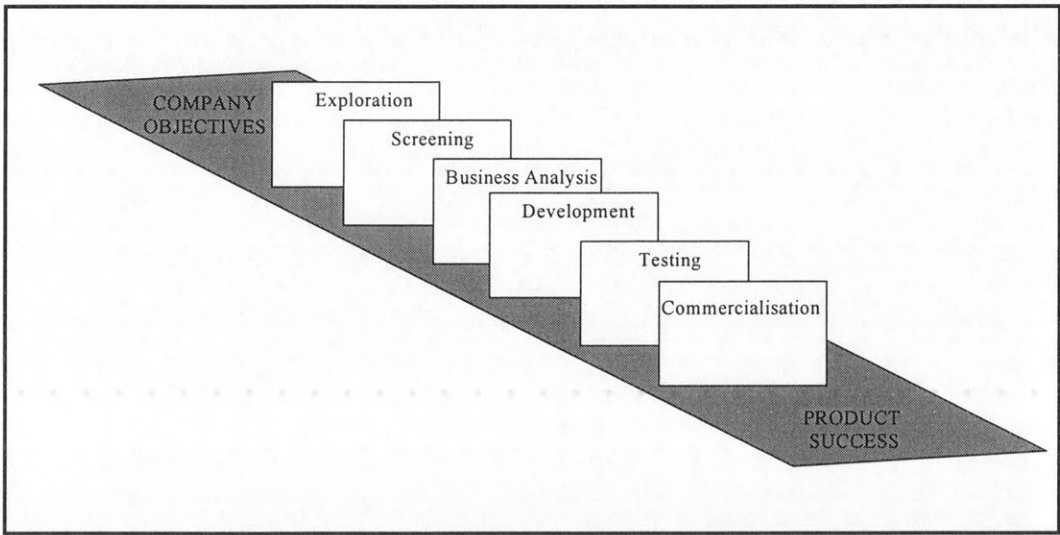
2.1.1.2 Dynamic interrelated planning

Before an innovation becomes commercialised it passes through a number of stages (Biemans 1989). Firms that have successfully launched new products are more likely to have had a formal product development and strategic planning process. The strategic planning process links the new products to company objectives (Booz, Allen, and Hamilton 1982). Extant literature on new product development abounds with various models. In order to understand the creation process of a new venture, this thesis draws on this literature. While some scholars have suggested a linear model based on the activities within various functional areas of one organisation (as opposed to a network of organisations), others have

developed models that depict product development as a series of activities (Booz and Hamilton 1968; During 1986; Moor 1984). Although the linear models do not offer much insight into the creation process of an organisation, they indicate that the innovation begins as an idea and emerges as a new product. These linear models also indicate a sequential movement of the innovation through the functional areas with the possibility of overlap between some departments, such as research and development, and technology development. Observations made during the preliminary research suggest that the various functional areas perform simultaneous macro activities when creating a B2B e-market firm. These (product development and linear) models are difficult to compare as different terms are used to describe the various functions (Biemans 1989). However, models based on activities (Booz and Hamilton 1968) clearly show the tasks carried out during each stage and depict the intermediate forms of development as the innovation progresses through the creation process. As a result of subsequent research the original model (Booz and Hamilton 1968) was modified to include the 'new product strategy development' stage at the beginning of the process (Biemans 1989). In this way, the original model became linked to the strategic objectives of the firm (Booz *et al.* 1982). This model shows the innovation as not only moving through certain stages but more importantly links the activities to the company objectives as shown in Figure 7. The arrow in Figure 7 indicates that a new product program begins with the firm's objective, which could include product fields of interest, profit aims and growth plans. For example, the firm with an objective to grow provides very little, if any guidance. In contrast, if the objective is set a starting point for guidance can be established (Booz and Hamilton 1968). This research focuses on the activity based models and in particular the model proposed by (Booz *et al.* 1982) and

suggests that the fixed objective may not be suitable for a dynamic process where the innovation driving the firm may trigger changes.

Figure 7: The process of product development depicted as a series of activities



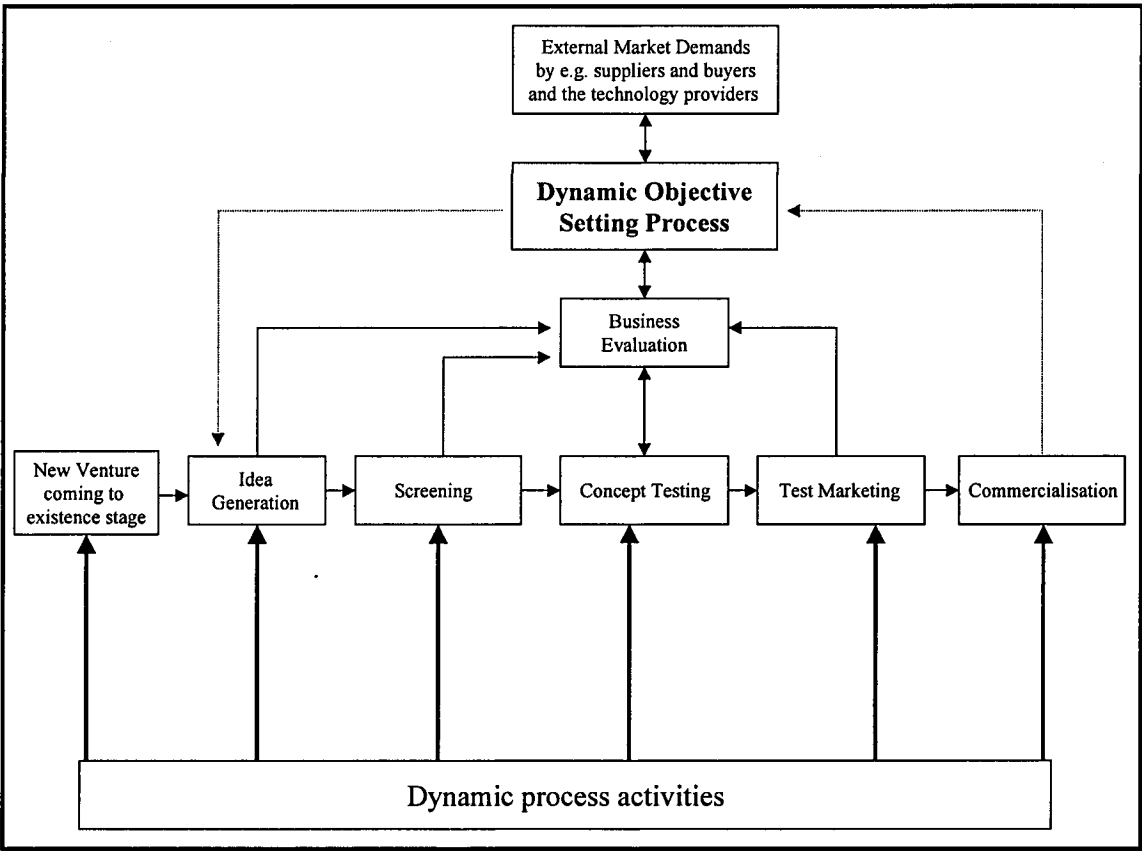
Source: Booz, Allen and Hamilton (1968) Management of New Products Booz, Allen & Hamilton Inc., NY.

Traditional sequential models have been criticised by scholars because of their inability to illustrate the interactions between the various stages of the development process and the assumption that each stage is completed before the following activity occurs (Moor 1984). Moor (1984) overcame these shortcomings by identifying parallel activities while at the same time linking the activities to the firm's objectives. More importantly, this linking of activities with the firm's objectives indicates that the business objectives were evaluated at every stage of the development process. This loop-back feature is captured in part by Cooper (1994). In contrast to the previous models, Cooper (1994) suggests a roadmap for driving a new product/project from the idea stage to product launch by providing a comparison between the second generation stage-gate process and third-generation process

that overlaps fluid or conditional 'go', 'no go' stages at the gates. Although an activity based model clearly shows the tasks carried out during each stage and the intermediate forms of development, the model of Cooper (1994) suggest that an ordered sequence of activities is involved, by which innovation moves though a process.

Building on these models, this thesis extends the activity models by arguing that objectives are flexible in a dynamic new venture B2B e-market firm. Figure 8 depicts process activities as dynamic in nature and demonstrates that the external environment and technology may affect on the objective setting process of a B2B e-market firm.

Figure 8: Dynamic process activities and objective settings process



Source: Adapted from Moore (1984) "Control of New Product Development in UK Companies" *European Journal of Marketing*, Vol.18 6/7.

This figure also suggests that the formation of a new venture is not dependent on a sequence of unrelated events based on a static objective. Furthermore, many models (Booz and Hamilton 1968; Cooper 1994; Moor 1984) are restricted to a development or creation within an organisation and they do not consider the implication of external factors, which may impact on the ongoing process of developing objectives. For example, external market demands or a change in technology, or both, may affect the objective.

In a process approach, the stages are interrelated, as mentioned before. However, process models suggest that each stage is planned and executed in sequence. This is not realistic to the extent that dynamic planning activities can and do take place over time and may not be executed in sequence. Planning activities in some instances may depend on market demands, where the capabilities of the firm and its resources can be configured or reconfigured to match market change (Eisenhardt and Martin 2000).

Dynamic capabilities are the antecedent organisational and strategic planning routines by which managers alter their resource base, acquire and shed resources, integrate them together and recombine them to generate new value creating strategies (Eisenhardt and Martin 2000; Grant 1996; Pisano 1994). Scholars (Henderson and Cockburn 1994; Williamson 1999) have described dynamic capabilities in vague terms, such as 'routines to learn routines', that have been criticised as being tautological (Eisenhardt and Martin 2000). Yet, a dynamic capability actually consists of identifiable and specific routines, such as product development, that often have been subject to extensive empirical studies, except studies that are resource-based (Eisenhardt and Martin 2000). Whereas some dynamic capabilities refer to product development, others focus on reconfiguration of resources or market structure (Eisenhardt and Martin 2000). One can argue that in a B2B e-market environment, however, the creation process must 'fit' the requirements of the market.

Dynamic changes could be triggered either by the product (e.g. new software in the market or limitations of the software) or the requirements of the sellers and buyers.

The pattern of effective dynamic capabilities depends on market dynamism where moderately dynamic markets are ones in which change occurs frequently but along roughly predictable and linear paths (Eisenhardt and Martin 2000). These markets have relatively stable industry structures and effective dynamic capabilities relying on existing knowledge of the market (Eisenhardt and Martin 2000). More importantly, high-velocity markets (e.g. real-time marketplaces) involve the creation of new, situation-specific knowledge in order to focus on market situations that are fluid (not static) and use simple routines to address strategic planning (Eisenhardt and Martin 2000).

Arguably, the B2B e-market environment is not a moderately dynamic market structure, rather it is a high-velocity market structure. As such, planning routines that focus on organisational changes in structure or processes are simple and flexible. Furthermore, the literature reviewed seems to suggest that the objective needs to match the market demands over time. In order to match market demands and the capabilities of the innovation (e.g. computer programming limits of the software) the macro and micro activities need to be flexible. In other words, *the formation of new venture B2B e-market firms depends on dynamic planning of macro and micro activities and a constant review of objectives rather than a sequence of unrelated events based on fixed objectives* in order to match market demands. Therefore, planning routines focus on events to match the market changes (over time) by using simple routines that are not completely unstructured, so that managers can act in highly uncertain situations where it is easy to become paralysed (Eisenhardt and Martin 2000). The preceding arguments based on literature suggest the following working proposition.

WP₁: The formation of new venture B2B e-market firms is dependent on a dynamic interrelated planning of macro and micro activities and a review of objectives, rather than a sequence of unrelated events based on a static objective.

Comments on WP₁:

This working proposition claims that in the high-velocity market environment of the B2B e-market firm, the planning process is dependent on a dynamic approach as the innovation embedded in it has the potential to create new applications. At a strategic level, for example, the innovation may lead to new applications by other start-up new ventures or new processes by which businesses may transact. Further, the working proposition claims that the activities take place in parallel rather than in a sequence.

2.1.2 Decision process in new venture creation

2.1.2.1 Decision to adopt or reject an innovation

Decision processes play an important role in innovation because decision-makers in the organisation are faced with choices such as to innovate or not, to select from different innovations or to use different methods of implementation (Zaltman *et al.* 1973). Taylor (1965) argues that decision making usually involves four steps, (a) the generation of some subset of alternative courses of action available, (b) a set of consequences attached to each alternative (c) preference ordering in an attempt to rank the consequences of various alternatives and (d) the decision-maker's selection of the first alternative that meets some minimum standard of satisfaction. However, in making decisions, the participants operate

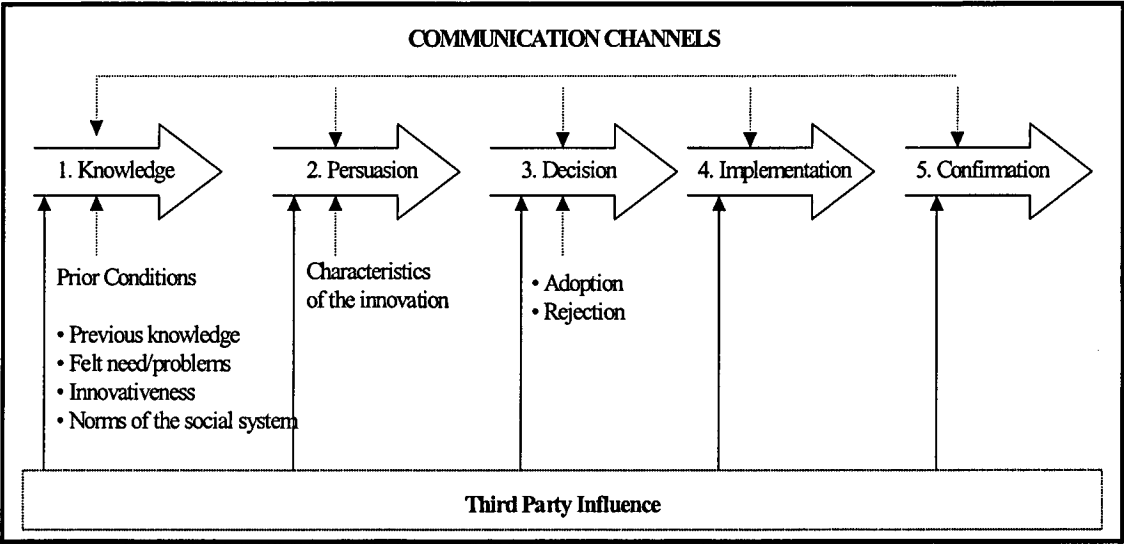
under several conditions. Scholars have highlighted the conditions of uncertainty and risk associated with making decisions (Duncan 1972; Schon 1967). Schon (1967) however, states that uncertainty attributes can be further classified into technical, novelty and marketing uncertainty. Technical uncertainty focuses on the question of whether the innovation is technically feasible, novelty uncertainty focuses on the question of other firms' approach to the innovation and marketing uncertainty focuses on the question of marketability of the innovation.

These attributes of the decision process are relevant to this thesis as the B2B e-market firm is based on innovation and therefore is dependent on the technology uncertainty and, being a new phenomenon, will be dependent on novelty and marketing uncertainties. Furthermore, in B2B e-market firms the decision to adopt an innovation is shared amongst the functional areas where each functional area makes a decision on a particular aspect of the creation process and then argues the merits of the decision with other functional areas.

2.1.2.2 Linear and fixed innovation-decision process.

Diffusion scholars have recognised that the decision/act of adopting an innovation is not instantaneous. Adoption is a dynamic process, consisting of a number of stages (Beal and Rogers 1960; Rogers 1995). The decision process is a series of stages that an innovation decision must follow that includes a fixed decision action as seen in step 3 in Figure 9.

Figure 9: A model of stages in the innovation decision process



Source: Adopted from (Rogers 1995) *Diffusion of Innovations* NY, USA: The Free Press p. 163

The above model (Rogers 1995) can be criticised, as it does not depict a loop back provision. Arguably, the model does not take into account that the decision to either ‘go’ or ‘no go’ could take place at any stage of the process rather than just at one single point, or that the decision process could be influenced by third party participants at any stage. There are a number of additional criticisms of Rogers’ (1995) model. Firstly, the decision to reject an innovation is not limited to the decision stage. In fact, rejection may take place at any stage of the decision process (Biemans 1989). For example, if the prior knowledge about the innovation gained at the pre-birth stage does not rouse any interest, the innovation can be rejected. Secondly, the adoption process assumes a linear sequence of completed stages. That is, each stage must be completed prior to initiating the next stage. This is not always the case in practice, as the decisions may be made simultaneously by the different functional areas of the firm. Finally, the model indicates that the gathering of information is limited to the knowledge stage based on previous knowledge skills and experience. Instead

it can be argued that knowledge can be accumulated and used at all stages of the creation process.

A study conducted by Chakrabarti, Feinman and Furntevilla (1982) claims that the desired information depends on the function of the key players in the firm, for example, managerial personnel demand evaluative information whereas technical personnel prefer problem specific information. While managers were mostly involved in downward communication, technical personnel showed more utilisation of lateral communication channels (Biemans 1989). However, in new venture start-up firms such as B2B e-markets, managers and technical personnel require information to flow both laterally and horizontally as both management and technical personnel need the information so as to constantly monitor the dynamic market, a situation that the Rogers' (1995) model fails to capture.

Although Rogers' (1995) model depicts communication channels as being open to the different stages of the decision process, the communication flow between third party participants and the firm remains unspecified. Furthermore, the role of the suppliers and buyers of the innovation is not depicted in the decision process.

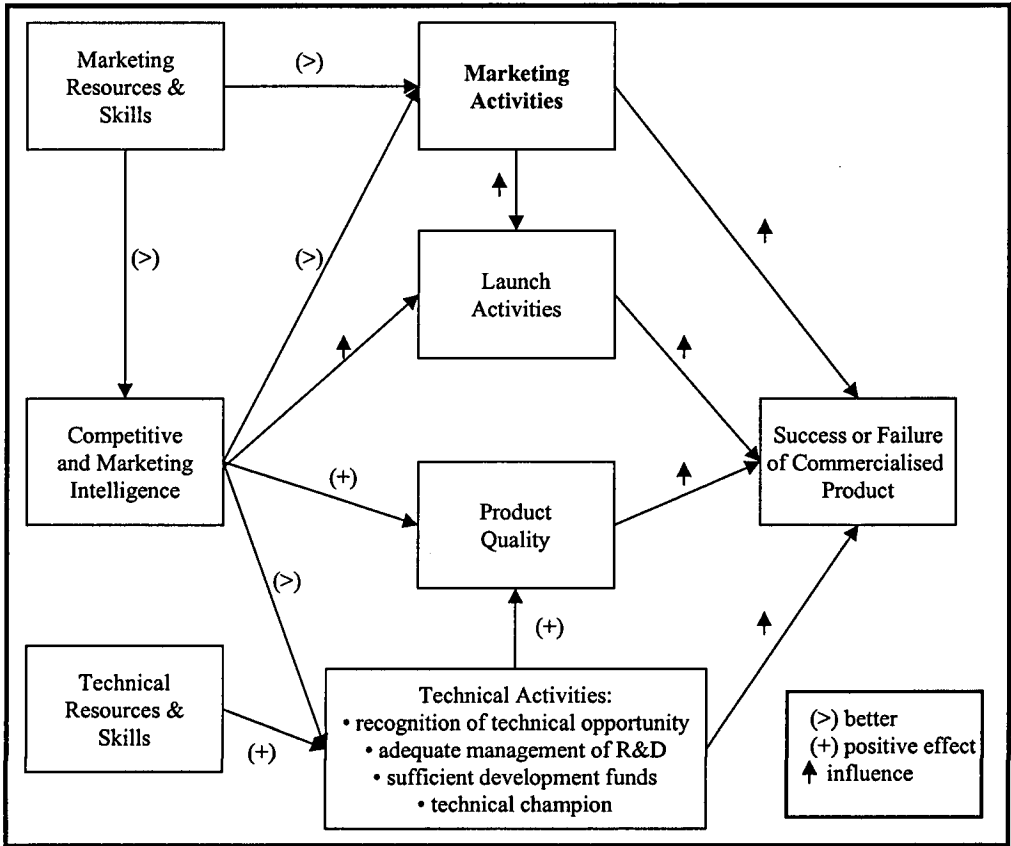
The decision models rest on the premise that the product development process can be split into a number of decision actions and, as such, the process is divided into several stages, separated by evaluation points (Biemans 1989). At every point, a decision on 'go' or 'no go' must be made in order to go on to the next stage of the decision making process. However, in a B2B e-market environment, once the initial decision to commit resources to the development process is made, a number of decisions are dependent on subsequent process activities such as, by third parties. For example, observations and discussion with Bizmarket employees suggest that selections of appropriate software or decision on

selecting the systems design to meet the needs of suppliers and buyers. Furthermore, Rogers' (1995) model suggests that the decision process is a sequential activity, yet in a B2B e-market environment the decision process could be a parallel set of activities with inputs by different actors and consequently the model is not flexible.

Generally decision models are easily constructed by taking the stages of the activity-stage model and linking them by evaluation points (Biemans 1989). Based on Cooper's (1975) decision stage model a more elaborate model that distinguishes between technical/production activities and marketing activities was developed. Calantone and di Benedetto (1988) provide empirical validation of Cooper's (1975) decision process model that identifies the strength of the relationship between technical and marketing activities (see Figure 10). This model suggests that the "needs" of the market (sellers and buyers in B2B e-market environment) and the technical resources provided by third party technology suppliers have a strong or positive effect in contributing to the success or failure of the commercial product.

Arguably in a B2B e-market each stage of the decision process may have an evaluation point at which the decision to adopt or reject an innovation can take place. Furthermore, in a focal business network, suppliers and buyers may affect the design decision of the procurement documents or the process in completing these documents. In such situations, the technical and managerial personnel require the input from the users of the system. Because of that, *the decision to adopt or reject an innovation can occur at any point in the decision process of adopting an innovation rather than at a particular point in the process.*

Figure 10: Relationship between managerial influenced new product skills activities and commercialised product outcomes



Source: Calantone, R and A. di Benedetto (1988) "An Integrative Model of the New Product Development Process: An Empirical Validation" *Journal of Product Innovation Management* Vol.: 5 p. 206

This leads to the following working proposition.

WP₂: The decision to adopt or reject an innovation can occur at any point within the linear innovation-decision process rather than at a fixed stage of this process.

Comments on WP₂:

The working proposition claims that the acceptance or rejection of an innovation by a firm may take place at any stage of the adoption process. It is assumed that

the decision to adopt or reject can not only be made by the focal business B2B e-market firm but also by the user firms (seller and buyer firms) and the technology supply firms. This assumption suggests that firms other than the focal business may trigger a 'go' or a 'no go' decision. In such situations, the adoption process could become dependent on the others in the business network at no one particular stage. For example, the focal business firm may base their 'go' decision on prior research, market situations. However, at the time of selecting the innovation, technology providers may suggest that the innovation is either too expensive to develop or that the innovation has limitations and therefore it could be unwise to go ahead.

2.1.3 Implementation process in New Venture creation

2.1.3.1 Implementation of innovation

The interest in diffusion theory for this thesis is in its consequences for the implementation process. This thesis seeks to understand implementation not as an outcome of a process but the process itself. In broad terms, the implementation or commercialisation stage of an innovation can be defined as the execution or commercialisation of the innovation where it is put to use (Rogers 1995). Klein and Sorra (1996) observe that innovation scholars have ignored research on innovation implementation. However, cross-organisational studies of determinants of innovation adoption are abundant (see (Damanpour 1991)). More common are qualitative case studies that focus on single-site implementation of innovation (Klein and Sorra 1996). Although these studies describe parts of the implementation process, an integrative model that captures and clarifies multilevel

phenomenon of innovation implementation is largely missing (Klein and Sorra 1996). Klein and Sorra (1996) claim that researchers have neglected the implementation. Furthermore, researchers have neglected the phenomenon that an innovation can be changed or modified by the user (Agarwala-Rogers 1978). Observations made during the initial interview of the B2B e-market firm suggested that in a B2B e-market environment, suppliers and buyers may request changes, for example, to the "procurement screen" so that it is more user friendly and contains standardised information.

An integrative model describing the determinants of the effectiveness of organisational implementation has been developed by Klein and Sorra (1996). However their study does not focus on the process of implementation. Rather, their research identifies a number of dimensions of effectiveness and urges researchers to understand implementation across organisations, using longitudinal data. The authors believe that a number of single-site studies (e.g. Sproull and Hofmeister (1986)) have rich descriptions of the variety of innovation, implementation, organisational and managerial practices, and characteristics that may influence innovation. However, the use of information from across organisations in a network (e.g. B2B e-market environment) will provide a valuable understanding of the implementation process using longitudinal data (Klein and Sorra 1996).

This thesis focuses on understanding the implementation process of an innovation that can be changed by the user over time in order to meet the requirements of the user of the innovation. In so doing, this thesis will map the process of how a technological innovation is implemented in a B2B e-market firm over time.

2.1.3.2 Feedback and redesign

Feedback and redesign refers to the process by which information is collected about a new technology and redesign activities are initiated to enhance the operations of the innovation (Goodman and Griffith 1991). The basic assumption is that any new technology will evolve in structure, process and outcome (Goodman and Griffith 1991). The authors posit that the evolution is driven by (a) the perceived benefits of the technology (b) the benefits drawn from economies of scope and (c) the technology is subject to change as new opportunities are envisaged over time. Goodman and Griffith (1991) argue that empirical evidence supports (Goodman 1979) the use of feedback and redesign in sustaining change. Leonard-Barton (1987) also studied the concept of technology evolving over time to meet the changing needs of different user groups. Due to the lack of empirical data, this thesis focuses on gaining an in-depth understanding the implementation process in one organisation.

2.1.3.3. Sequential activities

Adoption-decision models claim that the implementation stage occurs sequentially after the completion of the decision stage (Rogers 1995). In a start-up new venture like the B2B e-market, the implementation stage also occurs after the decision stage to go ahead with the innovation. However, the implementation stage is subject to constant feed-back loops and refinements that will match the requirements of the users of the product (B2B e-market) and will be subject to further redesign as the market demands over time. Extant literature does not provide adequate information on the sequence of implementation activities (Chan and Swatman 2000; Cooper and Zmud 1990; Premkumar 1994).

Observations made suggest that functional areas within a B2B e-market simultaneously perform implementation activities rather than completing one activity followed by another.

Arguably the *implementation of innovation process* follows a set of steps and each step is dependent on it being *evaluated and redesigned through feedback loops* in order to implement an innovation and perform implementation activities simultaneously rather than as a *linearly sequential chain of activities*. This leads to the following working proposition.

WP₃: The implementation of an innovation follows a set of sequential steps where each step interacts with the previous step through feedback loops, rather than a linearly sequential chain of activities.

Comments on WP₃:

This working proposition claims that the process activities follow some sequential steps, each of which is verified with the outcome of the previous step. For example, the decision to adopt the innovation precedes the implementation step and unless the decision to adopt stage gives the 'go' the implementation stage has a 'no go' status. Furthermore, for the implementation to be successful, the implementation process is subject to feedback loops in order to match the needs of the user.

2.2 Formation of networked firms and marketing activities

2.2.1 Marketing activities in networks

The concept that marketing channels can be viewed as a set of interdependent institutions involved in the process of making a product or service available for use or consumption (Stern and El-Ansary 1992) is not new. Furthermore, the idea that channel structure consists of interdependent institutions in the form of networks is well established in literature (Reve and W. 1979; Stern and El-Ansary 1992; Stern and Reve 1980). Of late, literature on network theory is beginning to receive attention (Achrol and Kotler 1999). However, much of this early research in networks focused on mapping the patterns of interpersonal ties within and between firms (Achrol and Kotler 1999). These interpersonal ties or networks consisted of informal social ties; a collection of dyadic bonds between channel members (Achrol and Kotler 1999). However, the dyadic bonds have changed due to the emergence of large scale managed networks (Achrol and Kotler 1999).

The term network has been used to describe a wide variety of phenomena ranging from the national economic systems in Japan (Keiretsu) and Korea (Chaebol) to opportunity network firms, electronic data and communication system and social networks (Achrol 1997). Building on prior channel literature, Achrol (1997) broadly identifies four types of networks. These include the *internal market networks*, the *vertical market networks*, the *inter-market networks* and the *opportunity networks*. Internal market networks are those networks formed within organisations linked by electronic data-processing systems, while vertical market networks are firms that focus on industry-specific channels of suppliers and distributors. However, Achrol's (1997) explanation of vertical market networks is incomplete, as the product development process can also occur in

horizontal markets. Drawing on Hakansson's (1987) study, Biemans (1989) claims that the product development process also involves horizontal market network interaction that relates to co-operation between firms that are in competition with each other, in order to develop products by sharing research and development costs, hence reducing risk, cost of development and production and increasing market potential by making market agreements on standards. While Cook and Emerson (1978) describe a network as a set of two or more firms that are connected, Biemans (1989) includes the concept of interaction between participants, resources and activities. Due to the current tendencies in industrial markets, manufacturing organisations are increasingly developing innovations through co-operation with other firms (Biemans 1989). These potential partners are not limited to the firm's present customers or potential users of the innovation. Firms such as competitors, research institutes and distributors may contribute to the product development process. More importantly, by means of these interactive relationships, manufactures can shorten the duration of the total product development process, share costs and risks involved, obtain the necessary technical and market knowledge and gain access to other markets (Biemans 1989).

In a B2B e-market network environment, however, buyers and sellers can perform similar marketing activities where products and services are procured not only from present customers but also from unknown suppliers. For example, Web-based business models, such as B2B e-market models, can operate across regional boundaries because they lack the constraints of physical product manufacturing or service delivery. Consequently these businesses can more accurately match value creation from a customer's perspective. As such Car.com allows customers to research and purchase new and used vehicles or E-steel.com can allow its customers to purchase steel. In general, networks of buyers and

sellers collectively allocate tasks to specialist firms and divide labour within and between industries and activities, thereby contributing to the value chain (Cadeaux 1997a).

The opportunity networks concept, however, consists of a set of firms specialising in various products, technologies or services that assemble, disassemble and reassemble in temporary alignments around particular projects. Arguably, B2B e-market firms exist in a kind of opportunity network as the B2B e-market firm serves as a marketing arm, brokerage and clearing house, and regulates the activities of suppliers and buyers in the network. For example, B2B e-market firms match buyers and sellers, validate them, select and classify buyers and sellers in the network and act as a structural intermediary in the Aldersonian sense.

A network of firms involved in the production and marketing of goods and services yields a variety of economies for its participants (Cadeaux 1997a). In the B2B e-market environment, (from the demand side) marketing activities include comparing information on price and product description, while logistics activities include using structured tender documents and assessing information on delivery times and product availability. From the supply side, marketing activities include providing quotes to buyers and providing product descriptions that satisfy the requirements specified in the tender document, while logistics activities include meeting the required delivery time and completing the structured reply to the tender document. Thus in a B2B e-market firm, environment suppliers and buyers perform marketing activities in the focal business network where the B2B e-market firm can be viewed as an independent institution involved in the process of making a product or service available for use or consumption.

2.2.2 Loosely and rigidly coupled firms in networks

Borrowing from the strategic management literature, this thesis uses the concept of co-evolving. The term co-evolving refers to successive changes among two or more ecologically interdependent but unique species in biology, such that their evolutionary trajectories become intertwined over time (Eisenhardt and Galunic 2000). Eisenhardt and Galunic (2000) maintain that in a shifting network structure, firms may seek to exploit fresh opportunities by creating new relationships, and discard those relationships that are deteriorating due to the dynamic nature of the market. One can argue that in a focal business network environment of B2B e-market firm, supply and buyer firms may seek to co-evolve over time. In contrast, Powel, Koput, Smith-Doerr (1996) claims that in a field of rapid technological development, such as biotechnology, the locus of innovation is found within the networks of organisational relationships that sustain a fluid and evolving community. Their empirical analysis suggests that a firm's characteristics, for example, age and size, appear as ancillary conditions as neither growth nor size reduces the propensity to engage in external relationships and as such is unimportant in the network context.

The structure of inter-firm relationship network changes is potentially predictable over time given the dynamic nature of the market (Madhavan, Koka, and Prescott 1998). A dynamic perspective on inter-firm networks will demonstrate that networks change over time as the network participants improve their individual positions (Madhavan *et al.* 1998). A comprehensive longitudinal empirical study suggests strong support for the framework (Madhavan *et al.* 1998). The method of creating separate matrices using pre and post events suggests the concept is similar to that of a 'sliding window' (Doreian 1986) approach, that is, the concept of structural flexibility in networks, such as, structure loosening or structure reinforcing. Madhavan *et al.* (1998) observed that *structure-reinforcing* events serve to

strengthen the current structure of the network because they typically sustain rather than disrupt current industry trajectories. In contrast, *structure-loosening* events trigger change in existing patterns of relationships, as they are more likely to be disruptive of accepted practices and industry definitions. Based on the characteristics of each event, it may be possible to predict whether it will reinforce or loosen the current network structure. For example, in a B2B e-market environment, firms that use electronic data interchange may arguably be structure reinforcing. In contrast, firms using Internet based network structures are structure loosening. In a B2B e-market environment, firms that join B2B e-markets may seek to be loosely coupled, that is, they may join the focal B2B e-market firm to exploit fresh opportunities by creating new relationships, and discard those relationships that are deteriorating. More interestingly, a B2B e-market may seek to develop a structure-reinforcing network by dropping non-performing suppliers or buyers over time from within the network and co-evolve. Arguably, in a B2B e-market environment, sellers and buyers may operate in a loosely coupled network in order to gain strategic benefits in a dynamic market in the short term, then rigidly couple in the long term until such time as the firms co-evolve and are then loosely coupled in networks. For example, sellers and buyers may choose and select partners in the network that poses the maximum strategic benefits, in the short term such as cost reduction in time, product description and availability of products but over time may rigidly couple. Therefore, in a dynamic B2B e-market environment *organising marketing activities between buyers and sellers is loosely coupled* rather than *rigidly coupled* in the short term. This leads to the following working proposition.

WP₄: In a dynamic B2B e-market environment, the organising of marketing activities between buyers and sellers is loosely coupled in the short term rather than rigidly coupled.

Comments on WP₄:

This working proposition claims that the buyers and sellers in the focal business network may seek to join or leave the B2B e-market firm. On the other hand, B2B e-market firms may seek to strengthen their position by dropping non-performing sellers and buyers in the short term. This 'fluid' situation suggests that the firms are not rigidly coupled by long term relationships rather are loosely coupled at the beginning. One may also argue that in such instances the loosely coupling effect experienced initially could lead to long term rigidity.

2.3 Participants in business networks

2.3.2 Direct and indirect impact of champions in networks

No one single environment faces the members of a channel dyad; instead from the perspective of analytical expediency and theoretical generalisation, it is reasonable to assume that there are important clusters of forces that affect channel dyads (Achrol *et al.* 1983). Theoretically, channel dyads can be influenced by external dependencies and for every dyad there could be a primary, secondary or macro task environment. Achrol *et al.* (1983) argue that the primary environment consists of immediate suppliers and customers whereas the secondary environment consists of those suppliers and customers that are one step removed from the immediate suppliers and customers. The macro environment

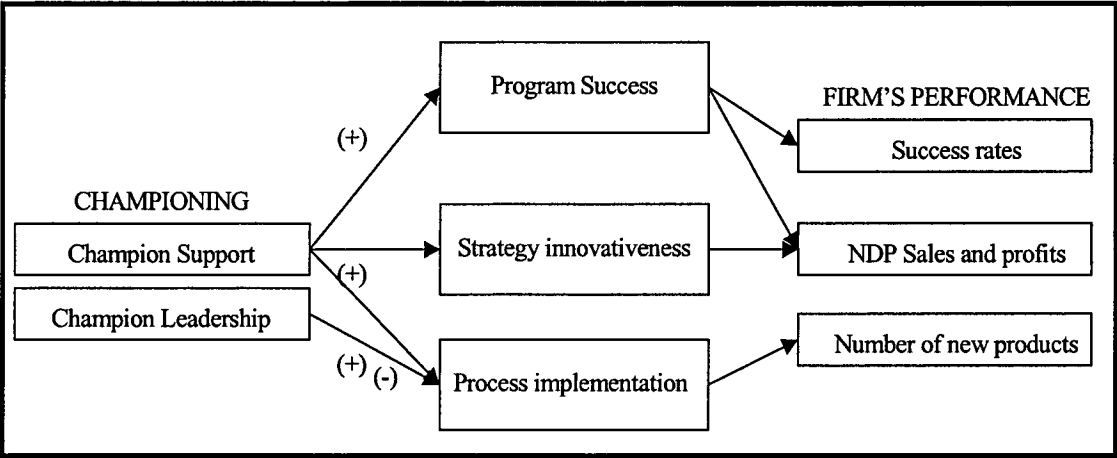
involves the general social, economic, political and technological forces that impinge on the activities of the primary and secondary task environments in a network (Achrol *et al.* 1983). The strategic options available to channel participants in the primary task environment will be in the form of integration, ranging from mergers to spontaneous co-operation to negotiated co-operation (Achrol *et al.* 1983). The authors claim that in the secondary task environment, strategic options that can be called upon could include alliance or network formation and horizontal co-operation. Arguably, in networks, participants facing an e-market firm consist of organisations that lie within the primary task environment (buyers and sellers) as well as organisations that lie within the macro environment (such as regulators and subsidising government organisations and other third parties). For the purpose of this thesis, only the primary task environment is selected, that is, participants in the focal business network.

As stated before, Biemans (1989) argues that the network approach implies two theoretical extensions. First, although the relationship between focal network participants is important (i.e., the relationship between the manufacturers or sellers of raw material and the business buyers), there are other participants that may influence the activities of those within the focal network. A direct relationship may consist of the manufacturer and its immediate suppliers and immediate business customers. A new start-up process that may influence the activities of the buyer firms with its suppliers and business customers constitutes an indirect relationship. Indirect relationships are of importance because (a) given the strategic situation, they influence the direct relationship and (b) changes in the strategic situation can change the buyer's position with regard to both the direct and indirect relationships. As firms are increasingly outsourcing various functions to other firms, third party involvement is a powerful alternative to traditional vertically integrated

firm structures; one that can affect the existence and strength of direct and indirect relationships (Boyson, Corsi, Dresner, and Robinovich, 1999). Direct and indirect relationships are crucial in the context of innovation because participants in these relationships affect the creation process (Biemans 1989). The second theoretical extension relates to the kind of relationships. This relates to firms having a certain position in a network that can be defined by (a) the function performed by the firm for other firms (b) the relative importance of the firm in the network (c) the strength of the relationship with other firms in the network and (d) the identity of the firms with which the focal firm has a direct relationship (Biemans 1989).

This relationship concept has a profound positive impact on the NPD process (Biemans 1989). Yet empirical data are limited. For example, champions affect five areas. First, level of investment and budgets, second, project termination decision, third, levels of support, (Markham *et al.* 1991), fourth, levels of NPD process integration and fifth, strategy innovativeness (Markham and Griffin 1998). Thus though champions may not directly affect the success of NPD, they may either directly or indirectly effect other people and processes in the organisation (Markham 1998). The research reveals a system of relationships between the champion effect (champion leadership and champion support), program success, strategy, creation process and performance. The data indicate that champion support is associated with program success (i.e. program met objective). The data also indicates that champion support is associated with strategy and NDP process. Finally the data indicates that champions have indirect effects on a firm's performance rather than direct effects as shown in Figure 11.

Figure 11: Championing effects on performance

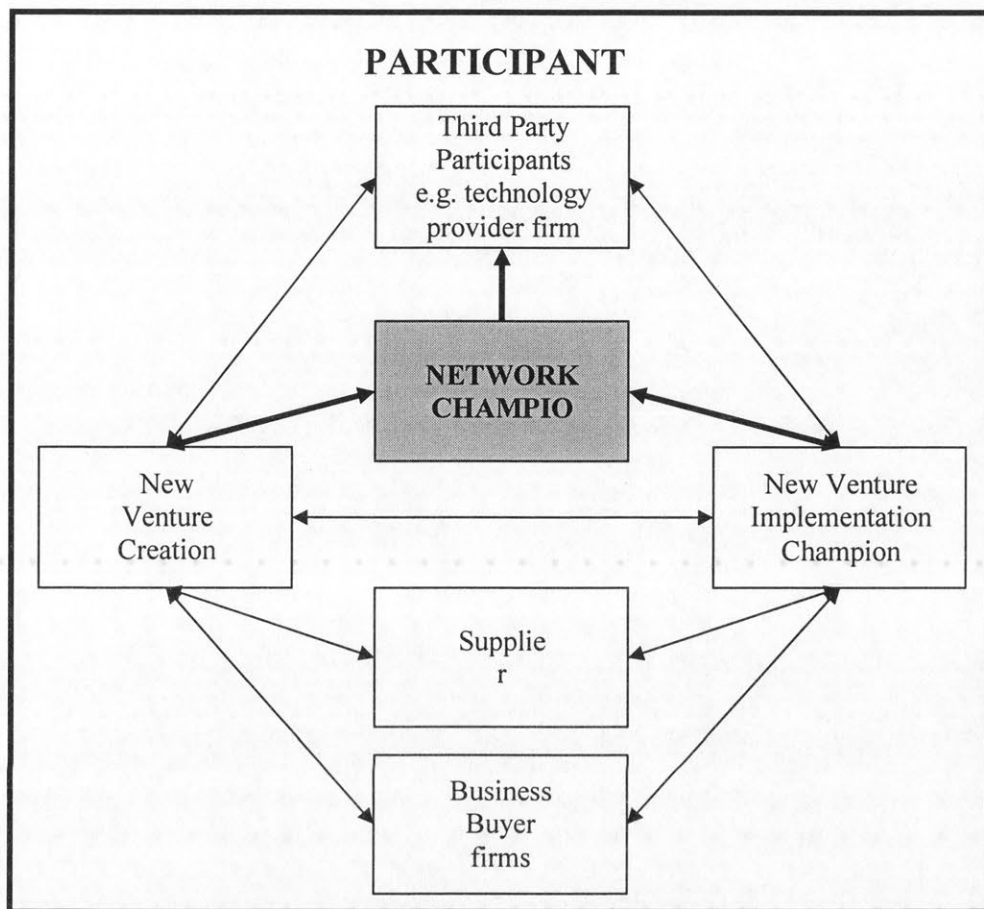


Source: Markham and Griffin (1998), "The Breakfast of Champions: Associations Between Champions and Product Development Environments, Practices and Performance " *Journal of Product Innovation Management* Vol. 15, p.451.

The concept of champion has been documented in the product innovation management literature and is defined as the person, not organisation, who is spirited, almost independent and fully capable and willing to pursue the risk of creating a new venture (Calish and Gamache 1984). In the new venture creation process a number of champions are involved. New venture creation champions are those who are directly involved with the new venture at a management and entrepreneurial level. The implementation champion is characterised as the one who is intimately familiar with the aim of the new venture and has the required skill and experience of the technology and co-ordinates the activities between the new venture and the third parties to achieve fruition of the new venture.

Arguably, network champions can and may directly or indirectly influence the linkage between the participants in the business network and the diffusion process. This concept is shown in Figure 12.

Figure 12: Relationship between network champions and business network participants



The review of the literature suggests that in the primary task environment, *network champions* may have a *direct or positive relationship* with *third party participant firms*, *new venture champion* and *new venture implementation champion* but an *indirect or negative relationship* with *supplier* and *business buyer firms*.

WP₅: *In a B2B e-market context (in contrast to EDI), network champions hold direct relationships with creation and implementation champions and third party participants rather than attempt to maintain direct relationships with suppliers and business buyers.*

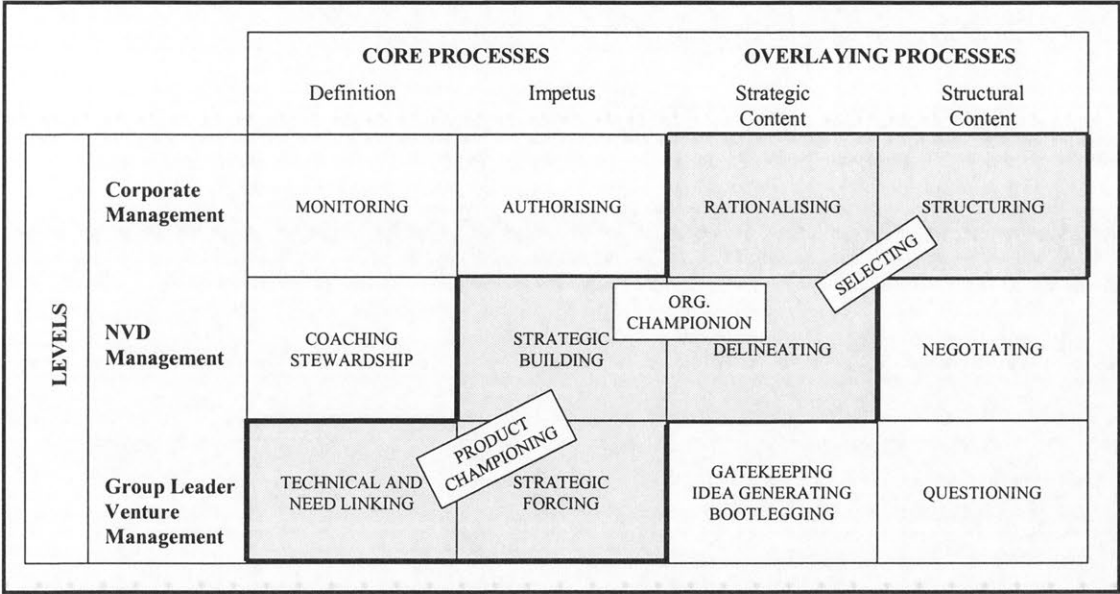
Comments on WP₅:

This working proposition claims that B2B e-markets operate in a network environment where a number of suppliers and buyers may participate and engage and disengage in their participation at their own discretion without having to lose any money. The proposition implicitly compares this to a fixed system (EDI) in order to demonstrate the inflexibility of such a system where suppliers and buyers are 'tied in' to the system. The proposition also claims that the role of the network champion is to co-ordinate the activities and processes at an over-all level and leaves the detailed operational side of the new venture to the individual champions within the new venture. As such, the network champion is directly linked to the champions within the focal B2B e-market firm rather than the customers of the focal B2B e-market firm.

2.3.3 Influence of champions on potential participants

A study on innovation reveals that champions influenced top management's acceptance of a project by making apparent the strategic importance of such projects (Burgelman 1983). Burgelman (1983) maps the corporate level findings onto the strategic context and structural context as shown in Figure 13.

Figure 13: Key and peripheral activities in a process model of ICV

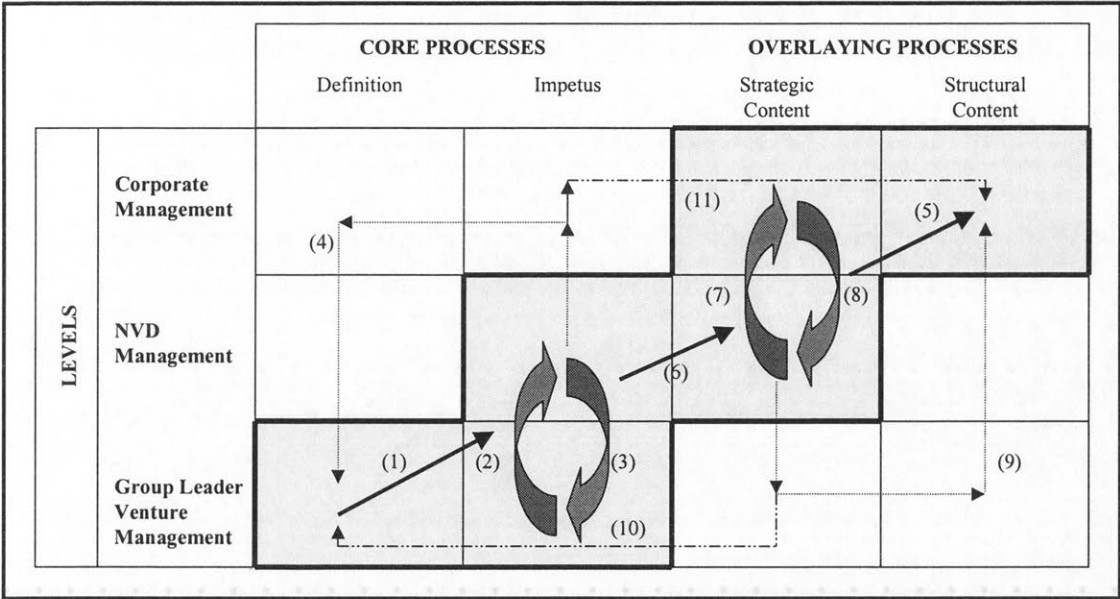


Source: Burgelman, R. (1983) "A Process Model of Internal Corporate Venturing in the Diversified Major Firm" *Administrative Science Quarterly*, Vol. 28 p. 230

Burgelman (1983) mapped the activities involved in Internal Corporate Venturing (ICV) onto the process model above. Figure 13 depicts how the strategic process in and around ICV is constituted by a set of key activities (the shaded area in the Figure) and by a set of more peripheral activities (non-shaded area). These activities are positioned at the corporate, new venture division and at the operational level. By superimposing Figure 13 on Figure 14 the interlocking activities are depicted forming pattern of connections and suggesting the flow of activities in this pattern (Burgelman 1983).

While Burgelman’s (1983) work provides a good foundation to this thesis as it identifies the importance of product and organisational champions, the study is limiting as it evaluates conditions in one organisation rather than across organisations. Yet the process can occur across organisations, especially in a network environment (Biemans 1989).

Figure 14: Flow of activities in a process model of ICV



Source: Burgelman, R. (1983) "A Process Model of Internal Corporate Venturing in the Diversified Major Firm" *Administrative Science Quarterly*, Vol. 28 p. 230

This thesis adapts and extends Burgelman’s (1983) model by allowing it to (a) operate at an inter-organisational rather than an intra-organisational level of analysis and (b) include the impact of network champions on the process model. In particular, the concept of network champions extends the work on product champions and the organisational champion concept (Burgelman 1983), although it is more closely related to the latter than it is to the former. The product champion is one who creates, defines or adopts an idea for a technological innovation and is willing to accept the risk, whilst an organisational champion is a decision-maker. According to Woodside (1994, p54) "... network champions are likely to serve, in part, as marriage brokers and deal makers to bring about new relationships amongst enterprises at multiple levels who must interact for the adoption of new ET (electronic technologies) in a manufacturing process". Woodside (1994) admits that such conclusions are the result of preliminary exploratory study and that detailed description through in depth case study is required of specific networks that

emerge in the adoption of new technology. Arguably, in a B2B e-market environment, a network champion works across firms in order to bring about new relationships amongst enterprises at multiple levels. These network champions support and persuade (or act as catalysts) supply and buyers firms in joining or "buying into" the innovation, that is, joining the independent B2B e-market firm to co-ordinate their marketing and logistic activities by identifying the benefits of the innovation. One can conclude that the *likely acceptance of an innovation* is dependent on *the involvement of network champions who can support potential participants to "buy into" the innovation.*

WP₆: The involvement of network champions who can be identified to support potential participants to "buy into" the innovation, results in the likely acceptance of the innovation.

Comments on WP₆:

This working proposition claims that the active participation of network champions in the adoption process of an innovation results in the adoption of the innovation by the participating firms such as the suppliers and buyers. The concept of 'buy into' suggests that suppliers and buyers in the focal business network are willing to participate in the network by adopting the technology embedded in the B2B e-market firm. The assumption is that the buyers and sellers in this environment will have the technology such as a modem that connects them to the B2B e-market firm and that they are connected through an Internet Service Provider (ISP). Suppliers and buyers (especially SMEs) that are not connected or

do not have the technology can be encouraged by the network champion to join the B2B e-market.

2.4 B2B e-market embedded in CDI

2.4.1 Strategic importance of CDI in B2B e-market firms

Achieving competitive advantage through strategic innovation is not a new phenomenon. However, academic scholars have a limited understanding of how B2B e-exchanges that are currently being created and operated by third party consortia or as private exchanges can achieve competitive advantage for participating suppliers and buyers (Cadeaux and Gupta 2001a). Competitive advantage can be defined as an advantage that cannot be imitated or can only be mimicked at a very high cost (Davis and Devinney 1997). Mottl (2000) observes that the cost of setting up a B2B e-market can range from half a million to two million US dollars so cost becomes prohibitive to many firms that wish to build such electronic marketplaces. Although published information on building a B2B start up new venture is not available, given the complexity of the development of such a firm it would suggest that the cost of building is a major portion of a start-up new B2B e-market firm's budget. Arguably, B2B e-market firms have a competitive advantage over wholesalers in a channel system competition where the phenomenon can be imitated or mimicked but only at a very high cost. However, for the suppliers and buyers the cost is comparatively minimal. That leads to the argument that suppliers and business buyers do not gain a competitive advantage but rather gain benefits by joining a B2B e-market firm. This thesis argues that implementation of innovation such as CDI (a) requires greater knowledge and understanding of the innovation by suppliers and business buyers and (b)

that a B2B e-market firm is a result of the firm adopting CDI whereby the firm can gain competitive advantage over wholesalers in channel system competition but not the buyers and suppliers.

2.4.1.1 Implementation of CDI or radical innovation in networks

Based on network theory, Achrol (1997) claims that large organisations are downsizing, vertically disaggregating and outsourcing services and products that are non-core business activities. In order to have access to supplier and buyer organisations, firms are turning their attention to marketing exchange companies. Industries are now more flexible and are focused on core technology and process. At one time Ford was so vertically integrated that it owned sheep farms to provide wool for the car seats and glass companies to provide glass. When Ford outsourced these activities, they avoided long-term commitments, preferring instead to deal with multiple suppliers that competed for their business (Achrol 1991). This example indicates that classic vertically integrated, multidivisional firms, so successful in the 20th century, are unlikely to survive today (Achrol 1997). Achrol (1997) maintains that these firms will be replaced by new forms of network organisations consisting of large numbers of functionally specialised firms tied together in a co-operative exchange relationship which will be leaner and more flexible "laced in a network of strategic alliances and partnerships with suppliers, distributors and competitors". Of late, firms are building partnerships with other firms and using B2B e-commerce in order to seek product and price information and initiate quotes and receive replies to quotes through B2B e-market firms. For example, "Covisint" was created by Ford, General Motors and DaimlerChrysler (Messmer 2000a) as a B2B e-market. Furthermore, firms such as Dell Computers and Cisco Systems use this new venture B2B e-

market phenomenon and have reduced transaction costs (cf. (Symonds 1999)) by providing online procurement facilities. Emerging research that has explored the adoption of CDI by firms indicates that competitive advantage can be achieved using a CDI (Bower and Christensen 1995; Christensen 1997; Hart and Milstein 1999; Henderson and Clark 1990; Tushman and Anderson 1986; Upton and McAfee 1996).

Extant literature in strategy is coming to terms with the economic consequences of firms participating in strategic networks (Gulati *et al.* 2000). In particular, research on joint ventures (Hakansson and Laage-Hellman 1984; Harrigan 1985; Kogut 1988) was among the first to pay systematic attention to the trend in the formation of inter-firm partnerships. More recently, research on strategic blocks (Nohrai and Garcia-Pont 1991), strategic supplier networks (Dyer and Singh 1998; Jarillo 1988), learning in alliances (Hamel, Doz, and Prahalad 1989; Sivadas and Dwyer 2000), inter-firm trust ((Zaheer and Venkatraman 1995), and network resources (Gulati 1999) has examined interfirm relationships from a variety of perspectives, levels of analysis, and outcomes. This considerable and growing body of research in strategy attests to the importance of inter-firm relationships and highlights the needs for coalescing and focusing the research area. From a strategic point of view, multi-firm networks in the business-to-business environment are of growing importance, as firms are embedded in networks of social, professional and exchange relationships with other organisational actors (Gulati *et al.* 2000). Such networks encompass a firm's set of relationships, both horizontal and vertical, with other organisations be they suppliers, customers, competitors (Gulati *et al.* 2000), or third parties who are not in the network but are involved in strategy formulation (Biemans 1989). Gulati *et al.* (2000) and Biemans (1989) posit that neglecting a study of strategic networks of firms leads to an incomplete understanding of a firm's behaviour. This thesis seeks to understand

the strategic advantage of B2B e-market firms in networks as firms can no longer be considered as separate, independent units but as a group of firms in a network connected through a B2B e-market firm.

The importance of B2B e-market companies has been recognised by academic researchers (Lancioni, Smith, and Oliva 2000) and by the popular press (Gottliebsen 2000; Hof, Welch, Arndt, Barrett, and Baker 2000; Piszczalski 2000; Stundza 1999; Tolhurst 2000; Uimonen 2000). In addition, academic researchers broadly state the importance of examining organisations in this environment (Achrol and Kotler 1999; Biemans 1989; Snow 1997). As such, innovation (on which B2B e-market firms are based) draws a distinction between refining and improving an existing design of a product and introducing a new concept that departs in a significant way from past practices. This notion is central to the existing literature on technological innovation (Freeman 1982; Mansfield 1968; Moch and Morse 1977). Incremental innovations introduce relatively minor changes to a product whereas radical innovation (e.g. CDI) is based on a different set of engineering and scientific principles and often opens up whole new markets and potential applications (Dess and Beard 1984; Dewar and Dutton 1986). Radical innovation often creates greater difficulties for incumbent firms and can be the basis for successful entry of new firms or the redefinition of the industry structure (Henderson and Clark 1990). Consequently, a greater need for reorientation of existing structures and processes is required (Nord and Tucker 1987).

Henderson and Clerk (1990) maintain that radical innovation establishes a new dominant design and, hence, a new set of core design concepts embodied in components linked together in a new architecture. The architectural components of a radical innovation may change triggered by a new design (capacity to hold a large amount of information as in

the case of B2B e-market) yet the core design concept remains the same. Radical innovations may tax existing systems of communication and patterns of collaboration more than incremental innovation. Radical innovations therefore require a greater outlay of resources and are riskier than incremental innovations (Kotler 1997). Radical innovations are inherently more unpredictable and uncertain (Rice, O'Connor, Peters, and Morone 1998). The “stage” approach, in which product development occurs in clearly defined and formally approved stages, is difficult to accomplish in radical innovation projects (Sivadas and Dwyer 2000). Sivadas and Dwyer (2000) claim that radical innovations require participants to engage in more learning and unlearning and to develop new capabilities. Long-standing patterns of informal communication might be absent in radical innovation projects. In contrast, an incremental innovation benefits greatly from existing competencies. The more radical the nature of the innovation, the more knowledge is required by organisation members to adopt the innovation.

Most new technologies foster improved product performance based on previously well established technologies. Christensen (1997) observed that these technologies “improve the performance of established products along the dimensions of performance that mainstream customers in major markets have historically valued”. As these technologies are familiar to customers, little knowledge is required to adopt such products based on these technological innovations. These innovations are substitutes for older technology, as they tend to incrementally improve the performance of established products (Christensen 1997). For example, IBM's 360 series was a major improvement in price, performance and features over prior models yet were developed through the synthesis of familiar technology (Tushman and Anderson 1986). Occasionally, however, radical innovations emerge that bring to the market a very different value proposition (Christensen

1997). These radical innovations may require more information and knowledge for customers as customers will have to learn to operate a new product which is unknown (Tushman and Anderson 1986).

Arguably, B2B e-market firms are new and unknown phenomena for buyers and sellers. Due to the nature of its complexity in building such products in networks, buyers and sellers require a greater need for reorientation of existing structures and processes so as to use and become familiar with its workings within their own involvement. In such instances, B2B e-market firms are required to train and explain this phenomenon to its clients whereas in an incremental innovation, prior knowledge and familiarity with a product may not require in-depth training and knowledge. Thus *the implementation of innovation based on CDI* is dependent on *acquiring greater knowledge by suppliers and business customers*. This leads to the following working proposition.

WP₇: Implementation of innovation based on CDI requires greater knowledge by suppliers and business customers than does incremental innovation.

Comments on WP₇:

This working proposition claims that innovation based on competence destroying innovation (CDI) or radical innovation requires greater knowledge of the innovation by those that use the innovation, than competence enhancing innovation or incremental innovation.

2.4.1.2 CDI and CEI

A firm's core competencies are the combination of technological innovations, production skills and knowledge (Davis and Devinney 1997). Davis and Devinney (1997) argue that core competencies are built up through the cumulative historical choices the firm has made with respect to technological innovations, which are heavily influenced by its competitive environment. The authors also argue that competencies define the soul of a company and are therefore difficult to acquire except through historic development and actively engaging oneself in direct market competition.

Although rather a trite generalisation, Prahalad and Hamel's (1990) view is that during the 1980s managers were judged on their ability to restructure firms so as to be flexible in order to be competitive in established markets. Yet in the 1990s managers were judged on their ability to exploit the core competencies of firms in order to gain competitive advantage over their rivals. Arguably, competencies and capabilities are difficult to acquire except through historical development ("path dependency") and active engagement in direct market competition (Davis and Devinney 1997).

Abernathy and Clerk (1985) note that new technology that departs from established systems of production, and in turn opens up new linkages to markets, characterises the creation of new industries as the reformation of old ones. This type of innovation phenomenon defies the basic configuration of "product" and "process" and generates new markets. In effect it lays down a foundation or "architectural" framework within which competition will occur and develop (Abernathy and Clark 1985). Architectural innovations are concepts that define how the components within the product interact or relate to one another (Henderson and Clark 1990). In a B2B e-market environment the architectural

innovation is the computer software. It is this innovation by which this firm is driven using the Internet.

The ultimate commercial performance of incumbents versus new start up firms is driven by the balance of three factors: investment in developing new technology, technical capabilities and the ability to appropriate the benefits of technological innovation through specialised complementary assets (Tripsas 1997). Tripsas (1997) uses these three factors in analysing the data on the type setter industry. From its inception in 1886 until 1990, the type setter industry had undergone three waves of 'creative destruction' where competence destroying, architectural technological change transformed the industry (Tripsas 1997). New entrants replaced incumbents, however, in only one of these three shifts. Furthermore, Tripsas (1997) argues that there are two contrasting perspectives on the process of creative destruction. First, in dynamic industries, the process by which new ventures innovate with technologically superior products and displace incumbent firms may only have the cycle repeated based on the early work of Schumpeter (1934). This continual failure of established firms in the face of radical technology has been well documented in the academic literature (Henderson and Clark 1990; Majumdar 1982; Tushman and Anderson 1986). Second, in contrast, other researchers have built on Schumpeter's (1950) later (1950) work that focused on the advantages established firms had over new ventures and found that those incumbents who possess critical specialised complementary assets are at an advantage, as new entrants are unable to contract for those assets (Teece 1986).

Arguably, the Internet technology can be viewed as CDI (Christensen 1997; Day and Shoemaker 2000). For example, Electronic Data Interchange (EDI) technology is competence enhancing because it builds on existing technology. EDI translation software accepts the output from the existing financial computer software packages and translates it

into an EDI standard format. This translated data is "batched" then sent across a dedicated telephone line to trading partners. At the receiving end, EDI data are collected in a file and disbursed through the trading partner's existing software systems. In contrast to EDI, the Internet itself becomes the transport medium without having to translate the data and is an open platform. In contrast, to EDI, the commercial arm of the Internet, electronic commerce, is an innovative change that replaces an existing competency; as such, it opens doors for new start-up ventures by upsetting the natural barrier that exists with competence enhancing innovations.

2.4.1.3 B2B e-market as CDI

Arguably, the dynamic aspect of technology innovation driven markets renders conventional business strategies useless (John, Weiss, and Dutta 1999). Compatibility amongst business users is a significant dimension of B2B e-market firms that work using Internet technology (John *et al.* 1999). CDI often creates greater difficulties for incumbent firms and can be the basis for successful entry of new firms or the redefinition of the industry structure (Henderson and Clark 1990). Consequently, there is greater need for reorientation of existing structures and processes (Nord and Tucker 1987).

Henderson and Clerk (1990) tend to believe that CDI establishes a new dominant design and, hence, a new set of core design concepts embodied in components linked together in a new architecture. The architectural components of a CDI may change triggered by a new design (capacity to hold large amounts of information as in the case of the electronic marketplace), but the core design concept remains the same (Cadeaux and Gupta 2001b). CDI may tax existing systems of communication and patterns of collaboration more than incremental innovation. CDI may therefore require a greater outlay

of resources and be riskier than incremental or CEI (Kotler 1997). Long-standing patterns of informal communication might be absent in CDI projects. In contrast, CEI benefits greatly from existing competencies. Christensen (1997) and Day and Shoemaker (2000) state that electronic commerce technology is a CDI that has the potential to create whole new markets. One can argue that the architectural innovation embedded in the B2B e-market firm is the new dominant design in these new ventures.

2.4.1.4 Competitive advantage through CDI

If an historical perspective is taken, the most dramatic changes in industrial structure and business performance have been driven by innovation; what Schumpeter called the “gale of creative destruction” (Davis and Devinney 1997). In other words, a technological innovation that disrupts established business functions in established markets has this characteristic. Yet, it is well known that creative destruction can be a dynamic source of competitive advantage. While Porter’s (1980, 1985) classic work on competitive advantage provides a comprehensive static analysis of basic market forces, it does not seem to be able to address how firms in networks can gain competitive advantage from a dynamic and radical innovation such as the B2B e-market. From the standpoint of traditional static models of competitive advantage, Porter (1985) focused on firm and industry-specific variables such as scale, advertising intensity, product similarity and independence along value chains in order to understand inter-firm profitability differences. In extending this work to the study of the competitive advantage of nations, Porter (1990) does incorporate a number of more dynamic elements including innovation. Yet, Porter’s (1990) “diamond” model of national firm, region, and industry forces (that is, firm strategy, structure, and rivalry, factor conditions, demand conditions, and related and supporting industries) does

not adequately capture how the adoption of a CDI, such as B2B e- market (within networks) could be a source of competitive advantage (Cadeaux and Gupta 2001b).

Technological change alters the competitive environment and rewards those innovative firms that are first-movers (Tushman and Anderson 1986). The superiority of new technology provides firms with a choice of either adopting an innovation or facing decline (Tushman and Anderson 1986). The competitive environment requires that organisations also become agile in their response to new technology, which is a synthesis of awareness of new technology, use of new technology and the flexible structure of the firms to adopt new technology (Tushman and Anderson 1986).

The use of information to develop products and segment the market efficiently (Allenby and Ginter 1995) and the flexibility in the use of information is fundamental in the implementation of effective marketing management. Superior skills and competencies in information management can even be a source of competitive advantage (Day and Wensley 1988; Glazer 1991). Notwithstanding these observations, Cadeaux (1997b) observes that although information assets and efficient information exchange are important factors in segmenting the market, they are but a residual outcome rather than a major determinant of disruptive competitive actions that transform markets, or “entrepreneurial” actions. More generally, Prahalad and Hamel (1990) argue that the strength of core competencies of the firm and not just quality information is one of the key factors for competitive strategy formulation. However, Christensen and Rosenbloom (1995) state that the technological and marketing strategies of new entrants are highly interrelated and that together they play an important role in the firm's probability of survival. In particular, these authors claim that entrants led in developing and adopting architectural innovation that addressed user needs in different, emerging value networks (Henderson and Clark 1990). It is this type of

innovation, which disrupts established trajectories of technological progress in established markets, the attackers proving to have an advantage over those who enter the market later. Thus, one can argue that B2B e-market firms, as a technology innovation, are to a large degree architectural innovation can therefore achieve competitive advantage through strategic innovation over those that depend on innovations that are of an incremental nature.

The concept of creative destruction had its origin in economics (Schumpeter 1966). Christensen (1997) extended this concept and defined disruptive technology as a breakthrough innovation that was initially rejected by industry because it could not use it. Christensen, Bohmer and Kenagy's (2000) research demonstrates, how when radical innovations disrupted a firm's operations, a larger number of less skilled employees were able to achieve more than that achieved by skilled specialists using established technologies. For example, in the 1960s people who needed computing help had to take the problem to the specialist who then wrote in special computer code (machine language). The programming specialist would then wait for the data-processing specialist to run the job. Minicomputers and then personal computers have replaced those specialists through faster and user-friendly software. These later versions of computers are classed as disruptive technologies to the mainframe market (Christensen *et al.* 2000). Dominant players in most markets focused on sustaining innovation - on improving their products and services to meet the needs of profitable high-end customers. Soon, however, as in the case of the computer industry, those improvements overshot the needs of the vast majority of users of the new innovation. This made the market ripe for "upstart companies" (like B2B e-markets) seeking to introduce disruptive innovations that were cheaper, simpler and more convenient, yet aimed at the lower end of the market (Christensen *et al.* 2000). This thesis

implicitly argues that CDI (in a B2B e-market context) is a source of competitive advantage for the B2B e-market firm over those firms that are based on CEI.

2.4.1.5 Effect of adoption of CDI by firms on marketing and procurement

Prior theoretical work in economics Arrow (1962) has considered the differing triggers that force a new entrant to adopt innovative activities (Tripsas 1997). This stream of research suggests that when innovation is radical i.e. an established technology is replaced by new technology; the incumbent firms have less incentive to adopt the innovation. Conversely, when innovation is incremental incumbents have greater incentive than do new entrants. One can argue that over time a B2B e-market, which is based on CDI, start-ups firms have the capacity to innovate new activities (e.g. open new markets, share and compare information on pricing, product features and distribution in real time) than do incumbents.

Different stages of the radical technology life cycle have major implications for technical capabilities of incumbents and new entrants. During the introductory period, when technological innovation builds upon the capabilities of established firms, they have an advantage over new entrants (Tripsas 1997). Incumbent firms develop organisational structures in order to accommodate the adoption of innovation (Arrow 1962; Burns and Stalker 1961). However, when faced with competence-destroying technological shifts, incumbent firms are at a disadvantage (Tushman and Anderson 1986). Core competencies during a period of incremental change can become 'core rigidities' making it difficult for a firm to adopt (Leonard-Barton 1992). Furthermore, the economic structures of firms provides the innovative prowess for firms in achieving competitive advantage (Davis and Devinney 1997) and some may argue that segmenting the market quickly using information

is fundamental in creating competitive advantage (Day and Wensley 1988). However, although organisation structures and economic structures are important antecedents of competency destroying innovativeness, the information intensity that results from the increasing use of customer information to segment such markets might be better viewed as a residual outcome rather than as a major determinant of entrepreneurially developed competitive advantage (Cadeaux 1997b).

A study on structure of established firms found that these firms did not have difficulty in developing new technology even when innovation was radical and architectural in nature (Christensen and Bower 1996). This result is consistent with other empirical studies (Chandler 1990; Freeman 1982). While early research based on Schumpeter (1934) argues that firms should be responsible for innovation, later work Schumpeter (1950) suggests that long established firms with capital and market power are in a superior position to exploit innovation. Furthermore, Teece (1986) argues those complementary factors such as manufacturing capabilities, access to distribution channels and service networks are important factors for consideration to gain a competitive advantage (in the sense of Schumpeter (1950)). Rosenbloom and Christensen (1994) claim that when technological innovation causes a shift in the value network, established firms are at a disadvantage. The value network is defined as the system of producers and markets serving the ultimate user of the product to which a given innovation contributes (Rosenbloom and Christensen 1994). In contrast, even when new technology is competence destroying, if the value network does not change, established firms are less likely to suffer at the hands of start-up venture firms like B2B e-markets.

Gilfillan (1935) and Rogers (1995) have contributed to the understanding of multiple discoveries in technology as an innovation. An evaluation of this literature suggests a

limited understanding of the impact technological changes have on firms (Tushman and Anderson 1986). Mansfield (1968) argues that the most important source of technology innovation in mature industries was outside rather than within the firm. Involvement with external firms is an important source of new ideas. Robertson and Gatignon (1986) and Shanklin and Ryans (1984) claim that technology has the potential to create new firms where it can be used to reduce costs in production, distribution or marketing processes, create higher quality or innovative products and provide flexible automation of supply and distribution. Due to these qualities of technology innovation (product and process), diffusion of innovation has significance to adopters of communication technology in general (Rogers 1995) and interactive communication technology in particular (Rogers 1986).

Extant literature provides conflicting perspectives as to whether firms in focal business networks (as opposed to firms outside the focal business network) can develop non-imitable information based on complementary assets to gain competitive advantage. The concept of complementary assets has been discussed. However, complementary assets can further be characterised as generic, specialised and co-specialised (Teece 1986). Generic complementary assets have multiple applications whereas specialised and co-specialised assets are useful only in the context of a given innovation (Teece 1986). In the marketing and procurement environment for SMEs, the present research focuses on the destruction of an established technological innovation such as EDI based on generic complementary assets with radical innovation based on specialised complementary assets.

Based on the above literature review one can argue that start-up new venture firms such as B2B e-markets, if based on CDI, can achieve competitive advantage through cumulative knowledge and skills over those firms that adopt CEI. Arguably, the potential

marketing and procurement activities that are generated in a B2B e-market environment is a result of CDI and not CEI as incumbents are less interested in radical technology than start-up new ventures. One can propose that in a B2B e-market environment *the potential marketing procurement outcomes* result from *CDI* rather than *CEI* for suppliers and business buyers.

WP₈: When suppliers and buyers in a focal business network adopt a B2B e-market, the potential marketing and procurement outcomes result from competency destruction rather than competency enhancement.

Comments on WP₈:

This working proposition claims that the competency destruction is a result of the B2B e-market firm adopting the innovation. So when the suppliers and buyers in a focal business network join the B2B e-market firm in order to perform marketing and procurement activities they may enjoy some benefits due to the characteristics of the innovation (e.g. reach, ease of use, low cost).

2.4.2 Factors influencing success and failure

2.4.2.1 Agility of firms

A study of four different industries that adopted B2B e-markets suggests that the extent of adoption by these firms differed in their use (Kraut, Steinfield, Chan, Butler, and Hoag 1998). These findings are consistent with empirical research in Australia of small and medium industries (Poon and Swatman 1997). Kraut *et al.* (1998) examined the effects of

transactions made by firms using Internet based B2B e-markets. The authors used transaction cost analysis to evaluate the effects of transactions using a B2B e-market. They concluded that there was a problem in trying to determine the extent to which B2B e-market usage influences transactions. The findings also indicated that a positive association between network usage and in-house production is generally inconsistent with the hypothesis that the use of a B2B e-market leads to outsourcing of key production inputs. Similarly problems existed in interpreting the positive association between B2B e-markets and personal relationships as co-ordination modes. Kraut *et al.* (1998) strongly suggest that future research in the B2B e-market environment will benefit by a detailed study of how B2B e-markets are created when mediated by the flexibility factor.

In his study Cadeaux (1994) of flexibility and performance of branch store stock plans, the author examines the relationship between a specific class of stock decisions, standardised versus flexible plans. In conventional marketing channels, retailers with branch operations often use model stock plans in establishing expected levels of non-staple merchandise for each branch store (Cadeaux 1994). Cadeaux (1994) argues that a retailer may use plans that are similar or standard across branches or, more flexibly, the retailer may use plans that vary considerably across branches. Cadeaux (1994) defines flexibility in terms of differences in stock plans between branches rather than in terms of adaptive plan changes over time. In that sense, flexibility rather than rigidity would adapt better in a diverse or heterogeneous market environment. The market environment in the case of the new venture B2B e-market is at best described as both volatile and heterogeneous. Without flexibility, firms such as buyers and sellers will be hard pressed to comply with customer demands.

In order to achieve competitive advantage using the start-up model, firms must be structurally aligned. In a management context, two factors, leanness and agility, have been identified in the literature to help best achieve competitive advantage outcomes. Leanness is defined as a set of practices intended to remove all waste from the manufacturing system while agility is the measure of a manufacturer's ability to react fast to sudden, unpredictable changes in customer demand for its products and services, and to make a profit (Noaker 1994). The key characteristic of flexibility is agility, while leanness is an element of agility in certain circumstances. In order to understand the concept of agility and leanness that translates into the supply chain scenario, Christopher and Towill (2000) state that agility should not be confused with "leanness". These authors argue that leanness is about doing more with less. For example, lean manufacturing implies "minimum reasonable inventory," or that the finished product was produced "just in time." In contrast, agility implies a business-wide ability to move quickly with the help of the organisational structures, information systems and logistics processes.

Leanness or richness is also an emergent property of communication media (Lee 1994). Lee (1994) argues that in the well-established and traditional perspective of information richness or leanness theory (Draft and Lengel 1986), electronic mail is considered a lean medium. However, recent studies (Contractor and Eisenberg 1990; Rice 1992; Yates and Orlikowski 1992) have identified serious conceptual and empirical weaknesses in information richness theory and suggest that the electronic communication medium is rich (see examples in (Lee 1994)). Empirical findings suggest that e-mail readily supports the information richness theory and considers it to be rich media (Lee 1994). These findings however, cannot explain information richness theory, as e-mail is a lean medium that does not readily support the level of communication richness a face-to-face

meeting does. The information richness theory classifies media in order of decreasing richness as (a) face-to-face, (b) telephone, (c) personal documents such as letters or memos, (d) impersonal written documents and (e) numeric documents. The reasons for richness differences include a medium's capacities to provide immediate feedback, to track transactions between suppliers and business buyers (including tracking stock levels automatically), to reduce transaction costs through reducing errors in procurement documents, and, not insignificantly, to reduce search costs. The electronic communication medium has the capacity to extend geographic boundaries and be available on-line all the time using an inexpensive medium (the Internet). In a B2B e-market perspective the capacity of immediate feedback is possible due to its embedded Internet technology. The firm, that is the B2B e-market, has a rich store of customer information that can be shared immediately between participants and can attach product information with the communication to which the customers can immediately respond.

A number of journal articles have recently focused on factors that include agility and leanness in supply chain networks and in particular procurement using B2B e-market firms (Naylor, Naim, and Berry 1999; Yusuf, Sarhadi, and Gunasekaran 1999). Christopher and Towill (2000) also discuss how agility and leanness are factors that can be related to firms in a supply chain network using a B2B e-market. Burgess (1994) argues that, in a manufacturing context, agile manufacturing is coincident with post-industrial network structures. Empirical study indicates that by controlling the firm size, market share increases were significantly correlated with improvements in manufacturing agility (Ettlie 1998).

Extant literature provides some indications of how factors such as agility and leanness can be related to firms in supply chain networks using B2B e-markets. Yet, what

is unclear from the literature is the impact of the factors (e.g. agility, leanness) on firms in the focal business network, that is, suppliers, buyer firms and the focal B2B e-market firm. The focus of this thesis is to understand the effect of agility on firms in the focal business network.

2.4.2.2 Effectiveness, adaptability, and efficiency

Performance dimensions such as effectiveness, efficiency and adaptability involve substantial trade-offs (Walker and Ruekert 1987). Good performance on one dimension often means sacrificing performance in another dimension (Bhargava, Dubelaar, and Ramaswami 1994; Donaldson 1984). Walker and Ruekert (1987) argue that no single strategy can be expected to perform well on all three dimensions no matter how well it is implemented. Walker and Ruekert (1987) define *effectiveness* as the success of a business's products and program in relation to those of its competitors in the market. *Efficiency*, they claim, is the outcome of a business program in relation to the resources employed in its implementation, whereas *adaptability* is defined as the business's success in responding over time to changing conditions and opportunities in the marketing environment.

By adopting a B2B e-market, firms in a focal business network may increase their effectiveness and adaptability but not their efficiency. This is based on the assumption that the firms adopting the B2B e-markets are agile from a structural point of view such that they are able to quickly implement new technology. This thesis argues that *agility of firms in focal business networks* has a positive effect on *effectiveness and adaptability* but not on *efficiency*.

WP₉: The agility of the firms in a focal business network caused by the adoption of a B2B e-market may have a positive effect on their effectiveness and adaptability but not their efficiency

Comments on WP₉:

This working proposition claims that the structural agility of firms such as buyers and suppliers may have a positive effect. This is so because the innovation embedded in the B2B e-market firm has the capacity to provide an effective outcome rather than an efficient (such as reduced cost) outcome.

2.4.2.3 Long-term and short-term success of start-up new ventures

Within industrial markets, however, it is of prime importance to understand which factors constitute success of an innovation (Biemans 1989). This knowledge can be helpful in setting up product innovation and taking the right decision during the different stages of the implementation process. Practitioners and academics alike usually agree that many newly developed product innovations do not become a success and that the failure rate is too high (Biemans 1989). Notwithstanding this agreement between practitioners and academics (Biemans 1989), the exact percentage of new product innovation failures has been the subject of debate for many years. Yet, according to (Crawford 1979b) the difference between these percentages is mainly due to different research methods and definitions of key concepts.

The central issue of success can be determined in terms of financial returns (Biemans 1989). Financial returns are far from the only important aspect in determining success (Maidique and Zirger 1984; Zirger and Maidique 1990). This observation and the results of empirical investigation led Cooper and Kleinschmidt (1987) to define success as characterised by overall financial performance, the degree to which the product opens new marketing opportunities and the impact of the product innovation in the market. Crawford (1979a) compared eight studies of new product success and identified the lack of

meaningful superior product innovation uniqueness as the predominant reason for failure. Others argue that superior resources and managerial skills are preconditions for success (Davis and Devinney 1997). Factors influencing success of product innovation can be divided into five broad categories (Biemans 1989). They include marketing which includes factors such as uniqueness of product, benefits offered to users, distribution channel choice etc. In the management category, factors that have been identified include management support, planning, targeting and pricing strategies. From a technology perspective, factors identified include in-house expertise, practicality of the design, technical and product synergies, availability of outside technology etc. In the financial category, factors include financial resources while external event factors include reaction of key competitor changes in user needs, government regulations etc. From a failure perspective, Biemans (1989) cites the 1964 example from the National Industrial Conference Board results and argues that the causes of failure on innovation include inadequate market analysis, product defects etc, while Webster (1969) and Briscoe (1973) argue that inadequate analysis of the market is the most important factor. Biemans (1989) claims that empirical studies that offer industrial marketers practical guidelines to incorporate marketing research during all stages of the product development are scarce. One can argue that market research alone during all stages of the product development process may not be the only determinant for success.

In contrast, Achrol *et al.* (1983) maintain that a macro environment may be observed as factors affecting focal dyad relationships. Achrol *et al.* (1983) defines the macro environment as an environment that consists of general social, economic, political and technological forces. This may be viewed as levels of technological development, communication infrastructure economic growth or demographic changes. The authors argue that for practical, methodological and theoretical-conceptual reasons that adopting

these factors would be less than fruitful for a number of reasons. First, the problem with using a subset of actual, objective factors (elements in the environment) is that such an approach implies itemising the environment. The inventory of environmental items is, to understate the case, immense (Achrol *et al.* 1983). For example, some variables such as levels of income and technology are only scratching the surface. Second, every event confronting a firm does not necessarily affect it because firms can be isolated from certain elements (Achrol *et al.* 1983). Third, generalisability of such variables is extremely tenuous over the period (Achrol *et al.* 1983) of the adoption of the innovation.

In the long term, the test of success is the ability of a firm to generate funds for shareholders (Bhargava *et al.* 1994; Davis and Devinney 1997). Although this may be true, one can argue that a firm needs to generate cash flow also in the short term for its survival. In a start-up new venture, the entrepreneur invested his or her own funds in a firm. In a B2B e-market start up new venture, cash flow is required in the short term in order to meet the needs of the market and the investment required in the development of the innovation that is supplied by third parties.

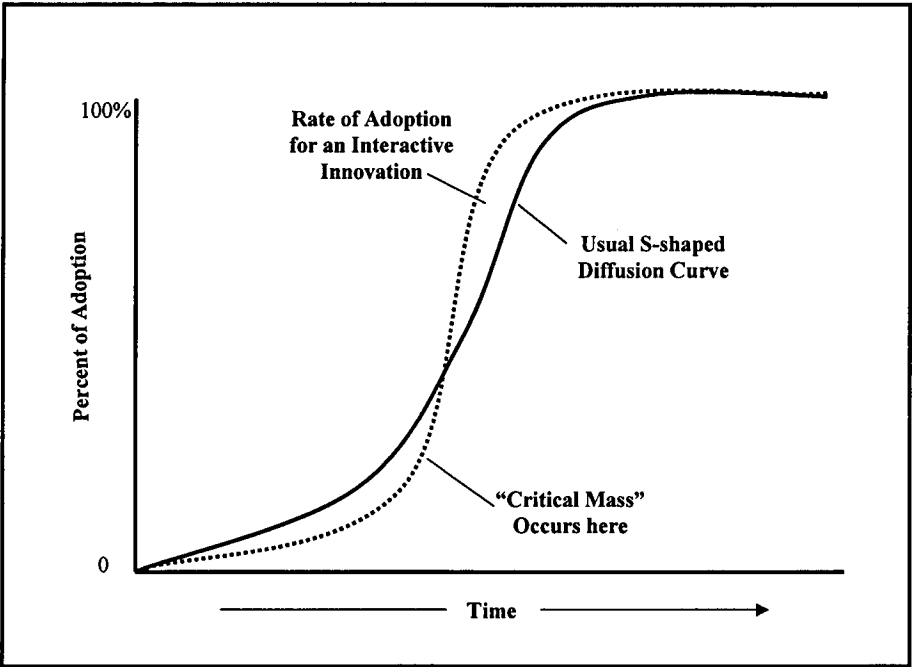
For an innovation to be successful external events such as changes to user needs, government regulations and patents are important factors (Biemans 1989). Arguably, these factors are pre-requirements in the creation process therefore cannot be considered as success factors. For example, government regulations need to be favourable for start-up firms to be created and patents need to be either purchased or commission paid for its usage prior to the commencement of the creation process. However, government regulations that impact on the security of the transactions may be considered as an important factor for the long-term success of the firm. This is because some firms are using the Internet to make direct connections with their customers while others are using secured Internet connections

(Symonds 1999). In order to facilitate uniformity in the transaction process and to give the buyers and suppliers confidence in transacting in these 'open' channels, uniform government regulations may feature a worthwhile concept towards the long-term success of the new venture. Bloch, Pigneur and Segev (1996) argue that online security is an often-cited concern amongst its users. Nevertheless, customer perception matters in terms of new technology adoption (Bloch *et al.* 1996).

Since B2B e-market firms provide a centralised exchange, it follows that if they are to be successful, they need to charge a fee for each transaction made using the facilities of the exchange. The usual format is to charge a fee based on the value of the transaction even though charging transaction fees can discourage trading in the short term (Sculley and Woods 1999).

In a B2B e-market environment success depends on the value B2B e-market firms provide the participating suppliers and buyers. Critical mass of suppliers and buyers are necessary for attaining success in this interactive environment (Grewal *et al.* 2001). Rogers (1995) claims that the rate of adoption of interactive media such as electronic messaging systems, fax and teleconferencing often displays a certain distinctive quality of critical mass. Rogers (1995) maintains that critical mass occurs at the point at which enough individuals have adopted an innovation so that the innovation's further rate of adoption becomes self-sustaining over time. Rogers (1995) claims that attaining critical mass in interactive technology is essential for it to be recognised as a success. The rate of adoption is slow at first, but after critical mass is achieved the rate of adoption accelerates as shown in Figure 15.

Figure 15: Rate of adoption (1) for a usual innovation (such as CEI) and (2) for an interactive innovation (such as CDI) showing the critical mass



Source: (Rogers 1995) Diffusion of Innovation NY, USA, The Free Press p. 314

Generally channel literature classifies wholesalers into three categories. Merchant wholesalers are firms that engage primarily in buying, storing and physically handling large volumes of goods and then selling the same in smaller quantities to retailers or to industries. Agents, brokers and commission merchants are usually compensated in the form of commissions on sales or purchases. Manufacturers use manufacturing agents for the distribution of their goods. It can be argued that these intermediaries are either biased towards the manufacturer or the retailers. However, in the B2B e-market environment the firm is an unbiased middleman as the function is to get buyers and sellers together. In doing so, the B2B e-market engages unbiased rules of engagement in the transaction process. Unbiased rules of engagement (in a B2B e-market environment) can be defined as the firm

having an unbiased connection with any particular seller or buyer without its involvement in the transaction.

The critical mass aspect of the proposition has a theoretical foundation in diffusion literature. However, the other factors such as favourable government regulations, adequate commission and unbiased rules of engagement are observations made by the researcher in the preliminary investigation. Arguably, *long-term success of B2B e-market firms* will depend on some specific factors such as *attracting critical mass, favourable government regulations over the duration of its existence and adequate cash flow from transactions*. In *the short term* the success will depend on the *available funding* to the creation process of the new venture.

WP₁₀: Long-term success of B2B e-market firms will depend on attracting a critical mass of suppliers and buyers, adequate commission from transactions and unbiased rules of engagement whilst short-term success will depend on funding.

Comments on WP₁₀:

This working proposition claims that a number of attributes need to be "operating" (as opposed to being "bankrupt") in order to be successful in the long-term. These attributes have a binary value as either existing that is "operating", or not existing that is "bankrupt". For example, a firm operating or trading long-term will depend on these attributes being present even though it may be losing money. Short-term success will depend on funding being available for the creation process to take place.

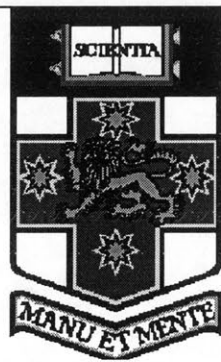
2.5 Conclusion

The literature review identifies a number of working propositions and constructs. The working propositions are linked to the research questions as shown in Table 1. These working propositions are refined in Chapter 4 of the thesis and the process of refining the working propositions is based on the research method discussed in the following chapter.

Table 4: Linking Research Questions to working propositions

Research Questions	Working Propositions
<i>How and why are B2B e-markets created?</i>	WP ₁ : The formation of new venture B2B e-market firms is dependent on a dynamic interrelated planning of macro and micro activities and a review of objectives, rather than a sequence of unrelated events based on a static objective.
<i>What are the decision processes that a firm uses when contemplating the creation of a B2B e-market?</i>	WP ₂ : The decision to adopt or reject an innovation can occur at any point within the linear innovation-decision process rather than at a fixed stage of this process.
<i>What are the implementation processes that a firm uses to create B2B e-markets?</i>	WP ₃ : The implementation of an innovation follows a set of sequential steps where each step interacts with the previous step through feedback loops rather than as a linearly sequential chain of activities.
<i>What are the processes that suppliers and business customers use to diffuse/adopt B2B e-markets in focal business networks?</i>	WP ₄ : In a dynamic B2B e-market environment, the organising of marketing activities between buyers and sellers is loosely coupled in the short term rather than rigidly coupled.
<i>How do firms in focal business networks use B2B e-markets to perform marketing and logistics activities?</i>	
<i>How do business network participants contribute to the diffusion process?</i>	WP ₅ : In a B2B e-market context (in contrast to EDI), network champions hold direct relationships with creation and implementation champions and third party participants rather than attempt to maintain direct relationship with suppliers and business buyers. WP ₆ : The involvement of network champions who can be identified to support potential participants to "buy into" the innovation, results in the likely acceptance of the innovation.
<i>How do participating firms in focal business networks gain competitive advantage in a B2B e-market environment?</i>	WP ₇ : Implementation of innovation based on CDI requires greater knowledge by suppliers and business customers than does incremental innovation
<i>What are the success and failure factors of the B2B e-market technology?</i>	WP ₈ : When suppliers and buyers in a focal business network adopt a B2B e-market, the potential marketing and procurement outcomes results from competency destruction rather than competency enhancement
<i>What are the key organisation factors that influence focal business network partners to adopt or to not adopt B2B e-markets?</i>	WP ₉ : The agility of the firms in a focal business network caused by the adoption of a B2B e-market may have a positive effect on their effectiveness and adaptability but not their efficiency. WP ₁₀ : Long-term success of B2B e-market firms will depend on attracting a critical mass of suppliers and buyers, adequate commission from transactions, unbiased rules of engagement whilst short-term success will depend on funding

Chapter 3



CHAPTER 3

3.0 RESEARCH METHOD

INTRODUCTION: This chapter describes the research method used in order to develop the theory discussed in Chapter 2. The chapter begins by discussing qualitative and quantitative research methods in terms of this study. This is followed by a discussion on deductive and inductive modes of research. Based on this discussion, I argue that the case study research method is appropriate. The research method to develop theory in this environment is then outlined in detail. The conclusion section highlights the contribution made in developing a research method that focuses on process research rather than variance research and identifies some of the limitations. The limitations however, are discussed in detail in Chapter 5.

3.1 Qualitative and quantitative research methods

A research design is the overall plan for connecting the conceptual research problem to pertinent and achievable empirical research. In order to answer the research questions, a research design needs to be effective in producing the required answers. Research designs can be divided into three main categories. They are exploratory, descriptive and causal (Simon and Burstein 1985). Exploratory research is most useful in the preliminary stages of a research project and in particular when the levels of uncertainty and general ignorance of the subject in question are at their highest or when the problem is not well understood (Stern 1980). A high degree of flexibility and a lack of formal structure characterise such research (Ali 1998). Flexibility arises from a desire to learn from the experience that the investigation provides without having any preconceived notions. The aim of exploratory research is to uncover variables that may be found to be relevant to the study.

If the primary aim of exploratory research is to discover the important variables then the aim of the descriptive research is to provide an accurate and valid representation of those variables (Ali 1998). Ali (1998) states that where exploratory research discovers variables of interest, descriptive research encapsulates it. Further, descriptive research does not attempt to identify any causal links between the discovered variables, it merely describes them. In causal research, the problem under investigation is structured where the aim is to establish a cause and effect relationship between different sets of variables (Simon and Burstein 1985). The methodology selected for any research, needs to be relevant to the specific demands and constraints of the subject and to elicit the optimum data (qualitative or quantitative) and insights from available sources (Ali 1998). Broadly speaking there are two major types of research, qualitative and quantitative.

The distinction between qualitative and quantitative variables concerns the way the variables are measured. Quantitative research methods entail the use of systematic and sophisticated procedures to test, prove and verify a hypothesis (Glaser and Strauss 1967). The main focus of quantitative research is on matters pertaining to structure rather than on more complex issues of process (Van Maanen 1983). Quantitative variables have actual units of measure whereas values of qualitative variables vary in kind, but not degree (Simon and Burstein 1985). For example, if the variables such as 'success' and 'failure' were measured in terms of degrees of success on an interval or ordinal scale instead of a binary value, the rate of success on the scale would have an interval interpretation. In contrast, values of qualitative variables vary in kind but not degree. For example, the variable 'success' and 'failure' are coded as binary values i.e. 'operating' (success) or 'bankrupt' (failure) and have no inherent quantitative interpretation.

From the standpoint of theory development and theory testing there are two types of variables, dependent variables and independent variables. Dependent variables are that quantity or aspect of nature whose *change* or *different states* the researcher wants to understand or explain or predict (Simon and Burstein 1985). Change in the dependent variable can be measured by quantitative method, however, different states, a binary value e.g. 'yes' or 'no', do not include interval measurement. Simon and Burstein (1985) state that independent variables are those variables whose effect upon the dependent variable needs to be understood as defined in the research question. In quantitative research, the effect can be measured, however, in descriptive research, for example, dependent and independent variables are difficult to label. Yin (1994) states that research questions that focus mainly on measuring variables or examining effect of independent variables on dependent variables are better understood using quantitative methods. Research questions

where little is known about a phenomenon (e.g. Biemans (1989)), and where (1) the dependent and independent variables are not clear and (2) scales are not developed to measure the variables, require qualitative research methods.

Constructs are specific types of concepts that social and behavioural scientists discuss in their theories (Kidder and Judd 1986). Concepts are perceptual mechanisms and are labelled by use of natural language (Hunt 1992). Kidder and Judd (1986) state that the concrete representation of these abstract concepts are called variables. Variables cannot be synonymous with a construct because any single construct may have many different variables (Kidder and Judd 1986). Hunt (1992) states that concepts do not constitute data, rather concepts become data only after they include variables that would be used to measure them. Therefore variables are partial representations of constructs and these variables can be measured, as they are more concrete than constructs. For example, “B2B e-market” is a construct. Literature has identified a number of ‘process’ steps but the variables that could be used to represent these steps are yet to be identified (Rogers 1995). In particular, variables that identify the creation process (macro and micro activities) of new venture B2B e-market firms are limiting.

In order to answer research questions that mainly focus on process related activities, the research method requires being quite different from the study of the independent variables associated with the dependent variable of innovativeness (Rogers 1995). Rogers (1995) claims that in process research the type of data gathering and analysis seeks to determine the time-ordered sequence of a set of events. In contrast, variance research is a type of data gathering and analysis that consists of determining the co-variance among a set of variance, but not their time-ordered sequence of events. Rogers (1995) further claims that most diffusion research is variance-type investigation that uses highly structured data

gathering and quantitative statistical tools on “static data”. Consequently, variance research method cannot probe backward in time to understand the process from its inception to its final launch, or how or whom in the network influenced the process. Variance and process approaches have often been confused in the past, where variance research was incorrectly used to understand process (Mohr 1978).

Each measurement strategy, qualitative and quantitative, has its own biases (Kidder and Judd 1986). Bonoma (1985) compares different research methods and concludes that ideally researchers would like to attain maximum levels of both data integrity and generalisability of results. In choosing a research method the researcher is forced by feasibility constraints to make a trade off between the two objectives i.e. data integrity and generalisability. Yin (1994) claims that case studies, like experiments, are generalisable to theoretical propositions and not to populations or universe.

Diffusion scholars should not rely on information from top management alone (Rogers 1995). Instead, data should be collected from the different layers of the organisation to fully understand an organisation’s innovation behaviour (Rogers 1995). This in-depth approach means that an organisation can be studied with the same research resources and hence fewer bases for generalisation of the research results (cf. Burgelman (1983)). However, the trade-off in conducting an in-depth study provides more reliable data and permits greater insight in tracing the various steps of the innovation process (Rogers 1995). Given that there are many unknowns, for example variables and constructs and the research focuses on studying a process (time-ordered sequence) which is a new phenomenon, an in-depth research method using a case study approach is more appropriate.

Keeping the research objective in view, and the fact that a new phenomenon is being studied where the variables are yet to be defined, an inductive process rather than a

deductive process is used in this research. The following discussion on inductive and deductive modes of research argues the rationale for selecting the inductive rather than the deductive mode of research for this thesis.

3.1.1 Deductive and inductive modes of research

According to Bonoma (1985), there are two divergent modes of research. The first involves formulating a tentative theory of a phenomenon deducing empirical consequences and controlling situational events in order to observe the validity of empirical deduction. The second is to reason from individual and naturally occurring, but largely uncontrollable, observations towards generalisable inductive principles.

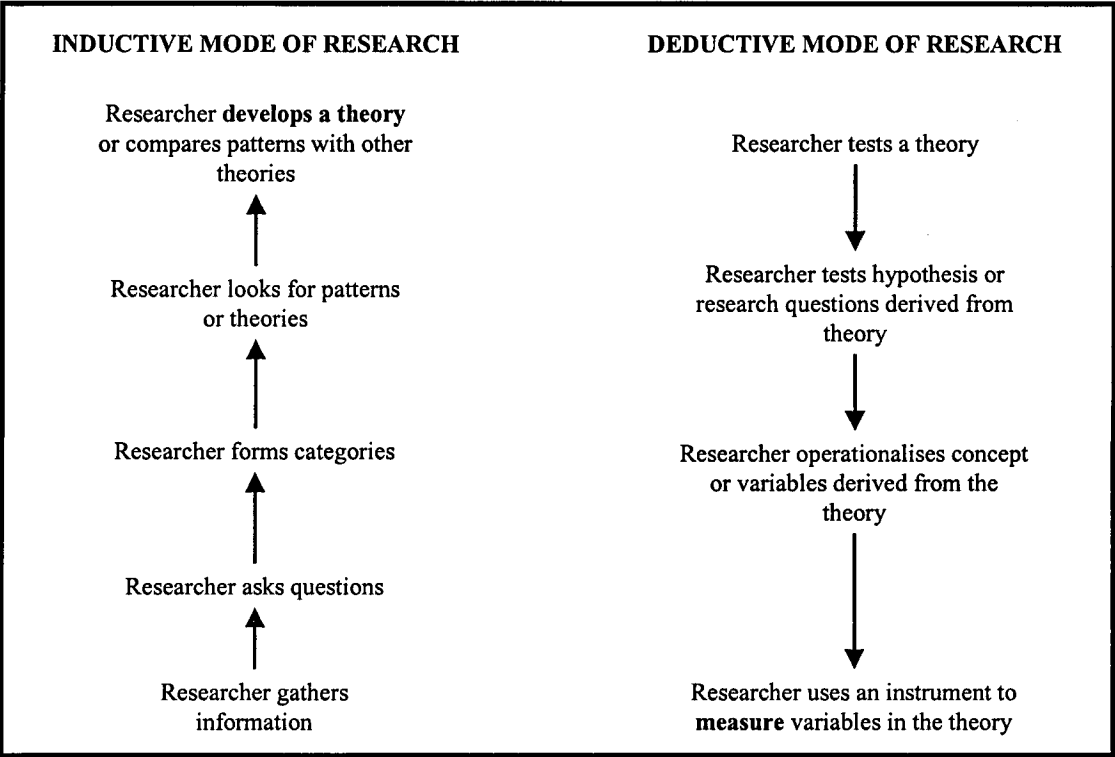
Building on the work by Chalmers (1982), Ghauri, Gronhaug and Kristianslund (1995) summarise the differences between induction and deduction. Ghauri *et al.* (1995) claim that in the induction mode, facts acquired through observations lead to theory, while in the case of deduction; the hypotheses are either accepted or rejected, thereby facilitating explanation or prediction.

Hypothesis testing is part of a deductive mode of research where researchers begin with a theoretical framework, formulate an hypothesis, deduce what the research results should be if the hypothesis is correct and gather data to test the hypothesis (Judd, Smith, and Kidder 1991).

Exploratory and descriptive research, however, works in the opposite direction, (as seen in Figure 16) that is in an inductive mode the focus is to develop theory by gathering information, and seeking for patterns to emerge from the information. In a deductive mode of research the researcher's tack is to test theory.

The inductive mode of research also seeks to establish instances and prevalence of phenomena and to identify appropriate variables that can be used to measure constructs. Therefore, due to the nature of the problem, where there are many unknowns the researchers begins by gathering information so a deductive and not an inductive mode of research is appropriate for this thesis.

Figure 16: Inductive and deductive mode of research



While most researchers use a combination of inductive and deductive logic, one can still characterise research methods as being predominantly one or the other. Literature suggests that there are various types of empirical research (Simon and Burstein 1985). They include descriptive case study that (a) investigates a contemporary phenomenon within its real-life context when (b) the boundaries between the phenomenon and context are not clear and (c) in which multiple sources of evidence are used (Yin 1994). Multiple data

sources serve as a means of "perceptual triangulation" and provide a fuller picture of the business unit under study. Case study research goes beyond providing a static snapshot of events, rather it crosses the "temporal and contextual gestalt of situations" (Bonoma 1985).

Researchers may begin with some preliminary hunches and crude hypotheses, but proceed to revise the hypotheses during the course of their investigation (Kidder and Judd 1986). Such will be the approach followed in this study. This study does not compare cases; rather, it uses a qualitative and descriptive case study research method to investigate a longitudinal process (time-ordered sequence) by focusing on one firm (Burgelman 1983). The study gathers information from different sources such as suppliers, business buyers and third party participants in order to triangulate the data to enhance reliability rather than use cases to compare.

As this research investigates the process of creation of a new venture, B2B e-market, a deductive research method is justified as process research will identify the time ordered sequence of events where observation of the creative process of the new phenomenon can be determined through an inductive research method. Deductive research is not contemplated for this thesis, as no theoretical framework formulating hypotheses exist.

3.1.3 Justification for selecting case study method

The purpose of this research is to generate theory and not test theory, whilst selecting an inductive mode of research rather than a deductive approach. Conclusions drawn from the above discussion suggest that the phenomenon is new and that the problem to define and to develop variables in order to measure constructs is premature. Further, the purpose is not to compare two case studies, but rather to depict a creation process using a single firm

that operates in a network environment. Therefore, to engage a measurement, classification, or a comparison technique is not the approach selected for this investigation. In investigating a time-ordered process of a new phenomenon, a case study approach is necessary to identify and verify or refine variables that exist in literature. The time-ordered creation process provides a longitudinal study of the planning (prior to launch, at launch and current) implementation process of one firm rather than a variance measure or comparison.

Scholars have used the case study method in circumstances similar to those of this study. Biemans (1989) studied the diffusion of innovation within networks, while Woodside (1994) studied the adoption of new superior technology in an industrial marketing network environment. Burgelman (1983) used a case study approach to map the key activities of managers at different levels in the organisation that constitutes the strategic process by which new ventures take shape. Tabor (1998) used the case study method to examine electronic commerce and the role of technology and strategy in a firm, while Nath and Newell (1998) used a case study method to track strategic success in a hyper-competitive environment by using causal maps. Mapping structures suggests “finding the kinship structure of a group, that is, who is related to whom in what ways” (Simon and Burstein 1985) p47). This process of mapping events to match strategic actions has been identified in literature (Clarke and Mackaness 2001; Hamilton and Shergill 1992; Huff 1992; Nath and Newell 1998; Vekataraman and Prescott 1990). Results of these studies indicate a positive fit. The authors considered ‘fit’ as a static rather than a dynamic concept. However, Nath and Newell (1998) considered fit as a dynamic concept, and conclude that strategies and structures need to be flexible in order for firms to succeed. This construct of alignment between a firm's strategy and its environment was considered an important

construct when one firm was investigated (Nath and Newell 1998). This study builds on Nath and Newell's (1998) findings by including firms in a network environment. As the concept of this thesis is new and theory building is the focus of this study, a qualitative research method is justified in order to develop appropriate constructs when studying firms in a dynamic network environment.

Using the mapping method this study analyses the internal and external documents and memos at various points in time from participating firms in the network. The mapping method is a sort of description but is more highly organised than an ordinary description in that it identifies various forms of relationships (Simon and Burstein 1985). Cognitive mapping of relationships using a case-study approach can help create a thick description of the strategic performance relationships that exists amongst constructs. They can also help assess the contribution and impact that network champions may have both in the development process and in identifying relationship structures underlying the strategic performance outcome for a B2B e-market network. In other words, relationship mapping provides an interpretation of structure and content of the innovation-diffusion process in a dynamic network environment.

This study proposes a method to develop context maps that can be used as tools to provide new ways of examining and improving managerial judgement. This form of mapping processes, as a method, is amenable to a rich form of analysis (Eden and Ackerman 1992). However, Eden and Ackerman(1992) argue that the interpretation and meaning of the analysis can only be determined in relation to both the purpose of the research and the theoretical basis of the form of representation to be analysed. In so doing, this research hopes to develop a tool for managers who have limited information on past experience, as B2B e-market firm creation is a new phenomenon. Further, managers need

tools such as mapping a diffusion process that can generate different inputs to a creation process and identify various “what if” situations so that the process can be followed from the initiation to implementation stages. These maps, therefore, examine the creation, decision and implementation processes of a complex and dynamic environment where more than one firm is involved. The mapping process can also depict the relationships between the actors in the diffusion process of a dynamic environment (Hulbert, Farley, and Howard 1972). To this end, scholars have used the mapping process to develop process models for new ventures (embedded in technological innovation) of related or networked businesses in order to investigate the relationships between strategy, core creation processes, impact of champions and level of management (Burgelman 1983; Maidique 1980; Quinn 1980).

Since the early days of grounded theory concept, scholars (Eisenhardt 1989; Miles and Huberman 1994; Yin 1994) have crystallised research methodology in this area. Although terminology for this type of research still varies, the term 'case study' research is frequently used (Perrott 1993). A case study is an empirical enquiry that (1) investigates a contemporary phenomenon within its real life context when (2) the boundaries between phenomenon and context are not clearly evident and in which (3) multiple sources of evidence is used (Yin 1994).

In order to refine the working propositions developed from literature, the research method refines these working propositions within the context of real life and by using multiple sources of evidence. Each of the working propositions have been reviewed or refined as necessary.

3. 2 Research Method

3.2.1 Research design

This research design is a multi-level field case study. It uses a combination of interviews, field notes and published information across all levels of the focal B2B e-market firm, its suppliers and buyers as well as third party organisations. In so doing it captures all participants and processes of a network (Biemans 1989). In conducting this research, theory building from the case study follows the process identified by Eisenhardt and Tabrizi (1995) summarised in Table 5. However, for the purpose of this thesis the guide to theory building is modified as the study progresses.

Before defining the research questions, exploratory fieldwork was initiated. The initial research questions arose from reviewing the literature and conducting exploratory research. The exploratory interviews were conducted amongst firms that use the Internet to (a) purchase goods and services, (b) promote their products and services (c) place orders and transmit design specifications to suppliers to quote on specific requirements within a network. Finally exploratory interviews were also conducted with a firm that used the electronic data interchange (EDI) exclusively within a network of suppliers to the Australian automotive industry. These preliminary interviews suggested that the participants were aware of the innovation (B2B e-market) and the benefits that could be derived from using such a product, but had not used or evaluated a B2B e-market firm embedded in technological innovations. Although buyers and sellers were aware of the benefits and strategic advantage of such a phenomenon, buyers were not using an independent B2B e-market firm to tender for supply contracts or order their supplies. Suppliers were not using the B2B e-market firm to promote products and services or search

for tenders in this environment. The EDI was used to transact between large organisations and medium firms that complemented logistics activities between the manufacturer and their suppliers.

Table 5: Process of Building Theory from Case Study Research

Stages	Activity	Rationale
<ul style="list-style-type: none"> Research Design 		
Stage 1. <i>Review of literature</i>	Defining the research question. Defining prior constructs. Neither theory nor hypothesis.	Focuses effort. Provides better understanding. Retains theoretical flexibility.
Stage 2. <i>Selecting cases</i>	Specified population. Theoretical not random sampling.	Constrains extraneous variation & sharpens validity. Focuses efforts on theoretical usefulness - i.e. those that replicate or extend theory by filling conceptual categories.
<ul style="list-style-type: none"> Data Collecting 		
Stage 3. <i>Designing protocols</i>	Create case study data base. Multiple data collection. Qualitative & quantitative data combined.	Increase reliability. Increase construct validity. Strengthens grounding of theory by triangulation of evidence. Synergistic view of evidence.
Stage 4. <i>Entering the field</i>	Overlap data collection & analysis including field notes. Flexible & opportunistic data collection methods.	Foster divergent perspective & strengthens grounding. Speeds analysis and reveals helpful adjustments to data collection. Allows investigators to take advantage of emergent themes & unique case features.
<ul style="list-style-type: none"> Data Ordering 		
Stage 5. <i>Data ordering</i>	Arraying events chronologically.	Enhance internal validity. Gains familiarity with data & preliminary theory generations.
<ul style="list-style-type: none"> Data Analysis 		
Stage 6. <i>Analysing data</i>	Within-case analysis. Cross-case Patterns search using divergent techniques. Logic across cases.	Forces researchers to look beyond initial impression and see evidence through multiple lenses. Confirms, extends & sharpens theory. Builds internal validity (triangulation through cross-functional data).
Stage 7. <i>Shaping Hypothesis</i>	Search evidence for "why" behind exchanges between businesses.	
Stage 8 <i>Reaching closure</i>	Theoretical saturation when possible.	Ends process when marginal improvement becomes small. (all participants in the focal B2B e-market were interviewed together with suppliers and buyers).
<ul style="list-style-type: none"> Literature Comparison 		
Step 9. <i>Compare emergent theory with existing theory</i>	Compare with existing theory. Comparison with similar literature.	Builds internal validity, raises theoretical levels & sharpens construct definitions. Sharpens generalisability, improves construct definitions & raises theoretical level.

Source: Adapted from (Eisenhardt 1989) "Building Theories from Case Study Research" *Academy of Management Science* 14(4) p: 532-550

The exploratory interviews together with business and academic literature review served as a starting point in the development of the research questions. Exploratory research design is advised as a first step in the understanding of a process where little is known about the field of research focus (Bonoma 1985; Schendel and Hofer 1979). This step is seen as a stage that allows the researcher to learn concepts, learn the jargon as it occurs in the field and to begin preliminary integration from literature. A prior notation about the firms' operation and practice can be documented from observation and from documents that are publicly available. The exploratory interviews facilitated the aspect of concepts and practices, and published information by the policy formulators in this environment assisted in understanding the area of research. In order to explore the dynamics of the diffusion process and to investigate the strategic significance of the technological innovation a pilot questionnaire was developed.

Three types of questionnaires are discussed in literature. They include unstructured, semi-structured and structured interview processes. Sekaran (1992) defines unstructured interviews as those where the interviewer does not have a planned sequence of questions to ask the respondents. In this case (unstructured) the purpose is to gather a descriptive account of a topic without formal hypothesis testing. Structured interviews are defined as ones where the interviewer knows exactly what is required and has a pre-determined list of questions, and where the research topic can be easily quantified. The objective in this interview process is to test a theory or a model (Crabtree and Miller 1992; Sekaran 1992). A semi-structured interview process includes an in-depth interview that intensively explores a particular topic, life histories and critical incidents (Miller and Crabtree 1992). Therefore in order to investigate the research questions, a semi-structured questionnaire was designed and selected. This is because the nature and range of participants' likely

opinions about the research topic was known and the research questions are designed to gain a thick description of critical incidents in relation to the decision and the implementation process of B2B e-market firms.

Face validation was carried out on the semi-structured questionnaires with experts from within the industry and with colleagues from within the school of marketing. The semi-structured questionnaires were in three parts. The first part focused on the focal B2B e-market firm, the second and third focused on buyers and suppliers in the focal business network. Data were obtained from each of the members occupying the relevant positions at the focal B2B e-market firm. In addition, data was gathered from the B2B e-market firm and its suppliers, buyers and third party firms. The semi-structured questionnaire was used in collecting the data, which was recorded and then transcribed and coded using contract coders.

Research relating to decisions, implementation processes and organisational change does not have a beginning or end point. Yin (1994) states that in such cases the unit of analysis is defined by the research questions. In order to develop theory in process research a well-established approach developed by Eisenhardt (1989) has been selected.

The flow chart (Figure 17) outlines the research design. A number of organisations were approached in order to select a site for this study. In most instances it was found that firms were not ready to adopt a B2B e-market firm or were in the process to adopt but were hesitant or, due to confidential reasons, were not prepared to share information with the researcher. The primary site selection was based on three criteria. First the firm was ready and willing to share all information, second they had the funding and were developing plans to launch and three, they were willing to introduce sellers and buyers and third party

member firms to the researcher. An article in the Business Review Weekly (November 10, 2000) identified that Bizmarket.com met the above criteria.

A formal approach was made to the organisation and a team meeting was followed by the development of a 'Memorandum of Understanding' (MOU) between the B2B e-market firm and the University of New South Wales to establish the research project. Access to records and identification and introduction to the network partners by the focal B2B e-market firm was agreed to in the MOU.

The coded information from transcripts together with published information, field notes and memos assisted in developing a database that was used to (1) review and refine the working propositions using a cross-functional analysis, (2) develop maps that depicted the creation process and (3) depict causal relationships between the participants. Finally, a process model was developed that extends the model developed by Burgelman (1983) that illustrates the relationship between the core process, champions and strategy over a time period.

Figure 17: Research design flow chart

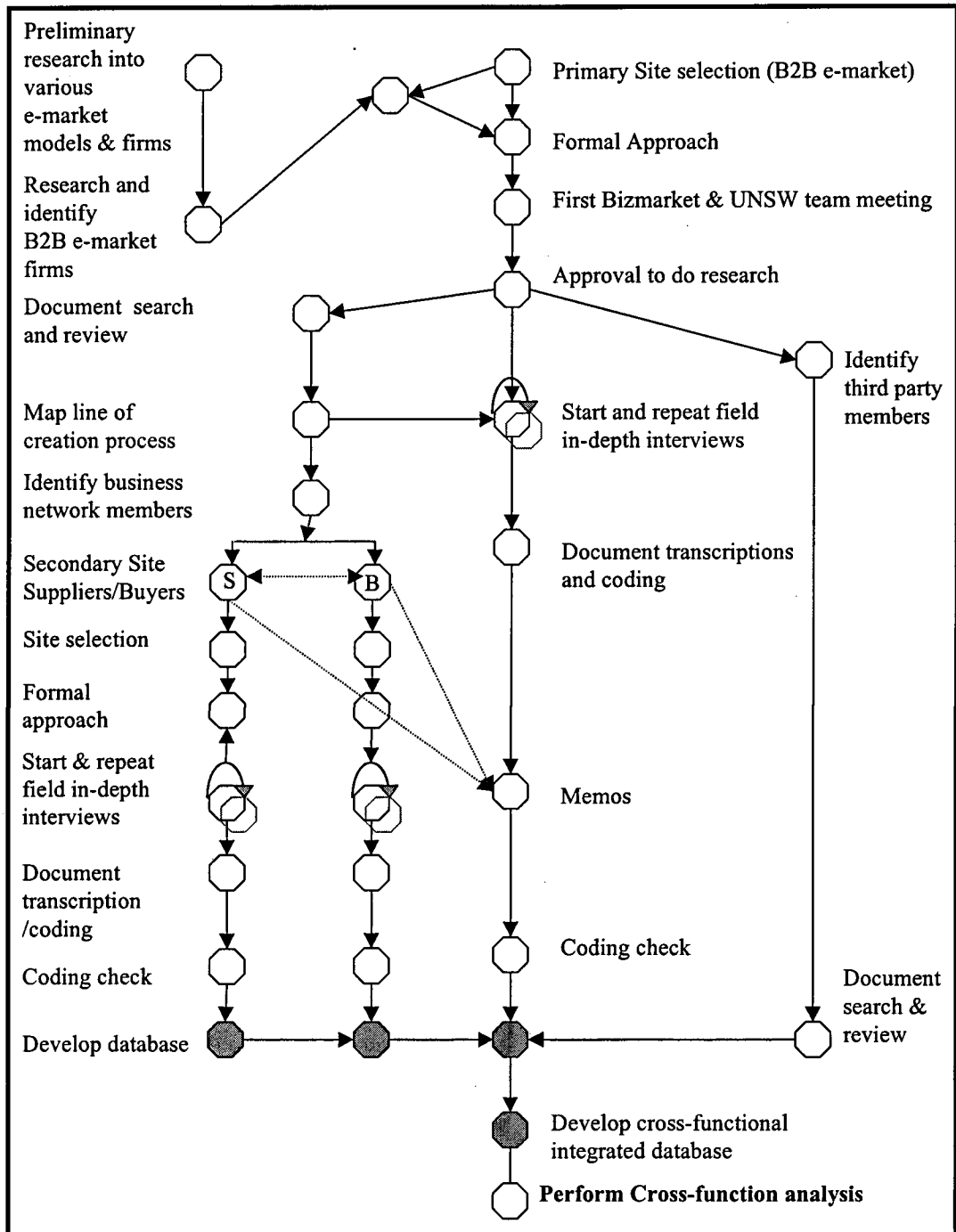


Table 6 that follows describes the data collection sequence undertaken for this project.

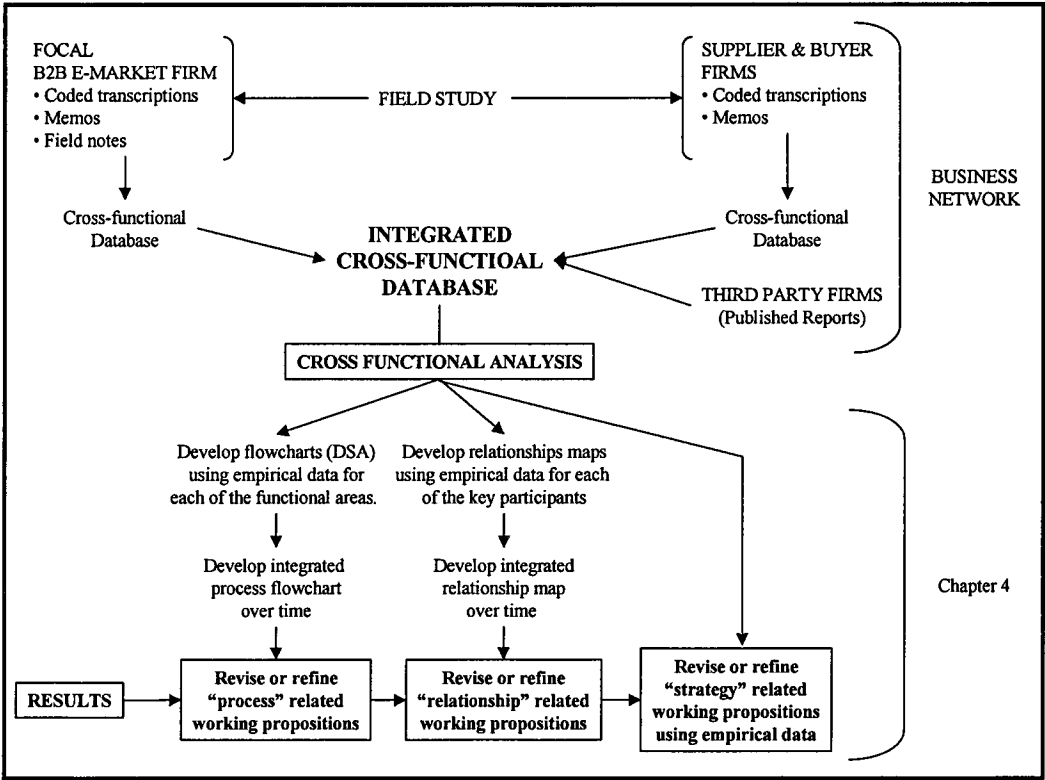
Table 6: Data collection sequence

Sequence	Procedure
Step 1	<ul style="list-style-type: none"> (a) Provide definitions. (b) Identify required information from research questions and propositions. (c) Determine content of individual questions. (d) Determine wording of each question. (e) Determine sequence of each question. (f) Face validation and test instrument. (g) Revise instrument. (h) Finalise protocol (see Appendix 3 - Interview Protocol).
Step 2	<p>Contacted B2B e-market firm and requested interview. Develop letter to outline:</p> <ul style="list-style-type: none"> (a) Why this research is important. (b) Schedule of visits for observation and for conducting semi-structured interviews. (c) The area of research and type of questions. (d) Documents required including video tapes. (e) Handling of confidential documents and confidential information (see Appendix 2 Correspondence). (f) Request confirmation of scheduled visits.
Step 3	<ul style="list-style-type: none"> (a) Conducted interview of primary site (B2B e-market - BIZMARKET). Include all functional levels of the firm. (b) The interview was followed by a number of sessions observing the members at executive meetings to generate field notes. The CEO agreed to this process.
Step 4	<ul style="list-style-type: none"> (a) Develop Coding System (See Appendix 1 - Coding Workbook). (b) Transcribe interviews. (c) Develop database based on Workbook - incorporate documents, memos, observations and field notes. (d) Develop cross-functional database. (e) Review research questions and propositions. (f) Identify new developments not included in literature review. (g) Resolve coding discrepancies.
Step 5	<ul style="list-style-type: none"> (a) Identify gaps in interview. (b) Follow-up interview schedule. (c) Revise data files.
Step 6	<ul style="list-style-type: none"> (a) Develop list of Suppliers and Business Buyers. (b) Verify list with B2B e-market firm and gain approval. (c) Request introduction to suppliers and buyers. (d) Identify telephone numbers, structure of organisation and names of members within the organisations and schedule interviews both intrastate and interstate.
Step 7	<ul style="list-style-type: none"> (a) Conduct and repeat interview for each supplier and business buyer based on similar semi-structured interview questionnaire. (b) Repeat Step 4 (b to f).
Step 8	<ul style="list-style-type: none"> (a) Finalise cross-functional database.

The cognitive biases that stem from reliance on judgmental heuristics such as representativeness, availability of information and anchoring of information are well documented and are seen to lead to systematic and predictable errors (Tversky and

Kahneman 1982) as "the data collection procedures are not routinized" (Yin 1994 p. 62). From these observations, it could be deduced that researchers might reach premature and even false conclusions as a result of information processing biases (Perrott 1993). This limitation can be overcome by performing a good cross- functional comparison by analysing data from many sources (see Figure 18). For example data are analysed from suppliers, buyers, B2B e-market firms and third party firms. The idea of this is to force the researcher to go beyond the initial impression derived from the B2B e-market and understand the network environment in which the enterprise is embedded. This process improves the likelihood of accurate and reliable theory. That is, theory with a close fit with reality in the market. Further, by comparing data from the different sources a greater potential exists for both explanatory power and greater generalisability than a single case study can deliver (Miles and Huberman 1994).

Figure 18: Cross-functional analysis



Other limitations regarding construct validity, internal validity, external validity and reliability are discussed in detail in Chapter 5. These limitations have been addressed through careful planning of the research process and data collection phases of the research method

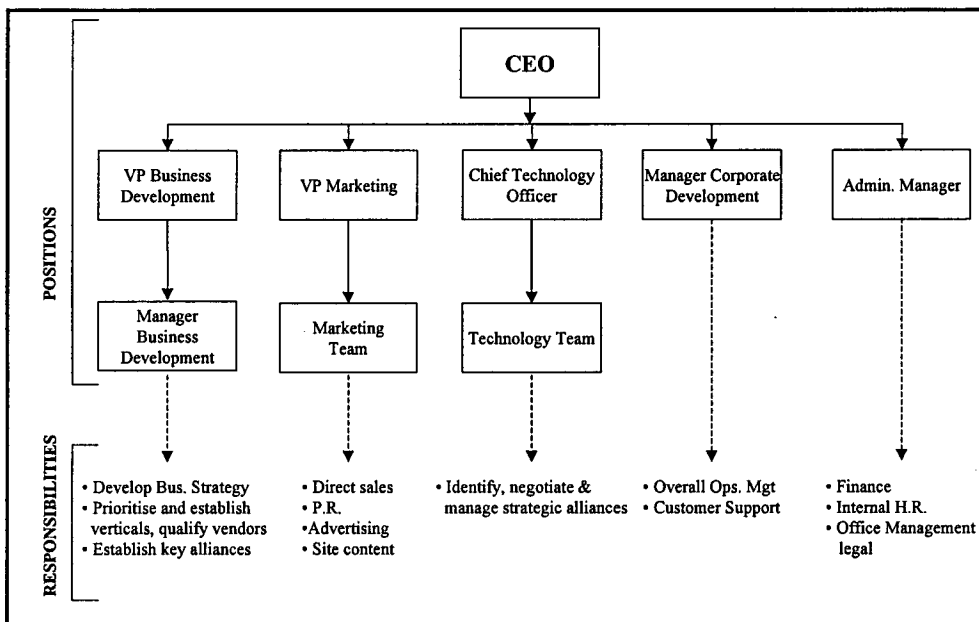
3.2.2 Research setting

The research was carried out in one Australian based B2B e-market company called Bizmarket.com. This B2B e-market new venture developed an aggressive business plan that included between five thousand and ten thousand businesses in twelve categories and was in its pre-birth phase when first contacted by researchers.

The organisation structure has five main functional areas that comprise business development, marketing, technology, corporate development and administration. The charter of the functional areas, the job descriptions of all position holders, their experience, knowledge, academic qualifications, and reporting relationships were studied. Information was also collected from Bizmarket's buyers and suppliers using a similar semi-structured questionnaire. In particular, the relationship between third party participants (buyers and suppliers) network champions, new venture champions, product champions and implementation champions in the business network were studied. This information provided the historical evolution of the creation process over time, that is, pre-birth, birth and current (launch). This process was studied exhaustively in one setting (Burgelman 1983). Figure 19 outlines Bizmarket's organisation structure. The structure identifies the position of the employees and the responsibilities of each of the functional areas. The

organisation chart does not include the external participants, for example the network champion, and third party participants such as the technology development firm.

Figure 19: Bizmarket's Organisational Structure as at January 2001



3.2.3 Data collection

Data were obtained from each of the members occupying the relevant positions at Bizmarket. In addition, data was gathered from Bizmarket's suppliers and buyers and technology providers. Bizmarket offered names and addresses of suppliers and buyers as per the MOU (see Appendix 2). Suppliers and buyers were selected at a random from two capital cities. The interview time averaged two hours and the interview usually began with an open-ended invitation to talk about the interviewee's background, interest in the firm and their understanding of the concept of the new venture. The interviewer then directed the discussion towards three major aspects of the B2B e-market development processes, that is, the creation process, the players and their impact on the creation of the new venture, and

the strategic advantage that buyers and sellers might gain from using the firm's technological innovation.

A major benefit from this approach was that it was possible to gather information at the pre-birth stage, prior to launch and at the launch period and triangulate the responses given by each interviewee. Respondents also mentioned names of relevant participants and Bizmarket was willing to set up interviews with relevant suppliers and buyers in the network. In total, one hundred and fifty one pages or six thousand, seven hundred and thirty eight lines of text were recorded. Table 7 indicates the break up between Bizmarket and its suppliers and buyers.

Table 7: Pages of text Bizmarket, Suppliers and Buyers

Participants in the Focal Business Network	Pages	Lines of text
Bizmarket	110	4937
Suppliers and Buyers	41	1801
Total	151	6738
Average interview time (in hours)	2	

This study analyses multiple relationships and resulting behaviours in a single B2B e-market (including multiple personal interviews through time of executives in the e-market venture, its suppliers, its buyers, and third parties). This method constitutes an ethnographic case study (Burgelman 1983). Given that third party participants affect this network by providing technology and legal and financial services, executives in several third party enterprises are included in the study (Biemans 1989). Although interviews were not conducted with third party participants insights into their contribution was gained from discussions with Bizmarket staff, project description (software suppliers) and published

material from the National Office of the Information Economies (Government policy formulators) were used in the analysis (Field Notes). The distribution of persons interviewed by position is shown in Table 8

Table 8: Distribution of Persons Interviewed by Job Title

Job Title	Number
Chief Executive Officer	1
Business Development	
Manager Business Development	1
Manager Corporate Development	1
Technology Development	
Chief Technology Development officer	1
Technology Development Officer	1
Marketing Department	
Vice President Marketing	1
Buyers/Sellers:	
CEO of organisations	4
Total	10

3.2.4 Coding the mapping process

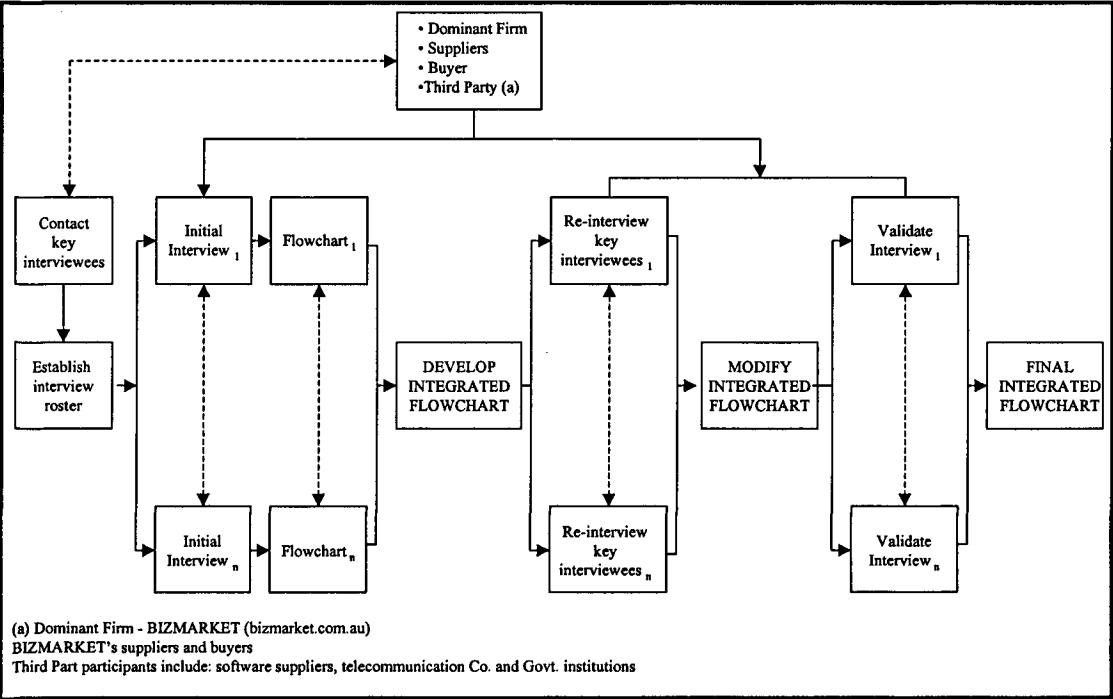
For geographers, a map is a means of depicting the world so that there is an understanding of reference points, that is, where one wants to go (Huff 1992). Similarly, cognitive maps are graphic descriptions that locate people, systems and procedures in relation to their information environment on firms and industries (Eden and Ackerman 1992; Huff 1992). Descriptive studies of the marketing decision process were once quite scarce (Capon and Hulbert 1975). The majority of early studies in the area focused on decisions at an individual level, rather than at an organisation level (Howard and Morgenroth 1968; Rados 1972). Yet most marketing decisions relating to strategy necessitate the participation of individuals whether in the stages of information collection,

analysis and evaluation or in the choice among alternatives and the implementation of a selected course of action (Capon and Hulbert 1975).

In order to follow the stages of a diffusion process, decision system analysis (DSA) can be used (Capon and Hulbert 1975). Capon and Hulbert (1975) describe the application of the DSA technique to pricing, forecasting, advertising and new product development. The focus of the present coding effort would be to determine the process of new-venture development and the involvement of network champions in the decision process. Such codes have been developed to identify the inception of the creation process, the creation process, the decision stages and the implementation stages. The focus of this approach is to generate a series of flowcharts of activities that take place in each of the functional areas of the focal business network and refine them. The ultimate aim is to develop an integrated flow of activities in a dynamic environment over time. This process of creating an integrated flow chart will help managers adopt the process in order to replicate it for their environment. The process could help managers identify barriers, strengths and weaknesses in emergent processes that cross multiple firms (cf. Woodside and Vyas (1983)). Such a model is useful for elucidating the creation processes and indicates how the interlocking process activities across the functional areas of firms emerge. The data collection process follows a similar pattern suggested by (Yin 1994) p 56). The process is based on the work of Hulbert, Farley and Howard (1972) and Nath and Newell (1998) and involves in-depth interviews in two interrelated environments – focal business networks and third parties (see Figure 20: The Research Process). The sample size for this study therefore is one in-depth case study of a B2B e-market firm and follows Eisenhardt (1989) and Yin (1994) suggestions for building theory from one case study research where the focus is to develop theory.

For example, codes were created for the innovation decision process that relates to activities including the micro and macro processes. Activities such as prior conditions and development, agenda setting, development process prior to launch and the review process were each sub-categorised and allocated an activity code.

Figure 20: The Research Process



Source: Hulbert, Farley and Howard (1972) "Information Processing and Decision Making in Marketing Organisations" *Journal of Marketing Research*, Vol. IX p. 76

For example, ‘AW’ stands for “awareness of the innovation”; ‘PK’ stands for “previous knowledge and experience with the innovation” etc (For details see Appendix 1- Coding Workbook). The coder then proceeded to follow a number of steps. The first was to read the transcript and, on the second pass, identify and highlight any text that identified the “process” using the codes developed for this purpose as described. To chart the activities the researchers then used standard flow-charting symbols such as a rectangle to signify

'process', a "diamond" to signify "decision" and a "rectangle with two bars" to signify 'predefined process' etc. Detail steps were as follows:

- Research funding was used to employ external coders (post graduate marketing students).
- The coders were given the Coding Workbook and the interview transcripts from each of the functional areas.
- The coders were encouraged to add codes as necessary where the codes developed did not adequately explain a process.
- The coding was checked and discrepancies were discussed and, where necessary, refined or updated.
- In circumstances where the codes were found to be inadequate, new codes would be developed and coders and researcher informed.
- *The researcher performed the following activities:*
 - The coded text was then put into a spreadsheet and linked to a working proposition, which was then linked to a research question. The columns from left to right indicate research question, working proposition, organisation code, respondent code, process code, text (from interview) page and line number(s) as shown below. This is an example of "awareness" of the phenomenon and the code "AW" has been allocated for this text. The text in closed brackets either explains the context or completes the meaning of the text.

R/Q	WP	Org. Code	Resp. Code	Process Code	Text	Page No (s).	Line No (s).
1	3	1001	01	AW	Specifically Bizmarket was the one I knew. I was aware of purchase over the Net. I was aware of E-Store concept but specifically exchanges, <i>[like B2B e-market that operated as an independent organisation.. no...but was briefed on the concepts prior to accepting the position].</i>	5	24-25

- The Process Codes were sorted and grouped within organisation code, respondent code and process code in the spreadsheet.
- Flowcharts were developed using the Process Codes for each of the functional areas and verified by the respondent and updated as required.
- Relevant texts from the transcripts were used in identifying the flow of activities.
- Example(s) from the transcript is used to support the flowchart and the text inserted in the analysis chapter.
- Finally an integrated flow chart was developed over time. The semi-structured interview questionnaire together with key words such as "before", "after that", "we then" were used to track and enhance the sequence of events.
- Working propositions were refined or confirmed.

3.2.5 Coding relationships between participants in networks

In a network environment, network champions are involved in the development process of new venture start-up firms and may also influence strategy development amongst the users of new venture start-ups (Woodside and Wilson 1994). In order to depict the causal relationship between the champions, codes were developed based on Axelrod's

(1976) work and the coding method documented by Margaret Wrightson (Axelrod 1976).

The next section discusses the causal mapping process.

Mapping the causal relationship is not new. Scholars have used the mapping process in qualitative survey research to elucidate inputs to strategic decisions in one specific field (Brown 1992), elicit the cognitive maps of a group of individuals (Langfield-Smith 1992) association of concepts (Huff, Narapareddy, and Fletcher 1990) and map organisational responses in a hyper-competitive environment (Nath and Newell 1998).

However, immutable strategic plans are becoming less useful in a world of rapid technology changes, emerging markets and shifting market boundaries (Gray 1986). Strategic planning has come under attack for generating rigid planning (Gray 1986). In relation to strategic decision and actions assessment of current position, relationships among key participants and events and the possibility of improved position, are the basis on which firms act or do not act. Therefore it can be argued that the relationships should be mapped to provide ways of examining and improving managerial judgement in a dynamic environment (Hulbert *et al.* 1972). To this end scholars have used the mapping process in order to investigate the strategic relationships using a case study approach so that thick descriptions of the relationships can be identified (Bougon 1992; Nath and Newell 1998).

Axelrod (1976, p5) suggests that

“...the notion of causation is vital to the process of evaluating alternatives. Regardless of philosophical difficulties involved in the meaning of causation, people do evaluate complex policy alternatives in terms of the consequences a particular choice would cause and ultimately of what the sum of all these effects would be”.

This study provides an insight into cognitive mapping that focuses on six relationship categories. For example, positive effect, negative effect, no effect, indeterminant effect,

effects that are not positive, and effects that is not negative. These relationships were further enhanced by including linkage codes e.g. A is equal to B, A is the same as B and A is defined as B (Huff *et al.* 1990).

Although Axelrod (1976) suggests the notion of causation that is one action is the cause of another in order to evaluate, this study focuses only on the relationship between participants over time. According to Cropper (1992) coding to generate maps follows many different conventions and there can be no general approach to the analysis. Rather the interpretation and meaning of the analysis can only be undertaken in relation to both the purpose of the research and the theoretical basis of the form of representation to be analysed, be a cause map, network or any other graphical picture.

For the purpose of this study, a positive relationship is shown by $/(+)/$, that is, makes better, promotes, expedites, make possible or is necessary. Negative relationship is depicted by $/(-)/$, that is, hurts, impedes, prevents, inhibits or changes for the worse. No relationship is depicted by $/(⊕)/$, that is, the relationship will not have a positive effect, won't help, won't promote or is of no benefit to. Relationships that are not positive are depicted by $/m/$, that is, affects in some nonzero way, somehow effects or in some way affect etc.

The following steps were executed to code the relationship patterns between the participants over time.

- On completion of the coding process, coders turned their attention to the relationship aspect of the study.
- Codes were developed that indicated the relationship between participants (see Appendix 1 - Coding Workbook).
- The transcripts were coded accordingly and the coding checked and verified.

• The following steps were taken by the researcher:

- The text was then grouped by functional area in a spreadsheet. The initial relationship maps for each of the functional area was then developed.
- The relationship pattern for each functional area was mapped in relationship with the network champion and the other participants in the network. An example of relationship as coded.

R/Q	WP	Org. Code	Resp. Code	Rel. Code	Text	Page No (s).	Line No (s).
5	4	1001	02	C \oplus	...apart from Dion (<i>network champion</i>) there are investors and the shareholders but they (too) had no direct impact in the day to day running of the business	8	21-22

- Relevant text from the transcripts was used and has been inserted in the analysis chapter (Chapter 4).
- These maps were then integrated in order to develop a complete picture that depicted the relationship (positive, negative) amongst participants over time. By integrating the functional areas of the focal business network triangulation of the data was achieved.
- The working propositions were refined or restated as required.

3.3 Proposed schedule

Date	Particulars
1999	
Dec	<ul style="list-style-type: none"> • Finalise dissertation proposal • Identify businesses with electronic commerce • Write letters to prospective businesses (see letter of introduction) • Write summary of research project • Make appointments
2000	
Jan - June	Visit businesses
July	Prepare interview protocol
Aug	Face validation of interview instrument with businesses
Sept	Identify business willing to take part in the research process
2000 - 2001	
Oct - March	Conduct interviews with focal business
March - May	Conduct interviews with suppliers and buyers
May - July	Follow up interviews
July - Sept	<ul style="list-style-type: none"> • Apply for research budget <ul style="list-style-type: none"> • (see approval letter in Appendix 2 - Correspondence) • Engage personnel to transcribe interviews • Transcribe interviews
Sept - Oct	Code interviews
Oct - Dec	<ul style="list-style-type: none"> • Finalise coding of interviews • Iron out discrepancies and merge field notes and memos
2001 - 2002	
Dec - Jan	Develop matrix of codes and text data Check data and codes
Feb - March	Analyse data
April - Oct	Write up Chapter 4 and Chapter 5

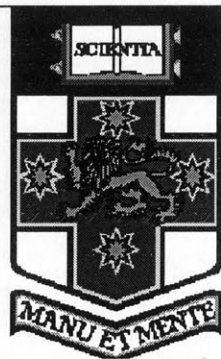
For actual schedule of activities see Appendix 4 - Milestones by Month.

3.4 Conclusion

The chosen methodology focuses on understanding a phenomenon and developing theory. In order to look for convergence of results in qualitative research, this study invites data from not only the focus of the study, that is the B2B e-market new venture, but also extracts data from suppliers and business buyers and third party participants. The Chapter presents the rationale for using the case study method and formulates a process based on the method of building theory from case study research (Eisenhardt 1989). Limitations addressing construct validity, internal validity, external validity and reliability are addressed in Chapter 5.

Although adequate care was taken in developing the codes from literature, additional codes were required and thus developed during the coding process. Coders (post-graduate students) who were appointed on a fixed term contract helped in addressing the discrepancies with the researcher. Approximately 70% of the codes were correctly identified, however an additional 30% either required refinement or required new codes to adequately code the text (Miles 1979). As suggested by Miles (1979), where discrepancies were not resolved, the researcher used his own initiative to code the text or did so in consultation with the coders. Care in the coding process was maintained throughout.

Chapter 4



CHAPTER 4

4.0 CROSS FUNCTIONAL ANALYSIS

INTRODUCTION: This chapter contains a detailed cross-functional analysis of process, participants and product innovation. Cross-functional analysis is achieved by interpreting the interview transcripts of all participants in the focal business network, field notes and published information. This body of information will be referred to as case data in this chapter.

The chapter begins with a discussion on the research questions following which the working propositions are reviewed or refined where necessary. Using the Decision System Analysis (DSA) research method, flow charts are developed for each of the functional areas of the firm (cf. Woodside and Vyas 1984). At the end, an integrated flow chart is developed that depicts all the process activities in creating the firm. This integrated flowchart also represents a time ordered sequence of activities, for example, t_0 indicates pre-birth or gestation stage activities, t_1 indicates the development stage activities and t_2 indicates the launch stage activities of the firm and the product innovation.

The second part of this chapter focuses on the relationships between the participants and their involvement in the creation process (cf. Johnston, Bonoma 1981). A number of relationship maps are developed, each representing different functional areas of the firm. Although the interviews were conducted at all levels of the firm and are included in the mapping process, these maps depict the relationship of the network champion with other key champions of the firm. For example, the CEO is regarded as the new venture creation champion given her activities and responsibilities. The map therefore depicts the

relationship between the network champion and the new venture champion.

The third part of this chapter discusses the impact of competency destroying innovation and competency enhancing innovation on the B2B e-market firm, supply firms and buyer firms. The focus of this part is to ascertain whether the imbedded technological innovation yields a competitive advantage to these firms by replacing existing competencies. Finally the chapter focuses on the long and short term success factors of B2B e-market firms.

4.1 Research questions

The research questions were found to generate good information from the participants in the focal business network. The interviews conducted across all functional areas indicated keen awareness of the concept at all levels of the focal business network. Participants had identified the need to create such a firm in Australia: *"there is no horizontal electronic marketplace up and running in Australiayou have got the corporate [marketplaces] but really [for] small and medium size businesses wanting to purchase via the Internet [there is nothing]"* (Bizmarket). A similar sentiment is offered by others in the focal business network such as: *"...I was curious to see what it was like [to join]...it was an interesting sort of concept... we run an e-commerce site here [although a very simple application]"* (Buyer, t_0 stage). *"I wanted more detail about the business [Bizmarket] and [once having got it] I worked out how to use it ...so I registered ...have some experience in this technology"* (Seller, t_0 stage).

In general, the research questions were found to be relevant and significant for this case, however, one question, *how do firms in the focal business network use a B2B e-market to perform marketing and logistics activities*, requires additional explanation. Logistics includes a number of attributes, such as reduction of cycle time, reduction of stock, and avoiding duplication in stock ordering. Observations by the researcher and field notes suggested that although reduction of cycle time was important for some SME buyers others suggested: *"time was not a factor for me"* (Buyer). Sellers knew the expected time of delivery from the quote and were able to respond to the quote, if it met their schedule. Duplication of logistics cost in comparison with other channels were addressed in such comments as: *"yes comparing to faxes, email and looking up yellow pages this [Bizmarket]"*

came out to be better [as I did not have to send the same fax to different suppliers]after having gone through the yellow pages to identify them" (Buyer, t_2 stage). However, inventory control was a non-issue for SME suppliers. For example, suppliers indicated that the only time they would order stock was when they were "confident of getting a job". They claimed that the cost of keeping stock that may never be used is too much for a small operator: "no I don't hold (large quantity of) stockI've got, may be a couple of thousand dollars worth [of stock] for people who come off the street [and want to see] the stuff [various samples of products on offer]".

From the marketing perspective, the Bizmarket model allowed buyers and sellers to record limited non-identifiable information about their respective organisations. For example, buyers could provide a brief description of their required products or services, their annual turnover, type of firm and the time by which the product or service was required. The intention of Bizmarket was not to offer an electronic directory where suppliers could come and advertise, rather an electronic medium: *"we are not a directory (like the yellow pages) ...but an electronic medium [channel] that brings together parties that want to transact together through us" (Bizmarket)*. From the suppliers' side, they were encouraged to provide a brief profile of their organisation to the buyers: *"allow them [suppliers] to actually put their own brief profile on the site so they get some exposure" (Bizmarket, t_2 stage)*.

Logistic activities for the SMEs, therefore, include reduction of cycle time (both receiving quotes and responding to quotes) and reduction in logistics costs. Marketing activities include providing the buyers with a quote (price) and product description based on the information on the quote. This marketing information is standardised amongst all product categories and, as such, buyers can use this information to compare price and

product features prior to allocating the contract to the suppliers.

4.2 Theory development

4.2.1 *Creation of new venture process*

The first working proposition developed from the literature focuses on the formation of the new venture. In particular, it discusses the activities that take place during the formation process of the new venture. As such, the working proposition was stated as:

WP₁: The formation of a new venture B2B e-market firms is dependent on a dynamic interrelated planning of macro and micro activities and a review of objectives, rather than a sequence of unrelated events based on a static objective.

In order to understand this creation process this section of the thesis develops a flowchart of activities of each of the key functional areas. Being a small start-up firm, the CEO's activities were regarded as a functional area, followed by the business development and technology development functional areas (see Figure 19).

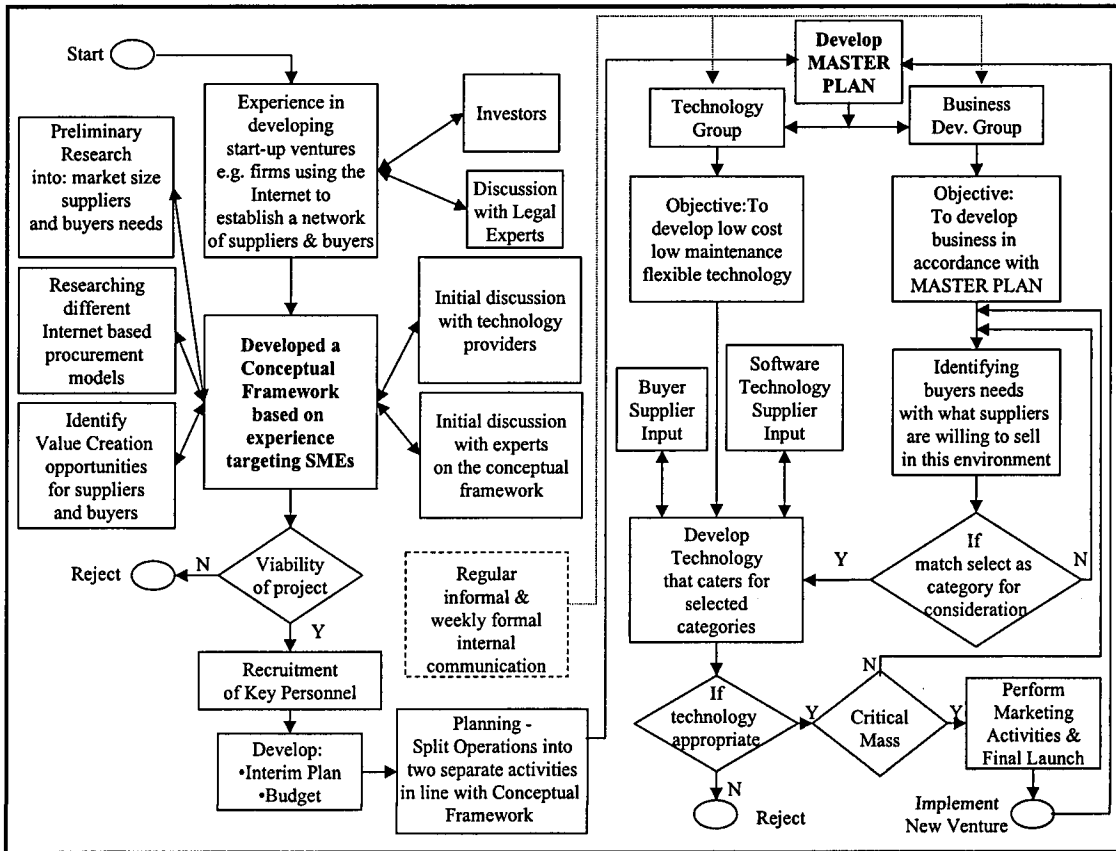
4.2.1.1. CEO's perspective

4.2.1.1.1 Formation of new ventures

The pre-birth stage or micro perspective consisted of researching the viability of the concept and at the same time considering the technical and legal requirements of setting up a new venture in Australia. In addition to the viability of the project, research was also

conducted in identifying the target market in Australia. This is captured by the following extract: *"talking to people [legal, sellers, buyers, and technology experts] was a small part of it [process] a much bigger part was the understanding the size of the marketplace [in particular SMEs in Australia]"* (Bizmarket). Figure 21 is the first flowchart that depicts the process activities of the CEO. The CEO suggested that initial research indicated that there were no firms in Australia that met the purchase requirements using electronic commerce that would satisfy the requirements of SMEs. Given this research, along with business intuition, the CEO indicated that the model she had in mind would be appropriate for the Australian marketplace. This feeling was based on the following extract: *"assumptions as opposed to facts"* (Bizmarket, t_0 stage). Different personnel from the various functional areas within Bizmarket generally concurred with this statement. Although this statement suggests that the need for the new venture was based on assumptions, probing further (Bizmarket 2002) suggested that the assumptions were based on (a) similar market conditions for Australia and the US (b) preliminary research into the small and medium firms indicated a high number of firms connected to the Internet and (c) preliminary discussions with experts in the area of technology suggested that it would be a viable proposition. In regard to the latter part: *"we were listening to a number of small and medium businesses, and promoting the concept and getting a feeling to its acceptance.... And we also got the feeling that this (model) would be a great use for them"* (Bizmarket t_0 and t_1 stage). Further statements from the CEO, Business development manager and marketing manager confirmed that comprehensive research was conducted in identifying the target market of suppliers and buyers who were classed as SMEs (t_0 stage).

Figure 21 Flowchart of process activities as interpreted from the CEO's interview



The case data suggest that the CEO had a concept of a model in mind based on extensive experience in the United States in working with similar models. This model would be the basis on which the firm was to be built as these firms were found to be very lucrative in the US and were attractive to investors: "...the models [in the United States] were actually generating quite a lot of revenue and raising funds for such a project in the US was not a big problem" (Bizmarket, t_0 stage). The CEO stated that when she got back to Australia from the US she was of the opinion that a similar model in Australia would be a viable proposition

it was actually when I got back to Australia that I started to conceive it [the model]. It was my experience in the States as a consultant to look for new companies and help them procure goods and services using a request for quotes [model]. Our experience

suggested that [the model based on the Internet had] the ability to store information that was assessable [to buyers and sellers in the network] and had a lot of potential here in Australia (Bizmarket, t_0 stage).

Further discussion with the CEO suggested that additional research was conducted subsequent to the initial research. This was based on identifying the target market in Australia and establishing the number of SMEs that were connected to the Internet. Secondary data (from Australian Bureau of Statistics) confirmed some of her intuitions of the market size for the model. The CEO was aware that there should be a certain number of suppliers and buyers in each of the categories that would be developed and offered to the market. This is captured by the following extract:

I started thinking about how people [suppliers and buyers] in Australia and measured the likely acceptance.....and found that the numbers were high.....and then thinking about how many small and medium business there are in Australia and whether this type of model exists.....I also used public documents [Australian Bureau of Statistics] to find the number of SMEs that are connected to the Internet (Bizmarket, t_0 stage).

In the discussion that followed the CEO was convinced that a request for quotes (RFQ) model was the correct approach and given the experience and knowledge this model was the correct one for the Australian market as outlined by the following description:

..it was my experience in the States as a consultant to look for firms that [this model could] help them [suppliers and buyers] procure and sell using a RFQ model and this model was appropriate for Australia...I have a lot of experience in RFQ models and it was a fit ...we could have reviewed a lot of models out there.... But it did not take us long to feel that this [model] was the right... I felt that the idea was a good one and also the time was right that spurred us to start the business (Bizmarket, t_0 stage)

The research into evaluating different models was found to be limiting due to the preconceived approach to initiate the RFQ model in Australia. The CEO felt that the model must be attractive to suppliers and buyers and as such must provide value: "we need to

provide more value [information based] to suppliers and buyers that join". In the discussion that followed she said: "we must provide information after the close of the transaction ... so we are always thinking of value adding [to our product]" (Bizmarket, t_1 stage). "I didn't realise much of the value until actually after I had used it ... I found that the step by step process very useful ...very easy to train junior staff to use [Bizmarket]" (Buyer t_2 stage).

In recruiting the personnel, the CEO was careful in selecting those who had extensive knowledge of the innovation and experience in working in similar environments. This decision process suggests that the personnel selected on the project would be already sold on the concept and would have little or no learning curve. In addition, their accumulated experience and knowledge would be a valuable asset for the firm.

From the macro perspective, the planning process involved splitting the functional areas into two separate but interrelated groups. The primary task for the technology area was to develop the technological innovation in consultation with other members in the firm and also in line with the master plan. The task for the business development functional area was to consult with known suppliers and buyers, receive feedback, and inform the product development team. Their task also included marketing the product in its conceptual stage to prospective buyers and sellers and thereafter, when the system was 'live', targeting the SMEs to buy into the firm. The business development group was to investigate the type of categories of goods and services that would be on offer to the customers, a process that would be undertaken in consultation with the known suppliers and buyers as suggested by the following description:

....so from pretty early on, we split the teams broadly into two groups. One was to focus on technology development and the [other] was to focus on the suppliers and the content of the [web] site.....and to get those two teams working in tandem

[although with separate objectives] to launch (Bizmarket, t_1 stage).

4.2.1.1.2 Dynamic interrelated planning

The comments made by the CEO that followed suggested that although the functional areas were largely divided into two groups, there were regular informal and formal weekly meetings amongst all the functional areas. The case notes suggest that the planning functions were dynamic as suggested by the following extract: *"things were changing very fast ...and we need to recognise the trends in the market and then interpret them and make sure the business is in tune with them....I think flexibility is critical for a new venture like ours [in this environment]" (Bizmarket t_2 stage).* The dynamic planning process involved developing and testing the technological innovation with the technology providers: *"on the technology side, the objective was to develop a low cost low maintenance solution...that is a flexible structure, that achieves the objective, but allow us to ensure that we could change the structure of the innovation as and when necessary" (Bizmarket t_1 stage).*

From the business development perspective the CEO stated that the creation of goods and service categories were completed in consultation with practitioners in the market and the technology experts. This consultation process between the needs of the market and the capabilities of the technology depict a rather dynamic planning process as suggested by the following extract: *"...and I were in [constant] contact over a period of time just firing back and forward information ...improving the productthem meeting my needs" (Known suppliers and buyers t_1 stage).*

4.2.1.1.3 Master plan

The CEO raised the concept of a master plan at the outset of the creation process. When questioned about the master plan, the CEO's comments suggested that the master plan was a detail-planning document that was flexible to accommodate changes. The development of the master plan suggested that it contained process activities and identified each task, such as site development, and site build completed together with start and finished dates. Observation of this planning document indicated that it was a comprehensive planning document based on program, evaluation and review technique - PERT. Each of the functional areas was considered as a program within which each task was identified.

Input into the master plan came from all of the functional areas of the firm. This concept of the master plan was referred to by all in the focal business. An extract of the conversation that captures this concept is mentioned as: *"a number of meetings (these were held every Friday) we really tried to focus on what is it that we are creating [based on the master plan], what are we delivering, what do buyers and sellers want and the capabilities of the technology"* (Bizmarket, t_1 stage). From the conversation that followed the CEO identified that the aim of the firm was to create an unbiased electronic marketplace: *"so we from very early on knew that we needed to have a true marketplace which sellers and buyers could use and we would add value to this site"* (Bizmarket, t_1 stage). The concept of value adding was in the forefront of the CEO's mind as she had experienced that the master plan would be the driver of such value adding.

Observations made by the researcher suggest that the master plan was necessary to keep the firm on track and was a vital 'cog' in the creation process. While the functional areas used the master plan, each functional area had developed their own objective. The

concept of updating the master file was enforced through the regular meetings. Other functional areas also referred to this master plan which was based on the firm's business plan. The following extract captures some of the concepts of the master plan.

.....we had a very detailed master plan of how we were going to develop this project from day one of the project to the actual launch of the firm....we broke it [the plan] down to the various second stages to operationalize the conceptintegrating the required activities and the activities.....performed by which functional area and by whom...we met weekly and reviewed the plan and its activities....so it was a constantly evolving document (Bizmarket, t_1 stage).

4.2.1.2. Business development

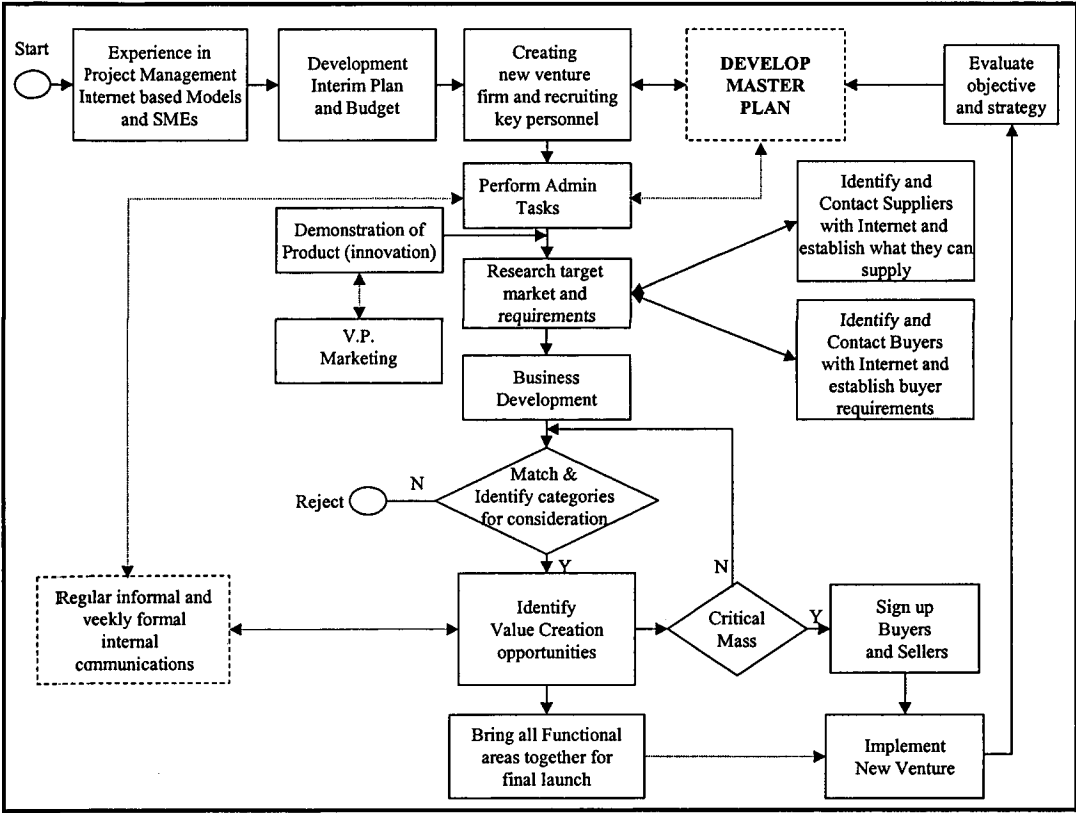
4.2.1.2.1 Macro and micro process activities

The business development functional area was the next key area of Bizmarket that was flowcharted (see Figure 22). This area came into existence after the pre-birth stage (t_0) of the creation process (t_1 stage). This functional area primarily focused on macro activities of the creation process after the pre-birth/gestation stages: *"the go ahead was already established.....that didn't involve us" (Bizmarket)*. As personnel were being recruited and the office created, the group became involved in developing the master plan: *"the master plan was written up in great detail with projected data, based on the primary and secondary research that was conducted" (Bizmarket, t_1 stage).*

The flowchart depicts the prior knowledge and experience of the team members in the creation process (micro stage). This functional area was also involved in substantiating the need for creating an electronic marketplace. The group (Bizmarket) did this by investigating similar marketplaces that were available and by selecting and discussing the proposal with suppliers and buyers who were connected with the Internet. The secondary research was conducted by this group in order to evaluate the cost incurred by SMEs for

their non-core services: "so to determine whether there is a need in the marketplace....it was assumed that the target market were SMEs that were connected to the Internet.....we found that between 27% to 33% of their cost went towards procuring indirect goods and services...that meant many millions of dollars given the number of suppliers and buyers on the Internet and if we could attract a small percentage [to start up with] of that cost then it would be a viable business case" (Bizmarket, t_1 stage).

Figure 22: Flowchart of activities in business development functional area



The activities that followed involved the identification of suppliers and buyers that were connected through the Internet on the assumption that the customers would have some knowledge of the Internet and its functions. Initially a number of known suppliers and buyers were contacted and the idea and the concept was floated amongst them.

Concurrently to these activities, the group was involved in identifying categories of goods and services that were going to be available for the customers. In addition to selecting the categories the group were keenly aware that a minimum number of suppliers and business customers were necessary for each category for it to be viable for the users.

A number of key questions were investigated that included how many categories were needed before the launch, the critical mass necessary, and the perception of the web site by buyer and sellers: *"We thought of six categories and then went through the process of how long it would take to build each category, the number of suppliers that would be necessary and the time it would take to sign them on" (Bizmarket t₁ stage).*

The building of the categories took six weeks, which involved outlining the request for quote forms and developing the 'buying guide'. This buying guide would add value to the product innovation. The buying guide consisted of a number of drop-down windows that would have details of the product or service. For example, in the printing industry, the buying guide would include the quality, thickness, and type of paper and colour details. In addition the guide included descriptions of standardised products such as letterheads and business cards.

Some categories proved difficult and were dropped, for example: *"because the service is fragmented and difficult to manage.....as such it would be difficult to quote and develop standardised buying guidesbecame a complex issue and so we dropped that category" (Bizmarket t₁ stage).* This comment suggests that the standardised categories were necessary for the software to handle the various combinations. Standardisation was also an issue with buyers and sellers and was raised as a concern by them (field notes). In order to develop such a software product, the firm would be required to invest more substantially into the software product development. Suppliers found it difficult to quote on

products that were out of the ordinary, for example, printing business cards was acceptable but when it came to provide quotes on multi-coloured posters, the suppliers found it difficult.

The interesting observation from the discussion was that, although the respondents stated that the innovation needed to be flexible, the software and development cost restriction were high for this new venture start up firm. Although the development cost details were not available to the researcher, the consensus was reached from the discussions held with the functional area personnel that the development cost was a major area of concern (field notes). The business development functional area was also involved in demonstrating the site to known customers. The group found that having a 'live site' as opposed to some mock up charts was more beneficial in communicating the concept to buyers and sellers as follows:

...the majority of them [suppliers and buyers] when we gave them a demonstration of the site, realised it was not difficult. The first five months when we didn't have something too substantial to show them, for them it was just another good concept. As we talked about the usage of the Internet from going from email to actually using the innovation many of them were interested and were eager to sign up. (Bizmarket t₁ stage)

The live demonstration proved valuable to both the SMEs and for Bizmarket: *"90% of the people I gave demonstration actually registered because they found that the process was easy for them to use"*(Bizmarket t₁ stage). Probing further into the 90% take up with the business development group at various levels suggested that although buyers and sellers registered when they demonstrated, only 60% actually signed up as registered suppliers and buyers. The difference between registering and actually signing up was that Bizmarket would then check the credential of the registered customers before they were considered to

be members of the network with the view that buyers would have a number of credible suppliers. The objective of this exercise was that Bizmarket would at a later stage grade the suppliers on their performance, such as on time delivery competitive pricing (t_2 stage). Sellers and buyers that were deemed not to be performing would be selected out of the network.

4.2.1.2.2 Setting objectives in dynamic environments

Observations made by the researcher and discussions with the business development team suggested that the strategy based on the original objective was shifting after the launch of Bizmarket. Due to the low levels of revenue being generated for the firm and the slow diffusion process, the business development team was considering revisiting their business objective in consultation with the other functional areas. When approaching unknown suppliers and buyers the team found that the firm was unknown to many of their prospective clients. In other words, the brand awareness of the firm had not been established in the minds of these customers. This macro activity is interesting to the researcher as Bizmarket failed to create brand awareness at the commencement of the project. In most instances they depended on *"word of mouth amongst known suppliers and buyers"* (Bizmarket t_1 stage). This conclusion was reached from having discussions with the marketing personnel after the initial stage of the process. Rather than actively promoting creating brand awareness for the organisation, the firm depended on free publicity e.g. one write-up in a business magazine and 'flyers' to businesses in the Sydney metropolitan area.

In order to accelerate the diffusion process Bizmarket developed another strategy: *"our strategy has sort of shifted (after the launch) from trying to create our own brand image and market, just Bizmarket....towards providing a wholesale model to large [well*

established] organisations who have an existing large customer of SMEs" (Bizmarket, t_2 stage). This view was also shared by others in Bizmarket and in particular the product and business development groups after the launch of the firm. The strategy was to use the brand image of the established firm (e.g. Bank) with the Bizmarket innovation 'sitting behind' the Bank's system. So when SMEs opt to transact using the corporate logo, Bizmarket's innovation would be activated, opening new doors for the firm. This observation reflects that Bizmarket was continually re-evaluating their objective and strategies in order to meet the changing nature of the marketplace, that is, changes demanded by buyers and sellers.

4.2.1.3. Technology development

4.2.1.3.1 Macro process activities

The following flowchart Figure 23 identifies the macro activities to the technology functional area of Bizmarket. As stated before, the primary objective of this functional area is to provide a flexible, low cost, low maintenance product innovation.

Members of this functional area had prior knowledge of the technology and experience of having worked on similar models and projects. The technology functional area was not involved in establishing the need for creating the new venture rather their focus was to cater to the needs stipulated by the suppliers and buyers. For example, the user friendliness of the web page, easy login, easy browsing, step-by-step order processing security and anonymity of the quote were some of the needs. The primary activity of this functional area was to develop a brief of the project and to use the brief to develop computer program specifications for technology suppliers. Following this process the group was involved in using a tendering process to bid on the specification. The software

development firm (PRAXA) was selected, not on cost, but on their ability to be flexible in developing the product innovation and their past reputation in having developed similar systems. Although a face-to-face interview with PRAXA was not undertaken, the researcher was given access to correspondence and discussions that were held with them were incorporated in the discussion with Bizmarket's technical personnel. This information was used to triangulate the information provided by the product development group.

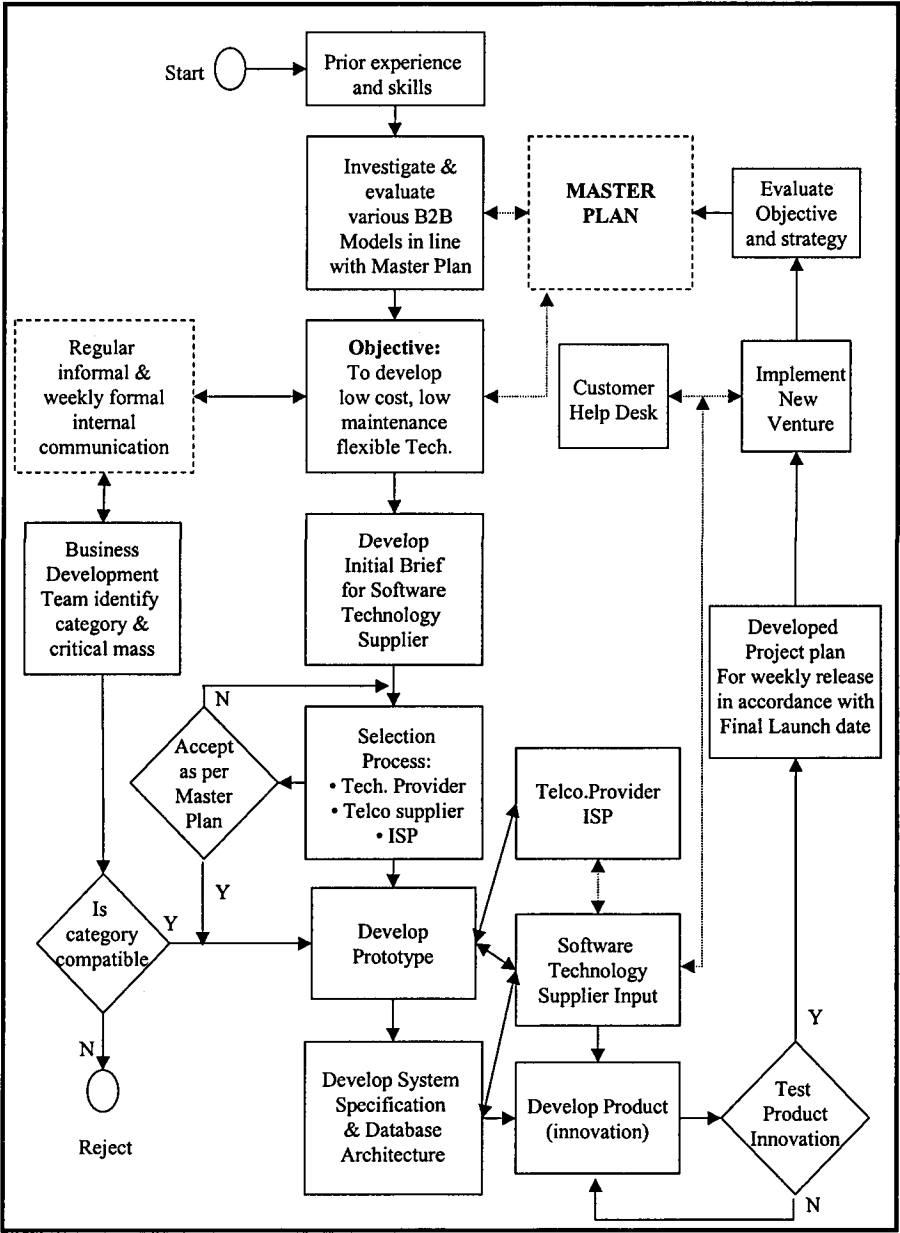
The technical functional area was involved in evaluating various models. Yet, arguably, this research and evaluation was superficial as the concept and model was well established in the minds of the entrepreneur. The task therefore was not evaluation of different models, but rather evaluating the visual appearance of the models e.g. colour layout etc is described below:

....we would have liked to have actually investigated and evaluated or had a few discussions around, you know, borrowing someone else's technology. When I thought about it, I mean in parallel we were also looking for people to build it. It seemed to us that it would actually be cheaper to build it as long as you know what you wanted than it was to borrow someone else's and have to make changes to fit [the objective](Bizmarket, t₁ stage).

In addition to managing the building of the product technology, the technology area was involved in discussion with the business development area and known suppliers and buyers in developing the buyer's guide, and other third party participants such as Internet Service Providers and Telecommunication firms (field notes). Claims made by the technology functional area and the business development functional area suggested that they were involved in evaluating the firm's long-term objective and strategies. The following extract captures this claim:

Our strategy was to distribute our product through a wholesale model [offer to establish corporations] to brand it by them ...so (their) customers [can use it].... so in that sense our alliance partners are important customers this is called 'white labelling' the idea being to get behind as many established firms and for their SMEs could use the product without actually having to join us (Bizmarket, t₂ stage).

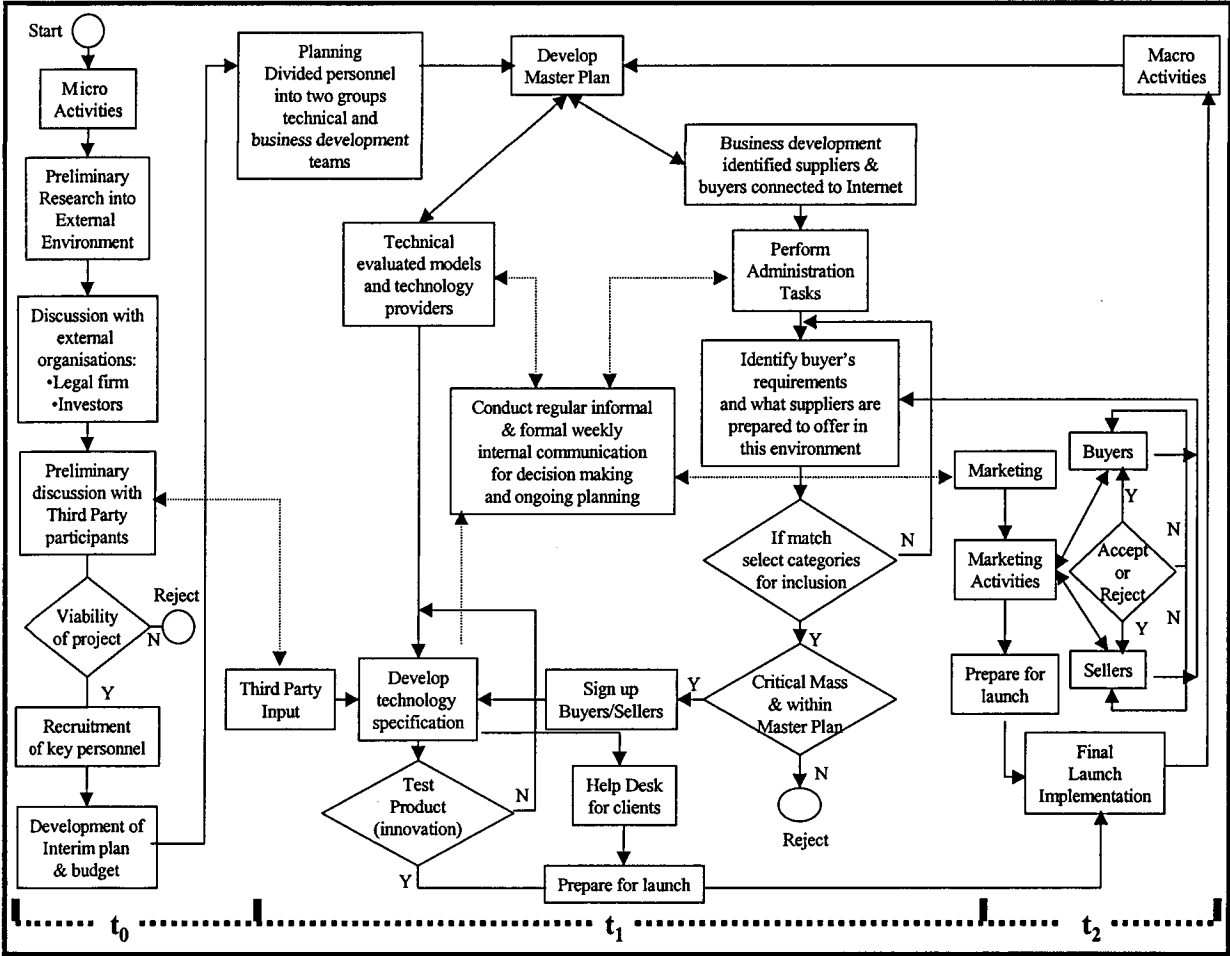
Figure 23: Flowchart of activities in the technology function area



4.2.1.4 Time ordered sequence of activities

Figure 24 depicts the micro and macro activities over a longitudinal time frame, that is pre-birth, birth or creation process and finally the launch of the firm embedded in the product innovation. This was developed by using the flow charts from the individual functional areas and through discussions with Bizmarket’s CEO. The concept of the master plan that was developed had been the driver of the creation process. This master plan was reviewed regularly as suggested by the following extract: *"we had a very much integrated master plan where we basically managed the (creation) process ...we got together and reviewed the objective, strategies that we were developing weekly"*.

Figure 24: Integrated flowchart of all activities of key functional areas over time



In summary, the micro activities were based on a preconceived model (RFQs) and research was conducted based on this model with known and experienced operators. Based on the capabilities of the team members and some research, a master plan was developed. This master plan was updated through inputs received from the different levels of the functional area from input from third parties. The macro activities were the detail activities that each of the functional areas managed. Both the macro and micro activities were parallel activities that operated in a dynamic marketplace.

After the launch of the firm, the realisation that the B2B e-market firm was not performing to its expectation, along with financial constraints, led to changes in objectives and strategy. From the time of its conception to the launch the objective changed, which was possibly due to the flexible nature of the firm as captured by the following extract: *"the beauty of running a start up [firm] is that it's constant evaluation of alternatives....the flexibility that a small agile company gives you, you [can] translate [this flexibility] directly into the changes you require to meet the needs" (Bizmarket, t₂ stage).*

One can argue that the master plan was an integral part of the planning process and the macro and micro activities were a consultative process between the functional areas. Therefore, the formation of new venture B2B e-market firms is dependent on the consultative process of macro and micro activities in line with a master plan. In turn this master plan is dependent on it being flexible in order to meet the changing nature of the objective over time. The refined working proposition is stated as P¹:

P¹: The formation of the new venture B2B e-market firm is dependent on a consultative process of macro and micro activities in line with a master plan that

has the flexibility of changing the objective over time, rather than a sequence of unrelated events based on a static objective.

Comments:

This proposition claims that the creation of new venture B2B e-market firms takes place in a dynamic environment and as such the objective needs to be flexible in order to meet the requirements of the market. At a strategic level, both macro and micro activities are dependent on a consultative process such that the innovation may lead to new applications for the B2B e-market firm.

Researchers have viewed creation as an unfolding process consisting of several stages in a certain order of unrelated events, while others have stated that the decision to adopt a new product may be optional, consensus-based or authority based (Cooper and Zmud 1990; Zaltman *et al.* 1973). However, in a new venture start-up the stages are, at best, blurred. Scholars have studied the creation of new business either at a pre-birth stage or after the birth of the organisation. Drawing on Katz and Gartner(1988) this thesis, however, provides a more 'complete' understanding of the process by including both macro and micro environments.

Models discussed in literature, for example Moor (1984), indicate a static environment. In contrast, models by Booz and Hamilton (1968) and During (1986) suggest a more dynamic environment. In order to meet the challenges of a dynamic environment such as the B2B e-market, empirical data suggests that objectives need

to be flexible. Furthermore, a master plan is necessary to control the macro and micro activities and as such is an important contribution to theory.

4.2.1.5 Decision processes in new venture creation

4.2.1.5.1 Decision to adopt or reject an innovation

The second working proposition developed from literature focused on the decision making process and was stated as:

WP₂: The decision to adopt or reject an innovation can occur at any point within the linear innovation-decision process rather than at a fixed stage of this process.

As seen in Figure 24, the decision (see the diamond symbol in the integrated flowchart) to adopt or reject an innovation can occur at any point in the creation process. At t_0 , decision on the viability of the project takes place that is based on the experience of the entrepreneur, interim research, and the consultative discussions with experts in the field. Once past this stage however, a number of decisions that are made focus on the technological innovation: *"the decision process that we went through was very focused around the technology....the types of categories and (the time)...when we could actually have the product that was ready for suppliers and buyers to use"* (Bizmarket, t_1 stage). During this decision process the sellers and buyers were consulted and are captured by the following extract: *".... contributed by [providing my input] into improving their [Bizmarket] product"* (Buyer and seller firms, t_1 stage). Discussion with the various functional areas suggested that once the decision was made to adopt the model the

remaining decisions were either of a technical nature or based on the rejection or acceptance of the concept by the sellers and buyers. For example, the decision to accept or reject a category for inclusion was made on whether or not a critical mass of buyers and sellers could be persuaded to sign up or the suitability of the category of goods and services. Discussions with the technology functional area suggested that the decision to build the product from scratch was made on the basis of cost and reliability of the technology provider.

4.2.1.5.2 Technical and marketing activities

The description from the interview with the technology team also revealed that the RFQ model that was developed was tested at all stages of the development process. This test was carried out at each stage and was evaluated against the system specifications: *"we actually tested the system really well... We got everyone from the various functional area to test the system thoroughly...we released the product in weekly releases so that we could test the components of the system...if you found errors in code, errors in the software development then the contract was that the technology providers would fix it"* (Bizmarket, t_1 stage). The technology providers had a 'say' in the decision process too (field notes). The market requirements were discussed with them and at times the software was restrictive or the cost was restrictive to develop certain aspects. Decisions were made to either shelve the idea for a later stage or provide funding for the development if the feature were deemed necessary. This decision process was made by the product development team in consultation with the other functional areas (field notes).

The case data suggest that the adoption of the innovation was the sole aim of Bizmarket during the birth stage t_1 . The research done by the CEO indicated the viability of

the project and the ability of the project to generate funds from investors: *"I had seen it work in the US"* and the concept there had merit as new venture firms were able to raise funding for such projects: *"\$US1.5 million....people in the US give new venture a go and don't punish you if you fail...(a similar start-up in the US) received US\$68 million in three lots of funding between 1998 and 2000"* (Bizmarket).

The decision on selection of personnel was based on accumulated experience, skill and understanding of similar projects. This suggests that the adoption of the concept was very high in the minds of the personnel. As such the skills, knowledge and experience were challenged from the time the personnel were first recruited.

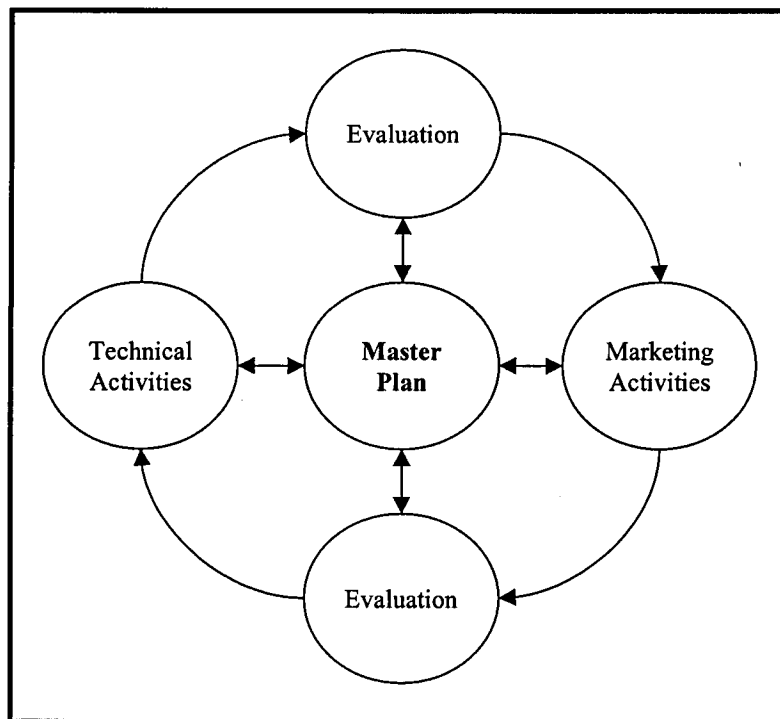
While the technology functional area concentrated on the development of the innovation, the business development group was concurrently busy in promoting and marketing the firm and its product in order to sign up sellers and buyers. The objective was to have as many sellers and buyers on the system within each of the categories prior to the launch of the firm as possible. However, discussion with the CEO indicated that marketing was not a high priority for the firm: *"so we had quickly learnt [from others mistakes] a lot of marketing money on our brand was probably not going to make sense...people have spent millions on marketing and now they are not"* (Bizmarket, t_1 stage). Others recognised the value of marketing the product on a site by site basis and depended on word of mouth in order to spread the concept to suppliers and buyers. The marketing team, however, used mail outs and telemarketing to promote the business. However, once the pilot was developed the business development group used the pilot system to demonstrate it to prospective clients.

One can argue that the decision to adopt or reject an innovation was dependent on the constant evaluation of technical and marketing activities within the innovation decision

process rather than at a fixed point. The working proposition can therefore be refined as stated in P^2 and is depicted by Figure 25.

P^2 : The decision to adopt or reject an innovation can occur at any point within the dynamic innovation-decision process and is dependent on the continuous evaluation of technical and marketing activities rather than at a fixed stage of this process.

Figure 25: Decision process in creating B2B e-markets



Comments:

This proposition claims that the decision to adopt or reject the innovation can take place at any point of the creation process and is dependent on technical and marketing activities of the firm. Technical activities could comprise of technological breakthrough, preliminary design and technical feasibility, product development,

pilot production, while marketing activities could include the promotion of the firm with the view to sign up enough suppliers and buyers within each category so as to reach a critical mass.

This theoretical development challenges the fixed concept of the innovation decision process (Rogers 1995) by suggesting that the decision to adopt or reject an innovation can take place at any point in the process. Further, it is a continuous process rather than a fixed process. The decision to adopt or reject can also be triggered by third party participants (Biemans 1989) and may not rest solely with key players with the firm (Chakrabarti *et al.* 1982). Further, in a network environment such as the B2B e-market environment sellers and buyer may affect the decision process. The important contribution to theory is the concept that the decision is a continuous process and it can be influenced by third party members and other firms (seller and buyers) in the network especially when the technology embedded in the start up new venture is developed by a third party.

4.2.1.6 Implementation processes in new venture creation

The next working proposition that was developed from literature focused on the implementation process and was stated as:

WP₃: The implementation of an innovation follows a set of sequential steps where each step interacts with the previous step through feedback loops, rather than a linearly sequential chain of activities.

4.2.1.6.1 Implementation process as set of parallel activities

Description of the implementation stage suggests that each step interacts with the various functional areas of creating a B2B e-market. As stated before, in order to create the firm based on the technology, the activities that took place were parallel activities all leading to the launch of the product. These activities were co-ordinated through interrelated functions of the two groups, that is, business development and technology development functional areas:

so the process [implementation] kind of had to happen in parallel [with other activities]again parallel activities all leading to the eventual launch of the site where we already had a couple of hundred suppliers involved....so the adoption had already begun earlier in the process ...then once we got the live date I think a week later we started some awareness driving marketing etc (Bizmarket, t₁ stage).

Although parallel activities took place, the technology team used feed back loops when testing the innovation both within the firm as well as with those suppliers and buyers who they knew and were used as advisors in the creation process. The business development team also used feed back loops in order to ascertain the type of categories between the technology providers, technology functional areas and buyers and sellers. These feed back loops were not only between the functional areas but also with third party participants.

One can argue that the implementation process follows a set of parallel activities with feed back loops rather than as a linearly sequential chain of events in a B2B e-market environment. Therefore, the refined working proposition is stated as P³ and is depicted in Figure 26.

P³: The implementation of an innovation (in a B2B e-market environment) follows a set of parallel activities with feed back loops rather than a [set of] sequential chain of activities.

Comments:

This proposition claims that implementation of the B2B e-market firm is a set of parallel activities with feed back loops between the functional areas such that the firm and the innovation on which it is based can be commercialised together. This is different to the conventional new product development process where the activities are sequential as shown in Figure 27.

Figure 26: Parallel activities in implementing a B2B e-market firm

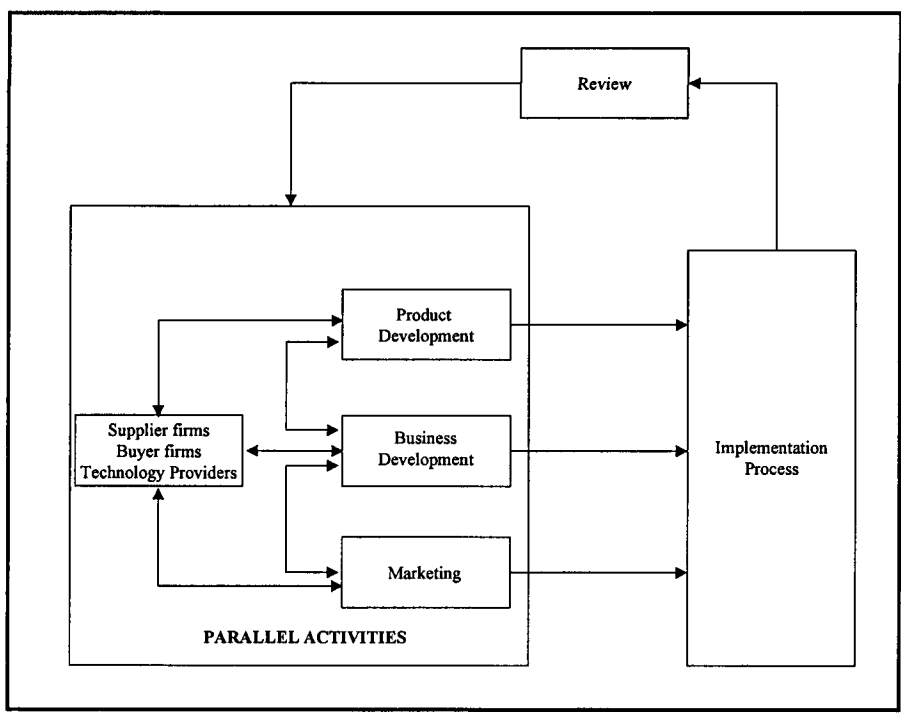
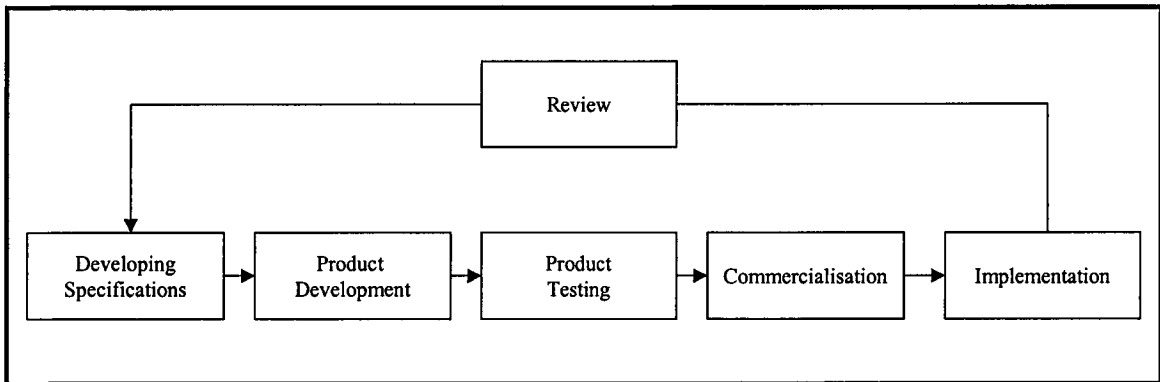


Figure 27: Sequential activities in NPD implementation process



As innovation scholars have ignored research on innovation implementation (Klein and Sorra 1996) and extant literature also does not provide adequate information on the sequence of implementation activities (Chan and Swatman 2000; Cooper and Zmud 1990; Premkumar 1994), this thesis contributes by providing an understanding of the implementation process for a start-up new venture over time. Marketing literature on new product development provides a model of sequential activities in the implementation process, however, empirical data in this thesis suggests that implementation is a set of parallel activities with loop back provisions.

4.2.2 Marketing activities in networks

The following working proposition in the diffusion process focuses on the marketing activities between buyers and sellers in the network. The working proposition developed from the literature is stated as:

WP₄: In a dynamic B2B e-market environment, the organising of marketing activities between buyers and sellers is loosely coupled in the short term rather than rigidly coupled.

4.2.2.1 Loosely & rigidly coupled relationships in performing marketing activities

This working proposition suggests that the relationship between sellers and buyers is 'open', that is, buyers are free to 'post' a tender (within the network) and any seller (within the network) can bid for the tender. As stated in Chapter 2, buyers and sellers co-evolve, that is, buyers can exploit fresh relationships of opportunities with sellers that are competitive and drop deteriorating ones. Marketing activities in a dynamic environment suggests that buyers and sellers deal with the information on price and product description: *"this [quote] is what I want (product description) this is when I want it by and you [seller] get the prices back [with some additional non-identifiable information]" (Buyers, t₂ stage).*

Due to the anonymity of the buyers and sellers in this environment, the sellers and buyers consider this form of transaction through this channel as a low cost non-committal environment: *"from a supplier's perspective, we see it as a new channel and a new low cost way of acquiring new business and just that" (Suppliers t₂ stage).* Discussion with sellers suggested that by joining Bizmarket they were getting a constant flow of quotes: *"getting two or three requests for quotes a week was the norm"* from buyers that were ready to buy: *"ready and interested in purchasing my product"* was a new experience. The sellers did not have to use their sales staff door knocking or making cold calls: *"I come to work and turn on the computer and I have a few quotes on the system and I would sit down and say ok this*

is going to take me 10 minutes...and it is not costing me...I have two sales representative and they are costing me salary and car expenses, telephone before they step out of the door...this [Bizmarket] enable me to reach more people new business" (sellers and buyers t₂ stage) without the need to develop any sort of relationship with the buyer.

Conversations with sellers and buyers indicate that using Bizmarket provides an additional link but is not personalised and as such the relationship between them is loose. Sellers did not anticipate these relationships; they just happened through this channel and did not require them to cultivate the relationship. Further discussion with the sellers suggested that they were not about to abandon their existing relationships that they had created over time but use Bizmarket as and when it suits them. One possible explanation to break away from existing relationships was that the Bizmarket concept was new and the fear that they would lose out on reciprocal trade: *"I'll lose all my reciprocal trade and there is that view that they can 'trade off' in your brain [perception] which is, how much can I save and how much could potentially cost me if all the reciprocal deals I have, fall over"* (Buyer and sellers t₂ stage).

Further observations made during the interview process suggests that the sellers and buyers that had recently joined Bizmarket and were not quite sure of how it would impact on their business over time. The concept was new and exciting and they were happy to get new business and there were certainly some cost benefits, but the attitude captured through the discussion was 'I would like to wait and see how this all pans out over time' (field notes). Bizmarket was aware of this perception of the buyers and sellers, and one of the strategies that they were pushing was to get the sellers and buyers that have existing relationships to conduct their existing business through Bizmarket (field notes). The outcome of this strategy is outside the scope of this thesis because, at the time of the

interview process, buyers and sellers were yet to be convinced of the phenomenon. From Bizmarket's point of view however, grading the performance of suppliers indirectly suggests that non-performing sellers would eventually be dropped from the network and new sellers would be persuaded to join. This working proposition does not require any change and the proposition is stated as P⁴ below:

P⁴: In a dynamic B2B e-market environment, the organisation of marketing activities between buyers and sellers is loosely coupled in the short term rather than rigidly coupled.

Comments:

This proposition claims that buyers and sellers join the B2B e-market firm to gain more business rather than lose their existing relationships at this early stage of the adoption process. However, this relationship is not as rigid as their existing relationships that they have cultivated over time.

This proposition confirms the argument proposed by scholars (Eisenhardt and Galunic 2000; Madhavan *et al.* 1998). The proposition developed extends the argument to a start-up new venture operating in a network environment.

4.2.3 Participants

The participants in the focal business network consist of the participants in the focal B2B e-market firm, the sellers and the buyers. Third Party participants include Technology

suppliers, telecommunication and Internet Service Provider (ISP), legal advisors and investors. The focus of this section, however, is on the relationship and impact of the Network Champion (NC) and other key champions in the network together with the third party participants. From the conversation held with the various functional areas, the NC was identified as a person who was not a part of the organisation but was involved in the creation process from the pre-birth stage to the launch stage. This person was an investor and shared the risk through his investment in Bizmarket. Identification of the Network Champion is captured by similar expression in these following extracts:

that was a decision [to go ahead with the project] that the CEO and X made prior to me joining....from that point of view they were going to fund the start of the project and they were confident that they could raise the money to get the site built and hire the teams (Bizmarket, Business Development group 2002).

I knew X from my past contacts and he requested me to join the firm as a supplier (Supplier)

He [X] works for an investment bank and heads up the media information and technology section....he is our competitive advantage....he gets to see a lot of business models and business plans and he is quite knowledgeable about technology and the marketsdid not necessarily influence any day to day operation matters (Bizmarket, Business Development group)

He [X] has a background in Internet technology so as an external [to Bizmarket] person he is involved. In the initial stage (t_0) he was heavily involved but not so at the later stages (t_1 and t_2) of the venture (Bizmarket, CEO).

The figures that follow are working maps drawn from the perspective of the NC and the product champion (PC) and the business development champion or implementation champion (IM). For the purpose of this thesis the Chief Technology Officer's activities and responsibilities have been that of a PC, while the Vice President Business Development's had the ultimate responsibility of developing and implementing the innovation. For the

purpose of this thesis, the Vice President Business Development is the IM. The activities and responsibilities of the CEO have been that of a new venture champion (NVC).

The working maps for each of the champions, that is, NVC, IM and PC are drawn in relation to the NC. These working maps culminate in an integrated map that depicts the direct and indirect relationship over time. Although the business development group is considered to include the responsibilities shared by the VP Business development, Manager Corporate Development and Admin Manager, it is the responsibility of the VP Business to ultimately implement and commercialise the new venture (see Figure 19). The Chief Technology Officer is considered to be the product champion in this thesis. The key to the working maps are given below:

Table 9: Key to the codes used in the working maps

Key Code	Examples of relationship description
(+)	Makes better; promotes; expedites; make possible.
(-)	Hurts; impedes; prevents; inhibits.
(≠)	Won't positively effect; wont help; won't promote.
(Ø)	Won't effect negatively; effects that are not positive.
(m)	Affects in some way; somehow effects.
(=)	Is equivalent to or (≠) as not equivalent to.
(0)	Has no effect; has no relationship.
(e)	Is a member of a set or (ê) is not a member of the set.

Note: Codes are only used to depict the strength of the relationship between the participants. The direct and indirect relationship between the NC and others in the network is the interpretation of the researcher based on the case data.

4.2.3.1 Direct and indirect relationship over time

The working proposition developed from literature focuses on the relationship between network champion and other champions in the network and is stated as:

WP₅: In a B2B e-market context (in contrast to EDI), network champions hold direct relationships with creation and implementation champions and third party participants rather than attempt to maintain direct relationships with suppliers and business buyers.

4.2.3.1.1 Relationship between network champion and new venture champion

Figure 28 below depicts the relationship between the Network Champion and the New Venture Champion. It suggests that the relationship between the NC, third party legal consultants and investors and selected known suppliers and buyers is positive. It can be interpreted that there is a direct relationship between them as the NC was in constant touch with these participants at the early stages of the creation process. However, in the latter stages of the creation process, that is t_1 and t_2 stages the NC did not have direct relationship with other champions, except the New Venture Champion (field notes).

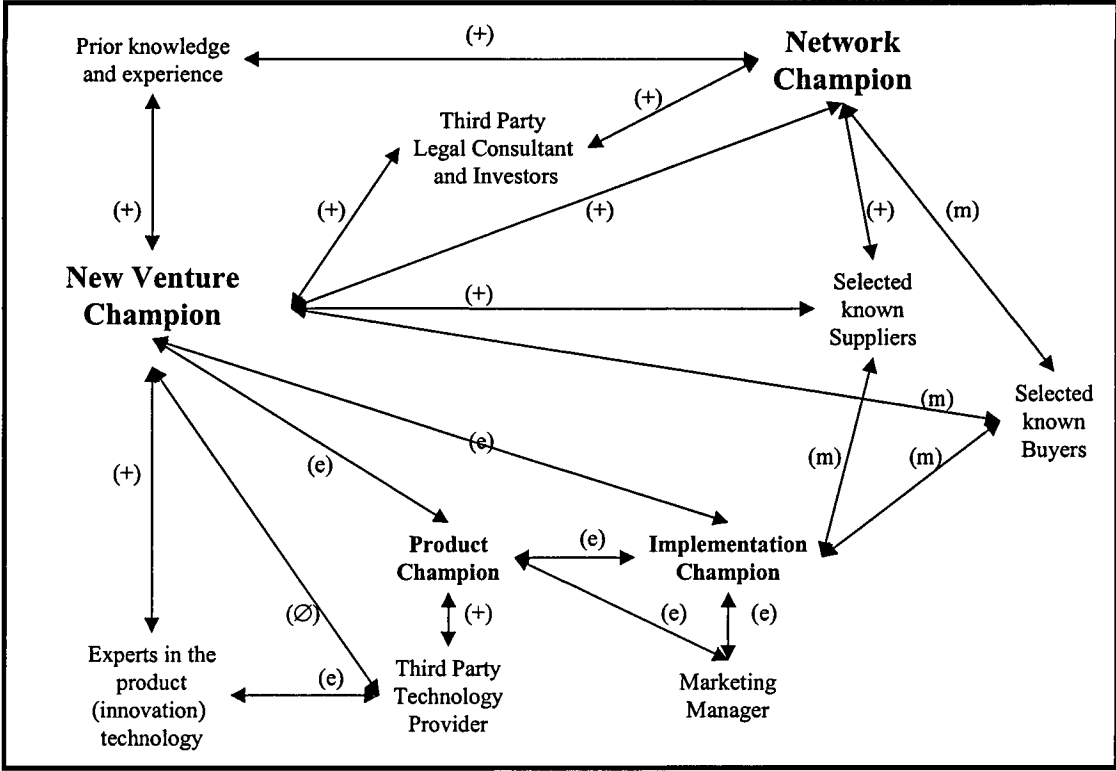
While the map also suggests that both the NC and NVC had prior knowledge and experience in the innovation the NC did not have direct relationship with the PC or IM. The figure also shows the relationship between and amongst other participants in order to provide a total picture from the New Venture Champion's perspective.

The case data suggests that both the NC and the NVC had a good relationship and understanding of the business, and the capabilities of the innovation:

[we knew that] basically using the Internet and its ability to connect companies ...its ability to store information and that it could be accessed by buyers and sellers that join the firm made a lot of sense and we had done this face to face as consultants (in the US) in terms of the industry..B2B was a buzz word but had a lot of opportunity....[risk was implied] it's a really big step for us to start a new venture (Bizmarket, NVC t₀ stage).

Case data captured during the interview also suggests that the NC contacted known suppliers and buyers initially (during the pre-birth stage of the creation process). These known suppliers and buyers were requested by the NC to join the firm. They were either personal friends or were intimately known to the NC from a business point of view. This notion was also captured in conversations with the suppliers and buyers who were interviewed by the researcher (field notes).

Figure 28: Relationship between NC and NVC in the network



The excerpts from the interview suggest that the NC and the NVC were involved in promoting the concept to investors as captured by this extract: "*we thought we could generate enough funds up front to get us through the initial period*" (Bizmarket NVC, t_0 stage). Both the NVC and NC relied on information from known suppliers. However, buyers affected the creation in some nonzero way, whereas suppliers relationships were positive as outlined below. The suppliers and buyers also supported this:

So, it was actually important to us to get the suppliers involved. We did do some interviewing with (known) buyers ...and suppliers [who] are used to having to respond to quotes as long as the information that they needed [was available]. Whereas buyers depend on what they are wanting to buy and how [the process] they [procured] it (Bizmarket, IM t_1 stage).

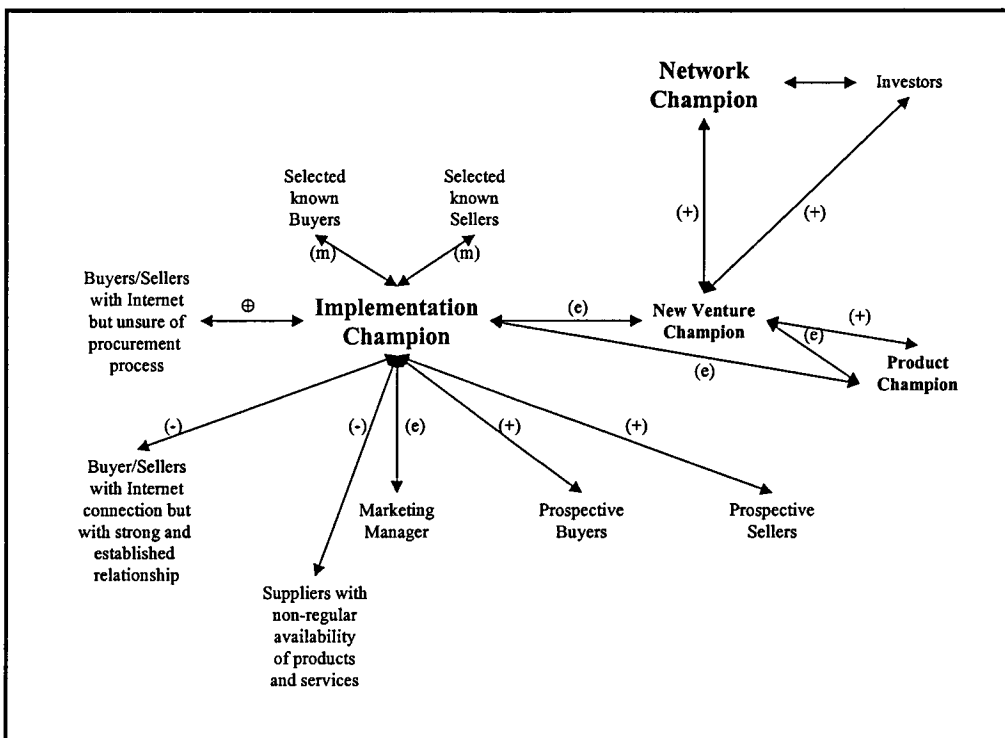
The following remark suggests that a legal firm was engaged in the creation process to provided advice and assurance to investors: "*We use which is a very large legal practice in Sydney..... we pay for (their services) gave us advice and gave investors a lot of comfort too that their investment was well protected*" (Bizmarket NVC, t_0 , t_1 and t_2 stages). Figure 28 also depicts that the NC had direct relationships with the key players: "*NC would give back and give his views and his knowledge to NVC and therefore back to us. So, indirectly the NC was having an influence in the decision-making process of the business*" (Bizmarket, IM, t_1 stage).... but the NC had indirect relationships with experts in the product technology third party technology providers (field notes). The NVC had direct relationship with experts: "*...that sort of advice can come from someone who knows the technology and what [Bizmarket] is trying to achieve*" (Bizmarket, IM, t_1 stage) but not so in the case of third party technology providers: "*No and neither did I [not NC or NVC]we have never actually been in to see how it [the product -innovation] worksas the*

[technology team was to focus on the development of the technology]" (Bizmarket, NVC, t_1 stage) .

4.2.3.1.2 Relationship between network champion and implementation champion

Figure 29 below depicts the causal relationship between the NC and the IM. It also shows the relationship with other actors in the business network. The main focus of this map is to illustrate the relationship in terms of the IM. From the IM perspective, the NC has an indirect relationship through the NVC. However, the IM has a direct relationship with the other actors in the network. When the IM was appointed at the birth stage of the creation process the IM had direct relationships with those known champions who were introduced by the NC. The IM also has direct relationships with the product champion but the NC has an indirect relationship through the NVC.

Figure 29: Relationship between the NC and IM in the network

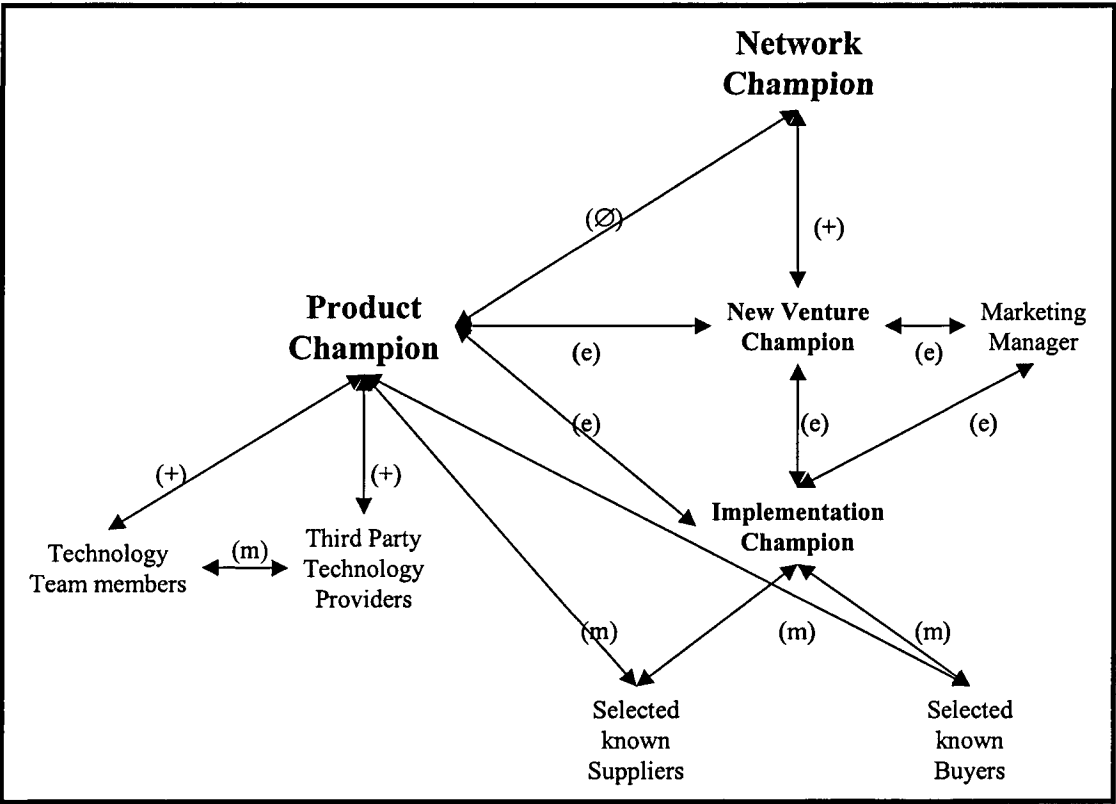


4.2.3.1.3 Relationship between network champion and product champion

The final working map depicts the relationship between the NC and the PC. Figure 30 shows that the PC's relationship with the technology providers and technology team members was strong. The PC had direct relationships with the NVC and the IM but an indirect relationship with the NC. At this stage of the creation process the PC was involved in the development process and although her responsibility included negotiation with the ISP, the initial introduction and discussion had been initiated by the NC.

Observations made by the researcher and field notes collected suggest that the NC did not get involved in the daily operations of the business: *"he did not influence or effect the core of us but did get involved with the investors of the firm"* (Bizmarket, IM, t_1 stage).

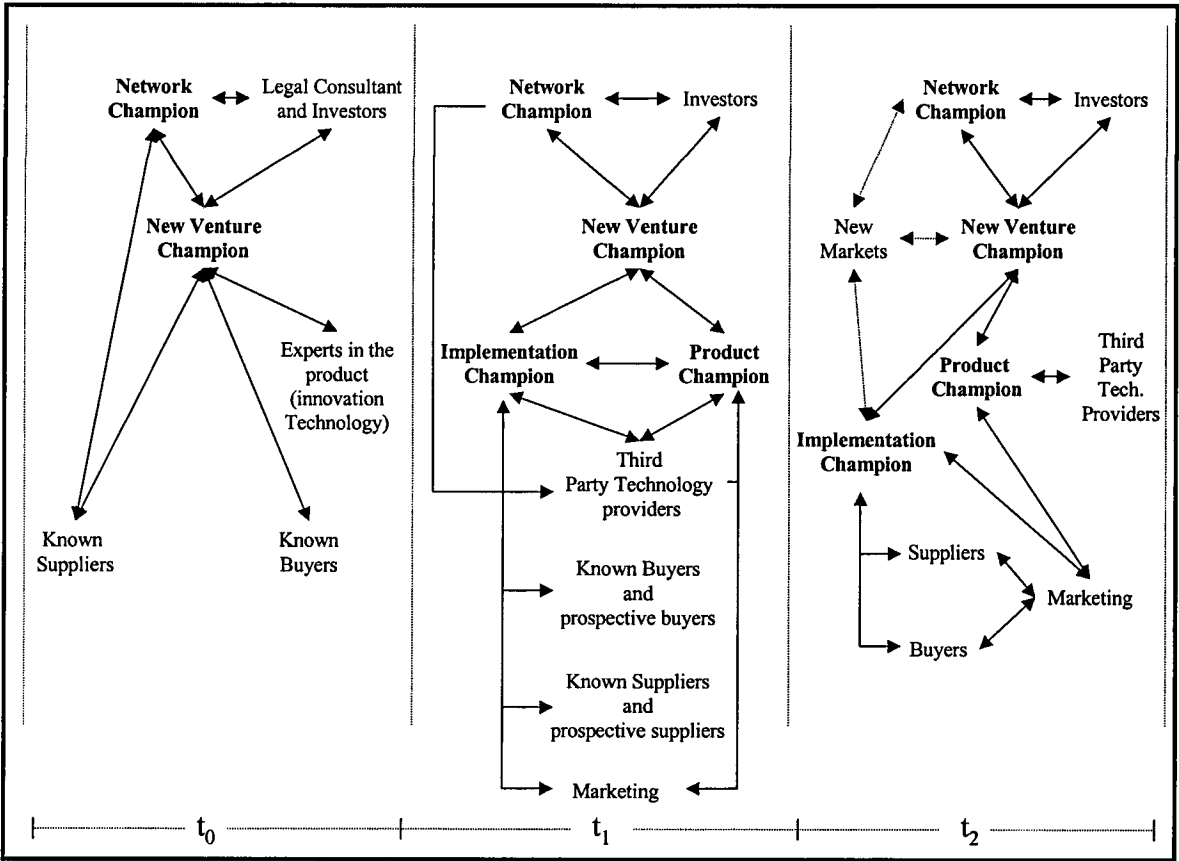
Figure 30: Relationship between NC and PC in the network



4.2.3.1.4 Integrated map of direct and indirect relationships over time

The next map Figure 31 is an integrated map of the relationship of the NC with other champions and third party participants over time. As such, the map depicts the creation process, at t_0 , t_1 and t_2 . The map depicts the direct relationship with the participants at the early stages of the creation process while identifying the indirect relationships with the participants over time. However the NC maintains a direct relationship with the NVC throughout the three stages of the creation process and, together with the NVC, also maintains a direct relationship with the investors. However, the NC has an indirect relationship with the other champions in the creation process.

Figure 31: Direct and indirect relationships over time



The figure above also depicts the concept of new markets in t_3 for the innovation and its guardians to focus on. Additional longitudinal data would be required to evaluate the relationship between the NC, the NVC and the IM.

One can argue that in the B2B e-market environment the NC holds direct relationships with the NVC and Investors throughout the creation process, but maintains indirect relationships with the other champions over time. The working proposition can be refined as P^5 and stated as:

P^5 : In a B2B e-market environment NCs hold continuous direct relationships with the NVC and investors, and indirect relationships with the PC and IM, rather than attempt to maintain direct relationships with suppliers and buyers over time.

Comments:

This proposition claims that in a B2B e-market environment, the relationships between the NC and NVC are direct but the relationship is indirect with other champions over the creation process of the new venture.

The theoretical contribution of this proposition extends the scholarly contribution of Markham (1991), Markham and Griffin (1998) and Boyson, Corsi, Dresner and Rabinovich (1999) by developing the network concept of start-up new ventures. The importance of this concept is the changing nature of relationships between champions over time.

4.2.3.2 Impact of network champions on participants over innovation

The second working proposition in this section focuses on the impact of the NC on the participants, such as buyers and sellers in the network. The working proposition developed from the literature is stated as:

WP₆: The involvement of network champions who can be identified to support potential participants to "buy into" the innovation, results in the likely acceptance of the innovation.

Evaluation of the case data suggests that the NC was not involved with the potential participants. Rather, the IM objective was to promote the firm and its functions to suppliers and buyers: *"the business development team were working very hard to find suppliers and buyers for the site" (Bizmarket, IM, t₁ stage).*

During the pre-birth stage of the creation process the NC did discuss the viability of such a model with known suppliers and buyers, however, the business development functional area conducted the task of marketing the model to prospective clients. This was initially conducted using conceptual diagrams, followed by the pilot web site and ultimately the live web site demonstration. This process did not involve the NC. One can argue that the involvement of the innovation champion who represented the business development functional area influences potential suppliers and buyers to sign up to join the firm. Therefore the working proposition can be refined to reflect that the implementation champion rather than the network champion influenced potential participants to buy into the innovation. The refined proposition is stated as P⁶:

P⁶: The involvement of the Implementation Champion who supported potential participants to "buy into" the innovation resulted in the likely acceptance of the innovation more so than did the involvement of the Network Champion.

Comments:

This proposition claims that the business development functional area headed by the IM was the one who was responsible in persuading potential suppliers and buyers to sign up to join rather than the network champion.

The theoretical contribution here is the validation of the contribution made by network champions who act as 'marriage brokers' to bring about new relationships amongst enterprises at multiple levels (Woodside and Wilson 1994). Although the NC was involved at multiple levels, the data suggests that it was the IM who was more involved than the NC in persuading the participants to 'buy into' the innovation.

4.2.4 Product innovation

4.2.4.1 Knowledge of innovation based on CDI

The working proposition developed from the literature focuses on the product innovation that is based on CDI. This working proposition suggests that the sellers and buyers require intimate knowledge to implement the innovation that is based on CDI and it is stated as:

WP7: Implementation of innovation based on CDI requires greater knowledge by suppliers and business customers than does incremental innovation.

Cross-functional analysis of the case data suggests that the participants in Bizmarket, rather than the suppliers and buyers, required the knowledge of the innovation based on CDI. The selection of the personnel was based on them possessing accumulated experience, knowledge and skill. The product development team in conjunction with the known buyers and sellers and the technology providers made the innovation user friendly. Buyers commented that the system was easy to use and they could train junior staff to use the system. They also commented that the availability of the buyer guide on the site was of help to the staff who had a restricted knowledge in procurement. Thus, respondents observed that the information:

was all there ...it was great...if you are going to order business cards for example you need to choose the GSM...if you do not know what GSM is then you click the right button on the window and it would tell you, it is that easy...this also allowed us to improve our skills and we received accurate quoteswhere we could compare the price and the product qualities (Buyers, t₂ stage).

Bizmarket's selection of SME target markets was based on these firms having access to the Internet. So the SME already had the working knowledge of the innovation. This helped in speeding up the adoption process of the innovation. Observations suggest that the suppliers and buyers accepted Bizmarket as another channel for transaction. For example, buyers and sellers stated that using Bizmarket was an extension of using fax or email. Using Bizmarket then can be interpreted as incremental innovation for the suppliers and buyers. However, comments made by members in the functional areas of Bizmarket suggest that even though they had accumulated experience, developing a RFQ model was a

first. The concept for them was easy to understand but operationalizing the concept proved to be difficult and expensive. This is because, during the birth stage of the concept, Bizmarket was unable to demonstrate the working of the site and prove its attractiveness to suppliers and buyers. The concept developed on paper was acceptable to known suppliers and buyers who had contributed in its development. However, others were more cautious about the phenomenon. In the development and implementation stages of the concept, that is, the stage when the pilot site was developed, Bizmarket was able to demonstrate the site and the diffusion process proved to be more acceptable to prospective suppliers and buyers. Bizmarket was able to demonstrate the relative advantage of the innovation, explain the compatibility with their (supplier's and buyer's) existing technology, and suppliers and buyers were able to try out the site from a remote location. In order to demonstrate and explain the concept during this phase and to answer questions about the risk and security of the transactions, the Bizmarket team needed to have a greater technological and business knowledge of the innovation than what was required by the buyers and sellers. Furthermore, in order to expedite the adoption process Bizmarket needed the innovation to be 'user friendly'.

It was also observed that buyers and sellers already connected to the Internet were accustomed to on line procurement. Buyers and sellers perceived that the Bizmarket concept was a procurement system with additional value added concepts. These included, (1) precise ordering of goods and services, and (2) comparing prices and product features of 'like' goods and services. In such instances it was observed that the suppliers and buyers viewed the Bizmarket concept as an incremental innovation to the online procurement process rather than a destructive innovation.

One can argue that the innovation provider (Bizmarket) rather than suppliers and buyers required greater knowledge of the innovation and its application to business in order to change the existing perception. Therefore, the refined proposition is stated as P⁷:

P⁷: In the implementation stage, innovators of CDI (B2B e-market) rather than its suppliers and buyers require greater knowledge of the innovation.

Comments:

This proposition claims that the innovators rather than the users of the innovation require a greater knowledge of the operations of the innovation and its implication for business over time. The innovators are able to see the prospective business needs and have a thorough understanding of the innovation in order to communicate the benefits of the innovation. From the supplier's and buyer's perspective all they are required to know is (a) how quickly they can use the innovation and (b) the benefits (cost) that they are able to gain by joining the network. In order for the adopters to quickly learn the operations of the innovation, the innovators need to make the innovation user friendly so that the diffusion process is enhanced and they can reduce the risk of rejection of such innovation.

Drawing on the scholarly work by Sivadas and Dwyer (2000) the theoretical contribution suggests that the innovators of new ventures (embedded in radical innovation) require more knowledge of the innovation than those who use the innovation. The reason for this is that radical innovations are inherently more unpredictable and uncertain (Rice *et al.* 1998) and therefore require the innovators

have detailed knowledge. The case data demonstrates that the personnel recruited had prior knowledge and gained knowledge through the creation process of the new venture.

4.2.4.2 Impact of CDI on marketing and procurement

The working proposition developed from the literature focuses on marketing and procurement outcomes based on CDI. It is stated as:

WP₈: When suppliers and buyers in a focal business network adopt a B2B e-market, the potential marketing and procurement outcomes result from competency destruction rather than competency enhancement

Observations made and based on the case data suggest that the potential marketing and procurement outcomes were based on CDI. The discussions with suppliers indicate that using Bizmarket has opened up new markets for them *"for someone like us it has opened up new opportunities using Bizmarket"* (Suppliers, t_2 stage). The constant review of the objective and strategies by Bizmarket also provides the foundation to explore new markets and provides the opportunity to add value to the services provided.

From the procurement perspective, buyers indicated that by using Bizmarket they had the ability to demand better deals from suppliers. As the prices were transparent between the sellers, the *"aggressive procurement"* notion stated by one of the buyers suggested that they were able to compare the product feature and price information together and accept bids not just based on price alone: *"our quote comparison table available to buyers (helps*

them) to see other variables such as delivery time" (Suppliers, t₂ stage). The advantage with the quote comparison table is that the buyers have the flexibility to compare different variables. This comparative analysis is dependent on comparing like variables (comparing apples with apples) which greatly benefits them. From the sellers side: *"they can see all the other quotes and comments other sellers have madetherefore gives them market intelligence about what their competitors were quoting...they just do not know who they are" (Bizmarket, t₂ stage).* Also buyers can use the pre-formatted quote application form that allows the innovation (embedded in Bizmarket which was developed by a third party firm) to simultaneously distribute accurate information to approved qualified suppliers. This benefits both suppliers and buyers from a logistical point as the number of errors in ordering is reduced (reduction in search costs and costs associated with errors) and the product and price can be compared and the quote can be 'responded to' online.

Conversations with the buyers implied that they would use Bizmarket in addition to the manual systems that were in place, or the way they used the Internet, to procure goods and services. For suppliers, the B2B e-market was also a benefit as they were able to access ready buyers who were in the market to purchase their products: *".....I mean you can have your sales representatives out there looking for business (with all the overheads associated in employing them) but I come to work switch on the computer and I have 3 quotes to respond to without leaving the office" (Suppliers, t₂ stage).* One can argue that by joining Bizmarket suppliers and buyers had adopted an incremental process rather than a disruptive process. Furthermore, buyers procuring goods and services via the Internet where the suppliers were unknown resulted in higher risk than doing business through Bizmarket where Bizmarket authenticated the suppliers: *.. "it is very easy and risk free way of providing and gaining services without having to engage with those people in the network"*

(Buyers t_2 stage). Therefore, suppliers and buyers benefit from joining the B2B e-market firm but do not have a competitive advantage because any number of buyers and sellers can choose to join a B2B e-market.

However, the Bizmarket firm had the competitive advantage over those established firms that are in the channel system. Observations made from the interviews and the field notes taken suggest that B2B e-market firms are able to accumulate knowledge. In addition, personnel employed had prior knowledge and skill of the innovation having worked in similar work environments. B2B e-market firms are also flexible in adapting to changes in the marketplace more readily than incumbent firms (c.f. Christensen 1997): "*[we are constantly revising our objective] as we evaluate (the marketplace) and shift our strategy*" (Bizmarket, t_2 stage). This constant evaluation of the marketplace and the firm's objective allows the B2B e-market firms to open new markets: "*recognition of the changes in the marketplace and adopting and changing the strategies to make sure (the firm) is in tune is critical*" (Bizmarket, t_2 stage). The technology developed is also able to share and compare information on prices and product features, and to distribute information in real time to provide buyers and sellers with new tools for making decisions in marketing and procurement. This is achieved by the format of the 'request for quote' form that is standardised for each product category. Bizmarket developed the product category concept through the accumulation of knowledge from various sources and the product development phase included a substantial injection of funds that is difficult to imitate or duplicate by its competitors without a comparatively substantial investment. This product developed by Bizmarket is durable as Bizmarket is consistently updating the performance of the product and is the sole earner from the transactions that are performed through the firm. In order to

ascertain its superiority to other channels additional longitudinal data would be required. Such a comparative systems approach is beyond the scope of this research.

One can argue that suppliers and buyers rather than the B2B e-market firm achieve certain cost benefits by joining the network. But the potential marketing and procurement outcome using the B2B e-market is a result of the firm possessing strategically valuable resources consisting of the knowledge of the personnel, the flexibility of the firm itself and the high cost of imitation, and the overall durability of these resources. Neither is the concept of competency destruction or competency enhancement clearly manifested in this scenario. Thus, the working proposition requires major refinement and is restated as P⁸.

P⁸: When suppliers and buyers adopt a B2B e-market, the potential marketing and procurement outcomes result from the firm possessing such strategically valuable resources as knowledge and flexibility, characterised by non imitability but do not as yet result from either competency destruction or competency enhancement.

Comments:

This proposition claims that a B2B e-market firm possesses a strategically valuable resource. This is due to the high cost involved in duplicating the innovation and the accumulated knowledge on which the innovation is based. Furthermore, the innovation is durable due to the constant evaluation of the innovation. The data does not suggest one way or the other that the B2B e-market firms either destroy existing competencies or enhance competencies because (a) there was no data that reflected incumbent competition firms or the pre-existing competencies of the focal B2B e-market firm and (b) the short time frame of the study.

The theoretical contribution in this proposition is that Porter's (1990) model does not adequately capture how the adoption of CDI by firms in a network could be a source of competitive advantage. Therefore drawing on the scholarly work by authors such as Davis and Devinney (1997) this proposition is refined in order to reflect that when firms in a network adopt a radical innovation the potential marketing and procurement outcome is a result of these firms possessing resources (Robertson and Gatignon 1986; Shanklin and Ryans 1984; Teece 1986) that can be imitated at a high cost but is not a result of CDI or CEI.

4.2.5 Effect of certain factors in networks

4.2.5.1 Influence of agility on network firms

The working proposition focuses on the impact of agility and its outcome for firms in networks. The working proposition was stated as:

WP₉: The agility of the firms in a focal business network caused by the adoption of a B2B e-market may have a positive effect on their effectiveness and adaptability but not their efficiency.

The concept of flexibility has been discussed in P⁸ above. As stated before (2.4.2.1) the key characteristic of flexibility is agility. The description from the interviews suggests that agility refers to the organisation structure rather than to a firm becoming agile due to the adoption of the innovation. From a buyer or seller's perspective, adopting Bizmarket represents access to newer markets that may lead to changing the way they would conduct

their business: *"you could change the structure of the company, in your sales and marketing functions....you just make sure that you are well represented in a lot of markets and the business will come to you (rather than sending sales teams to service existing business or gain new markets). So it's another way of doing business [when using this environment]" (Buyers and Sellers t_2 stage).* The concept of flexibility for the B2B e-market firm is in its ability to change and adopt objectives and strategies to fit the market requirements: *"the flexibility that a small agile company [Bizmarket] gives you.... You can translate directly into changes...(in) the way you do things [in order to keep abreast of the market]" (Bizmarket, Buyers and Sellers, t_2 stage).*

Information provided by the SMEs suggests that buyers who lodge their quotes are prepared to buy goods and services in this environment which for them is an efficient way of doing business. The following extract captures some of this.

It is quite valuable to know someone is about to buy or is ready to buy....that is not just the target market...you know it is the right customer group that is ready to purchase the good (that is on offer) ...if you can afford to have sales people wandering up and down just because they need to have a sale (it's a waste).... (alternatively) then you can probably spend the time sitting down and doing a quote because you know that the buyer is ready to buy.....this is much more efficient (Bizmarket, Buyers and Sellers, t_2 stage).

The case data tends to support a focus more on adaptability of the innovation and the efficiency that firms in the network can gain rather than its effectiveness. One can argue that agility of firms in networks caused by the adoption of a B2B e-market may have a positive effect on their efficiency and adaptability but not their effectiveness. The revised working proposition is stated as P⁹:

P⁹: The agility of the firms in a focal business network caused by the adoption of a B2B e-market may have a positive effect on their efficiency and adaptability but not necessarily on their effectiveness.

Comments:

The proposition claims that the structural agility of firms in the network may have a positive effect on efficiency and adaptability. This is because the innovation embedded provides an efficient outcome (reduced cost) rather than necessarily an effective outcome (more likely achievement of objective). The working proposition is substantially changed when refined. This is so because efficiency is an outcome of a business program in relation to the resources employed in its implementation. Firms in the focal business network may gain from cost efficiency by adopting the B2B e-market. Adaptability is defined as the business's success in responding over time to changing conditions and opportunities in the marketing environment. Firms in the business network are responding to the changing conditions in the marketplace by adopting B2B e-markets. However, one measure of effectiveness is the success of a business' products and programs in relation to those of its competitors. Here firms in the business network are not necessarily gaining effectiveness as any number of firms may join the network reducing the competitive nature of the B2B e-market.

Scholars have indicated how factors such as agility and leanness can be related to supply chain networks (Naylor *et al.* 1999; Yusuf *et al.* 1999). Yet it is unclear from the literature what the impact of these factors on firms in networks. Based

on the definitions of efficiency, efficiency and adaptability (Walker and Ruekert 1987) it is argued from the literature that agility of firms in focal business networks may cause a positive effect on efficiency, which is no doubt affected by leanness but not agility. The theoretical contribution of this thesis is that the agility of new venture start-up firms has a positive effect on the firm's efficiency and adaptability, but not necessarily on its effectiveness.

4.2.5.2 Long and short term success factors

The final proposition focuses on the long and short-term success factors. The working proposition developed from literature is stated as:

WP₁₀: Long-term success of B2B e-market firms will depend on attracting a critical mass of suppliers and buyers, adequate commission from transactions and unbiased rules of engagement whilst short-term success will depend on funding.

Achieving critical mass is one of the factors in measuring the long-term success of B2B e-market firms. There are a number of other factors that have been identified in the literature. However, these factors are measured in binary terms, that is, 'yes' it is important to measure or 'no' it is not a valid factor to measure success. Where respondents failed to articulate the response, further probing encouraged the respondent to either say 'yes' or 'no'. Table 10 shows how the respondents valued each of the 9 factors. Factors 1 to 5 are considered as internal success, that is, success to Bizmarket ascertained by asking the respondents within Bizmarket. However, factors 6 to 9 were deemed as external factors that is, how suppliers and buyers responded when asked about their opinion about these factors.

The suppliers and buyers interpreted the concept of "speed of access" as speed of gaining access to Bizmarket. As such the revised list must contain the concept of saving time and cost using this channel as suggested by the following extract: *"the big advantage is time...it saves a lot of time"* (Buyers, t_2 stage) The other factor that needs to be included is reach *"Reach in terms of numbers of suppliers.....you know I might call three printers...reach in terms of not a lot of suppliers but suppliers that might be geographically near or far from me"* (Suppliers, t_2 stage).

Table 10: Responses to the factors by respondents in the network

Factors	Important for Bizmarket	Important for suppliers and buyers
1.Critical Mass	Yes	No
2. Receipt of commission	Yes	No
3. Stable communication platform	Yes	Yes
4. Affordable technology	Yes	No
5. Speed of access	No	No
6. Lower search cost	No	Yes
7. Better inventory management	No	No
8. Easier and cheaper requisition processing	Yes	Yes
9. Research and development	No	No

Cross-functional analysis of the case data indicated that security was an important factor for suppliers and buyers. The data also suggests that if security measures over the Internet or better software protection were offered, sellers and buyers are more likely to transact over the Internet in the long term. Therefore, the factor that needs to be added to the working proposition is "good security".

Generally, the table reflects the importance of each of the factors. Observations made suggest that the respondents were aware of the fact that attaining critical mass for each of the categories was important for the long-term success of the firm. Similarly, other factors

that were presented to the respondents such as receipt of commission, stable communication platform, affordable technology, and easier and cheaper requisition processing were deemed as important factors. However, for SMEs the 'research and development' and 'better inventory management' factors were not important at all and should be dropped. Although, Bizmarket and suppliers and buyers identified easier and cheaper requisition processing as an important factor, this was not included in the refined proposition as it is an outcome of adopting the B2B e-market, rather than a factor. Data also suggested that in the short term success would depend on the level of investment in the start up new venture, and the flexibility of the firm to adapt to market conditions by adding value to the product. These additional factors were the outcome from the interviews and observations made by the researcher over the initial period of the creation process. As such the proposition is restated as P¹⁰:

P¹⁰: The long-term success of B2B e-market firms will depend on attracting a critical mass of suppliers and buyers, adequate commission from transactions, stable platform, affordable technology and good security whilst short-term success will depend on funding and value adding.

Comments:

This proposition claims that within the context of a B2B e-market environment certain factors such as critical mass of suppliers and buyers, and good Internet security are important for the long-term viability of the firm. Implicit in the proposition is the continuous development and evaluation of the innovation.

Funding (Bhargava *et al.* 1994; Davis and Devinney 1997) is an important factor in

the short term, however, once the firm reaches its critical mass (Rogers 1995) in each of the categories it is assumed that the ongoing viability of the firm will be maintained. In addition to these factors security was an additional factor identified from the case data.

4.3 Theoretical contribution

Table 11: Working propositions and theoretical contribution

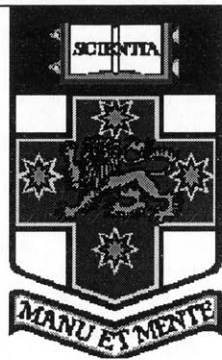
No.	Working propositions	Theoretical contribution
1	The formation of new venture B2B e-market firms is dependent on a dynamic interrelated planning of macro and micro activities and a review of objectives, rather than a sequence of unrelated events based on a static objective.	The formation of the new venture B2B e-market firms is dependent on a consultative process of macro and micro activities in line with a master plan that has the flexibility in changing the objective over time, rather than a sequence of unrelated events based on a static objective.
2	The decision to adopt or reject an innovation can occur at any point within the linear innovation-decision process rather than at a fixed stage of this process.	The decision to adopt or reject an innovation can occur at any point within the dynamic innovation-decision process and is dependent on the continuous evaluation of technical and marketing activities rather than at a fixed stage of this process.
3	The implementation of an innovation follows a set of sequential steps where each step interacts with the previous step through feedback loops, rather than a linearly sequential chain of activities.	The implementation of an innovation (in a B2B e-market environment) follows a set of parallel activities with feed back loops rather than a [set of] sequential chain of activities.
4 No change	In a dynamic B2B e-market environment, the organising of marketing activities between buyers and sellers is loosely coupled in the short term rather than rigidly coupled.	In a dynamic B2B e-market environment, the organisation of marketing activities between buyers and sellers is loosely coupled in the short term rather than rigidly coupled.
5	In a B2B e-market context (in contrast to EDI), network champions hold direct relationships with creation and implementation champions and third party participants rather than attempt to maintain direct relationships with suppliers and business buyers.	In a B2B e-market environment, Network Champions hold continuous direct relationships with New Venture Champion and investors, and indirect relationships with the Product Champion and Implementation Champion, rather than attempt to maintain direct relationships with suppliers and buyers over time.
6	The involvement of network champions who can be identified to support potential participants to "buy into" the innovation, results in the likely acceptance of the innovation.	The involvement of the Implementation Champion who support potential participants to 'buy into' the innovation resulted in the likely acceptance of the innovation more so than did the involvement of the Network Champion.
7	Implementation of innovation based on CDI requires greater knowledge by suppliers and business customers than does incremental innovation.	In the implementation stage, innovators of CDI (B2B e-market) rather than its suppliers and buyers require greater knowledge of the innovation.
8	When suppliers and buyers in a focal business network adopt a B2B e-market, the potential marketing and procurement outcomes result from competency destruction rather than competency enhancement.	When suppliers and buyers adopt a B2B e-marker, the potential marketing and procurement outcomes result from processing such strategically valuable resource as knowledge and flexibility, characterised by non imitability but do not as yet result from either competency destruction or competency enhancement.
9	The agility of the firms in a focal business network caused by the adoption of a B2B e-market may have a positive effect on their effectiveness and adaptability but not their efficiency.	The agility of the firms in a focal business network caused by the adoption of a B2B e-market may have a positive effect on their efficiency and adaptability but not necessarily on their effectiveness.
10	Long-term success of B2B e-market firms will depend on attracting a critical mass of suppliers and buyers, adequate commission from transactions and unbiased rules of engagement whilst short-term success will depend on funding.	The long-term success of B2B e-market firms will depend on attracting a critical mass of suppliers and buyers, adequate commission from transactions, stable platform, affordable technology and good security whilst short-term success will depend on funding and value adding.

4.4 Conclusion

This chapter used empirical data to revise or refine the working propositions. The result from the cross-functional analysis identified some minor changes or refinements to the working propositions. However, the few working propositions that required major changes as a result of the analysis have been explained in detail in the comments section. The comments section also links the theory (working proposition) to the contribution made by this thesis (propositions). In so doing, the thesis contributes to the new venture literature.

The constructs that have been developed in the propositions may be subject to testing in future research work. The next chapter provides a summary of the thesis and addresses limitations of the ethnographic approach used in the research. However, these limitations may be addressed as directions for future research about new ventures.

Chapter 5



CHAPTER 5

5.0 Summary, limitations and future directions

INTRODUCTION: This final chapter of the thesis presents a comprehensive summary of the research undertaken, discusses its limitations and focuses on some future directions. Based on diffusion literature, the central thesis of this study was to develop a theory and contribute to the new venture literature, the thesis had three interrelated themes. While the first was to understand the creation process the second focused on the understanding of the relationship of the participants in the network. The final theme was to evaluate whether a new venture B2B e-market start-up can achieve competitive advantage through the embedded technological innovation.

5.1 Summary

Chapter 1 outlined the significance of the research, and how this thesis is positioned in relation to other research. The chapter also identified the theoretical and contextual domains and justified the multidisciplinary nature of the thesis. Based on the those discussions, a number of research questions were identified in this chapter. Having outlined the domain of the study, the thesis developed a broad conceptual framework.

A review of marketing literature suggested that scholars were focusing their attention on various models of B2B e-market firms (Bakos 1991; Grewal *et al.* 2001). However, a detailed understanding of how and why these models are created and the contribution of the participants in the network posed a problem for many practitioners in this environment. Furthermore, scholars indicated that understanding the strategic significance of these models embedded in CDI was even less well understood (Gulati *et al.* 2000). The chapter provided an explanation into grounding the research in diffusion theory. It also provided the rationale for borrowing from strategic management and network literatures while contributing to the new venture theory. The chapter also identified the managerial significance and developed working definitions for terms that were used in the thesis.

Chapter 2 focused on reviewing previous research, providing a critique and developing arguments for establishing working propositions. These working propositions were refined as required in Chapter 4 in order to develop theory. A synopsis of the research questions and the related working propositions were also outlined in a Table 4.

Chapter 3 focused on the research methods. This chapter began by discussing previous arguments on quantitative and qualitative research and then justifying why qualitative and not quantitative research must be used for this study. The research method

described in this chapter offered an alternative approach in research design and data collection and analysis based on published work by scholars in the field of process research. In order to develop this research method this thesis extended the coding process established in the literature by developing a coding workbook that may be used in future research. However, the research method developed inherits some of the limitations that were also found in other studies. These limitations have been addressed in Section 5.2 of this Chapter.

Chapter 4 used cross-functional data to refine and/or amend the working propositions and developed propositions and constructs thereby contributing to the new venture literature in general and the literature on start-up new ventures in particular. In developing the arguments from the data a number of limitations were observed and these limitations have been addressed in this chapter. While the research questions were found to be valuable in generating much needed discussion in this new environment, only working proposition 4 did not warrant any change. The other working propositions required minor changes whilst, working propositions 8 and 9 required major changes in light of empirical data.

Chapter 5 discusses the theoretical and managerial outcome of the thesis. It also addresses the way data was captured mainly focusing on the process and relationship sections of the thesis while indicating that variance research would be more suitable in addressing the strategy questions. Although the case data was used in refining the strategy related working propositions, it was found that the data did not adequately address the concept of competency destruction suggested in the working proposition. This limitation is addressed in Section 5.2 of this chapter.

5.1.1 Theory development

5.1.1.1 Creation process

In order to analyse the case study data, Chapter 4 offered a cross-functional analysis of the various functional areas together with the contribution made by the third parties, field notes and published data. The analysis suggests that the creation process of a start up new venture is dependent on a consultative process of flexible macro and micro activities. These interrelated macro and micro activities had an impact on setting the objectives and strategic direction for the firm over time. The decision process to adopt or reject an innovation is a continuous process where some of the limitations are triggered by the capabilities of the innovation's architecture, that is, the limitations posed by the software and the restrictions on the information that were posed by the innovation. The implementation process, however, involved commercialisation of both the firm and the innovation and as such needed to be developed and launched in tandem unlike a new product developed within an existing firm.

5.1.1.2 Participants

The relationship between the network champion and new venture champion revealed the continuous direct relationship from the pre-birth (t_0) to the final launch (t_2) stages. However, data restrictions did not permit subsequent follow up to evaluate past the launch stage of the creation process. The daily operation of the firm was left with the champions who worked in the functional areas. A direct relationship evolved with and between the participants in the various functional areas of Bizmarket. The relationship with the Network Champions whilst direct during the pre-birth stages of the creation process, was found to be

indirect during the birth and launch stages of the creation process. While the Network Champions were involved in 'setting' up contacts for the New Venture, Product and Implementation Champions (that is, acting as a catalyst at various levels of the organisation) the Network Champion was not directly involved with third party participants during the birth and the launch stages of Bizmarket. Rather the New Venture, Product and Implementation Champions developed a direct relationship with third party participants such as technology providers and sellers and buyers over time and maintained an indirect relationship with the Network Champion.

5.1.1.3 Product innovation

The literature review in strategic management suggested that the focal B2B e-market firm might benefit from competitive advantage due to the embedded technology over those firms that did not adopt a radical technology. This was not reflected in the case data. This was perhaps due to the focus of obtaining process data rather than collecting variance case study data. The data however, reflected that the focal B2B e-market firm provided a strategically valuable resource to the buyers and sellers in the network. Whether the B2B e-market firm destroys competence or enhances competence could not be adequately addressed from the case data. This limitation is addressed in this chapter.

5.1.2 *Managerial implications*

The managerial implications of the research can be seen from the viewpoints of process, participants and strategic implications of focal B2B e-market firms in networks. The findings suggest that there is a need to understand the macro and micro creation

processes and the emphasis on flexibility when setting objectives in order to constantly monitor the market requirements with the capabilities of the technology. Furthermore, the descriptive analyses suggest that the decision to adopt or reject an innovation can occur at any point of the creation process. However, case data tends to suggest that once the initial decision to adopt the innovation was made, firms tended to rectify or improve the technology in order to meet the requirements of the market rather than reject the innovation. This is perhaps due to the high financial commitment to the development of the innovation. The implementation phase of the innovation is a set of parallel activities performed by all the functional areas in order to launch the product in the marketplace. Here the focus is to have an operational e-market that contains buyers and sellers who are ready to conduct business transactions. In addition, the integrated flowcharts can be used by managers to evaluate the creation process in a specific setting and adapt or change the process to suit the firm's commitment to creating start-up new ventures that are embedded in technological innovations.

Finally the chapter identifies the key success factors of B2B e-market firms. In the long-term, the data identifies the need for B2B e-market firm managers to attract a critical mass of suppliers and buyers. This can be achieved by promoting the business through business periodicals while at the same time achieving a brand image. Although Bizmarket attempted to use word-of-mouth and contact businesses (using telemarketing) no follow up processes were implemented. Managers also needed to determine the value in terms of service provided to buyers and sellers and to monitor the performance of the Internet Service Provider. This is because once the system went 'live', sellers and buyers would be discouraged if they were unable to use the 'web site'. Adequate inscription of data and non-

identifiable information to buyers would also help in the long-term success of the B2B e-market firm.

In the short-term, however, the success factors identified were adequate funding and value adding to the type of information provided. Managers need to focus on the amount of funding needed at the different stages of the creation process and be prepared for contingencies, monitor the cost of value adding and perform a cost benefit analysis. Simultaneously monitoring the flow of investment dollars, completion of the different stages of the creation process and objectives that reflect the market requirements, is also important.

This thesis also developed a coding workbook that managers may use in coding any process type data. This workbook was initially developed based on literature and then refined, as case data became available. The outcome was a comprehensive list of codes that can be used in process research or in identifying relationships between the actors. Future research will use the models developed and test them.

5.1.3 Triangulation of data

The present study developed a number of constructs and has identified a number of factors in providing the first detailed insight into all the activities of creating a new venture. Data was collected from the various functional areas, sellers and buying firms, together with published information from policy formulators in order to triangulate the information. Furthermore, data was collected from more than one supply and buyer firm in order to triangulate the information, which also included memos and emails that were sent between the supply and buyer firms and Bizmarket. As sellers and buyers had recently joined

Bizmarket, patterns in their response to the semi-structured interview emerged quickly. Further, selection of suppliers and buyers who had joined Bizmarket was not possible as they (buyers and sellers) were still in the process of getting to 'know' the system. However, the information reached saturation point from those agreeing to provide data at this early stage. The propositions developed by triangulating data from different sources, as discussed above, were refinements of the working propositions developed from the literature.

5.2 Limitations

Although the case study method is deemed most suitable in fulfilling the objective of this thesis, limitations of the method need to be discussed. A number of reservations have been expressed about the case study research method. One is the lack of rigour, which has allowed equivocal evidence of biased views to influence the direction of findings and conclusions. A second is the limited basis of scientific generalisation. Yet another limitation is that the results are, in many respects, subjective interpretations of the individual researcher. Despite these limitations, the patterns of arriving at such interpretations are revealed in the discussions.

Adequate care was taken in the design of appropriate instruments that were subject to face validation from external agencies working in the e-commerce environment. Care was also maintained to avoid many of the pitfalls of bias by referring closely to the research method. In order to address potential limitations, this research engaged independent coders to code from the transcripts whose coding was then verified. Care in the coding process was maintained by comparing the codes as suggested by Miles (Miles 1979). Discrepancies in the codes were addressed through discussion between the coders and the researcher. Where the text did not match the code, new codes were allocated in consultation with the coders

(Miles 1979). Due to the background of the coders (post-graduate marketing students) and the fixed duration of employment, agreement on the codes was reached in consultation where discrepancy emerged (approximately less than 2%). Where situations provided no conclusion the researcher interpreted the text along with the coders in allocating codes ((Miles 1979). Although the question of reliability and validity remains, this was traded off against the opportunity to gain an insight into an evolving phenomenon (Burgelman 1983). A truly longitudinal study was beyond the available resources, so instead a longitudinal processual approach was adopted (Pettigrew 1979). It should, however, be noted that this study focused on one setting, which is in line with Burgelman's (1983) study.

The research method adopted was to develop theory and not test theory. As such process research was selected rather than variance research. Process research was found to adequately address the creation process and the relationship between the participants, however, variance research would have adequately addressed the strategic significance of the innovation. As the B2B e-market firm model selected for the study was a start-up new venture, variance data was deemed as out of scope and, as such, adequately addressing the competitive advantage fell short of the required research question. Furthermore, a larger longitudinal data collection might have enhanced the findings into competitive advantage.

Due to lack of data from an organisation operating in a classical 'channel' sense, which then opted to operate as a B2B e-market, the competence destroying innovation aspect could not be adequately addressed. This is due to the focus on process rather than variance data. Difficulty was also experienced in finding (a) appropriate organisations in Australia that would 'fit' the different business models (see Table 2) and (b) for these firms to agree on sharing data for research purposes. Furthermore, the timing of data collection was found to be too early as suppliers and buyers were just 'coming on board' with

Bizmarket. As such, data that would adequately address a comparative analysis of the various business models over time, and data comparing the various categories of suppliers that joined Bizmarket, were not available. However, firms (suppliers and buyers) that join B2B e-market firms would benefit through reduced costs of procurement and the reduced cost of finding new markets. Suppliers and buyer firms do not gain competitive advantage or destroy competency, rather the data indicated an additional channel to perform marketing and logistic activities.

The study was limited to the potential users of the B2B e-market firm at the time of data collection. Further expansion of categories of users (suppliers and buyers) would have enhanced the study. This is because categories of suppliers that could join such a model could have been studied although this was not a part of the research questions.

5.2.1 Construct validity

Construct validity is one of the criticisms of the case study research method. As such, the triangulation of the information that included the interview transcripts and the development of categories in the coding process that were related back to the research questions and working propositions may enhance the quality of the constructs. Notwithstanding these precautions, a certain bias is inevitable as data sources of documentation and interviews are not exhaustive within each functional area.

As the data was limited to one organisation, a comparative analysis to measure the degree of advantage of B2B e-markets over those firms that have not invested in such markets or the degree of benefits to SMEs that join such new ventures was not possible.

This is subject to future research as the intention of this thesis was to develop theory and not test theory.

5.2.2 Generalisability

In order to establish generalisation, the sample was carefully selected and was found to be ideal. The firm Bizmarket was in the pre-birth stage and willing to help in the research process by allowing members of the focal B2B e-market firm to be interviewed. Bizmarket also assisted in setting up interviews with third party participants that were selected by the researcher from a list of suppliers and buyers provided by the firm. Subsequent research can establish the usefulness and generalisability of the research process. In addition Bizmarket was willing to share information that was subject to the Memorandum of Understanding (see attached) with the University of New South Wales.

5.2.3 Longitudinal data analysis

The longitudinal aspect of the study was limited to the launch of the product and further investigation was not possible due to the untimely demise of the firm. Instead the process was studied exhaustively in one setting and was traded to gain an insight into an as yet incompletely documented phenomenon. However, as future research in this environment gathers momentum, additional data may benefit and enhance this research.

5.3 Future directions

Future research may benefit from measuring the strength of the relationships between the champions in the network and identifying the causal relationships. In addition, future research will benefit from focusing on key roles played by participants in new venture

creation in the e-business domain. Furthermore, research may also benefit by tracking how the relationship between participants impacted on adjusting objectives and strategies in order to identify new markets and processes based on the accumulated experience and investment on the innovation by the firm.

For researchers in strategic management, this thesis provides a theoretical foundation in innovations that are based on CDI and operate in a network. Comparative research into the creation process of various B2B e-market models may interest process researchers, by identifying the suitability of these models for different markets.

Descriptive theory is important in the process of making a normative prescription. Neither normative nor descriptive theory can stand-alone. If the theory is proposed based on the normative approach alone, it will fall short of expectations, as it will lose touch with reality as well as with the theory on which it is founded. Considering this importance, this study has demonstrated that a multiple theoretical approach is useful in facilitating an understanding of new venture B2B e-markets and their strategic significance.

5.4 Postscript

Bizmarket stopped operating on February 5, 2002. Although the researcher was in close contact with the personnel, closing of the firm came as a surprise to the researcher. The reason for its closure at this stage is speculative since the researcher is unable to get in touch with any of the participants. The first reason for its closure was the lack of additional funding for its operations as the firm was not generating enough cash flow from its suppliers (Bizmarket, VP Marketing). Critical mass had not been attained although the research data compiled by Bizmarket at the pre-birth stage indicated that the market was ripe for the model. The second reason for its demise can be attributed to the level of

funding injected into the development of the innovation without it generating the required funds. This may be attributed to management's failure in marketing the product. Believing that word-of-mouth, telemarketing, articles in the business press and demonstrating the product to a few at the initial stage (t_2) that is, at launch, would be enough to achieve the brand recognition it deserved, the funding allocated to marketing was withdrawn and the marketing position was closed. Finally, the suppliers and buyers were not convinced and were reluctant to disengage from the established relationship that buyers had cultivated over time. Furthermore, the volatility in the market was overwhelming and suppliers and buyers were perceived to have a wait and see attitude. These three factors contributed to the fall of the firm although it did not face any known competition from similar firms in the marketplace. Since then the market has stabilised and future new ventures B2B e-market firms would have a better understanding of such firms from the experiences of Bizmarket.

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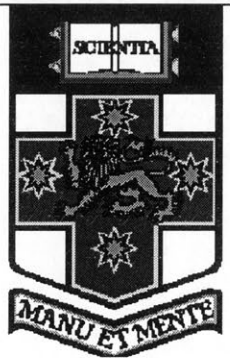
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Appendix 1

CODING WORKBOOK



***CODING THE DIFFUSION PROCESS AND RELATIONSHIPS OF
CONCEPTS FROM CASE STUDY***

University of New South Wales

January 2002

Adapted from: (Axelrod, 1976)

Introduction - BACKGROUND TO MAPPING IN MARKETING

Descriptive studies of the marketing decision process are quite scarce (Capon and Hulbert 1975). The majority of these studies has focused on decisions at an individual level, rather than at an organisation level (Howard and Morgenroth 1968);(Rados 1972). Yet most marketing decisions relating to strategy necessitate the participation of individuals whether in the stages of information collection, analysis and evaluating or in the choice among alternatives and the implementation of a selected course of action (Capon and Hulbert 1975). For example, in a network environment, network champions are involved in the development process of new venture start-up firms where they may also influence strategy development amongst the users of new venture start-ups (Woodside and Wilson 1994). In order to follow the stages of a development process, decision system analysis (DSA) can be used (Capon and Hulbert 1975). (Capon and Hulbert 1975) describes the application of DSA technique to pricing, forecasting, advertising and new product development. The focus of this coding effort is to determine the process of new-venture development and the involvement of network champions in the decision process.

In order to determine the impact of network champions and identify implications of innovation on strategy, cognitive mapping is recommended (Huff *et al.* 1990; Nath and Newell 1998). Further, mapping techniques have been successfully used in studies that focus on strategy, in particular where new technology innovations are the primary focus (Abernathy and Clark 1985) (Fletcher and Huff 1990).

(Axelrod 1976), suggests that “the notion of causation is vital to the process of evaluating alternatives. Regardless of philosophical difficulties involved in the meaning of causation, people do evaluate complex policy alternatives in terms of the consequences a particular choice would cause and ultimately of what the sum of all these effects would be” (1976, p5). This study provides an insight into cognitive mapping that focuses on six causal relationships e.g. positive effect, negative effect, no effect, indeterminant effect, effects that are not positive, and effects that are not negative. These causal relationships were further enhanced by including non-causal linkage codes e.g. A is equal to B, A is the same as B and A is defined as B (Huff *et al.* 1990).

The objective of this coding process is twofold. First, to identify the creation process and second, to identify the causal linkages of the decision process.

Text developed from semi-structured interviews can be mapped using codes derived from the causal mapping technique (Huff *et al.* 1990). Codes relating to the mapping of the innovation-decision process are outlined in this workbook. This includes mapping the process from the inception of the creation of a new venture, to its operationalisation, up and including to its current stage of operation. Therefore the task is to use the codes that describe this process and document the text (transcribed interviews).

Goal of the handbook:

The workbook has several goals:

- To add the process codes to the ones used by (Huff *et al.* 1990).
- To specify a systematic procedure for coding that will help coders identify the innovation-decision process, the involvement of network champions and the causal connection.
- Provide examples in the handbook to code the above interrelated but specific aims of the study.

Instructions to coders:

Although in practice coding is not strictly sequential, it is useful to separate the various parts of the coding process (Huff *et al.* 1990). The text generally follows the pattern of questions and answers as outlined in the semi-structured questionnaire (see attached).

Steps:

- | | |
|----------------|---|
| Step 1. | The first step is to read the text once over. |
| Step 2. | The next step is to read the questions in the semi-structured questionnaire and identify (in pencil) any areas in the text where you think answers are repeated. |
| Step 3. | Next read the definitions and the codes outlined in Section A below and in the second pass of reading the text, code the innovation decision process. |

Section A
(CODING SHEET FOR THIS SECTION APPEARS IN Section E)
Innovation-decision process

All of the activities that relate to formation of the idea, information gathering, conceptualising, planning for the adoption and leading up to the decision to adopt.

(1) Prior conditions and development process

Research Question No.	Codes	Definitions
1.1	AW	Awareness of Innovation
1.1	PK	Previous knowledge of Innovation
1.3	IG	Idea generation
1.4	PI	Information search prior to adoption (Preliminary investigation)
2.1	DI	Evaluation of alternative systems
1.2	NR	Need recognition

Agenda setting i.e. one or more individuals identify the “need” (NR) and seek an innovation to solve a problem.

Research Question No.	Codes	Definitions
3.1	EP	External Player (outside bizmarket) (Facilitate implementation)
4.4	EP	External player (outside bizmarket) (Facilitate adoption)
6.1	EP	External player (outside bizmarket) (Adopt reject innovation)
3.1	IP	Internal player (within bizmarket)
3.1	NC	Network Champion (involved in the overall development process of the firm)

(2) Development process prior to launch

Research Question No.	Codes	Definitions
3.2	EM	Employee selection
3.2	TS	Task allocation
3.2	EX	Contact external org. to identify suppliers and buyers needs
4.1	PU	Bizmarket's publicity
3.2	RR	Revenue raising
3.2	DP	Development process of bizmarket
3.2	RE	Review of process
3.2	TE	Technology feasibility
3.2	SP	Writing and developing specifications
3.2	PT	Software development, testing, and updating
3.2	PS	Production stage
3.2	FP	Formal planning
3.2	IP	Informal planning

(3) Product Innovation

Research Question No.	Codes	Definitions
4.3	KN	Product Innovation knowledge required by supplier and buyer
8.2	KN	Knowingly rejecting the innovation
5.1	FA	How marketing and procurement is carried out
8.1	FA	Factors that increase (facilitate) marketing and procurement activities
8.1	VA	Value adding by bizmarket
4.2	MK	Marketing activity by suppliers and buyers
7.1	SU	Success factors (binary value)
7.1	UN	Unsuccessful factors (binary value)
7.1	AG	Agility of Bizmarket customers
4.3	CEI	Competency enhancing innovation
9.2	CDI	Competency destroying innovation
9.3		Causal Coding (relationships)

Section B
(CODING SHEET FOR THIS SECTION APPEARS IN Section F)

Step 4.

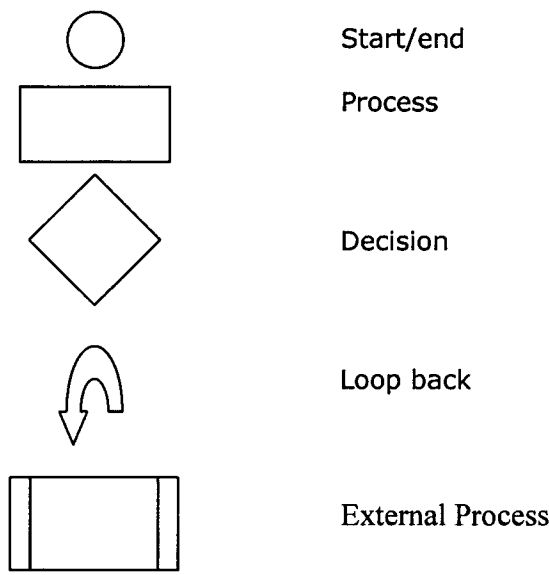
This step concerns the implementation process i.e. the creation process of the firm (Bizmarket). Use the codes below to identify portions of the text that relate to the creation process.

(1) Redefining/restructuring

Research Question No.	Codes	Definitions
3.2	IM	Innovation modified The innovation is modified and reinvented to fit the situation of the particular organization and its perceived problem
3.2	OB	Reviewing Objectives
3.2	OS	Organization structure modified Org. structure modified to accommodate the innovation.
3.2	CL	Clarifying The relationship between the innovation and the organisation is defined more clearly as the innovation is put into full and regular use.
3.2	RO	Routinizing The innovation eventually loses its separate identity and becomes an element in the organization's ongoing activities.
3.2	PM	Performance monitoring Refer to Q 7 in Questionnaire This is a 'yes' 'no' answer NOT FOR CODING – (Researcher to code)

NOTE: THE SYMBOLS BELOW ARE NOT FOR CODERS BUT ARE USED BY THE RESEARCHER IN IDENTIFYING THE PROCESS. EACH (TOTAL OF 5) TRANSCRIPT (FROM BIZMARKET) IS USED TO DEVELOP A FLOW CHART; VALIDATION CARRIED OUT PRIOR TO THE FINAL INTEGRATION OF ALL THE FLOW CHARTS (Hulbert *et al.* 1972).

(2) Symbols for identifying creation process



Step 5:

This step focuses on the development of causal maps. Wording in the text and the verbs used play an important factor in this section.
(CODING SHEET FOR THIS SECTION APPEARS IN Section G)

Wording:

Wording problems are common sources of errors and inconsistencies. In many cases the inconsistencies are minimal, but wording errors can lead to serious problems in later interpretation. Therefore, the general principle is to ‘stick’ to the original wording of the text as close as possible. Better to include than to exclude text. In other words, treat the original as a source being quoted (Huff *et al.* 1990).

Verbs:

Do not be tempted to drop verbs or change them to nouns, when writing down code. The outcome is sometimes harmless, but at other times the change in wording results in a subtle but distinct shift in meaning. Check the synonym list; if the verb structure is synonymous, it can be dropped safely (Huff *et al.* 1990).

Relationships

- (1) Please re-read the entire text to understand the speaker's point of view based on the semi-structured questionnaire. During this reading, you may want to mark in pencil obvious text items, particularly passages that are not directly relevant to the question.
- (2) In the following pass, find the relationship in the text i.e. positive, negative or other linkages or utility relationships. Check for gaps e.g. pick a phrase in random and ask the question "how is this related with this" then is it a positive or negative relationship or any of the other relationship codes in Section C.
- (3) In the following pass place components in sequence i.e. the relationships. Some relationships may sometime be difficult to determine. In such cases ask the following questions:
 - Does the wording of the component follow all the wording rules?
 - Are both components variable in the sense that they have 'the potential to take on different value'?
 - Is the relationship non-causal? Should it be coded as a statement of explicit definition, equivalence or an example?
 - Does component 'A' precede 'B' in time
 - Does component 'A' logically precede 'B'?
 - Is 'A' necessary before 'B'?

NOTE: The importance of identifying the direction is not whether the speaker's relationship inference makes logical sense, but what is retaining the speaker's original meaning.

- (4) In the same pass, identify the nature of the relationship and assign linkage code. Select the portion of actual text to enter on the coding sheet. The lines in the text are numbered.

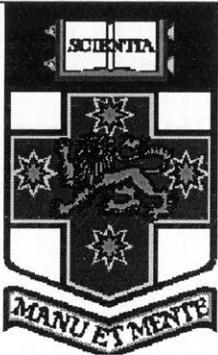
Section C

Coding the relationship/linkage of one concept with another

/+/-	-	A relationship with B e.g.
		<ul style="list-style-type: none"> • makes better • helps • promotes • expedites • makes possible • is necessary for
/-/-	-	A relationship with B
		<ul style="list-style-type: none"> • hurts • impedes • prevents • inhibits • changes for the worse
/⊕/		A relationship with B
		<ul style="list-style-type: none"> • won't positively effect • won't help • won't promote • is of no benefit to • (construct negatives of /+/- above)
/θ/		A relationship with B
		<ul style="list-style-type: none"> • won't affect negatively • won't hurt • (construct negatives of /-/- list above)
/m/		A relationship with B
		<ul style="list-style-type: none"> • affects in some nonzero way • somehow affects • in some way affects
/o/		A relationship with B
		<ul style="list-style-type: none"> • has no effect on • has no relation to • doesn't matter for
/=/		A relationship with B
		<ul style="list-style-type: none"> • is equivalent to • is the same as • is defined as
/e/		A relationship with B
		<ul style="list-style-type: none"> • is a member of • is an example of • belongs to set • is not a member of
/∉/		A relationship with B
		<ul style="list-style-type: none"> • is not a member of

Appendix 2

CORRESPONDENCE



THE UNIVERSITY OF
NEW SOUTH WALES



RONALD BEWLEY

PROFESSOR OF ECONOMETRICS
ASSOCIATE DEAN (RESEARCH)
Faculty of Commerce and Economics

16 July 2001

Mr Samir Gupta
School of Marketing

Dear Samir,

Re: Staff Doctoral Research Grant resubmission dated 4 June 2001

After consultation with the Research Committee, I am pleased to inform you that your application has been approved for a Staff Doctoral Research Grant of \$2577 for your project titled:

"The B2B e-market in Business Network: Understanding the Dynamics of its Diffusion Process and its Strategic Significance"

The funds must be spent by 31 August 2002 and a report on the expenditures and outcomes from the project should be submitted to the Associate Dean (Research) by that same date. A three month extension may apply if you notify the Office of the Associate Dean (Research) in writing prior to the completion date. Please inform us should any circumstances relating to your SDRG application change during this time.

Account details will be available in early August.

I wish you all the best with your project. Should you have any further queries, please feel free to contact my assistant Cassie Fatcher on extension 3167.

Yours sincerely

Ronald Bewley

Cc: Nadia Withers

THE UNIVERSITY OF
NEW SOUTH WALES



SCHOOL OF MARKETING

Dear

Re: Letter of Introduction

This is to introduce Mr. Samir Gupta who is a doctoral fellow at this University. His PhD topic is "Understanding the Dynamics of the Diffusion Process of Business-to-Business Exchanges in Supply Chain Networks". In particular Samir will be examining the strategic importance of adopting Business-to-Business Exchanges in a network. He is planning to conduct in-depth interviews of senior executives who are directly involved in their company's strategic decision making process. Samir would like to contact you soon to arrange a mutually convenient time to meet with you with his supervisor Dr. Chris Dubelaar whom you have spoken to in order to seek your cooperation in conducting this project for mutual advantage.

After successfully completing his PhD, an Industry Report will be developed for your organisation. The report will highlight key factors participants in the supply chain need to adopt in order to gain competitive advantage and to provide input into the development of policy and best practice.

This dissertation is leading edge research in the area of electronic commerce and your assistance in the project will be greatly appreciated. If there are any additional aspects that you or your organization would like Samir to focus on in relation to his research please do not hesitate to mention your requirements. I hope you will find the project a useful insight into the strategic benefits of creating Business-to-Business exchange in a network.

Thank you for your consideration
Yours sincerely

Professor Mark Uncles
Head - School of Marketing

THE UNIVERSITY OF
NEW SOUTH WALES



SCHOOL OF MARKETING

9 January 2001

Ms Caroline Ralphsmith
CEO and Founder
BIZMARKET
Woollahra, NSW. 2052

Dear Ms Ralphsmith

Research Proposal

Please find enclosed an overview of the research project, that includes objective of the project, rationale for the study, outcomes, how the research will be conducted, confidentiality of the data, the research team members and the time table for the research.

The objective is to understand how and why virtual exchanges are created and identify the strategic significance of a virtual enterprise from the point of view of the enterprise itself as well as the suppliers and business buyers that join the exchange.

The output will consists of a number of case studies that will be prepared for publication both as academic papers and for teaching at a masters level at Boston University, UNSW and at Monash University. This research should help Bizmarket to identify barriers for firms trying to enter such an enterprise and identify successful strategic factors to those firms that wish to enter the virtual exchange with the view of creating a critical mass.

The research will focus on not only Bizmarket but will include suppliers and buyers to the network. It will also include technology specialist firms and policy regulators. A case study approach as been identified for the collection of the data that will involve a series of in-dept interviews. Data collected will be handled in confidence and in accordance with the University rules of confidentiality.

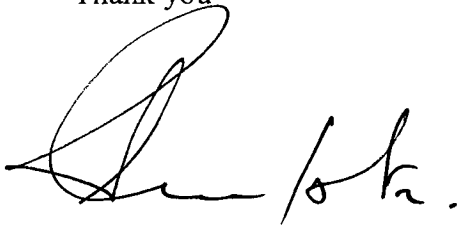
The research questions identified can be discussed further and any additional information identified by the users can be accommodated in the study for analysed. An Industry Report will be presented at the end of the study.

This research is of significance due to the restructuring of industries and the introduction of new technology. Previous research in business network, supply chain management, and strategic management has been limiting. This is the first research of its kind that will involve an Australian company with Australia's premier institution.

Professor Arch Woodside, Dr. Jack Cadeaux and Dr. Chris Dubelaar will be involved in the research study. Please do not hesitate to call on them or myself at any time to discuss any aspect of the research. A quarterly report mechanism will be set up to provide findings and report on progress of the study.

I hope the research proposal meets with your approval.

Thank you

A handwritten signature in black ink, appearing to read 'Samir Gupta', followed by a large, stylized flourish or initial.

Samir Gupta

B.Bus (Marketing), Dip. Maths, MBA,



MEMORANDUM OF UNDERSTANDING

SCHOOL OF MARKETING

This Memorandum of Understanding is made on 30th day of January 2001 between Bizmarket and The Main Researcher Samir Gupta of University of New South Wales together being the parties.

The parties have a Memorandum of Understanding that:

1. The Main Researcher will submit a quarterly report for discussion.
2. The Main Researcher will submit an Industry Report¹ at the end of the research project.
3. There shall be no restriction on the use by the Main Researcher and the Research Team members² of published information from and about Bizmarket that is readily available through normal trade and industry sources.
4. Information expressly identified by Bizmarket as "sensitive", and not covered by point 3, will be treated in confidence unless Bizmarket chooses to waive this restriction. This information can be shared among the parties without restriction. Should this sensitive information form part of the PhD thesis of the Main Researcher, the examiners can be asked to sign a confidentiality agreement and portions of the thesis can be held in confidence for an agreed period of time.
5. All taped interviews with Bizmarket will be treated in confidence unless Bizmarket chooses to waive this restriction. This information can be shared among the parties without restriction. Should extracts from the taped interviews form part of the PhD thesis of the Main Researcher, the examiners can be asked to sign a confidentiality agreement and portions of the thesis can be held in confidence for an agreed period of time. A copy of transcripts from the tapes will be made available to Bizmarket.
6. ~~The main researcher will have access to the records of Bizmarket in order to draw up a list of Bizmarket's clients to interview (suppliers and business buyers). Prior to conducting interviews the Main Researcher will consult with Bizmarket on the list.~~ Removed!
Chas/ken.
7. The main researcher will consult with Bizmarket in order to accommodate any research-related requests put forward by Bizmarket.
8. The Main Researcher intends to generate summary interpretations of the sensitive information and taped interviews. These interpretations will become the intellectual property of the researchers, as governed by University of New South Wales (UNSW) rules for the preparation and submission of research

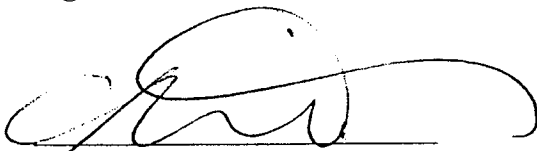
¹ Content of Industry Report will be discussed with Bizmarket.

² Professor. Arch Woodside; Dr. Jack Cadeaux and Dr. Chris Dubelaar

theses. These interpretations will be used by the main researcher for the sole purpose of academic publication and writing of the PhD thesis and are as such governed by UNSW rules. A copy of the interpretation will be made available to Bizmarket for their input. Draft copies of any publications for academic journals will be made available to Bizmarket prior to publication.

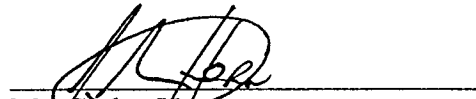
9. Any information that is deemed sensitive by Bizmarket will not be published without prior approval from Bizmarket unless Bizmarket waives this provision.
10. The terms of point 3 to 9 will exist for a period of up to three months from the submission of the Industry Report unless Bizmarket chooses to waive this restriction. Thereafter, there will be no requirement for the main researcher to have draft papers reviewed by Bizmarket prior to publication. This does not override the restrictions on sensitive information and taped interviews.

Signed on behalf of Bizmarket:



Ms. Caroline Ralphsmith
CEO Bizmarket

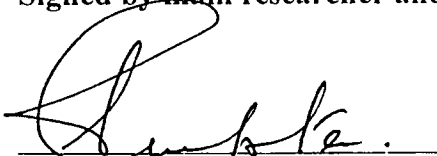
Date: 19/2/01



Mr. Carlos Horn
VP Marketing

Date: 19/2/01

Signed by main researcher and PhD Co-Supervisor. UNSW



Main Researcher
Samir Gupta
University of New South Wales

Date: 30/01/01



Co-Supervisor PhD Program
Dr Jack Cadeaux
University of New South Wales

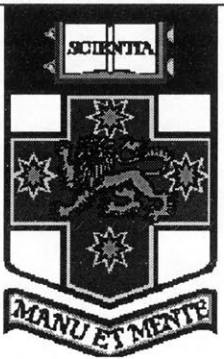
Date: 30/1/2001

Replacing Point 6 with the following statement:

Bizmarket to provide names and addresses of its clients to the main researchers so that the main researchers may draw up a list of Bizmarket's clients. The main researcher will use this list of clients to conduct interviews. The list of clients will require formally authority of Bizmarket management prior to conducting the interview process. Bizmarket to provide a letter of introduction prior to conducting the interview of Bizmarket clients by the main researcher. Bizmarket clients will have similar Memorandum of Understanding as Bizmarket.

Appendix 3

INTERVIEW PROTOCOL



Code	1			
Interview No.				

THE UNIVERSITY OF
NEW SOUTH WALES



PROJECT TITLE
**Developing Diffusion Process Models and
Strategic Performance Theory
for a New Venture**

Semi-Structured Interview questionnaire (Pilot)
Focus: (1) B2B e-market organisation
(2) Sellers and Buyers
(3) Third Party participants

Samir Gupta
School of Marketing
E-mail: s.gupta@unsw.edu.au
Telephone: 93865 3615

Interview Record
School of Marketing
University of New South Wales

Interview Time: _____ am/pm

Date of Interview: ____/____/01 Start time: _____ End: _____

Name of Interviewee: _____

Position in the Company _____ Code:

--	--

Division: _____

Organisation Address _____

_____ Post Code

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CALL RECORD TO CONVENE MEETING FOR INTERVIEW

Date	Time	Outcome	Notes

Semi-structured Questionnaire

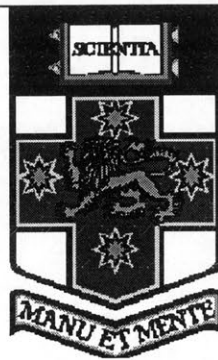
(Questions number relate to research questions)

- 1.1 How did you first become aware of electronic exchange? Why do you think they are created for business?
- 1.2 How did you establish that there was a need to create an electronic exchange?
- 1.3 When establishing the need for electronic exchange, what type of information did you rely on?
- 1.4 What alternative electronic means of business exchanges were investigated? Did you try out any of them? What were the outcomes from that investigation or the trial?
- 2.1 Did you have a set of evaluation criteria before you proceeded to embark on this new venture? What were these criteria? Formal and informal planning?
- 3.1 Describe the implementation/adoption process? Who were the players within your company involved in the adoption (implementation) process? How did each contribute to the process? Who were the external players in the process and how did they contribute? Was there one particular person within your firm who had overall responsibility in the adoption process? What was his/her role in the process?
- 3.2 Once you decided to adopt this new electronic exchange and create the new venture what steps did you undertake to implement it? Did you find that the steps were occurring simultaneously or that you considered finishing one step at a time? Expand.
- 4.1 How do suppliers and buyers become aware of your organisation? What process do they follow in order to join your organisation?
- 4.2 What challenges were encountered in attracting buyers and sellers to your organisation? Expand - how were the challenges addressed by your organisation?
- 4.3 How do suppliers (buyers) perceive the electronic exchange in terms of its advantages; compatibility with existing systems e.g. telephone; fax; internet or e-mail? Did your clients find the exchange operation complex? If so can you identify the problems (barriers) they faced? How were the problems addressed? - Complexity of electronic exchange.

- 4.4 What reasons were given by your customers to adopt or reject joining the electronic exchange?
- 6.1 Based on your experience, how did suppliers, buyers, technology providers, policy makers and financial institutions contribute to the adoption process?
- 5.1 In your experience how do suppliers and buyers use electronic exchange in performing marketing and procurement activities?
- 7.1 When evaluating success what factors would you consider?
- 8.1 In your experience what are the main factors mentioned by your suppliers (buyers) that they considered when joining an electronic exchange?
- 8.2 What were reasons were given if the supplier or buyer inform that they were not going to join straight away as they would like to wait and see?
- 8.3 What were the factors mentioned when suppliers and customers show reluctance in joining an exchange?
- 9.1 Compared with Electronic Data Interchange (EDI) how would you perceive the technology used in electronic exchange?
- 9.2 From your customer's point of view (I.e. suppliers and buyers) (a) whether or not you think that they have competitive advantage (b) if so, how in comparison with those who have not joined an electronic exchange do they have a competitive advantage.
- 9.3 What are the key factors that are offered by electronic exchanges such as yours that provide an advantage to suppliers and buyers? Who do you think benefits more suppliers or buyers, If suppliers how if buyers how? Do you think telecommunication and technology providers facilitate competitive advantage to the suppliers and buyers. If so how?

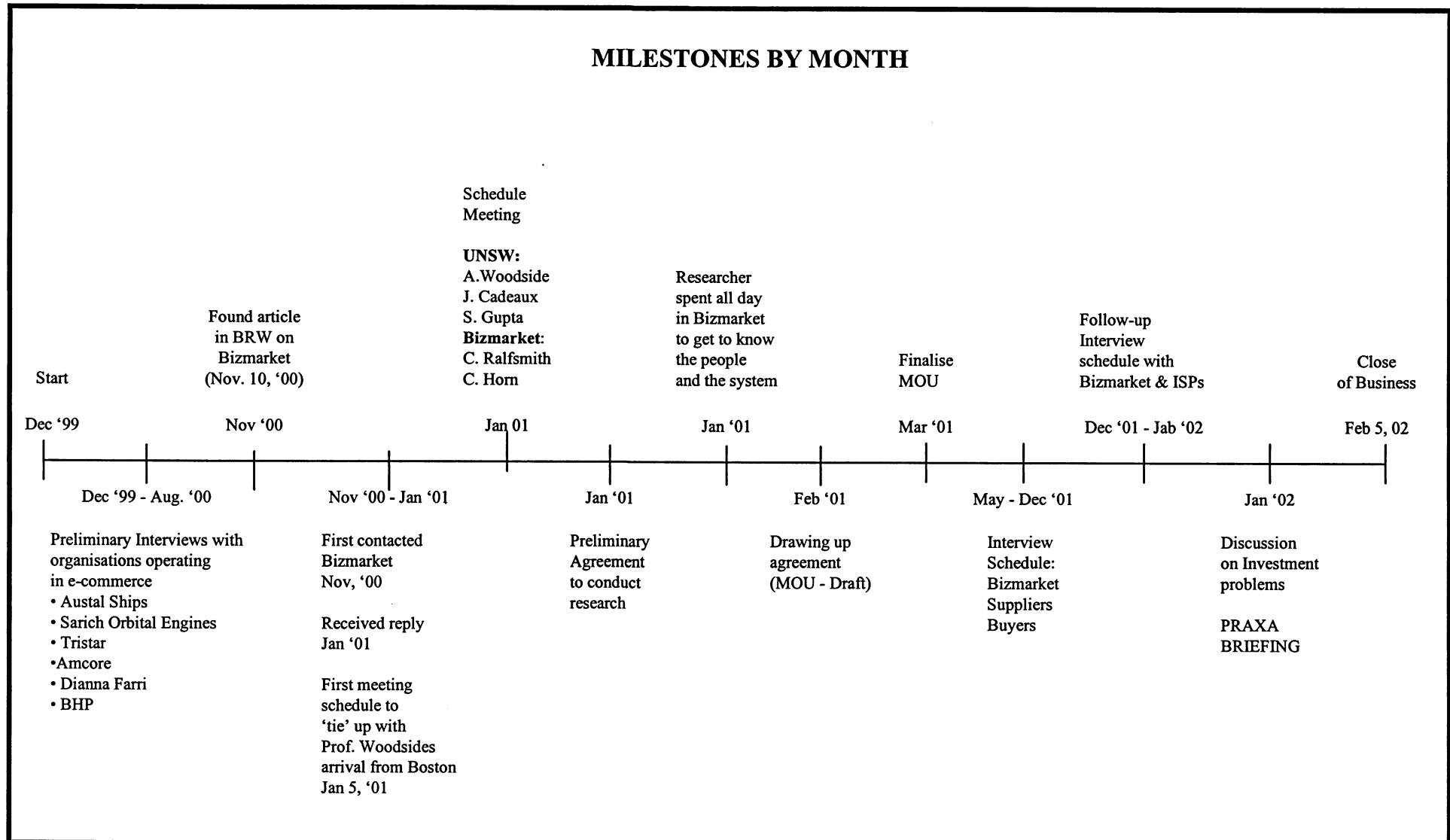
Appendix 4

MILESTONES



APPENDIX 4

MILESTONES BY MONTH



GLOSSARY OF TERMS

B2B e-market:	A B2B e-market is characterised as a new venture independent firm where buyers and sellers perform marketing and logistics activities using the embedded technological innovation on which it is based.
Business Network:	A business network is composed of a focal business, supply and buyer firms and third party participants.
Focal Business Network:	A focal business network is comprised of the focal business, suppliers and buyer firms.
Network Champions:	Network champions are external players to the focal business who act as catalysts in building new linkages amongst multiple firms that may or may not have communicated with one another, have detailed knowledge of the market, can see the needs of the marketplace and invest in the project and share risks.
Marketing Activities:	Comparing pricing and product information
Logistics Activities:	Gauging availability, delivery information and completing request for quotes and providing quotes online.
Focal Business Network:	Focal business network comprised of the focal B2B e-market firm, suppliers and business buyers
Business Network:	Business network is characterised as focal business network and third party participants.
Network Champions:	Network Champions are external players who link multiple firms at multiple levels, have detailed knowledge of the market, can see the needs of the marketplace and invest in the project and share risks.
Product Champions:	Product champions are those who create define or adopt an idea for a technological innovation and are willing to accept risk.
Organisational Champion:	Organisational champions are decision-makers who bring the innovation to from its inception to its implementation stage.
CDI:	Competence destroying innovation is characterised as innovation brought about by destroying previously dominant technologies such that the skill and knowledge base required to operate the core innovation shifts. Such innovations open new opportunities for new entrepreneurs.