Entrepreneurship and Innovations in E-Business

An Integrative Perspective

FANG ZHAO

Entrepreneurship and Innovations in E-Business:

An Integrative Perspective

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Preface

The fast growth and business successes of Amazon.com, Dell, travel.com, and others, and the bankruptcy of numerous dot-com firms worldwide in 1999-2000 have reinforced the importance of entrepreneurship and innovation in e-commerce and e-business. E-entrepreneurship and e-innovation are emerging disciplines for proactively responding to changes in the e-world. The dot-com crash presented new challenges and new opportunities to entrepreneurs as well as intrapreneurs and researchers to rethink and redefine the constructs of entrepreneurship and innovation for e-business. This author argues that a combination of entrepreneurship and innovation will be a crucial factor to the long-term sustainability of e-commerce and e-businesses. While in this frenetically changing competitive landscape, e-entrepreneurship and e-innovation help organizations to gain competitive advantage, they raise important issues in their practices.

"Entrepreneurship, in its narrowest sense, involves capturing ideas, converting them into products and/or services and then building a venture to take the product to market" (Johnson, 2001, p. 138). A noticeable trend in the study of entrepreneurship in recent years has been away from the subject of small business per se toward the concept of entrepreneurship (Cornwall & Perlman, 1990; Chell, 2001). This book reflects this trend by emphasising the concept of entrepreneurship itself, rather than the personality or psychology of small e-business entrepreneurs in e-business.

Entrepreneurship represents organisational behaviour. The key elements of entrepreneurship include risk-taking, proactivity, and innovation (Miller, 1983). However, Slevin and Covin (1990, p. 43) argued that the three elements are not

sufficient to ensure organisational success. They maintained that "a successful firm not only engages in entrepreneurial managerial behaviour, but also has the appropriate culture and organisational structure to support such behaviour." The book adopts a similar approach and treats entrepreneurship as organisational behaviour that is related to change and innovation and discusses both external and internal environmental elements and structures for fostering entrepreneurship and innovation in e-business environment.

From an economic perspective, entrepreneurship increases national prosperity and competitiveness by virtue of its impact on employment creation and the development of new goods and services (Zahra et al., 1999). Corporate entrepreneurship, that is, intrapreneurship, can be used to improve competitive positioning and transform corporations, their markets, and industries as opportunities for value-creating innovations are developed and exploited (Miller, 1983; Naman & Slevin, 1993; Lumpkin & Dess, 1996). There is a firmly established empirical base for claiming the effectiveness of corporate entrepreneurship (Lumpkin & Dess 1996; Zahra & Covin 1995). The book examines the relationship between the economy and e-entrepreneurship and e-innovation and the effect of corporate entrepreneurship on e-business success.

Is entrepreneurship related to innovation? Studies show that there is considerable overlap between entrepreneurship and innovation (Kanungo, 1999; Sundbo, 1998; Drucker, 1994; Schumpeter, 1934). Innovation is the specific tool of entrepreneurship by which entrepreneurs exploit change as an opportunity for a different business or service. Moreover, innovation has to address market needs, and requires entrepreneurship if it is to achieve commercial success (Zhao, 2004). Entrepreneurship is a change of state, a dynamic process, and a unique event. Legge and Hindle (1997) believed that people who lead teams and organisations to introduce innovations are entrepreneurs. Entrepreneurs seek opportunities, and innovations provide the instrument by which they might succeed. Corporate entrepreneurship often refers to the introduction of a new idea, new products, a new organisational structure, a new production process, or the establishment of a new organisation by (or within) an existing organisation. As Herbig, Golden, and Dunphy (1994, pp. 37 and 45) have observed: "Innovation requires three basic components: the infrastructure; the capital; and the entrepreneurial capacity needed to make the first two work."

Drawing upon the outcomes of the principal studies of entrepreneurship and innovation, this book opens up a new field of debate and research about the role of entrepreneurship and innovation in the e-world, namely, e-entrepreneurship and e-innovation. E-entrepreneurship and e-innovation refer to broadly entrepreneurship and innovation in the context of e-business activities and operations. The theoretical constructs and the working concepts of e-entrepreneurship and e-innovation are developed and explored from various perspectives in the book through comprehensive and collective studies by a number of researchers and practitioners with e-business and management expertise.

The primary purpose of the book is to explore the changes in the nature, process, and practice of entrepreneurship and innovation in e-commerce and e-business after the dot-com crash. The specific objectives are:

- To characterize and define the main constructs of e-entrepreneurship and e-innovation;
- To examine the relationships and internal synergies between entrepreneurship and innovation in e-commerce and e-business;
- To explore the economical, social, political, and organizational structural elements in the rise and fall of e-entrepreneurship and e-innovation;
- To investigate the effect of "e-intrapreneurship," that is, e-entrepreneurship within organizations, on e-business;
- To identify and corroborate best practices in e-entrepreneurship and innovation through best practice case studies;
- To examine ethical issues relating to e-entrepreneurship; and
- To speculate the future trends of the e-dimension of entrepreneurship and innovation.

You will find the book extremely helpful if you belong to one of the following groups:

- Entrepreneurs and managers from micro-enterprises to multinational companies who have been engaged in or plan to start, e-commerce and/or e-business;
- Lecturers and students in the subject areas of entrepreneurship and innovation;
- Researchers and students who study the electronic business and technology aspects of entrepreneurship and innovation;
- Government policy-makers and regulators who seek to address the significant issues in relation to e-commerce in the small and medium-sized business sector; and
- Anyone who is interested in the field of study.

This book helps e-business managers to formulate and implement strategies that foster the development of e-entrepreneurship and e-innovation, and provides a greater understanding of the crucial issues in e-business operations in a wide range of fields. As the present study is based upon both empirical and theoretical research, the book is also a valuable resource for researchers and students in the study field.

A review of the current literature about e-business as well as entrepreneurship and innovation found that there is hardly any English language literature investigating the dot-com crash from a perspective of entrepreneurship and innovation. The book intends to fill the knowledge gap and entails a better understanding of how significantly e-businesses rely on their entrepreneurial and innovative capacities, and how to develop these capabilities needed for sustainable success.

The book provides readers with both theoretical and practical guidance to a further study of e-entrepreneurship and e-innovation. The book presents a comprehensive introduction of the concepts and practices of e-entrepreneurship and e-innovation. The book discusses the application of the concepts in e-business operations and management. Readers are able to appreciate the key issues involved in the development of e-entrepreneurship and e-innovation.

The book is organized into 14 chapters, addressing the objectives of the book. A brief description of each of the chapters follows:

Chapter I sets the theme for the entire book. It identifies and explores the synergies between entrepreneurship and innovation, analyses the factors that foster an interaction between the two, and provides an integrative framework for building entrepreneurial and innovative organization in the e-world. The chapter reports findings from a number of case studies of entrepreneurial and innovative dot-com companies and from a comprehensive review of entrepreneurship and innovation literature. This empirical study contributes to a better understanding of the existing theories and practices of entrepreneurship and innovation in organisations.

Chapter II introduces the work of Deleuze and Guattari, particularly their notion of rhizomic becomings to the study of emergent knowledge dynamics in contexts of innovation. It shows how an analysis of rhizomic becomings can assist to explore new and emergent patterns, channelling interpretation toward the discovery of new combinations and creative assemblages in knowledge. This is exemplified by the example of a qualitative study exploring knowledge dynamics in e-business entrepreneurship since the dot-com crash. The results highlight the forging of the conditions for innovation in new combinations of lines of affect and lines of technology.

Chapter III critically challenges the naïve view of Internet innovation and reflects on the extraordinary rise and fall of large numbers of e-entrepreneurial intermediaries. Unlike much of the literature in this area, which has largely focused on leading companies or the few successful hubs, this chapter concentrates more on the opportunities and obstacles that face small and entrepreneurial organizations, and the innovations which failed. It addresses two central questions: Why did the Internet revolution not happen? What substantive ideas for business practice can be salvaged from the wreckage? Drawing on a multi-stranded empirical study, this chapter seeks to explain the divergence between the expected and realised degrees of e-business innovation.

Chapter IV presents experiences of two entrepreneurial companies in adopting e-innovations. The chapter identifies current and future online business environments, especially in light of Open Source Software (OSS) being accepted globally. Unlike proprietary software (such as Windows), OSS comes with its internal implementation details (source code) visible both to its developers and users, along with the freedom to change and redistribute this source. The significant implications of this unique style of software distribution for e-entrepreneurs are examined. Having a flexible strategic plan; possessing management skills; providing excellent service; and having patience are some of the recommendations provided by interviewed e-entrepreneurs. When made part of the decision-making process, these recommendations would enhance current and future e-entrepreneurs in sustaining their business.

Chapter V aims to illustrate how technology innovations can be implemented in the SME sector and to explore how technology innovation and marketing can help each other in enhancing e-entrepreneurial companies. The chapter focuses on a UK-based marketing communications company which has developed an innovative personalized relationship e-marketing tool, utilizing mobile technology aimed at the SME sector. Current marketing practices, such as database marketing and CRM systems, are discussed in terms of SME adoption. The chapter provides a pragmatic guide to formulating SME relationship marketing strategies using e-innovations.

Unlike other chapters of the book which predominantly focus on the business and/or industry sectors, Chapter VI seeks to explore the strategies for virtual learning and e-entrepreneurship in higher education institutions. The study examines the pedagogical ICT strategy which is a specific functional strategy that describes the strategic outlines for virtual learning and e-entrepreneurship. The aim is also to explore the methods (such as the balanced scorecard (BSC) approach developed by Kaplan and Norton) to communicate and implement the strategy in an understandable and efficient manner. This chapter helps educational administrators to better implement strategies for virtual learning and e-entrepreneurship.

Chapter VII illustrates the rise and fall of an e-entrepreneurial company embracing e-innovation. The case company corProcure, a postal e-marketplace founded in partnership with 13 big corporations, was viewed by many as a promising e-innovation star when it was launched. But the company's business model failed. This chapter seeks to answer the questions: Why had the potentially largest buying cartel failed so quickly? What lessons were learned? What was the right e-business strategy that needed to be implemented? The evolution of *corProcure.com* has been a learning curve for those involved, the initial owners, the new owner Australia Post, but also for all the interested e-business observers.

Chapter VIII presents a case study of Sensis Search, a young successful e-business which was launched in July 2004. The case study sheds light on a model of best practices in terms of the development of entrepreneurship and innovation, in the current business environment where the overall economic conditions worldwide have been improving, and investors' confidence in high-tech and e-business industries has been recovering. The e-entrepreneurship strategy that Sensis Pty, the parent company of Sensis Search, has taken is actually that of an intrapreneurship, that is, an entrepreneurship within an organization. The chapter explores the lessons, both good and bad, learned from the case and identifies the areas for future research.

Chapter IX discusses using e- and m-business components in supporting and enhancing existing businesses and in creating new business innovations. A framework illustrating two different approaches companies have to the adoption of e- and m-business components is proposed. Three cases of how Finnish companies have, in an innovative way, used e- and m-business components to support, to enhance, and to launch entrepreneurial businesses are presented. Based on the illustrative framework and the cases, some rules of thumb for using e- and m-business components are proposed. The aim of this chapter is to offer e-managers and e-entrepreneurs helpful insights for planning e- and m-business component investments.

Chapter X explores the main constructs of e-entrepreneurship through a case study of an Internet start-up company developed by two e-entrepreneurs. The Internet is a new platform for setting up business providing entrepreneurial opportunities to those who may not be capital rich. It enables people to turn innovative business ideas into reality. It is also apparent from the case study that like any other business, just an innovative idea is not enough, a business plan and a revenue model are essential for developing the enterprise. The e-entrepreneurs in the example had to make an enormous effort in marketing and promotion of the business for customer acceptance.

Chapter XI touches on ethical issues in e-entrepreneurship. It reports the results of an Australian national survey which studied Australian Internet users' online information privacy values using a typology that combines specific demographic and attitudinal measurements with behavioural data. The chapter contains a comprehensive examination of the internal, external/environmental, and behavioural dimensions of information privacy, incorporating a comprehensive profile of each of the typologies' categories along with a general profile of total respondents. The implications of the findings for e-entrepreneurship and e-business ethics are discussed.

Chapter XII incorporates several perspectives to examine how small and medium-sized enterprises (SMEs) use the network technologies and information and communication technology (ICT) in their current business environment. Through a literature review and interviews, the chapter analyses the various

options for managing the transformation, and its effects, to ascertain the appropriate strategies within a range of SMEs. The results of this study reveal that the SMEs' journey toward becoming e-organisations can be classified into three stages: 1/2-fusion, fusion, and the ultimate e-organisation stage. Based on this work, strategic solutions are proposed for future SMEs intending to adopt Internet and other network technologies.

Chapter XIII explores new ways for SMEs to create a competitive advantage through the use of e-business. It examines the level of ICT use in SMEs and identifies the drivers and barriers which owner-managers face in adopting e-business. Furthermore, it explores the degree of awareness amongst SMEs of the opportunities available to them for developing their employees, their business strategies, and their attitudes toward the range of initiatives and options on the use of e-business. Industry behaviour and organisational culture in relation to the creation of competitive advantage through e-business are also explored.

Chapter XIV addresses the very important question of the impact of e-innovation, namely, Web-based global electronic procurement systems and marketplace on corporate governance in relation to organizational purchasing — the organizational structures and processes for procurement control. This is undertaken through an action research case study of the failures and successes of competitor global organizations cooperatively establishing and utilizing a global electronic marketplace. Specifically, the chapter investigates how electronic procurement contributes to the adaptation and evolution of control structures — from highly structured, bureaucratic, and rigid to flexible, adaptable, free-flowing, and profitable, and these can result in substantial reductions in transaction costs.

In today's e-business context, technology, customers, competitors, and partners can change rapidly. E-technology innovations can become obsolete in the blink of an eye and customers can appear and disappear with a keystroke. In such circumstances, it is crucial that e-business entrepreneurs, managers, and policy-makers have an insightful knowledge and understanding of the complexities of e-business and how to make e-entrepreneurship and e-innovation work for e-business.

As shown, e-entrepreneurship and e-innovation are critical to the sustainability of e-business. Unfortunately, they are under-researched areas in e-business management literature. While there are many publications, both academic and professional, that talk about e-business and entrepreneurship, such as the books authored by Timmons and Spinelli (2003) and Allen (2000), most of the publications place their focus on how to help micro enterprises and entrepreneurs set up and run e-commerce.

Unlike the existing publications, this book was written from an integrative perspective of entrepreneurship and innovation to examine both strategic and operational issues around e-business after the dot-com crash. The book also con-

tributes to the development of the emerging disciplines of e-entrepreneurship and e-innovation both theoretically and practically.

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Chapter I

Entrepreneurship and Innovation in E-Business: An Integrative Perspective

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Abstract

This chapter argues that a combination of entrepreneurship and innovation is a crucial factor to the long-term sustainability of e-commerce and e-businesses. Entrepreneurship and innovation are positively related to each other and interact to help an organisation to flourish. The chapter takes an integrative approach to exploring the synergies between entrepreneurship and innovation and to analysing the factors that foster an interaction between the two. Case studies of entrepreneurial and innovative dot-com companies were conducted to complement a comprehensive literature review of entrepreneurship and innovation. This empirical study contributes to a better understanding of the existing theories and practices of entrepreneurship and innovation in organisations.

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Introduction

The fast growth and business successes of eBay, Amazon.com, travel.com, priceline.com, and so forth, and the bankruptcy of numerous dot-com firms worldwide in 2000 have held potent management implications for IT innovation and entrepreneurial organizations worldwide. **E-entrepreneurship** and **e-innovation** are emerging disciplines for proactively responding to changes in the e-business world. The **dot-com crash** presented new challenges as well as new opportunities to e-business entrepreneurs and managers to rethink and reshape their business strategy. This author argues that a combination of **entrepreneurship** and **innovation** is a crucial factor to the long-term sustainability of e-commerce and e-businesses. In this frenetically changing competitive landscape, an integrative approach to e-entrepreneurship and e-innovation will enable organizations to gain competitive advantage and hold the key to e-business success.

This chapter investigates the relationship between entrepreneurship and innovation and their roles in organizational development, in general, and in dot-com industries, in particular. A review of the current literature about e-business as well as entrepreneurship and innovation found that there is hardly any English language literature investigating dot-com experiences from a perspective of entrepreneurship and innovation. Some studies have dealt with the process, structure, and strategy of either entrepreneurship or innovation (Littunen, 2000; Cornwall & Perlman, 1990: Caird, 1988; Casson, 1982), and others have touched on the conceptual relationship between the two (Schumpeter, 1934; Drucker, 1994; Legge & Hindle, 1997; Kanungo 1998; Sundbo, 1998). However, there have been few empirical studies that explore the synergies between the two.

Thus, the aims of this chapter are:

- to contribute to an understanding of the complementary nature of entrepreneurship and innovation through an empirical study of dot-com companies, and
- to develop an integrative framework for building **entrepreneurial and innovative organization**.

Data for this qualitative study were collected from three sources, using complementary methods. First, a review of principal literature about entrepreneurship and innovation was undertaken to collate the existing theories about the two and explore the conceptual relationships between them. Second, semi-structured interviews were conducted to examine the perceptions of senior managers in e-business regarding entrepreneurship and innovation and the factors that contrib-

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ute to the development and integration of entrepreneurship and innovation. Eleven senior managers involved in e-businesses in Australia were interviewed between April and August 2004. These interviews focused on how the dot-coms/ e-businesses have been managed, how they have succeeded or failed, and what lessons can be learned from their experiences. This chapter reports part of findings of the interviews relevant to the main theme of the study. Third, case studies of five dot-com companies were undertaken to explore organisational practice and behaviour, and the correlation between business practice entrepreneurship and innovation in **dot-com industries**. Three of the case studies rely on documentary research, while the other two rely on semi-structured interviews with their senior managers. The companies that were selected for the case studies and interviews encompass various business sectors (e.g., search engine, online auctioneer and retailing, digital music provider, and online speaker portal), operating in different nations and cultures, and have different histories, varying in size and length of existence, but they serve to illustrate the main focus of the chapter — the interaction between entrepreneurship and innovation in **e-business**.

Literature Review

There has been no consensus in defining entrepreneurship and innovation in the existing literature. Some studies have dealt with entrepreneurship and innovation by investigating the personality and psychology of entrepreneurs and innovators (Littunen, 2000; Caird, 1988; Casson, 1982). Others have talked of the nature of entrepreneurship and innovation in organisations (Goffin & Pfeiffer, 1999; Martin, 1994). This literature review summarises a diverse spectrum of views about entrepreneurship and innovation and the relationship between them. The review also touches on cultural issues because they have a profound influence on the development of entrepreneurship and innovation (Herbig, Golden, & Dunphy, 1994).

Entrepreneurship

"Entrepreneurship, in its narrowest sense, involves capturing ideas, converting them into products and/or services and then building a venture to take the product to market" (Johnson, 2001, p. 138). A noticeable trend in the study of entrepreneurship in recent years has been away from the subject of small business per se toward the concept of entrepreneurship (Cornwall & Perlman, 1990; Chell, 2001). The chapter reflects this trend by emphasising the concept of entrepre-

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neurship itself, rather than the personality or psychology of small business entrepreneurs.

Entrepreneurship represents organisational behaviour. The key elements of entrepreneurship include risk-taking, proactivity, and innovation (Miller, 1983). However, Slevin and Covin (1990) have argued that the three elements are not sufficient to ensure organisational success. They maintained that "a successful firm not only engages in **entrepreneurial managerial behaviour**, but also has the appropriate culture and organisational structure to support such behaviour" (Slevin & Covin, 1990, p. 43). This chapter adopts a similar approach and treats entrepreneurship as organisational behaviour that is related to change and innovation.

Entrepreneurs and Small Business Owners

Entrepreneurs are different from small business owners. Garland, Hoy, Boulton, and Garand (1984) and Steward, Watson, Garland, and Garland (1998) argued that **small business owners** were concerned primarily with securing an income to meet their immediate needs and that they did not usually engage in innovation, whereas entrepreneurs had higher achievement motivation and risk-taking, and were inclined to innovation and change. This chapter presents a related perspective in arguing that entrepreneurship and innovation are closely related and complementary.

Corporate Entrepreneurship or Intrapreneurship

Drucker (1994) made an important contribution to the theoretical construct of entrepreneurship in large organisations when he referred to "**corporate entrepreneurship**" or "intrapreneurship." Antoncic and Hisrich (2003) argued that **intrapreneurship** goes on within organisations, regardless of their size. Intrapreneurship research has studied the individual intrapreneur, the formation of new corporate ventures, and the characteristics of entrepreneurial organisation (Antoncic & Hisrich, 2003). In this chapter, entrepreneurship includes corporate entrepreneurship and intrapreneurship.

Innovation

For more than half a century, research and development (R&D) has been closely associated with technological innovation (Miller & Morris, 1999). Invention is the narrowest definition of innovation. Drucker (1994) maintained that there are

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seven basic sources of opportunities to innovate. Only one of them is to do with inventing something new. Thus, innovation is more than invention and does not have to be technical. There are numerous examples of social and economic innovations (Drucker, 1994). Innovation is a proposed theory or design concept that synthesises extant knowledge and techniques to provide a theoretical basis for a new concept (Sundbo, 1998; Bright, 1969). Hence, innovation has many facets and is multidimensional. The most prominent innovation dimensions can be expressed as dualisms: (i) radical vs. incremental; (ii) product vs. process; and (iii) administrative vs. technological (Cooper, 1998).

Innovation can be radical *and* incremental. Radical innovations refer to path-breaking, discontinuous, revolutionary, original, pioneering, basic, or major innovations (Green, Gavin, & Aiman-Smith, 1995). Incremental innovations are small improvements made to enhance and extend the established processes, products, and services. However, this contradistinction does not "necessarily [correspond] to the more fine-tuned reality" because "radicality is a continuum" (Katila, 2002 p. 307). Product innovation, as the name suggests, "reflects change in the end product or service offered by the organizations, [whereas] process innovation represents changes in the way firms produce end products or services" (Utterback cited in Cooper, 1998, p. 498). Some researchers have categorised innovation into technological and administrative innovations. Technological innovation is about "the adoption of a new idea that directly influences the basic output processes, [whereas] administrative innovations include changes that affect the policies, allocation of resources, and other factors associated with the social structure of the organization" (Daft, 1978, cited in Cooper, 1998, p. 497).

For the purpose of this chapter, innovation is defined broadly to include new products, new processes, new services (including new uses of established products, processes, and services), new forms of organisation, new markets, and the development of new skills and human capital.

The Conceptual Relationship between Entrepreneurship and Innovation

The conceptual relationship between entrepreneurship and innovation has been discussed in the literature for many years. The economics of innovation, in particular, have attracted increased attention in recent years (Grupp, 2001; Arora, Fosfuri, & Gambardella, 2002; Stoneman, 1995). Sundbo (1998) summarised the basic theories of the economics of innovation and identified three competing paradigms in the current theoretical discussion of innovation: (i) the entrepreneur paradigm; (ii) the technology-economics paradigm; and (iii) the strategic paradigm.

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The entrepreneur paradigm can be traced back to the 1930s when Schumpeter (1934) first attempted to establish a linkage between entrepreneurs and innovation in theory, and viewed the entrepreneur as innovator. He maintained that innovation contributes to the growth of the economy because entrepreneurs produce innovations. The concept of the entrepreneur as innovator underpins the entrepreneur paradigm in which the role of the entrepreneur is highlighted in the innovation process. According to this paradigm, only a person who founds a new company on the basis of a new idea can be called an entrepreneur. Entrepreneurship is viewed as a creative act and an innovation. Entrepreneurship is about creating something that did not previously exist. The creation adds value to the individual and the community, and is based upon perceiving and capturing an opportunity (Johnson, 2001). Bygrave and Hofer (in Legge & Hindle, 1997) held similar views. They regarded entrepreneurship as a change of state, a dynamic process, and a unique event. Legge and Hindle (1997) believed that people who lead teams and organisations to introduce innovations are entrepreneurs. Entrepreneurs seek opportunities, and innovations provide the instrument by which they might succeed. Corporate entrepreneurship often refers to the introduction of a new idea, new products, a new organisational structure, a new production process, or the establishment of a new organisation by (or within) an existing organisation. As Herbig et al. (1994, pp. 37 and 45) have observed: "Innovation requires three basic components: the infrastructure; the capital; and the entrepreneurial capacity needed to make the first two work."

Innovation is the specific tool of entrepreneurship by which entrepreneurs exploit change as an opportunity for a different business or service. There is considerable overlap between entrepreneurship and innovation (Kanungo, 1998; Sundbo, 1998; Drucker, 1994; Schumpeter, 1934). Moreover, innovation has to address market needs and requires entrepreneurship if it is to achieve commercial success (Zhao, 2001).

Case Studies of Synergies between Entrepreneurship and Innovation

This section summarizes key findings from the 11 interviews and five case studies conducted for the study. The interviews with senior managers from dot-com companies in Australia were aimed to examine their managerial practices and perceptions of the role of entrepreneurship and innovation in running an e-business. The majority of the managers interviewed considered that entrepreneurship and innovation share an interdependent and synergistic relationship and cannot actually be separated. For example, the CEO of **Destra**, a successful

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dot-com company based in Australia, believes that entrepreneurship means "creating something out of nothing," and that it is a mindset, where "anything is possible and the only boundaries are those that we create ourselves." To him, innovation means "doing something that hasn't been done before or doing something differently." His company's *Destramusic.com* was the first digital music provider in Australia, going live between 1997 and 1998, far in advance of their current competitors.

SpeakerDirect (www.speakerdirect.com.au) is a young Melbourne (Australia) based dot-com, providing an online speaker portal. The online speaker portal business idea was developed in December 2003, and the portal was formally launched in March 2004, illustrating the fact that the founders believed that speed to market was one of the essential elements of their strategy, and a characteristic of the e-market. The Web site system was developed from scratch with the premise that the company wanted a corporate friendly and comprehensive tool for both speakers and speaker-seekers. SpeakerDirect is actually a business resource as well as a promotional platform. *SpeakerDirect.com.au* provides a free service for corporations to search and select corporate speakers, however, unlike their competitors, the company does not take engagement fees. The company has an ambitious goal of becoming the number one global speaker portal within five years and to connect up the entire business community.

From the perspective of the company's founders and directors interviewed for the study, entrepreneurship and innovation mean risk (financial, emotional, and personal):

Entrepreneurship is taking control and action on a concept or a dream in the face of adversity. The tangible aspect of making that happen is where innovation comes in. For example, I want people to communicate with each other over long distances (the dream), therefore I am going to do something about it and invest time and dollars to do it even when everyone is saying it cannot be done/I am mad/it is too risky (entrepreneurship/the risk) and a phone is designed to achieve this (the innovation to achieve the dream). A combination of both is the 'big picture' that requires tenacious and passionate people to turn an idea into reality by being independent and in control. (Interview Data, 2004)

The business model that the company has developed is in itself an example of a combination of entrepreneurship and innovation — it is the first of its kind, replacing the idea of the client having to deal with many agencies separately, by creating a one-solution portal. Another example of entrepreneurship and innovation is the system behind the Web site. This was designed to be multi-functional (but streamlined) and very user-friendly for both speakers and seekers. One of

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the most innovative features is a bulletin board where companies can advertise an event for which speakers can express an interest in being engaged for — this would be a useful tool for anyone who is time-pressed or needs a speaker at short notice. Another key e-dimension of entrepreneurship and innovation that the case company demonstrates is responsiveness to client and market needs. For example, *SpeakerDirect.com.au* is seeking to position itself as a media tool (e.g., by providing a service whereby speakers are available to journalists for "expert comment," gaining valuable and credible exposure, but without actually being engaged on a fee basis). In the director's words, they have "flipped the agency concept on its head," and as a result, many seeker clients believe the free service is "too good to be true."

eBay, a widely successful start-up, is a classic example of entrepreneurship and innovation in the e-business world. From its humble origins as a trading post for Beanie Babies, eBay has become one of the world's largest online trading centres. It has created a whole new business arena which hosts over 150,000 entrepreneurs and about 30 million customers worldwide. The company has constantly pursued new ways of doing business. For instance, eBay created an innovative feedback system in which buyers and sellers can rate each other following a transaction, thereby enhancing users' experience and satisfaction. Its PayPal payment-processing system also allows buyers to make electronic payments to eBay sellers who cannot afford a merchant credit card account. This opens up a whole new medium of exchange. As a result of such innovations, it is estimated that eBay's net revenues will grow to US$3 billion by 2005 (Hof, 2003).

Google, the Web search engine giant, is not only an entrepreneurial company in terms of its aggressive growth strategy but also a pioneer of innovation. To enhance the level and efficiency of its features and services, Google has continuously improved its technologies. It created a services and tools section in its Web site known as Google Labs to demonstrate its innovation and ask its users to experiment with and provide feedback on the features and tools. Google toolbar, Google Groups, and Google Answers are a few of their other innovative e-business developments (Anonymous, 2004). The founders of Google, two graduate computer students expressed their innovation mindset quite frankly, "Google is not a conventional company. We do not intend to become one." In this respect, Google has persistently taken an unconventional way of designing its business and concentrated on building a better search engine rather than spending millions on marketing campaigns. It has innovated the existing technology to provide a fast, accurate, and easy-to-use search service that can be accessed from anywhere at anytime. "Never settle for the best" is one of the company's philosophies (Google, 2004). In fact, Google's strategy against the fierce competition in the search engine provider market is one of constant innovation and entrepreneurship through creating new and innovative services

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and tapping new channels of revenues. For example, Google has recently launched a string of new services, such as the free Webmail service, G-mail, and Froogle, an online shop price comparison service (*BBC News*, April 29, 2004).

Most recently, **Google** took another unconventional step to sell its company to the public. The floating approach is innovative and "peculiar" (in some analysts' view) as Google's management decided to sell its shares through an online auction rather than the traditional allocation by big banks. It was reported that this approach to the initial public offering (IPO) aimed to give the general public a better chance to buy Google's stock before the shares begin trading, rather than let investment banks decide who should own the shares. However, the floating plan caused concerns that the impending float would fuel a second Internet bubble. Analysts expected that Google would attract a market valuation of up to US$40 billion (Clarke, 2004, *BBC News*, April 29, 2004). Amid a weak stock market and a lukewarm investors' response to Google's IPO proposal, the company's executives had to reset the opening price from US$108-US$135 to $85 and cut the number of shares offered from 25.7 million to 19.6 million. After two days trading, Google's share price jumped 27%. All of a sudden, the value of the young start-up dot-com became worth more than the Ford Motor Company (Wood, 2004). By October 22, 2004, about two months after the IPO, Google's share price had reached US$169, which almost doubled the initial IPO price (Perez, 2004).

Amazon.com's success has everything to do with innovation and entrepreneurship. The company has been a pioneer in the dot-com industry since its beginning. It was the first company to move a book retailing business online; the first to offer its customers a "one click" program to streamline the buying process by storing detailed customer information including credit numbers; and the first to use collaborative-filtering technology to give customers an idea about what other people with similar purchase histories have bought. **Amazon.com** was the first company to develop the comparison-shopping program that directs its customers to other retailers if it does not sell a certain product. Its affiliates program also was also the first in the dot-com industry, having directed millions of customers from its partners' sites to *Amazon.com.* Undoubtedly, Amazon.com has always been a first mover in e-business through continuous innovation (Mellahi & Johnson, 2000).

These empirical studies of e-entrepreneurship and e-innovation demonstrate that the success of e-business is inextricably linked to a combination of entrepreneurship and innovation, and that the two are enablers and key drivers of e-business.

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Issues and Challenges Facing Entrepreneurship and Innovation in E-Business

Today's e-business operates in a highly competitive marketplace where sustainable competitive advantage is almost impossible as there are minimal barriers to new entrants and competitors in the marketplace. Innovation faces constant challenges of imitation and erosion. There have been different views in the literature about the benefits of first movers in e-business marketplace. Mellahi and Johnson (2001) asked the question "does it pay to be first to market or should e-commerce firms wait for first movers to make an investment and then cannibalize the idea with lower entry cost?" The cause of the concerns are raised by a general belief that it is safer and less expensive to imitate the first mover in the e-business environment, where there is a higher level of technical uncertainties and rapid rate of technological innovation. For instance, many new dot-coms rushed to build an e-marketplace and chose imitation as a business strategy rather than innovation. This author maintains that it is the lack of a combination of innovation and entrepreneurship capacity that has caused the demise of many imitators in the dot-com industry. The essence of innovation and entrepreneurship is taking a new idea to market, not imitating a new idea without taking into account the special needs of local markets, and being innovatively and proactively responsive to environmental changes by introducing a new product, process, service, or implementing a distinctive business model as did the case companies studied in this chapter.

In the early days of e-business, it was likely that most businesses could be applied differently online and off-line. "Irrational exuberance" was prevalent within the market, and venture capitalists were prepared to take on much more risk. However, since the dot-com crash, the market appears to have reverted to traditional models and methods. More attention has been given to the fundamental structural components of e-business, such as flow of revenue. E-business, to many companies, is now just seen as another channel to market (rather than signalling the demise of off-line business as originally prophesized). Likewise, many senior managers interviewed for the study indicated that there was no difference in the concepts of entrepreneurship online and off-line. Traditional business models are here to stay. For new e-businesses to succeed, they need an innovative idea incorporated into a sound business model which is viable economically and which is facilitated by knowledgeable and experienced people.

As such, those entrepreneurial and innovative e-business activities which genuinely have utility for the customer (e.g., **e-banking**) are more likely to be successful. For example, the difference between retailing and banking is that

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while one is seen as an emotive and/or social activity, the other is perceived to be a chore. Therefore, offering an electronic channel to facilitate the latter is more likely to succeed than the former — people want convenience and speed when they bank, but they are more likely to value other factors which an online channel may not necessarily be able to offer when they shop for goods and services. In this respect, dot-com companies should endeavour to enhance customer experience by offering tools on their Web sites which enable customers to personalize the shopping process and provide more personalized business services.

In summary, the issues facing e-business today are that entrepreneurship and innovation needs to respond closely to market needs and gain market credibility. Ideally, there should be credibility built within the marketplace before inception of the business. In addition, the intangibility of an online service needs to be addressed in order to build brand awareness.

An Integrated Framework for Building Entrepreneurial and Innovative Organizations

Both the theoretical and empirical studies of this chapter demonstrate that a combination of both entrepreneurship and innovation is crucial to e-business success, and that they require systematic and **organizational behaviour**. In this respect, organisations can foster entrepreneurship and innovation behaviour internally through their strategy, structure, and processes (Cornwall & Perlman, 1990). Therefore, this author proposes an integrated framework for developing innovation and entrepreneurship to help organizations including dot-coms to obtain competitive advantage. The framework involves the "**5 S's**" of **s**trategy, **s**ystem (structure), **s**taff, **s**kills, and **s**tyle. This model is developed on the basis of the principal management literature of Bartol, Martin, Tein, and Matthews (2001), Robbins, Bergman, Stagg, and Coulter (2000), and Drucker (1994). However, the complex and evolving nature of entrepreneurship and innovation as shown in this chapter means that the proposed model might address only some of the issues pertaining to entrepreneurship and innovation behaviour. Therefore, the model should be seen as a starting point in developing effective organisational strategy, structure, and culture to stimulate entrepreneurship and innovation behaviour in organisations.

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Strategy

A well-defined and proactive strategy is central to an entrepreneurial and innovative organisation. Such an organisation needs internally focused strategies that propel growth and stimulate change within the organisation, as well as externally focused strategies that actively seek out new ventures, acquisitions, mergers, or joint ventures to achieve commercial success through innovations. The strategy should be diverse enough to address a spectrum of technological, financial, and human issues, and should be congruent with the future scenario envisaged for the organisation. Given the close synergies between entrepreneurship and innovation, the strategy should be both entrepreneurial and innovative, and should include methods of transforming established products and services into something new that will add value to existing businesses. Meeting and exceeding the changing needs of customers, as well as an emphasis on marketing and the development of new markets, should be key management and entrepreneurial strategies.

Moreover, in the current turbulent e-business environment, developing organisational capacity to acquire, create, accumulate, and exploit knowledge should be an essential strategy in gaining a competitive advantage through innovation. A good strategy depends on effective execution and requires an appropriate system, a capable staff team, a wide range of skills, and an encouraging and supportive management style that fosters an innovative and entrepreneurial organisational culture.

System and Structure

The case studies of this chapter suggest that size, industry sector, and type of organizations do not determine the extent of organisational capability in entrepreneurship and innovation, and that cultural and structural elements play a crucial role. Generally speaking, flexible, adaptive, and open organizations are more conducive to innovation and entrepreneurship, because a highly centralised decision-making process restricts information flows and communication with inter-firm partners and also stifles the motivation of e-innovation and e-entrepreneurship. The control and management system should be flexible — depending on the changing situational conditions affecting each project or program. Generally speaking, innovation is not fostered in tightly controlled structures. Empowerment and delegation are needed, especially during the early stages of innovation and product development. However, to secure a niche market, an appropriate control system should be maintained to monitor quality and costs, to meet tight deadlines, and to achieve predetermined objectives as the project develops. An effective balance between freedom and control is required.

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Staff

People are the most important assets in today's knowledge-based economy. Staff members in an innovative and entrepreneurial organisation must be creative people with a flair for innovation and entrepreneurial spirit, to realize its value. They must be keen to change, and keen to exploit such change as an opportunity. To succeed in its economic environment, an innovative and entrepreneurial organisation needs entrepreneurial project managers to promote and coordinate the development of innovative projects as well as creative and conscientious supporting staff to implement the projects. The right mix of people is essential to the successful commercialisation of innovations.

Skills

Drucker (1994) maintained that systematic innovation requires the capturing and monitoring of seven sources of opportunity: (i) the unexpected; (ii) incongruities; (iii) process need; (iv) industry and market structures; (v) demographics; (vi) changes in perception; and (vii) new knowledge. Clearly, an innovative and entrepreneurial organisation needs a range of managerial and entrepreneurial capacities and skills to handle innovation. These can be summarised as follows:

- an ability to search for and identify innovative opportunities
- a proactive attitude to the promotion of innovation through a strategic vision
- the ability to create a cultural environment that fosters innovation and entrepreneurship
- the ability to develop effective plans to implement innovation and commercialisation procedures
- the ability to integrate research, design, and market information to convert new ideas and inventions into commercially viable innovations
- the ability to develop effective and realistic procedures for the evaluation of R&D projects in terms of innovation, quality, and commercial value

Style

An ideal entrepreneurial management style for innovation should be open and supportive, should encourage and nurture new product development, and should identify new needs of customers, new users, and new markets through an ability

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to absorb information from various sources. The style of an **innovative and entrepreneurial organisation** should provide employees with a culture of empowerment and should enforce a reward system that provides incentives for innovative and entrepreneurial behaviours, values, and assumptions.

Conclusion

This chapter has explored the synergies between entrepreneurship and innovation through a review of the principal literature in this field and case studies of entrepreneurial and innovative organisations in the dot-com sector. The argument of the chapter is that a combination of entrepreneurship and innovation is a crucial factor to the long-term sustainability of e-commerce and e-businesses. The author has found that:

- Entrepreneurship and innovation are positively related to each other and interact to help an organisation to flourish.
- Entrepreneurship and innovation are complementary, and a combination of the two is vital to organisational success and sustainability in today's dynamic and changing environment.
- Entrepreneurship and innovation are dynamic and holistic processes in entrepreneurial and innovative organisations.

The chapter also broadly discussed key issues and problems in the implementation of entrepreneurship and innovation in e-business. Because entrepreneurship and innovation are systematic behaviours (Drucker, 1994), systematic efforts are required to incorporate them into the operations of organisations. The "5 S's" model is designed to address this need. Entrepreneurship and innovation should be regarded as ongoing, everyday practice in organisations, and this chapter has contributed to the development of such an attitude.

However, given the small sample size of interviews and case studies, and the nature of this qualitative study, there are methodological limitations which do not permit any generalization of the findings of the chapter to other situations. The perceptions of the people interviewed may not represent those of the industry as they are personal understanding of entrepreneurship and innovation based upon their respective experiences. To minimize the limitations, this author chose two small dot-coms in Australia to complement the case studies of the three leading global players in the dot-com industry — Amazon.com, Google, and eBay.

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Nevertheless, these limitations infer that further systematic and comprehensive research would be useful — especially if it involves quantitative studies of a larger sample size in different settings.

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Chapter II

Exploring Rhizomic Becomings in Post Dot-Com Crash Networks: A Deleuzian Approach to Emergent Knowledge Dynamics

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Abstract

This chapter introduces the work of Deleuze and Guattari, particularly their notion of rhizomic becomings to the study of emergent knowledge dynamics in contexts of innovation. It shows how an analysis of rhizomic becomings can assist to explore new and emergent patterns, channelling interpretation toward the discovery of new combinations and creative assemblages in knowledge. This is exemplified by the example of a qualitative study exploring knowledge dynamics in e-business entrepreneurship since the dot-com crash. The results highlight the forging of the conditions for innovation in new combinations of lines of affect and lines of technology.

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Introduction

The reader may engage with this chapter in two different modes. First, it can be approached in a social psychological mode as an exploration of the idea of networking in e-business entrepreneurship, especially of the idea of new forms of technological interaction in order to consider the issue of the emergence of new knowledge. Specifically, I have in mind the issue of networking amongst e-business entrepreneurs via communication technologies (predominantly the Internet), which specifically since the dot-com crash has brought forward new creative dynamics of interaction not captured in the ways in which knowledge dynamics is addressed in present studies. The aim is to get a better understanding of these dynamics in order to explain emergent conditions of innovation.

On a second level, the chapter speaks to a post-structuralist literature, in that it is an elaboration of the notion of knowledge dynamics as rhizomic becoming, adopting Deleuze and Guattari's ontology of non-dialectic, aconceptual difference. This elaboration moves toward a critique of the very ubiquity and endless utility of the dialectic idea as a way to address knowledge dynamics through the suggestion that its appeal may conceal moments and movements where more unexpected effects are taking place. Indeed, I suggest that there may be some twists in the knowledge dynamics of post dot-com crash networks, where some selected thoughts from a reading of Deleuze and Guattari specifically around the notions of "difference-in-itself" and "the rhizome," may lead one to read other stories than pre-offered through contemporary literature on networks and innovation.

Researching Knowledge Dynamics in E-Business Entrepreneurship

E-Business Entrepreneurship, Knowledge, and Innovation

Today, e-business entrepreneurship brings together two signs of change: advances in technological communication culture and changes in the organisation of business life centred on the management of knowledge. E-business entrepreneurship is a young business sector, roughly 10 years old. With the development of the World Wide Web[1] in the mid-1990s, new business opportunities emerged for selling products and services. The new ways to spread information

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quickly in digital form around the globe led to an explosion in the number of small entrepreneurial businesses that focused on the use of new information and communication technologies (ICTs) for business that is wholly or predominantly conducted through Web sites. Over a short period of time, this new "Internet-enabled business" (Whinston et al., 2001) emerged as a highly successful new business type. Especially in the latter half of the 1990s a high level of new business activity developed, a period that is often referred to as the "dot-com boom"[2].

In this new business arena, knowledge is seen as one of the most significant levers of innovation and its effective management is seen as a route to successful innovation (Seely-Brown & Duguid, 2002). Internet-enabled business developed quickly into a "knowledge-based" business arena of innovation, with the majority of businesses concentrating on the selling and trading of services and solutions over the Web (Whinston et al., 2001). Business types include firms that focus on the provision of systems and solutions for infrastructure or service applications on the Internet, Web pages offering specific information content (content aggregators), Internet intermediaries such as consultancies through or about e-business, and firms concentrating on electronic commerce (business-to-business and retail) (Whinston et al., 2001).

The development of the new sector of e-business entrepreneurship co-exists with what is widely referred as the "dot-com crash," a stockmarket crash in April 2000. What seemed to be an unstoppable growth of the e-business sector in the 1990s ended abruptly in April 2000 in a worldwide stockmarket collapse of high-tech firms' values (Ellis, 2001). In the UK alone, hundreds of dot-com firms experienced bankruptcy (DTI, 2002). The dot-com crash meant a major turning point, and its aftermath has opened up a "start-from-scratch" scenario that has raised new questions as to how entrepreneurial innovation can be approached. It also has reinforced the general focus on the importance of knowledge and its management, both in business practice and policy.

Networking "Post Dot-Com"

In this chapter, I suggest that new theoretical flexibilities are required in response to the dynamics that emerge when attention is focused at the meeting point of communication technologies and business centred on knowledge. The network may indeed be the central dynamic at this meeting point. There is increasingly social scientific evidence that networks play an important role in the ways in which business is conducted (Agre, 1999; Aldrich & Zimmer, 1986; Castells, 1996). Wittel (2001), most notably, argues for a new network sociality, a new way of socialising via networking that is reshaping not only contemporary business life but also social life in general.

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During the dot-com boom, new networking practices emerged, such as "First Tuesday" networking events where entrepreneurs and venture capitalists mingled every first Tuesday of a month at an informal face-to-face event. The aim was to bring people with business ideas together with people who could potentially fund such ideas. First Tuesday networking enjoyed great popularity nationwide and many similar but more locally focused e-business networking events mushroomed during the dot-com boom.

However, with the dot-com crash, these networks changed. While the focus on potential investors disappeared, the concept of networking has had a revival in the form of online networking that offers ways for entrepreneurs to place each other in contact in a combination of online introducer systems[3] with face-to-face networking. In these networks, the scope of networking had been extended to a wider, seemingly more general theme: being connected. This is illustrated in the two networks that I will examine in this chapter. Web-based networking with integrated introducer systems have been highly successful in the UK with growing membership numbers in the past three years; several of them have membership numbers in the ten thousands and are expanding on an international level.

The question this chapter is concerned with is how we can better understand how these new and highly popular networks contribute to innovative dynamics in e-business entrepreneurship. When it comes to explaining innovation in knowledge-centred business, the predominant logic of thinking about knowledge dynamics adopted is the dialectic one. This is evident in several streams of research that focus on interaction and knowledge creation.

In organisation and management theory, for instance, knowledge dynamics in innovation are studied as the social creation of knowledge through social relations and social interaction (cf. Nonaka & Toyama, 2003; Nonaka, Toyama, & Konno, 2000; Von Krogh, Ichijo, & Nonaka, 2000; Wenger, 2000). This work emphasises social interaction as a key factor in knowledge emergence and bases recommendations for innovation management on it (Kenney, 2001). Interaction, crucially, is presumed to constitute innovation because of the dynamics of learning that the dialogue amongst proactive agents engenders (cf. Seely-Brown & Duguid, 1991). At the centre stands the assumption that it is mainly a dialectic dynamic that brings forward creativity and innovation (Chell, 2000; Hoang & Antoncic, 2003). Dialectics, in this context, is understood in a Hegelian way, meaning a progressive evolution of ideas in the interplay of thesis, antithesis, and synthesis (Hegel, 1977; Rosen, 1982).

The Hegelian stance of theorising dynamics is emblematic for a growing post-Cartesian literature that counters the classic individual-centred and static view on knowledge by Descartes, which separated knowledge from its embodiment and its social context (Hosking, Dachler, & Gergen, 1995). Most prominently,

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Cook and Seely-Brown (1999) have drawn attention to the legacy of Cartesian epistemology for organisation theory and have argued that in order to go beyond the static Cartesian notion of knowledge units "possessed" by individuals, a dynamic epistemology grounded in interaction is necessary.

Social psychologists also have argued for dialectics with regard to explaining knowledge dynamics. They have shown how a dialectic perspective is useful to highlight the dynamics of knowledge transformation in the inter-subjective and mutual constitution of the social (Jovchelovitch, 2001; Marková, 2003; Moscovici, 2000). Consistently, authors seek to map out the knowledge relations that individuals create in communicative interaction and explain social change through the dialectic dynamics of social construction in everyday dialogues and argumentation (Moscovici, 2000; Howarth, 2002). Similarly to organisational theorists, the underpinning assumption is that new knowledge emerges from the evolutionary progression of ideas in controversial debate. Argument and counter-argument and the synthesis of different concepts is taken as the exclusive pattern to explain how new knowledge emerges.

Beyond Dialectics

In this chapter, I suggest that in order to capture and explore knowledge dynamics in the contemporary context of post dot-com-crash networks we need to leave behind certain assumptions about the nature of knowledge dynamics which we have tended to rely on to explain knowledge creation. Particularly, this concerns the dialectic model as a way of thinking about knowledge dynamics. Surely, there might be dialectic dynamics in network relationships engendering new understandings about networking. However, dialectics no longer suffices as the *exclusive* pattern through which we address the dynamics that networking engenders.

Two issues are at stake here. First, if we want to account for innovation in knowledge business, we need to be able to think about the *emergent* character of knowledge, that is, we need to be able to capture not merely how existent knowledge transforms but how new and *unprecedented* aspects arise that might lead to new knowledge. Typically, with innovation what emerges is a "something" (Wagner, 1998) that does not relate to any pre-existent socially mediated concept we might have in mind. Rather, this "something" forms a potentiality of a new concept being forged. Second, if we are to better understand the dynamics of such new and unprecedented aspects arising, we need to be able to think about the *creative patterns* that foster such a process of emergence. By creative, I mean patterns that might be different each time. Innovation can "happen" in various "different" ways; they do not follow a proven, routine pattern or procedure. Both aspects point to the *unpredictable* and *surprising* character

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of innovation. While the dialectic perspective is useful to highlight how people collectively reconstruct *existent* meanings and identities (Steinberg, 2003), it, however, fails to address this precise aspect; the unpredictable and the new in emergent patterns cannot be addressed, as the dialectic logic directs attention predominantly to the realignment of a pre-existent, familiar concept or pattern with the novel.

Emergence as Rhizomic

Post-structuralist thinkers Deleuze and Guattari (1987) argue that emergent phenomena are part of a much larger, more diverse, and multiple becoming than is represented by an epistemic logic of dialectics (Deleuze & Parnet, 1987). Dialectics, they hold, subordinates our thinking about dynamics to *conceptual difference* (Lambert, 2002) which exclusively addresses differences between pre-existent concepts and directs attention to the emergence of the novel only *in relation to* pre-existent concepts. Deleuze and Guattari radically oppose dialectics and turn to an ontological notion of becoming that is continually engendered by the repetition of *difference-in-itself* (Deleuze, 1994). For Deleuze and Guattari, what *moves* a system forward is not conceptual difference, but rather a rich and multiple form of difference that bypasses the pre-existent because *it does not relate* to it. Difference-in-itself is a difference that is unprecedented, multiple, and, most importantly, one that "makes itself" (Deleuze, 1968).

This philosophy of becoming emphasises that the dialectic of thinking is not groundless. It depends upon an ontological work of dividing the world which ensures that it can visibly bear the marks that ongoing communicative interaction cuts into it. Deleuze and Guattari describe this work of dividing with the image of the *rhizome*. In their seminal work *A Thousand Plateaus*, Deleuze and Guattari (1987) write:

> *Non-parallel evolutions, which do not proceed by differentiation, but which leap from one line to another, between completely heterogeneous beings; cracks, imperceptible ruptures, which break the lines even if they resume elsewhere, leaping over significant breaks .... The rhizome is all this.* (Deleuze & Parnet, 1987, p. 26, emphasis added)

The rhizome challenges the notion of a unique direction of emergence; rather, it portrays a dynamic that grows in simultaneous, multiple ways (Deleuze & Guattari, 1987). Furthermore, the rhizome has no central or governing structure; it has neither beginning nor end. A rhizome spreads continuously without

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beginning or ending and exists in a constant state of play. It does not conform to unidirectional or linearly progressive reasoning. This provides a stark contrast to the dialectic assumption that emergence progresses linearly in tree-like patterns of thesis, antithesis, and synthesis.

For the present purpose, the rhizome offers a logic of thinking about emergence as a series of combinations of different (in-themselves) streams of becoming. This is what Deleuze and Guattari describe as the emergence of new assemblages (Deleuze, 1990) through the crossing of different lines of becoming. Assemblages can be defined as "multiplicities"; they express the potentiality of multiple differences that are enmeshed variably and without a pre-existent fixed concept or pattern of how they should be linked. Following Deleuze (1987), all life consists of processes of assemblages, of new, unforeseen connections, patterned in rhizomic ways. Consistently, any human body or object is the result of a process of multiple connections (Colebrook, 2002).

Despite its appeal to address unforeseen connections and creative patterns of emergence, the advantage of the rhizome image also is its disadvantage, as Eco (1983, p. 57) points out, as the notion of connections and assemblages becomes easily limitless:

> *The rhizome is so constructed that every path can be connected with every other one. It has no center, no periphery, no exit, because it is potentially infinite.* (Eco, 1983, p. 57)

Those within and those engaging with new connections, therefore, have to engage in forms of "cutting" that halt the flow of the rhizome in order to be able to *perceive* it and to *speak* about them (Strathern, 1996). Here it is important to bear in mind that Deleuze and Guattari's philosophy is an *ontology* of becoming (Hayden, 1998), which implies that we are concerned with flow and movement in the material and natural world rather than exclusively the meaningful world of social sense (the case of dialectics).

Deleuze (1968) emphasises that as human beings we are part and parcel of both worlds — the social world of understanding and the material and natural world. But in contrast to Hegel and other classic metaphysics, sense-making and understanding do not provide the main and superior faculty that orders all sense experiences in the material world (Bryant, 2000). Rather, Deleuze suggests a disjunctive rather than harmonious functioning of the faculties of human reception. This means that, different human faculties such as understanding or feeling are equally important in the creative process of movement. Different sense experiences consistently disrupt each other, with different faculties of reception being involved, such as intuition disrupting understanding.

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Thus, a cutting of rhizomic becoming would mean its disruption by the faculty of understanding in order for it to become incorporated in the social world of meaning. The networks I explore next illustrate this: They enmesh contact and friendship with elements of technology in new ways, which emerges as a rhizomic dynamic that disrupts existent understandings of friendship and technology. What the interpretation then hones in on is how people's understanding of technology is variously cut by affect and how people's affect is variously cut by their understanding of technology.

In what follows, I illustrate the *notion of rhizomic becoming that is variously cut* at the example of an exploration of two post dot-com crash networks. Specifically, I present a new individuation that emerged from central cuttings of new connections amongst various lines of technology and lines of affect: the personal profile page.

The Study

An interpretative study was conducted exploring London's e-business networks using participant observation, interviews, and a focus group. The enquiry was conducted over a period of four months (September 2002 to December 2002) and featured 33 e-business entrepreneurs as well as seven e-business networks. At the time of the study, the business arena of e-business entrepreneurship was in a phase of reassessment of business after the dot-com crash. It was a time of radically new phenomena of interaction being shaped, which made it particularly relevant to an exploration of emergent knowledge dynamics.

In this chapter, I report a particular result from the participant observation, which surfaced when exploring rhizomic becomings in networks. Networks had emerged as the most important site for observation in the interviews. The course of observation was determined through a snowball process (Huck, 2000). This was a two-stage purposive sample that first turned to a social milieu that exposed the minimal criteria of the context in question (e-business entrepreneurship as defined by Whinston et al. (2001)), and second, was helped by respondents to complete the sample by pointing to further locations of observation.

Through snowballing, the natural context of social life in the context in question can be reproduced (Gaskell, 2000). This was a key aspect in establishing the quality and public accountability of this qualitative exploration. As Gaskell and Bauer (2000) have suggested, it is crucial for qualitative exploration to ensure the openness of the research for the discovery of local surprise and novelty, enabling the exploration to unfold according to the local context under study rather than

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the expectations of the researcher. The snowball process addressed this successfully and yielded seven networks altogether; two of which I report here.

Deleuzian Analysis

The notion of rhizomic becomings by Deleuze and Guattari (1987) indicates an approach to analysis that lets us "think beyond dialectics" and that enables us to channel interpretation in such a way that it lets us surface the emergence of creative new assemblages. Essentially, Deleuze and Guattari introduce a new vocabulary to *think about* dynamics and emergence. Their philosophy animates analysis to "think otherwise," which is in their sense to approach philosophy as a tool kit from which to draw selectively in order to think about becoming in the light of the analytical task at hand (Deleuze & Guattari, 1994).

Deleuze and Guattari were prolific inventors of concepts, to embrace this logic. Their work teems with such concepts as nomadology, deterritorialization, lines of escape, assemblage, intensity, rhizome, becoming, machinism, plateaus, heterogeneous series, body without organs, and plane of immanence, to name but a few. The Deleuzian approach is often loosely described as "artistic" by critics; yet, authors increasingly take notice of Deleuze's approach because of his capacity to overturn taken-for-granted assumptions (Bogue, 1989).

In what follows, I employ particularly three notions which suit the present purpose of accounting for emergent knowledge dynamics in e-business entrepreneurship: lines, connections, and individuations. What lies behind this is not a desire to be trendy, but the realization that in order to account for the emergence of new concepts we need new words to express this — especially in an exploration of the dynamics of innovation.

To change my thinking to "rhizomic mode" when interpreting, I looked beyond the dialectic categories of similarity (with existent concepts) and opposition (to existent concepts) when interpreting. Rather, I wanted to highlight the various and startling phenomena I had come across in the observation, pointing me to events which did not translate into any pre-existent concepts about networking and to new connections that would seem counterintuitive to be working together (according to pre-existent categorisations of concepts), yet, nonetheless, worked extremely well together.

First, *lines* provide the main routes of the rhizome. Some such lines will cross over one another, others will merge, and yet others will proliferate chaotically. A rhizomic line is any non-attributable micro-becoming that we can follow and that proceeds *in-between points*. Lines are the routes that make a rhizome what it is: de-rooted. Deleuze and Guattari (1987) describe lines as follows.

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These lines are constantly crossing, intersecting for a moment, following one another. ...it should be borne in mind that these lines mean nothing. It is an affair of cartography. They compose us, as they compose our map. They transform themselves and may even cross over into one another. Rhizome. It is certain that they have nothing to do with language; it is, on the contrary, language that must follow them, it is writing that must take substance from them, between *its own lines.* (p. 203)

Lines can connect to anything, yet can be broken at any instant, only to take off again in any direction. A line can be an event, a nonsense, a something, a movement. Importantly, in comparison to dialectic lines of progression, lines do not function in terms of lines with a beginning and an end. They do not translate into pre-existent concepts, but rather pass "in-between" (Deleuze & Parnet, 1987) them. As Ansell-Pearson (1997) puts it, "in rhizomatic-styled becomings, becoming denotes the movement by which the line frees itself from the point and renders points indiscernible" (p. 136). In my thinking when interpreting, lines were thus about attempting not to look for origins or destinations, but to focus on the "in-betweens," that is, on those aspects that were ambivalent to existing evaluative dimensions such in the present networks which were breaking down existent categorisations of online versus off-line networking and of business versus private life.

Second, I focused on *connections.* Connections signify new combinations and assemblages arising from "lines twisting, converging, and crossing as well as diverging; not aborescent but rhizomaniac" (Mackay, 1997, p. 264). A connection can be a disruption, a rupture, a divergence, as well as a convergence. The important aspect about connections is that what is connected "functions well together" (Deleuze & Parnet, 1987) as this is what creates a dynamism of movement. Furthermore, connections are, similarly to lines, ambivalent to pre-existent categories. They are new, heterogeneous phenomena that do not allow an interpretation in terms of unity, resemblance, or contradiction, but bring forth new (non-dialectic) orderings. Hetherington (1997) has described a conceptual, non-dialectical ordering as an ordering through similitude:

Similitude, ... is all about an ordering that takes place through a juxtaposition of signs that culturally are not seen as going together, either because the relationship is new or because it is unexpected. What is being signified cannot easily be attached to a referent ... Similitude is constituted by an unexpected bricolage effect. (p. 9)

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It is this unexpected bricolage effect that is at the centre of innovation — usually perceived only in hindsight. They are the new connections that do perhaps not make sense in terms of existing concepts or categorisations but nonetheless work well together.

Third, the analytical focus on ambivalent lines and non-dialectic connections let me concentrate the interpretation overall on the *cutting of becomings*, in the sense that I looked for emerging patterns that came close to what Deleuze and Guattari call "haecceity":

> *There is a mode of individuation very different from that of a person, subject, thing, or substance. We reserve the name of* haecceity *for it. A season, a winter, a summer, an hour, a date have a perfect individuality lacking nothing, even though this individuality is different from that of a thing or a subject. They are haecceities in the sense that they consist entirely of relations of movement and rest between molecules or particles, capacities to affect or be affected.* (Deleuze & Guattari, 1987, p. 261, emphasis in original)

A haecceity is an intensity and new ordering that is becoming a new concept, yet was not defined in its emergence through the relations to other pre-existent concepts. Rather, through individuating, it gradually intensifies the energy of lines running through it and enmeshes connections in new orderings to forge a dynamic that allows them to be grasped by the faculty of understanding — in that it can be named and interpreted in meaning.

In the following section, I concentrate on the particular example of such an individuation: the personal profile page. It came particularly close to forming a haecceity: It was an intensity that emerged from a rhizomic becoming of lines of affect and lines of technology that crossed and cut each other in new ways that were ambivalent to the existent dialectic between virtual versus real world and business vs. private life. These new cuttings worked extremely well together; the personal profile page was at the centre of a dynamic of movement that engendered new potentialities for interaction. To illuminate this, throughout the following, I include excerpts from traces of the dynamics of the personal profile page such as postings, visualisations and announcements on networking-sites, personal messages, guestbook entries, and other micro-events that I experienced when participating in networking.

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Personal Profile Page and New Emergent Orderings in Networks

Amongst the seven networks that were sampled in the snowballing process two networks — Ecademy and Ryze — did not compare to the other networks. While most networks would use their Web site as an online space to inform about the network and advertise upcoming face-to-face networking events, the networking-sites of Ecademy and Ryze featured free *personal profile pages* for members — embedded in online introducer systems. The personal profile page was highly popular amongst entrepreneurs: Almost every respondent in the present study was a member of either one or both of the networks and had a personal profile page.

Ecademy was initiated in the UK in 1998. In 2002, it had 20,000 members, with a rising trend. Its mission reads as follows: "… to build the world's largest Trusted Business Network by connecting people to each other — enabling knowledge, contacts, and opportunities to be shared for World Wide Wealth." (Excerpt from Web site *Ecademy.com,* 2002). Ryze has existed since 1996, originated in California's Silicon Valley and had 80,000 members in 2002, also with a rising trend. Its mission was "Extending members' business networks" (excerpt from *Ryze.com* Web site, 2002). In addition to online networking, they both feature monthly face-to-face networking events for members. Ryze had its first face-to-face networking event in London in 2002.

In both networks, a membership is free and acquired via an online registration. Membership can be upgraded to an advanced service (providing special member search functions) for a monthly fee. Once one is registered, one gets assigned a personal Web page (the personal profile page) through which one can publish all kinds of information about oneself and one's business. Figure 1 shows the top section of a (randomly selected) personal profile page on Ryze.

Once one is present on the network with a personal profile page, one is connected to an online universe of personal profile pages and can browse the pages of other entrepreneurs in related business fields or sub-networks (called "tribes" on Ryze). Also, one's own page can be accessed by all other members of a network; it also is searchable via a search tool. Browsing through personal profile pages, one is presented with a rich and colourful range of "personal universes" of knowledge, ambition, and experience. Besides a small standardised part of the page (on Ryze, for instance, the top of the personal profile page features a pre-structured space where entrepreneurs list their "have's" and their "want's"), the larger part of the personal profile page is open to the content preferences of the entrepreneur. On the personal profile page, network members post their profiles,

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biographies, and photos, list their vitals, favourite quotations, hobbies, previous jobs, and future career interests.

Members also have a range of profile and communication management tools at their disposal. Via these tools, entrepreneurs can "manage" their contacts and can track potential new network contacts. Examples are private messaging, a guestbook feature via which a member's message is publicly displayed on the personal profile page of the addressee as well as the "list of friends." To appear on the list of friends (also on the personal profile page) requires that both members have requested and confirmed their friendship online. Figure 2 shows

Figure 1. Randomly selected personal profile page on Ryze.com (2005)

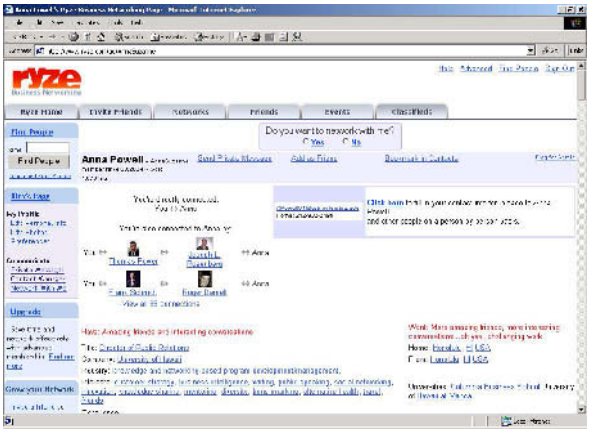

Figure 2. Cut-out from a personal profile page on Ryze.com — guestbook, networks, and list of friends

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a cut-out from the lower section of a randomly selected personal profile page, depicting the guestbook, next to the list of friends and a list of sub-networks that this member is involved in.

Hence, a common way of interacting was to contact other entrepreneurs by browsing personal profile pages, and subsequently by sending a guestbook note or personal message. As part of my own participation during the study, I would receive networking messages such as the example shown below.

Ryze Guestbook entries

Anurag Mehra, 12/10/02

Hi, Alex, I have just started an e-learning company myself. Do check it out. Let me know if you need anything.
Anurag

Karen Edelman, 10/25/02

Hi, Alex – Just dropping by to say hello. Your profile is very interesting. Stop by my site perhaps my services would be useful for you at some point.
Karen

Crucially, contacts acquired in this way were in-between business and private interaction as on the one hand, the contact in the network could be for any purpose or reason and had a feel of online chats to close friends to them, but at the same time usually involved some form of assertion that for future business opportunities one would keep each other in mind. This form of interaction was ambivalent to business versus private interaction, but also, as we shall see, to virtual versus real interaction.

The personal profile page brings together two lines of becoming: the technology-becoming of friendship and the friendship-becoming of technology, to phrase it in Deleuzian terms. This means that friendship becomes a technology of networking (technology-becoming of friendship), and technology becomes part of the entrepreneurs' socializing apparatus (friendship-becoming of technology). Both the lines of technology running through the various tools of contact and communication and the lines of affect emerging from the online communication crossed each other in new ways and became each other. Together, this lets the personal profile page emerge as a phenomenon that is "different-in itself" and that intensifies around a large amount of creative energy, given the sheer limitless ways in which technology and affect could intersect via this page.

The phenomenon of the personal profile pages is remarkably close to a "perfect individuality" in the sense of a Deleuzo-Guattarian haecceity as it has a capacity to affect others or to be affected by others (capacity to move and to bring forth dynamics). On the surface, it seemed to form a technology image, but, in fact,

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it was far more multiple: Emerging from new connections of lines of affect and lines of technology, it created a dynamic in that ”what” each becomes changes no less than ”that which becomes” (Deleuze & Parnet, 1987, p. 3). This means that both new crossovers of affect and technology emerged as well as rearrangements within each of these lines. The personal profile page emerged as an individuation from the various ways in which these lines cut each other; each of which ordered technology-becomings and affect-becomings in different ways, but highlighted the importance of their difference-in-themselves for the dynamics the personal profile page engendered.

Friendship as a Technology of Networking

The technology-becoming of friendship can be described as the dynamic engendered by two lines crossing. First, as the slogan from Ryze illuminates (Figure 3), there is the aspect of the sheer *limitless* potentiality of expansion of one’s personal network via the technology of the personal profile page. At the same time and second, this potentiality of unlimited growth is variously cut by several tools that make one’s contacts publicly *visible* on the personal profile page.

The list of friends is the tool at the centre of this becoming. As we have seen in Figure 2, it is featured on each personal profile page, embedded into an automatism that tracks online interaction. More precisely, the list of friends is a dedicated space on the personal profile page that is automatically generated; it adds the names of one’s contacts to a list whenever a new friendship is confirmed. The list of friends opens up one’s potentiality of interaction to an unlimited array of contacts. The list of friends can extend widely without any rules about where the lines of connection should stop and the boundaries of the personal circle of friends are defined. Consider the statement by the network user below.

> “ …‘If there’s someone with whom I have common business interests, I add them to my list of friends, and then a link to their page appears on my page,'' explains Kaup’s friend Anne Fitzpatrick, Executive Director of the Boston-based Rock & Roll Library and a Ryze user.” *Excerpt from "The Press on Ryze," published on* Ryze.com, *2002*

The statement also illustrates how friendship is not attributed via the notion of face-to-face interaction: This is the image of friendship qua network — it is also the image of friendship that becomes a tool, a technology.

This technology-becoming of friendship extends one’s private network and despite the sheer limitless expansion of one’s network, the crossing of lines of technology

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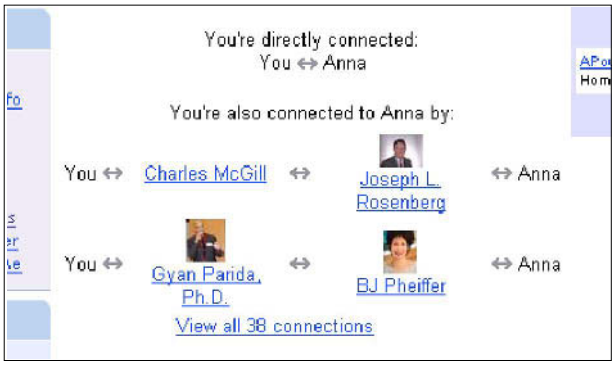
Figure 3. Cut-out from Ryze

Figure 4. Cut-out from Ryze.com — visualisation of friendship



that made contacts visible cut the rhizomic growth of the network. On Ryze, for instance, in addition to the list of friends as a list of names, the entrepreneurs' ties to other network members also is depicted graphically on the personal profile page, featuring thumbnail photographs of one's contacts (Figure 4).

This feature in Ryze creates an image of the lines of connection running through the network, illustrating the chain of people via whom one is connected to other entrepreneurs. While, again, this feature invites one to make new contacts in order to become more connected to other entrepreneurs, the visibility is important as it cuts into the limitlessness of this line. Through the guestbook, the photographs, and the list of friends, the visibility of friendship became a technology that connected "making contacts online" with one's "real" reputation and thus enabled it to make sense in the "real world" of entrepreneurs. Consider the following excerpt from a networking message distributed to all members by Ecademy.

Ecademy Networking Message

Check your personal reputation with fellow members
Fellow Ecademist.

Now you can check your personal reputation with fellow
Ecademy members and rate members in your personal
Ecademy network:
http://www.ecademy.com/module.php

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The visibility of one's friends creates a relationship of similitude, seen from the outside, "from the standpoint of another perspective" (Hetherington, 1997, p. 43); in other words, it creates an ordering of the lines of connection "established by their difference in a relationship between sites rather than their Otherness deriving from a site itself" (ibid, p. 43). In this way, the network becomes real for entrepreneurs in such as way that the technology of the network becomes part of one's socialising apparatus. This is the friendship-becoming of technology.

Technology as Part of Entrepreneurs' Social Life

The lines of technology that run through the network take another route of crossing lines of affect: The technology-becoming of friendship also is a friendship-becoming of technology. The technology of visualisation of one's acquaintances becomes part of one's *everyday way of* socialising with others.

I wrote that the ways of interaction via these networks are ambivalent to the concept of virtual (online) vs. real (off-line). There are various new tools that reinforced the "becoming entangled" of the technology with the daily life of entrepreneurs. An example is e-mail notifications informing the network member about a "movement" on one's personal profile page. This can be, for instance, a notification about a profile visit (see e-mail excerpt below), a guestbook entry, or a request for friendship.

Profile Visit
Alexandra,

Steve Collins has looked at your profile.
http://www.ecademy.com/
You can see who else has looked at your profile here:
http://www.ecademy.com//

Ecademy - Connecting Business People *http://ecademy.com*

Another example is a weekly summary e-mail of one's online activities in the form of statistics of visits and traffic on one's personal profile page.

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email « Ryze stats »

HITS
Your Ryze page : 6* (cumulative)
Average Ryze home page : 91*
Average Ryze home page w/photo: 260*

To increase your hits, add a photo on your Ryze homepage, at: *http://www.ryze.org/photo.php?lr=weekly*

FRIENDS & GUESTS
Friends you link to: 0
No Friends yet?? GET THE MOST VALUE or of RYZE by leveraging your Friends' Networks:
http://www.ryze.org/invite.php?lr=weekly

Friends linked to you: 0
Guestbook entries: 0
Contacts: 0

The friendship-becoming of technology also is present in other ways. Entrepreneurs would often post photographs of friends on their personal profile pages. These photographs usually show friends and acquaintances in a leisurely setting such as in homes, holidays, restaurants, or occasionally, at weddings. The important aspect hereby is that these friends are mostly friends from the network shown *in* the private context of the entrepreneur: The friendship technology has begun to cross over affect in "real life" — there is no distinction into real or virtual.

As a newly-appointed CEO, I have special needs for business contacts. Thanks for creating Ryze! I've not only made many great business contacts, but also lots of personal ones! Great job." Bob Glass, CEO, Creative Science SystemsExcerpt from "Member Testimonial Section". (published on Ryze.com, 2002)

While some authors have drawn attention to problems of establishing trust via online communication, focusing attention on the lamentable absence of proximity in online networking or "virtual networking" (cf. Lash, 2000; Rheingold, 1994; Tucker & Jones, 2000), I suggest that in the present networks the new ways in which lines of technology and lines of affect become enmeshed create conditions for rearrangements in lines of affect that depended *primarily* upon technologies rather than the face-to-face aspect of human interaction. The more a member can prove via the list of friends, guest-book sign-ins, and photographs that he or she "has" friends, the more this person is deemed trustable and successful.

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Together, these new connections of business and private life, of real and virtual, forge the conditions for a new ordering of the network; it creates the conditions for new creative assemblages. The personal profile page generated new potentialities for "trusted" interaction and allowed lines of affect that are in-between the flow of the real life and the virtual, blending them together in a new, different, and innovative form of business-private interaction. This is an unprecedented form of interaction that has reinvented the concept of networking; as it creates new conditions for interaction, it presents in itself an innovative and different becoming.

Implications and Conclusion

In his reading of contemporary society as a highly technologically mediated network society, Manuel Castells suggests that in informational networks a culture of "real virtuality" emerges. This is a reality in which "appearances are not just on the screen through which experience is communicated, but they become the experience" (Castells, 1996, p. 373).

The findings presented in this chapter have shown a particular mode in which two post dot-com crash networks *become* such a real virtuality. The Deleuzian analysis uncovered the dynamics that make these networks a phenomenon of movement and creative energy. The personal profile page stands at the centre of it, ordering the experience of networked entrepreneurs in new ways. Entrepreneurs' social lives are no longer connected mainly to a local community of businesses, but come via the list of friends and network messages; via lines of technology that get intermingled in new ways with friendship. Reputation and business credibility is no longer solely created in face-to-face relations.

These findings raise new questions about the future reverberations of these new connections. The rearrangements in lines of affect and lines of technology go beyond those potentially captured in dialectic relations between real and virtual and between business and private. They are different in-themselves, that is, they do not translate into a mere synthesis between these classic divisions. Rather, they are likely to forge new concepts, just like the personal profile page has emerged as a new concept of networking, assembling elements such as the guestbook, the list of friends, and photographs of close friends.

The Deleuzian analysis has been invaluable to recognise the personal profile page as an intensity of creative becomings as such; it has enabled me to single out the personal profile page as an individuation of a dynamic process of emergence in-the-making. This aids our analytical possibilities of distinguishing creative and emergent dynamics from other dynamics that might merely

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reproduce and recreate existing concepts. It gives us a handle to describe the micro-cosmos of becomings, which might not be realised conceptually at the time but which bears first cuttings that allow us to "see" new emergent conditions for innovation.

The present analysis was only possible by keeping the analysis itself "in-between" — bypassing what Deleuze (1987) calls the "grille" of invested evaluative dimensions (such as online versus off-line or business versus private life) when interpreting. This mode of engaging with emergent dynamics does not dictate the story that emerges, and indeed, that has not been the objective. But in following these paths that the Deleuzian philosophy suggests, this chapter has promoted an exploration in the spirit of rhizomic connections in an attempt to estrange the conventional and taken-for-granted, while opening the interpretation up to the imagination of new emergent concepts.

This chapter has been an illustration of what could be developed into a new method of the explorative interpretation of conditions for innovation in knowledge-related contexts. Far from being complete, this chapter has merely presented a first attempt in this direction. Somewhere between the ethnomethodological and the sceptical, the social psychological and the ontological, this chapter has itself been something of a rhizomic journey connecting points of a story rarely narrated as such.

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Endnotes

1 Graphical user interface of the Internet

2 Since then, entrepreneurship in e-business is often referred to as "dot-com business." The name derives from the "com" suffix of many business Web sites. A dot-com firm is one whose business is wholly or predominantly conducted through such a site, as opposed to traditional businesses which may be represented online but continue to operate primarily off-line.

3 An online introducer system is software that can be integrated into a Web site to support the registration and interaction management of an online community. It allows registered users to send messages to other registered users, to visualise their networking contacts, and to create links between other users.

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Chapter III

Innovation and B2B E-Commerce: Explaining What Did Not Happen

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Abstract

The massive wave of enthusiasm for B2B (business-to-business) e-commerce generated with the "dot-com" boom led many to believe that a fundamental transformation of how firms bought and sold products was just around the corner. The new "wired" world of commerce would lead to real-time, Internet-driven trading, with significant implications for — amongst other things — the nature of buyer-supplier relationships, pricing, and the management of industrial capacity. Despite the excitement, such a transformation has largely failed to materialise, and whilst there has been a limited uptake of B2B innovations (for example, the use of online reverse auctions), the fundamental character of B2B trade has remained mostly unchanged. Drawing on a multi-stranded empirical study, this chapter seeks to explain the divergence between the expected and realised degrees of innovation.

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Introduction

The extraordinary rise and fall of the late 1990s **technology bubble** was not the first speculative boom of its kind — and presumably will not be the last. As with the successive 19th century booms relating to the railways, the frenzy was accompanied by an astonishing explosion of rhetoric, folklore, and intellectual and managerial fashion — crudely, "hype." This led to a significant flurry of innovation, particularly in the founding of large numbers of **Internet-based intermediaries** ("hubs" or "exchanges" Bakos, 1991, 1998; Bloch & Catfolis, 2001; Barratt & Rosdahl, 2002; Le, Rao, & Truong, 2004). Investors and organisations poured vast sums into these ventures and, for the most part, lost their money. Consultants and investment banks made shrill claims that **interorganisational trade** would be transformed, but the predicted revolution failed to materialise.

I address two central questions in this chapter. The first is the simple question: Why did the revolution not happen? The second is: What substantive ideas for business practice can be salvaged from the wreckage? This is an important task; to adapt George Santayana's famous quip, those who do not understand the past are condemned to repeat it.

One feature of published work in this field is that there has been relatively little solid empirical material; on the other hand, there has been a great deal of generalised comment and unsupported speculation regarding the causes and consequences of the bursting of the **B2B bubble**. Day, Fein, and Ruppersberger (2003) present an analysis that emphasises the similarities with other "shakeouts" associated with disruptive technologies.

This chapter reports the results of a multi-stranded investigation into the extent to which organisations are prepared to make use of the Internet in buying and selling, and into the patterns of life and death of **B2B exchanges**. Unlike much of the literature in this area, which has largely focused on leading companies or the few successful hubs, this chapter concentrates more on the opportunities and obstacles that face "ordinary" organisations, and the innovations which failed. The logic behind this is that there is often much to be learnt about the process of innovation from the mundane and the typical. The purpose of this study was not to recount the organisational success stories of leading firms — others have done that before, and the *potential* benefits of B2B e-commerce are well documented (e.g., Sculley & Woods, 1999; Timmers, 2000; DeMaio, 2001; Raisch, 2001). For this study, the challenge was to understand the reality of organisations' experiences, and to gauge the key issues and obstacles that they face.

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Background: The B2B Phenomenon

A simple starting point to the complex origins of the **B2B e-commerce** phenomenon lies in the well-established technologies of **electronic data interchange (EDI)**. At the beginning of the 1990s, for many industries, the direct system-to-system transfer of data over proprietary networks following industry standard protocols had become a routine element of doing business. The technology allowed significant savings from both increasing the speed and accuracy of data transmission, and in some cases was progressing to more advanced uses whereby buyers and suppliers could not only manage routine transactions but also "see" into each others' systems, facilitating such operational innovations as *collaborative planning forecasting and replenishment*, and *vendor managed inventory*. In addition, electronic linkages also were developing for the easier sharing of technical and design data, encouraging interfirm collaboration in technical design. The downside of these "**interorganisational information systems**" were the considerable "hook up" costs incurred by the parties involved, a fact which limited the adoption of the technologies by smaller suppliers, often faced with meeting the costs of linking their own systems with the non-matching requirements of several customers. In parallel, in the academic literature, there was a limited debate as to the long-term effects of these technologies on firms' switching costs, and good arguments could made for expecting both a reduction and increases in market "stickiness," and the consequential shift to purer "markets" or growing "hierarchies," respectively (Malone, Yates, & Benjamin, 1987; Bakos, 1991). The debate was rather theoretical, and was rather neglected outside of a handful of learned journals.

The arrival of the Internet, and its adoption by businesses as a serious tool for business, however, radically changed the character of the debate. Three key features of the Internet and two innovations transformed the horizons of possibility. The Internet was ubiquitous, cheap, and — being built around the idea of a standard and simple set of technical protocols — relatively easy for firms to adopt. The two innovations — the *search engine* and the *online auction* — opened up a range of new possibilities for online B2B trading. Over time, two basic connected perceptions emerged regarding the potential for a new approach.

The first of the perceptions was that the Internet could radically transform procurement and sales processes, collapsing the costs and timescales of trading. Prospective buyers could seek out prospective suppliers very rapidly, and suppliers could present vast quantities of searchable information on their products and capabilities. Furthermore, buyers could use Internet mechanisms to identify the cheapest supplier in real time using multilateral reverse auctions.

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Correspondingly, suppliers could be more responsive in their pricing. The scope for these new approaches to yield substantive benefits was widely acknowledged.

The second perspective, however, took these new potentials as heralding something far more significant than some dollars shaved off administrative transaction costs. As Bill Gates (1995) stated, the Internet will "carry us into a new world of low-friction, low-overhead capitalism, in which market information will be plentiful and transaction costs low." This vision of the future initially fuelled enthusiasm for online **business-to-consumer (B2C)** retailing, but after a while many observers realised that the B2B market was of a vastly larger scale. B2B e-commerce was held to signify a "fundamental change in the way capitalism works" (Prigg, 2000; Tapscott et al., 2000). A report by AT Kearney (2001) suggested the emergence of "differentiated value networks" that would "redefine entire industries and value chains," and that that e-markets "can dramatically affect the power balance in today's value chain." Partly driven by an almost ideological faith in the nature of "markets," this position assumed that supply markets for corporate purchasers would be transformed: The features which stopped industrial markets behaving like the theoretical, equilibrium-finding markets of the neoclassical model (small numbers, constrained flows of information, high switching costs, high barriers to entry) could be removed by the new technology, reaping substantial efficiency gains. For these gains to be realised, however, new market institutions would be needed to act as "hubs" between buyers and sellers, and these — even if charging just a tiny fraction of the throughput — stood to reap phenomenal economic rewards. These hubs were to be the "killer application of the B2B Internet revolution" (Sculley & Woods, 1999). As a result, an Internet "land grab" emerged as entrepreneurs and existing market participants sought to establish themselves in the controlling positions in their chosen market or industry.

As time has passed, many of these new intermediaries have fallen by the wayside — and their fate is examined later in the chapter. However, it is important to note that there is far more to B2B e-commerce than online exchanges and marketplaces, and some organisations have achieved significant advantage through the use of e-procurement and the use of so-called "private exchanges." However, many organisations have struggled to develop their e-procurement or e-marketing activities, and it is interesting to explore why this might be so.

Methodology

The investigation described here used multiple research methods. First, an e-mail questionnaire was sent to over 4,000 firms who supply the major UK utilities,

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generating 240 usable replies that provided information on these companies as both buyers and sellers. Second, follow-up telephone interviews with a dozen of these firms helped provide greater insight into their experiences. Third, this was complemented by nine case studies (involving site visits, multi-informant interviews, and documentary analysis) involving a range of both public and private sector organisations. Fourth, the work used a database of 663 e-marketplaces and B2B hubs constructed by Meakin (2002). This large database represents a significant slice of the population, although there is no way of definitively establishing what percentage it represents. Grubb (2000) estimated 1,400 B2B exchanges had been launched; Levaux (2001) "estimated a thousand or so." Caspar (2000) cited an Andersen Consulting study that claimed there were 7,500 by late 2000. Day et al. (2003) claim a peak of 1,520. (For reasons discussed next, all these figures must be taken with considerable caution).

The sample for the e-mail survey was firms in the **Utilities Vendor Database** of the Achilles Group — a B2B company whose activities concentrate on public and regulated procurement (see www.achilles.com). The pool of companies represented a broad range of firms supplying the UK utilities sector. Our approach was to initially use a very brief questionnaire and to use the immediacy of e-mail feedback to refine the structure and examine the effect on response rates by adapting the number and sequence of questions asked. The survey was administered in the autumn of 2001, and we e-mailed just over 4,000 organisations, reaping over 240 usable replies (we asked firms about either their purchasing or selling, or both). However, due to our adaptive design, we did not collect data on all questions from every respondent. Participants were entered into a drawing to win a £50 gift voucher.

The mechanism of the questionnaire was to send a plain text e-mail, for which the answers could be simply overtyped on the reply and returned. We did this to avoid using e-mail attachments (which might be blocked by firms' firewalls), and to avoid the need for respondents to access a Web page (we knew that for at least some of the smaller firms involved, whose access to the Internet was by standard telephone line, this requirement would be a disincentive). We also offered each participant access to the findings of the report, and a brief benchmarking report comparing their response with other (anonymous) firms. Due to the exploratory nature of the research, we have not employed formal scaling or rigorous hypothesis testing in the interpretation of the data; the full analysis is still in progress. Here, we present an overview of the descriptive data, which in this case we believe is more instructive than looking for intricate correlations of scores. As we were dealing with non-anonymous returned questionnaires, we were able to additionally incorporate further public domain information about the organisations into our analysis, including financial information and (subject to data protection constraints) data from the original database.

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The median turnover of the respondents was £11m, with the median number of employees being 124.

The qualitative aspects of the research entailed a series of visits to nine organisations with a view to finding out which issues and aspects of B2B e-commerce at the top of their agendas; we sought (within the time and budget available) as wide a selection of organisations as possible (large, small, public, and private sector), and sought to let managers and staff in these organisations largely steer the direction of the discussions. This rather unstructured approach meant that we did not (nor did we expect) to collect commensurate or matching data from these organisations; however, it helped us engage with some of the underlying issues regarding B2B and e-procurement, which we suspect would have been rather lost if we had framed the meetings too strictly in our own terms. We believe this trade-off to be particularly important given managers' propensity to discuss aspiration in these areas as if it were current fact, and the way in which interviewees' responses may sometimes encapsulate that which they have read in professional magazines rather than the actual experience of their organisations. However, the serious downside to this approach is that much of the material generated is not directly relevant to issues at hand, and of course generalisations are even more problematic than with survey data.

Methodological trade-offs also were needed in the analysis of the B2B hubs. Much of the writing on these initiatives has assumed that relatively few of them would survive, for example, Levaux (2001) estimated that only 200 would still be around by 2003. Drawing from the prior database, this phase of the research worked through 302 e-marketplaces with a highly structured search process which entailed examining the Web site (where available) and using two search engines (*Factiva*™ and *Lexis-Nexis*™) to collate news and PR-agency coverage (typically from trade journals). There are obvious problems with these secondary sources not being wholly accurate or reliable; on the other hand, for some of the initiatives we examined, these reports are the only accessible information left. Where necessary and possible, e-mail messages were sent to the exchange to gain further information.

This highly structured process allowed the systematic analysis of data regarding each of the initiatives and also allowed a rational decision to abandon the search for information on a particular exchange and move on to the next one. This Taylorist approach to data gathering proved particularly effective, as experimentation showed that without a programmed cut-off point, a great deal of time could be spent searching fruitlessly for exchanges which were the equivalent of "vapourware" — initiatives which were announced in the press but subsequently disappeared without trace.

A key aspect of the data collection process was the classification of the B2B initiative according to a set of dimensions (such as type of exchange, industry,

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etc.). These included whether the site was alive, dead, or had a continued existence via merger with or acquisition by another initiative. Sites that appeared to be dormant were contacted via e-mail, but if the link was broken and the e-mail returned, it was assumed the operation had closed. If the site appeared to be in a state "yet to go live" it was left until the end of the project and then rechecked — if it was still pending, it was ignored.

During the course of the data collection, it became clear that it was not easy to judge the level of activity or indeed in some cases the seriousness of intent of the initiatives. Many of the marketplaces described what they did in principle, but displayed no evidence that the site or the services provided were genuinely operational. This transpires to be a major problem when investigating organisations that may or not be viable, and which exist in a business context where it is not in the actors' interests to be completely honest about their current degree of success. What was needed was an indication of substantive activity — an "Activity Test." We eventually settled on a simple proxy for being "genuinely alive": whether there was any reported quantitative indication of the transaction volume (in number of transactions or dollar value) or throughput. These were deemed to be "Actives." However, this does not imply that the initiatives were financially viable; an exchange could have throughput but not make any profit. There is clearly a risk of "type one" error in this classification, in the cases where an Active site has simply not gotten around to releasing some indicative numbers, or there is some other strategic reason for obfuscation. There is also a "type two" error for marketplaces that falsely declare activity. However, as there will be a general incentive for initiatives to publicise their vitality in order to attract participants, this seems a reasonable criterion to apply. Büyüközkan (2004) describes another attempt to "score" the activity of e-marketplaces, but, from the experience gained in the current study, it is difficult to see how his approach could be operationalised in practice.

Sudden Birth and Lingering Death of B2B Exchanges

Figure 1 illustrates that — given the extensive reportage of the death of B2B — a surprising number of initiatives remained "alive," in that there was still a Web presence of some kind. However, out of the 302 studied, we identified only 29 who passed the "Activity Test" of providing quantitative evidence of any substantial kind of any kind of activity.

Interestingly, the small difference between sites passing the Activity Test and those not was not statistically significant (using the chi-squared test at the 0.1

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level of significance). So marketplaces able to publish throughput figures seem to be no more likely to be still "alive" than those not. This can be explained by two ideas: The relatively low capital and operating costs for "pure play" Internet-based businesses (and the relative ease of fundraising during the boom years) can mean that sites with meagre levels of real activity may be able to sustain some type of Internet presence for some time as they simply burn off the initial investment. This is a significant point. Day et al.'s (2003) study uses the construct that a marketplace "exists and continues to operate" — our work points to the fact that these two things are separable concepts.

Second, one way of attracting sufficient buyers and suppliers to participate in an exchange would be to charge minimal fees, or to offer attractive but expensive-to-provide services, thereby making continuing operations unviable.

There are a very wide range of schemes for classifying different types of exchange. Here we adopt that proposed by Ramsdell (2000), which is summarised in Table 1.

Figure 1. Survival of B2B e-marketplaces — comparison of whole sample with those passing the 'success test'

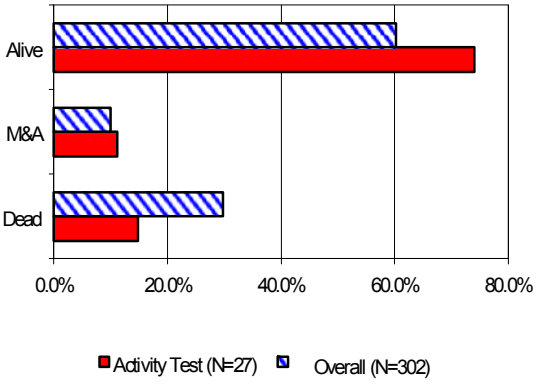

Table 1. B2B marketplace types (after Ramsdell, 2000)

Type	Typical Owners	Type of Market	Description
Product	Suppliers or 3rd Parties	Fragmented	Horizontal e-marketplace usually formed around a supply market that cuts several industries (e.g., MRO market)
Industry	Buyers	Buyer power dominated	Vertical e-marketplace, usually revolving around an industry sector (e.g., Chemical Industry)
Function	3rd Parties	Non-fragmented	Focuses on services and capabilities rather than products, such as Supply Chain Integration (SCI) or Project Management.

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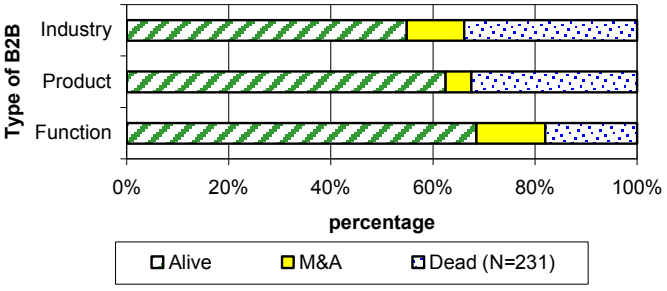
Table 2. Breakdown of marketplaces by category

Type	Percentage
Function	38%
Product	35%
Industry	27%

Figure 2. Status of exchange types



The classification of exchanges transpires to be a rather complex matter, as there are many instances of hybrid and unconventional approaches. However, in this study we found that the total sample — where categorisation was possible — was split roughly equally between the categories as shown in Table 2. Figure 2 illustrates the status of these categories; again, there is no statistical significance between the types of exchange.

The lesson that emerges here is that despite the widespread assumption in the prescriptive and speculating writing at the time, no one particular exchange model turned out to be dominant.

The emergence of B2B needs to be understood in the context of the technology boom of the late 1990s, and Figure 3 plots the date of first announcement against the value of the NASDAQ composite index. This pattern is illustrated in more detail in Figure 4, which illustrates the lifelines of exchanges by category.

The data presented in Figures 3 and 4 points to some interesting speculation. On the one hand, the close match of announcements to the NASDAQ index is suggestive that much of the enthusiasm for B2B intermediaries was driven as much by the potential of making money from investors in the heat of the technology investment boom as it was by the desire to build genuinely viable businesses. Simply setting up some kind of intermediary B2B organisation is not in itself capital intensive (although making it really deliver value to buyers and

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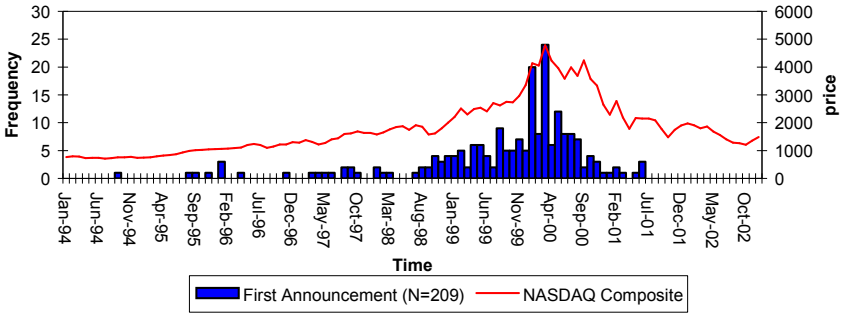
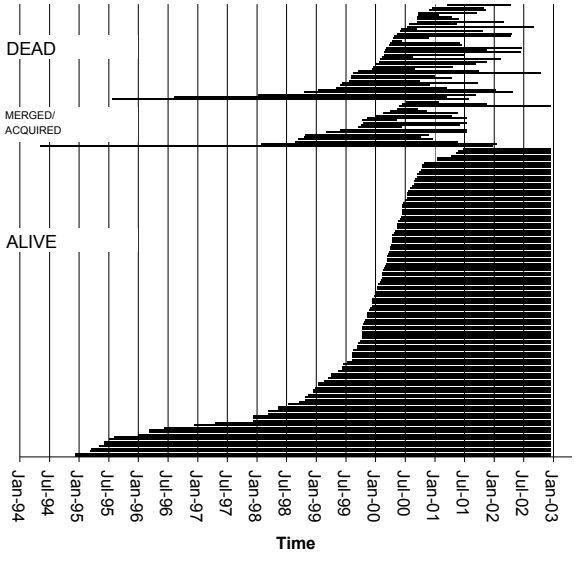
Figure 3. Announcements of marketplaces



suppliers may be). Therefore, it seems unlikely that the decline in the launching of B2B initiatives is completely explained by the difficulty of raising funds as the boom subsided. If, on the other hand, the motivation for many of the enterprises was simply to get to the investment markets quickly, then the sharp drop off in announcements between April 2000 and February 2001 makes more sense.

Figure 4, however, suggests that the fate of the initiatives cannot be explained by looking at the launch date. A very cynical view might expect that those

Figure 4. Birth and death of e-marketplaces (n = 193)



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launched at or just before the frenzy might be the least likely to survive, being the most driven by fashion and being subject to the least rigorous degree of scrutiny. However, if this is the case, it is not clear from the data. Furthermore, it does not seem that the early initiatives were more or less likely to fail than the later starters. A key point in the consideration of this data is that many of the initiatives may well be alive, and yet not very active, and not generating very much or any revenue. As nearly all the initiatives are small private businesses, it is generally very difficult to get convincing or informative data on their financial and operating performance. The fact, however, that so few pass the "Activity Test" is perhaps indicative that the task of bringing buyers and suppliers together is far more complex than many initially thought. To explain why this might be, it is sensible to begin by reviewing the impact of e-commerce to "ordinary" companies — and this brings the discussion to the survey and case studies.

Experiences of B2B E-Commerce: Initial Observations

Before we turn to the substantive data gathered by the survey and the cases, it is worth noting some incidental aspects of the research that we found interesting. First, an immediate feature of the survey was the large number of e-mails (roughly 10%) that were returned as undeliverable — even though we had used contact e-mails provided by the firms themselves to a database to which they paid a fee. Following up these cases revealed several potential problems: Many firms had changed the format of their e-mail addresses; individuals had left the organisation; and a surprising number were addresses based on non-company e-mail systems (for example, Hotmail™ or Freeserve™), and the addresses were no longer active. For reasons we discuss next, we think this is a significant finding. A second and surprising observation was that eight of the responses were returned by conventional post rather than by e-mail.

For reasons of available space, we concentrate here on just three aspects of the substantive research findings: the impacts of e-commerce on buying, selling, and the character of the buyer-seller relationship.

Buying: Commodification and Specification

We suspected that much of the hype surrounding B2B e-commerce was based on a naïve view of corporate procurement. For example, many of the B2B enthusiasts over-emphasise the extent to which corporate purchasing is about

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buying commodities or highly standardised products for which price is the only salient variable. We sought data from supplier organisations about the nature of their sales on two dimensions: First, the degree to which their output was commoditised — in the sense that the goods or services provided were standard "off-the-shelf" items, or bespoke for a particular customer's needs. Second, we asked about the extent to which buyers play a role in the specification of their own requirements: In some cases, buyers spell out exactly what they want; in others, the seller specifies the solution according to an assessment of the buyer's needs; in many cases, the exchange requires a process of dialogue between the buyer and seller. Much of what has been written about B2B e-commerce has assumed a particular model of inter-company trade, emphasising standardized products specified by the customers (e.g., from an online catalogue). From the supplying firms who responded to the e-mail questionnaire in this study, this amounted to less than 19% of sales. This is a significant finding, as it indicates that (if the result were indicative of the general case) more than 80% of B2B trade is not amenable to the impersonal, price-oriented, online catalogue mechanisms which have been one of the key archetypal images of B2B. Firms also differ from each other by supplying different combinations of goods, services, and works. The firms in the e-mail survey provided a good mix here, with 60% providing goods alone or in some combination with works and services, and the remainder selling some combination of works and services. Of the firms that sold goods, three quarters sell them as part of a more complex package involving more intangible elements. Again, much of the discussion about B2B has thought only in terms of simple "products," but the reality is far more complex.

Buying: Use of the Internet

We asked organisations about the use of the Internet in the purchasing process and found extensive use, especially in terms of seeking information from suppliers' Web pages (see Figure 5).

Telephone interviews confirmed that respondents interpreted the term "online marketplaces" very broadly — and organisations often view distributors in these terms. Also, it seems that a crucial role of suppliers' Web pages is simply providing further contact data — postal addresses and telephone numbers. The "other info" response includes using standard search engines to find, for example, press coverage on a supplier. This mundane but valuable facility transpired to main current impact of the Internet on the procurement function, and is a significant observation only in as much as that it falls considerably short from the idea of a "closely-coupled supply chain" or a "virtual community." In our case studies, we noted that the opportunity for "finding new suppliers" did not seem to excite much enthusiasm amongst the organisations; the Internet

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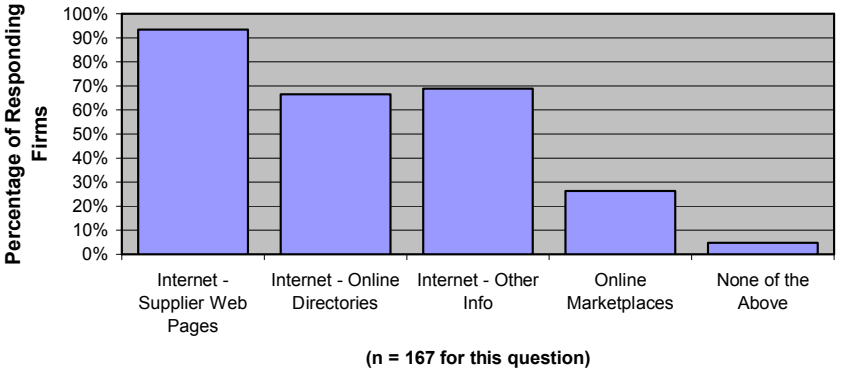
Figure 5. Purchasers' use of the Internet

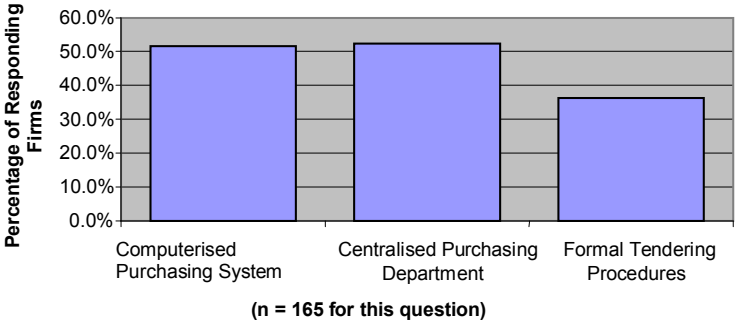


could make getting information slightly faster, but was not perceived by the case participants as being fundamentally different from using the Yellow Pages. This is an apparently mundane but significant finding; much of the early excitement about the role of the Internet was based around a notion that it would reduce search costs (see Bakos, 1991). This appears not to be much of an issue — or, if it is, there is only marginal advantage in a marketplace system over a simple Google™ search.

Buying: Inter-Organisational Systems

Although the B2B hype emphasises the electronic linking of organisations' procurement systems to their suppliers' systems, we found that only half of the

Figure 6. Purchasing organisation and methods



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supplying firms had computerised purchasing systems, with the same proportion having centralised purchasing systems (see Figure 6).

These findings are interesting in that it suggests that for smaller organisations at least, the idea of inter-linked systems along the supply chain is likely to remain something of a fantasy without considerable innovation in both information technology and business practice amongst many firms. This is not to say that this cannot or will not happen; however, were these findings to be representative, it would appear that there is a major task of supplier development ahead for those firms which wish to cascade integrated supply chain practices.

Buying: Purchasing Measurement and Control

Much of the enthusiasm for **e-procurement** has focused on the enormous scope for reducing the costs of purchasing bureaucracy and transactions processing. Rather than go through an internal purchasing department, "users" can order what they need from their desktop, with automatic budget controls keeping spending within predefined limits: Many B2B enthusiasts have predicted the demise of purchasing departments as a result.

While not denying the great potential for these types of savings, this study points to some important qualifications. This is because there is more to purchasing than transaction processing. First, effective procurement requires higher-level, strategic management in regard to external issues — such as supplier development, collaboration on business processes, and supply policy. In other words, there is much more to good purchasing than simply finding the lowest price. Second, there are more complex internal issues than simple budgetary controls — a prime function of procurement systems is the control of fraud, and, in the public sector in particular, organisations' procurement systems are constrained by a complex regulatory framework. So while e-procurement can yield significant savings on elements of the procurement process, it does not do away with the need for specialist procurement staff with real purchasing expertise.

These considerations of organisation and structure lead to the questions of measurement. The participants in our study all struggled with quantifying both the performance of purchasing and in determining reliable costs for the purchasing process itself. This issue has two important consequences for the adoption of e-procurement and B2B.

First, without effective metrics of how well a purchasing process is performing, the appeal of using Internet-based innovation to reduce costs is rather blunted. Indeed, for managers in some of the organisations in this study, the key motivation was to ensure compliance with a system of bureaucratic controls rather than a hunger to reduce expenditure. This seems a particular issue if an

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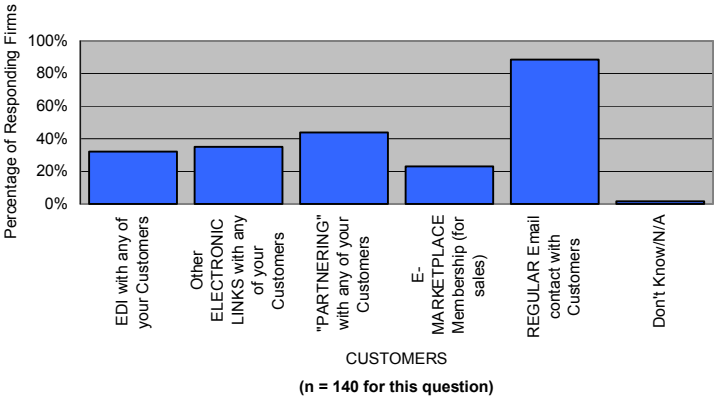
organisation's culture rewards risk aversion; we found organisations where purchasing managers' principal goals seemed to be to stop things going wrong and to maintain a steady equilibrium. In such organisations, mechanisms of measurement and reward work against dynamic innovation in procurement systems.

Second, in other types of organisations, the measurement of purchasing works to give a misleading focus on short-term savings. In some organisations, the dazzle of dramatic savings in headline prices achieved by B2B innovation (for example, online reverse auctions) has mesmerized firms into forgetting that the important cost is the total cost of acquisition and ownership. The phenomenon of suppliers "lowballing" to win a contract, then working hard to claw back their margin by, for example, raising post-contract complexities, is well known and understood by procurement professionals. Equally, costs associated with delivery, quality, warranties, and post-sale support can easily dominate the initial purchase price. It appears, however, that in some organisations it has become politically convenient to brush aside these concerns and focus on impressive sounding reductions in headline prices. In such cases, there is a clear risk that such an approach may backfire in the longer term.

Selling: Communication and Customer Relationships

B2B has often been presented as though it is all about purchasing. But is essential to understand the other side of the coin — how it affects selling organisations. We asked suppliers about various aspects of their relationships with customers (see Figure 7).

Figure 7. Customer relationships



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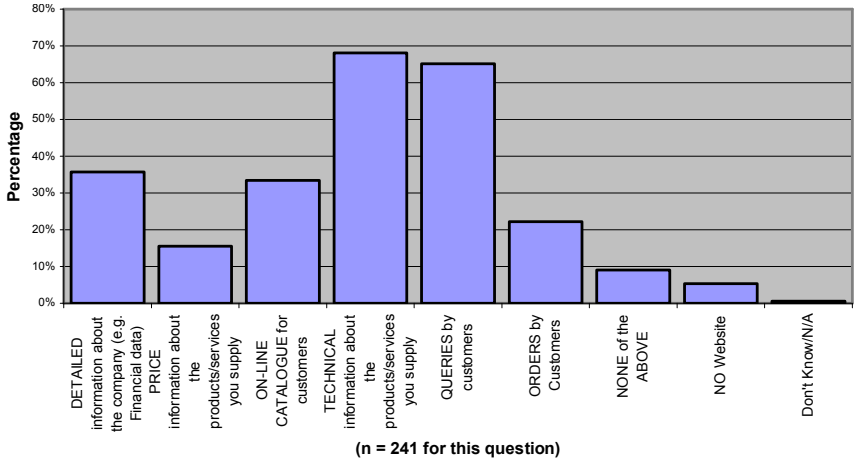
Although only roughly one-third used electronic links such as EDI, the use of e-mail was very widespread. E-mail is clearly a dominant aspect of firms' use of the Internet, but it is useful at this point in the discussion to consider the earlier finding regarding the poor quality of e-mail addresses. It seems fair to say that although the firms in our study are largely reliant on electronic communications, there are many examples where the process of managing these communications is rather amateurish, and, specifically, where the organisational infrastructure for managing these systems are underdeveloped. (It is worth noting that in the author's own institution, there are cases of administrators continuing to use e-mail addresses to send and receive messages from accounts labeled after long-departed colleagues; published "contact" e-mail addresses are often personalised; and there are few managerial systems for systematically managing the "filing" of e-mails). Electronic communication — for all its benefits — brings with it a need for an administrative infrastructure, and associated investment and training.

Selling: Use of Web Sites

The use of Internet pages for selling firms varied considerably, with many firms using the opportunity for both information and handling queries. Far fewer organisations used the Web sites for transactional purposes — and for many the mechanism for handling orders was merely the provision of an e-mail address for the sales department (see Figure 8).

Figure 8. Use of Web sites for selling



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The study highlighted the various roles that the Internet might play in the sales and marketing strategies of supplying firms. Much of the B2B literature presents a very passive role for suppliers — their role reduced to supplying commoditised goods and participating in price-driven auctions, or merely providing the fulfilment of orders placed through online catalogues. In contrast, we found that organisations have various proactive approaches to using the Internet. Our case studies included a small manufacturer of specialist architectural electrical equipment, who made considerable use of the Internet as a marketing intelligence tool — a member of the marketing team systematically trawled the Web for news relating to suitable building projects in key overseas markets. For this firm, the crucial marketing activity was working with the "specifiers" rather than the immediate customers, and to avoid any type of marketing which presented their products as commodities, or easily comparable to competitors' products. In this case, the use of online catalogues was not at all a priority, as this would be entirely out of step with its relationship marketing philosophy.

Impact on Buyer-Seller Relationships

A key question for B2B e-commerce is its effect on the power balance in supply relationships. Figures 9 and 10 indicate some interesting contradictions in participants' perspectives. ("High" and "Low Impact" here refer to participants' expectation of the impact of the Internet on customer relationships in the next five years. "Don't Knows" and "Not Applicables" are not included on these graphs).

Figure 9. Predicted effects on price changes to customers

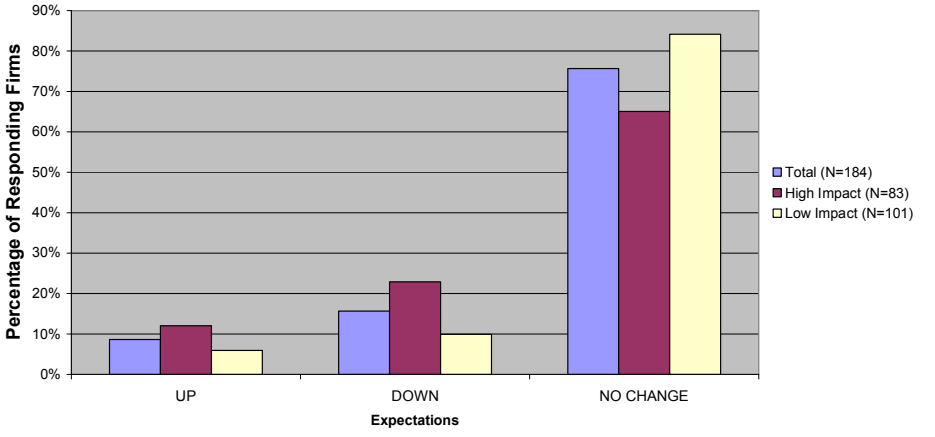

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Figure 10. Predicted effect on prices paid to suppliers

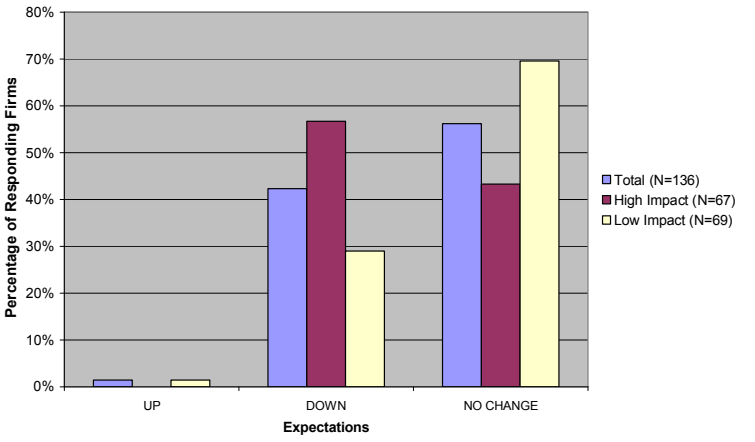
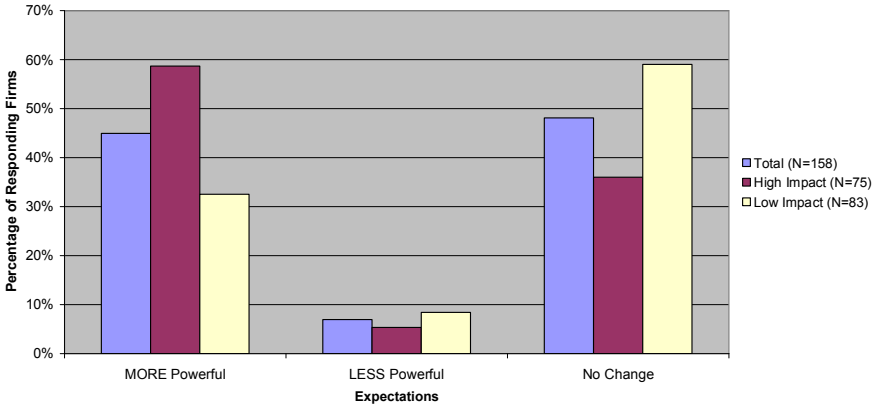


Figure 11. Predicted effect on power position relative to customers



An interesting contrast here is that a large group of respondents expect their suppliers' prices to decline while the prices they charge to customers remain unaffected. This imbalance is also reflected in the way in which firms viewed the likely shifts in power (see Figures 11 and 12).

One interpretation of these data is that there is perhaps an unwarranted degree of optimism — and maybe even complacency — in the responding firms. This intriguing and contradictory finding echoes previous findings regarding firms' views regarding the power consequences of supply chain integration and partnership relationships (see Burnes & New, 1996; New, 1998).

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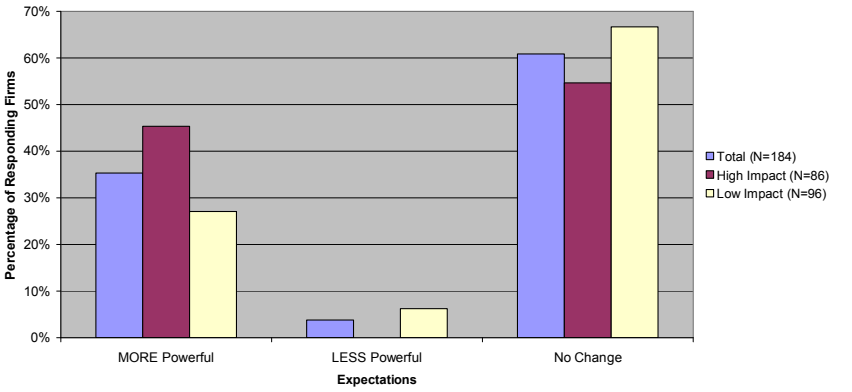
Figure 12. Predicted effect on power position relative to suppliers



Conclusion

This chapter has presented some of the data from a multi-method study into the reality of B2B e-commerce. Its general conclusions are to point toward a picture which is considerably at variance to the extraordinary hyperbole generated by the business media, consultants and some academics about the potential impact of B2B.

A key element of this picture is that much of the theorising about the potential impact of B2B has started from an inaccurate and deeply misleading image of a) what organisational buying and selling is like, and b) the degree of sophistication of much of the supply base. Here, we found firms who were a considerable distance from "supply chain cybermastery" (Berger & Gattorna, 2001) and appeared not to be "surging forward on the crest of the Internet wave" (Friedman & Blanshay, 2001, p. 2) and for whom the reality of B2B relationships are more complex and richly textured than the rather Spartan and highly depersonalised images of the electronic marketplace.

The boom and bust in B2B e-commerce could be accounted for by a number of explanatory stories. Day et al. (2003) focus on the idea of a competitive opportunity attracting many players, many of whom die in the rush. The fact that so many of the e-marketplaces have failed simply reflects brutality of the "land grab." Good ideas attract much interest, and there is not enough gold to go around. An analogy could be that the innovations at the turn of the 20th century that initially encouraged the founding of hundreds of car companies — but only a few can become Ford and GM.

The story that emerges from the research described here is different. It suggests that the B2B hype was based on a fundamental misreading of the nature of inter-

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organisational buying and selling, and the rush was for fool's gold. Many of the presumptions of the B2B model were not true, and, in consequence, innovators lost a great deal of money. From this wreckage, one might salvage a reminder of the idea that innovators have a duty to understand in detail the nature of the markets into which they wish to enter.

These observations are clearly contingent on the degree to which the data gathered here is representative of other populations. However, the use of the triangulated approach in the broader research project has indicated to us that this line of inquiry is worth continuing.

Acknowledgments

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Chapter IV

How e-Entrepreneurs Operate in the Context of Open Source Software

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Abstract

The Internet has become an integral part of our everyday lives and it is often difficult to imagine how we ever functioned without it. This chapter presents experiences of two entrepreneurial companies, one of which has survived the 'dot-com bubble burst.' The chapter identifies current and future online business environments especially in light of open source software (OSS) being accepted globally. Unlike proprietary software (such as Windows), OSS comes with its internal implementation details (source code) visible both to its developers and users, along with the freedom to change and redistribute this source. The significant implications of this unique style of software distribution for e-entrepreneurs are examined.

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Having a flexible strategic plan; possessing management skills; providing excellent service; and having patience are some of the recommendations provided by interviewed e-entrepreneurs. When made part of the decision-making process, these recommendations would enhance current and future e-entrepreneurs in sustaining their business.

Introduction

The aim of this chapter is to explore the usage of OSS in e-entrepreneurship and to identify the attributes and skills necessary for an e-entrepreneur. **E-entrepreneurship** is defined as the notion which principally uses the Internet to strategically and competitively achieve vision, business goals, and objectives. **E-entrepreneurs** use the World Wide Web (WWW) to interact and complete virtual transactions both with other businesses (B2B) and their consumers/customers (B2C).

The notion of an e-entrepreneur has recently gained recognition amongst both academics and practitioners. An e-entrepreneur has many similarities with that of an 'entrepreneur,' especially with respect to the attributes and traits required to be successful. Concurrently, the major differences between the two are primarily in the resources (such as infrastructure and setup costs) required to start the business.

Over the last two decades, most businesses have experienced substantial change brought about as a result of globalisation and the Internet. Maintaining a competitive advantage to simply survive is a continued battle for many businesses. The Internet, however, has provided companies with numerous opportunities irrespective of the nature of the products and services offered to customers. Many companies now make use of the Internet and provide customers through their Web site information such as store opening hours, store locations, contact details, and listing of their products and services. However, for a majority of these businesses a large proportion of the sales revenue is still generated through activities conducted at the physical stores. One example is **Telstra**, which in addition to having nationwide physical stores also does sales and online billing (Telstra, 2004).

The number of companies performing their business activities through the Internet is increasing rapidly while still maintaining a physical store presence to enable customers to 'see and feel' their products before making a purchasing decision. Satisfying the needs of conventional customers who prefer to complete 'face-to-face' transactions is recognised by many businesses. One example being the Borders bookstores (Borders, 2004). Then, there also are companies

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who only have a virtual presence and complete all their advertising, marketing, and transactions through the Internet. Amazon.com (Amazon.com, 2004) is a perfect example of this type of organisation. Brand recognition, customer service, and customer satisfaction are the main ingredients for any company, whether operating solely as 'bricks and mortar,' 'online,' or a mix of the two (Mottl, 2000).

The concept of '**entrepreneurship**' has been in existence and researched by academics for some time. Due to the lack of literature in the area of e-entrepreneurship, the authors have sought guidance and direction from the entrepreneurship literature to realise the following objectives:

- Identify attributes of e-entrepreneurs.
- Identify the similarities and differences between entrepreneurship and e-entrepreneurship.
- Identify if being an e-entrepreneur is more advantageous than simply being an entrepreneur.
- Examine open source software in the context of e-entrepreneurship.

Chief executives of two e-entrepreneurial organisations were interviewed to obtain insights into the concept of e-entrepreneurship. Some of the issues explored in the interviews included:

- attributes of an e-entrepreneur,
- role played by **open source software (OSS)** in the information technology sector,
- impact of OSS on existing and future e-entrepreneurs, and
- role played (if any) by government in supporting e-entrepreneurs.

The next section presents an overview of the literature examining the dot-com crash, entrepreneurship, and open source software (OSS). This is followed by the section that describes the research methodology used to conduct the interviews. Case studies of the two companies interviewed is then presented identifying the various aspects of being an e-entrepreneur with respect to the current technological environment including OSS. The last section presents the conclusions and future research directions.

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The Dot-Com Crash: Did It Change the World?

The arrival of the 21st century was accompanied by the 'dot-com crash' with hundreds of companies around the world laying off thousands of employees and filing for bankruptcies. Competition amongst the remaining companies, however, has not diminished. Companies that have survived have merely "shifted their value propositions to meet (or chase) new marketplace needs" (Spiegel, 2002, p. 30). Success stories of companies that have survived and moreover thrived following the crash are no less amazing (see Anonymous, 2003; Spiegel, 2002).

A number of parties have been blamed for the 'dot-com crash' that include but are not restricted to venture capitalists, investment banks and brokerages, and the Federal Reserve Bank (Mills, 2001). Another factor that has been attributed to the dot-com crash was that the majority of these businesses were established and run by young entrepreneurs who lacked the "essential experience in planning, organising, and managing businesses" (Foster & Lin, 2003, p. 456). These arguments also have been substantiated by *The New York Times* and *The Industry Standard* studies (Infante, 2001) where lack of human resource planning has been noted as a contributing factor leading to sexual harassment and legal suits against the companies, further crippling them following the crash (see also Dvorak, 2001). Duck (2004, p.14) listed seven mistakes that resulted in the crash: "too many competitors; short-term mentality; undisciplined growth; unrealistic revenue projects; inexperienced management; underestimated costs of establishing a national brand; and lack of customer-centered focus." It is the authors' view that as opposed to the traditional models, entrepreneurs and investors alike failed to foresee long-term funds allocation and put in place contingency plans.

The '**dot-com crash**' has not meant that the Internet is no longer used for undertaking business transactions, rather it is being used more than ever before. Whether a company started using e-technologies before or after the crash, it is imperative that they offer security to their customers and avoid hackers from their Web sites. Conry-Murray (2001) and Dvorak (2001) have highlighted security issues that companies should address to protect their customers such as debugging their sites regularly, minimum use of cookies, and not putting too many advertisements on their Web sites.

Over the past decade there has been a substantial increase in the uptake of the Internet by businesses primarily as a marketing tool. The Internet has enabled even small businesses with limited resources to instantly communicate their products and services to their target markets and audiences globally. Worldwide companies are being encouraged to join this phenomenon. For instance, speakers

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at the Dubai Strategy Forum mentioned a number of attributes required to improve economic performance. This included the need for accepting information technologies and a "strategic structure that wipes out bureaucracy and encourages entrepreneurialism, where managers manage, innovators innovate, and the teams are rewarded for their successes" (Anonymous, 2002, p. 1).

The next section identifies the attributes of entrepreneurs and reviews the relevant literature in the area of e-entrepreneur(ship).

Entrepreneurship and Its Relationship to e-Entrepreneurship

The concept of entrepreneurship has been evident in economics and sociology studies since the early 18th century (Becker & Knudsen, 2004). A number of entrepreneurship definitions have been mentioned in the literature. Mulcahy (2003, p.165), while citing the *Oxford Dictionary* defines an entrepreneur as "a person who undertakes or controls a business or enterprise and bears the risk of profit or loss." Thompson and Randall (2001, p. 290) describe entrepreneurs as those individuals who "sense opportunities and take risks in the face of uncertainty to open new markets, design and develop new and improved products and processes" (see also Legge & Hindle, 1997; Kuratko & Hodgetts, 2001).

A number of traits and skills that entrepreneurs possess are cited in the literature. According to Chris Dyson, a business analyst, there are nine traits that depict a person's entrepreneurial characters. These traits include: "personality, integrity, initiative, commitment, drive and determination, directiveness, confidence, self-direction, selling, and leadership" (cited in Tams 2002, p. 399). Cherwitz and Sullivan (2002, pp. 24-25) similarly comment that an "intellectual entrepreneur" is depicted by having attributes such as "realistic and attainable vision, taking risks and seizing opportunities, using available resources to achieve the vision by using collaboration, teamwork, and innovative strategies" (see also Jablecka, 2001, p. 376). From these definitions, it can be inferred that successful entrepreneurs need to possess attributes such as vision, opportunity-seeking, leadership, and management skills.

As highlighted earlier, for the purpose of this chapter, the authors have defined e-entrepreneurship as a concept which principally uses the Internet to strategically and competitively achieve vision, business goals, and objectives. e-entrepreneurs have been defined as those individuals who use the World Wide Web (WWW) to interact and complete virtual transactions both with other businesses (B2B) and customer (B2C) (see Thompson & Stickland, 2003). E-entrepreneurs have come under focus after the dot-com crash that resulted in the closing of hundreds of businesses and thousands of people left unemployed.

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Practitioners, consultants, academics, and governments are investigating the causes behind this crash that left many other industries dependent on information technology crippled for months. Contingency measures are now being put in place to avoid similar crashes in the future. A study of 42 entrepreneurs based in the Greater London Business area who survived the dot-com crash was conducted during the last quarter of 2002 by the London School of Economics and Political Science (Steinberg, 2004). Using a triangulation method, the study found that businesspeople were "in the process of jointly developing a new [under]standing of what success and decision-making means via e-business networks" (Steinberg, 2004, p. 4) and, accordingly, developing coping strategies to avoid similar downfalls in the future.

One of the factors that contributed toward the demise of many e-entrepreneurial companies was the lack of human resources and communication between sellers and customers. To address such issues and provide potential e-entrepreneurs with an understanding and practicalities of the business world, many multinational organisations are now working with their prospective employees with the aim of providing them with an in-depth understanding of business operations. "Media entrepreneurship" is one such program that has been launched by Hewlett-Packard (Canada) Ltd. (Bolan, 2002). The program primarily uses Linux as being open sourced, allowing users (students) to acknowledge that there are no limitations in software development. Robert Miller, national business development manager responsible for education and healthcare at HP, commenting on the program said (Bolan, 2002, p. 19):

*The **dot-com boom**/bust saw a lot of technologically astute people become empowered with vast amounts of capital funding, but they lacked the business sense or financial management skills to fully exercise their plans. Some of them were smart enough to bring in business people that had that kind of savvy, but it was a very awkward culture mix because there were two totally different kinds of mindsets.*

Globally, companies and individuals are being encouraged to embrace the Internet as a means of developing a business advantage. For instance, the e-Business Forum Working Group D5 (WG D5) in June 2003 identified the key challenges (including those encountered in communication and policy formulation) to encourage Greek companies to enter the area of e-business (Neofotistos & Yagoulis, 2003). WG D5 consulted with a number of Greek private and public sector companies involved in e-business and provided a number of recommendations to smooth the process of conducting business through the Internet. These included being aware of issues of privacy, protection of personal information, promoting communication, and the training the e-entrepreneurs (Neofotistos & Yagoulis, 2003).

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An individual's prior understanding and knowledge in business studies and cultural background affects how much new knowledge and information is required to develop a collaborative business plan. This finding was realised by Foster and Lin (2003) when exploring the impact of individual students' learning in e-business and e-commerce environments. By using cognitive perspective in the study of students from different cultural backgrounds, Busenitz and Lau (1996) found that people from some cultures produced more entrepreneurs than others (see also Thornton 1999). Similar results have been found in a recently completed study across eight countries including Australia, Slovenia, Mexico, North America, Finland, Scotland, South Africa, and Kenya (Morrison, 2000). Business plans of new ventures in New Zealand in 2000 were compared to identify the percentage of Internet usage as part of the e-entrepreneurship competition based on the Mckinsey model (McQueen, 2004). At the end of the phase two of the competition, it was found that individuals with pervious IT background, education, business experience, or personal interest had a much higher Internet component in their business plans than participants with traditional business experience such as those for the fields of accountancy, retail, entertainment, and games.

Open Source Software (OSS) vs. Proprietary Software

Proprietary Software Model

In the recent past, much high-profile software (including Microsoft products such as Word and Windows XP) have been distributed under a license that treats the software as a 'black box.' The software is supplied in 'compiled' or 'binary' form, meaning that a computer can read and execute it directly. However, programmers are unable to study the internals of the program. They are forbidden to understand in detail how the program works, they are not permitted to modify its working and they can redistribute neither the software in its original form, nor in any derived or modified form. Typically, a single company or an individual holds copyrights on **proprietary software** (Anonymous, 2004). These copyrights are used in conjunction with licensing agreements to deny the "freedom" or "openness" to modify and redistribute the software. "Proprietary software is software that is not free or semi-free. Its use, redistribution, or modification is prohibited, or requires you to ask for permission, or is restricted so much that you effectively can't do it freely" (FSF 2004).

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From the point of view of the software vendor, the proprietary software model utilises restrictive licensing and secrecy to safeguard **intellectual property** (IP). It is possible that the development of the software could be regarded as entrepreneurship.

However, from the point of view of an e-entrepreneur looking to leverage existing technology, proprietary software may not seem like an attractive option, since modification and redistribution of existing proprietary software is forbidden. Furthermore, providing key services related to deployed proprietary software may not be possible due to the unavailability of the internal source code. Another problem is what is commonly referred to as 'vendor lock-in.' A proprietary software vendor by definition is the only organisation with the legal capacity to improve and enhance their proprietary software products. Hence, an e-entrepreneur wishing to deploy proprietary software is "locked in" to the vendor. No other organisation or individual (including the e-entrepreneur) can provide improvements or custom modifications. For instance, Microsoft is the only organisation that can provide security updates and bug fixes for the proprietary Windows operating system. In effect, any user of Microsoft Windows faces vendor lock-in. Unless and until Microsoft decides to issue a security update or a bug fix, users must helplessly use the software in whatever condition it is in. This argument is developed further under the discussion of OSS below.

Free and Open Source Software Model

When referring to OSS, the authors have used the Open Source Initiative (OSI) definition (OSI, 2004a). OSS involves access to the underlying source code. In addition, for a license under which software distributed is to be considered open source, it must permit redistribution of the software without requiring a royalty. Redistribution must be permitted in source as well as compiled (ready-to-run) form. Modification of the software and creation of derived works must be permitted. There are some other clauses that must be satisfied for a particular software package to qualify as OSS (OSI, 2004b). However, the criteria are arguably the most fundamental and, to someone not familiar with the OSS paradigm, perhaps the most revolutionary. Many organisations and Web sites use the term "free software" (FSF 2004) whose meaning and interpretation is very similar to OSS, with 'free' implying freedom to access and modify the source as well as redistribute unmodified and modified versions. Strictly speaking, the definition of 'free software' might preclude certain software from being considered "free" even though it might be considered OSS. Since all 'free' software would be considered OSS, we will use that term for simplicity and to avoid the confusion that comes from 'free,' meaning 'at no charge.' Interestingly, while it is possible that OSS and 'free' software can be obtained for no or

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very little cost, e-entrepreneurs should note that it is entirely possible for OSS and 'free' software to be 'commercial' (i.e., a source of revenue). For instance, Red Hat produces an open source product called Red Hat Enterprise Linux, an open source operating system that is sold by annual subscription. Subscribed customers are entitled to receive ongoing security updates, errata fixes, and new features as they become available for the duration of their subscription.

Research Methodology

In this chapter, we have adopted the exploratory methodology (see Peil et al., 1982; Spencer, 1982) to identify the trends of how OSS has been and would impact the entrepreneurs as the usage of Internet and other technological methods to conduct business continues to increase. Conducting interviews as a method of exploratory research has been accepted in academia. For instance, Murray (1996) used case study methodology to identify the role of venture capital investments in newly established technological firms. Conducting interviews as a research methodology offers a numbers of advantages: giving flexibility to both interviewers and interviewees in setting up a mutual time; increasing the interviewers' control on the direction of the questions and an opportunity to further explore issues; providing undivided attention of the interviewees; and, last but not the least, providing insight into non-verbal observations such as body language (see May, 1993; Burns, 1998; Peil et al., 1982; Spencer, 1982; Reddy, 1987; McNiff, 1988; Yin, 1994).

As previously mentioned, e-entrepreneurship is a new and under-researched area, hence, the authors were working in unfamiliar terrains. Case study as a research methodology has been accepted when attempting to overcome the uncertainty of having clear measuring instrument (see Wallace, 1984; McCutcheon & Meredith, 1993; McGuire, 1995; Palmer & France, 1999; Corbett & Cutler, 2000).

Chief executives from two entrepreneurial organisations were interviewed in September 2004 for their experiences of setting up, running, and maintaining their businesses in light of growing technological changes. According to the Australian Bureau of Statistics (ABS) classification, Company A can be classified as "micro" with only four employees, while Company B can be classified as "small" with 25 full-time employees (see Steinberg, 2004). The focus of the interviews was on the role of OSS in today's entrepreneurial world where considerable focus is being placed on functions of the Internet for completing business transactions. After receiving consent from the interviewees, the interviews were tape-recoded and subsequently transcribed and written up as case studies.

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These were then sent back to the interviewees for verification of the content, and any changes as required, were accordingly made. This step was undertaken to reduce limitations (e.g., generalisation, reliability, information overload, validity, rigour) accompanied by the case study methodology (see McNiff, 1988; McGuire, 1995; Burns, 1998; Kitazawa & Sarkis, 2000).

Please note that to protect the confidentiality of the interviewees and their respective organisations, their names have not been disclosed and are referred to here as Company A and Company B, respectively. Nonetheless, as far as possible, direct quotes from the interviewees have been incorporated in the following sections.

Case Study Findings

Company A

With its head office currently based in regional New South Wales (NSW), Australia, the company was established and registered as a partnership business in early 2003 and then become a proprietary limited company in January 2004. The company is "focused on developing and deploying Web commerce and Linux-based network solutions" (Company A Web site) and has successfully secured and completed projects in both the open source area and commercial world projects for both Australian and foreign-based companies including in the UK and the United States. The company's open source content management product has been ranked in the top 2% of the active projects at the SourceForge dot-net site which has over 8,000 projects and downloads listed on its Web site (Company A Web site). Even though the company and its members have a strong background and focus on Linux, it also provides software solutions for pocket PCs, the Palm Operating System (Palm OS), and Microsoft Outlook.

The mission and vision of Company A, in addition to generating and increasing its revenue, is to move toward the area of "embedded media." Interviewee A considers embedded media to "employ devices and solutions on single chip computers running on open source software." Each of the Company A directors have expertise in areas of programming, administration, and management, respectively, and are on the path of expanding the company.

The motivation and flexibility offered by working for oneself was one of the driving forces for the interviewee to establish his own company. The interviewee also wanted to have the flexibility to adjust quickly as changes in the external environment and technology took place without going through the bureaucratic

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levels often found in a large organisation. Technology itself is also the passion of the company. This is still a motivating factor for all the personnel involved, which is steadily pushing the company forward. The interviewee believes that this is true of other companies such as Adobe and Apple, where he feels that the vision of the company and the passion of its technologists had kept them going despite management changes.

One of the themes that intrigued the interviewers was how the concept of OSS that involves freely distributing your knowledge can result in generating business for the company. Under an open source license the 'source code' is distributed along with the ready-to-run version of the software product. The interviewers were keen to ascertain how this apparent giving away of intellectual capital could result in profit for the person/organisation involved. It appears that OSS is gaining momentum and acceptance around the world, and these issues are becoming more relevant, especially for e-entrepreneurs.

To answer the query, interviewee A commented that the writers of a program are generally accepted as having the authoritative knowledge. To elucidate his point he gave the following example: If a program is released as OSS, the writer not only shares, but also demonstrates, his or her knowledge in a manner that can be subject to scrutiny by experts. In addition, other organisations that require tailoring of the program to their specific needs may contact the writer to do the customisation for them.

This is where dollars come into the picture. The interviewee has had similar experiences. A London-based company contacted the interviewee when they wanted him to make changes to their program source code so that it was compatible with the company's accounting system. Since the company's experts had the source code of the product available to them, they could, in theory, do the customisation themselves. However, this would involve them first becoming familiar with the internal details of the software and then modifying it. Cost-benefit analysis by the company showed that it was easier and more economical for them to ask the interviewee to utilise his knowledge and expertise to deliver the modified code. The interviewee estimates that the work took him approximately 20 hours to complete while his customers might have had to spend several man-days to achieve the same result. So, the interviewee was able to acquire highly specialised, lucrative business without having invested in marketing or publicity services. The client, on the other hand, was able to procure a software system that fitted their needs in less time and for less money than if they had done it by themselves. So, it was a win-win situation for both parties involved.

In interviewee A's view, the Internet, due to its ubiquitousness and near universal accessibility, can be very effectively used as a marketing medium and MySQL AB, the popular open source database product vendor, is a classic example. In less than a decade, the MySQL database server has become internationally

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recognised and widely used, including in customised forms. High-profile clients include Sony, Suzuki, and Sabre Holdings (MySQL, 2004).

It should be noted that not all the software produced by Company A is OSS. Some software is released under the "general public license" (GPL) (Derekgnu, 2004) and qualifies as OSS. In other cases, clients may purchase software under a "commercial licence agreement" from Company A. This agreement allows the client to use the product and to view the source code and covers the provision of regular service by Company A such as providing further customisation and enhancements. Under this license, the clients are *not* allowed to modify the source. Essentially, this is Company A's strategy to be able to effectively support their clients. If too many modifications are made to the code, Company A would have to extensively study the modified version before being able to provide enhancements. It also can be seen as a precaution taken by Company A to avoid legal repercussions arising from claims of failing to provide adequate support as per the license agreement of the customised program. However, if the buying organisation changes the source code without obtaining prior consent from Company A, the latter is under no legal obligation to be able to support the changed version of the code. Of course, the client is free to approach Company A and/or other software solution providers to collaborate on customised versions subject to additional costs.

During discussions with Interviewee A, an interesting point emerged: Company A does produce open source software but also utilises open source software tools. Company A has obtained commercial services from Red Hat Linux related to their open source Linux-based operating system. They also are developing some software for embedded systems which may turn out to be a derived and open modification of existing open source software.

If an individual is contemplating to become an entrepreneur or change himself or herself from an entrepreneur to an e-entrepreneur, they have to first consider a number of alternatives and subsequently take appropriate decisions. One needs to decide whether they would be deploying new software or leverage the existing software. Further considerations regarding licensing agreements (OSS or proprietary or a mix of both) also would be required.

In views of Interviewee A, "Open source [should be considered] as a serious alternative for people [who] are trying to do [something new]. Statistically, more than 50% of the Web servers in the world run open source software, which is generally […] Apache, […] the most popular Web server in the world.[1]MySQL is the best or the most popular database for Web-based projects." Company A does still utilise proprietary software, such as MYOB for its accounting needs since it helps them conform to the appropriate standards and legislation. MYOB runs on the proprietary Microsoft Windows operating system. Except in instances where the clients request that supplied programs remain closed source,

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Company A generally licenses its software as OSS and believes that other organisations should do the same.

Interviewee A commented that the decision whether or not to go OSS for their software is a business decision and dependent on its vision, current position in the market, current/existing new code development, and future plans. One needs to keep in mind that like any other material product, software and code have their own life cycle and the business decision should incorporate the potential life of the code, accordingly.

Interviewee A also made two points of direct relevance to e-entrepreneurship. First, as an e-entrepreneur, if you are trying to develop a novel solution, you can focus on the entrepreneurial aspects by using existing, reliable, open source software to avoid "re-inventing the wheel." Second, as a provider of innovative IT solutions, an e-entrepreneur faces a more level playing field since organisations are not "locked-in." Hence, they can turn to the e-entrepreneurs to provide support, maintenance, and enhancement of OSS.

The interviewers also were interested to know the support, if any, provided by the government to Company A and whether being based in a regional area it was eligible for any specific government funds. Interviewee A indicated that he had approached the state government for assistance and there had been some progress. The response, however, has not always been very speedy which sometimes is a challenge for small, struggling firms looking for assistance as they may not be operating after a few months. The problem is sometimes further compounded by the bureaucratic structure of the governments. The difficulty experienced by regionally based organisations is convincing the officials of their innovative ideas who are sometime reluctant to provide capital for new ideas that may be regarded as being too risky. A classic example is trying to get funds for OSS projects as the question raised by government officials is the same as the authors: How can one make money by giving away their knowledge and expertise?

Company B

The company has been providing innovative, competitive solutions based on open systems and open source technology to its customers since the late 1980s. The company aims to "develop strong, ongoing relationships with its clients and long-term partnerships, based on mutual growth and respect with industry vendors" (Company B Web site). Services provided by the company fulfil customers' needs in areas of: consulting; application development; and training in software programs such as Unix, Linux, Windows systems administration and network management, and Web-based solutions to name a few. In addition to serving a

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number of small and medium-sized Australian-based customers, Company B also has successfully completed projects and provided training to a number of large organisations including Hitachi, Telecom Australia, Kodak Australasia, University of Melbourne, Mobil Oil Australia, CSIRO, RACV Insurance, Rockwell Areospace, ANZ Bank, Ericsson Data Australia, and VDO Instruments (Company B Web site).

When the interviewee first started working in the computer industry, not only was the industry in its infancy with huge-sized computers, a much smaller percentage of people had access to computers as compared to today. The majority of people involved in the industry at the time were young males generally categorised as 'geeks.' Only large professional organisations such as insurance companies and banks were using computers. The interviewee's introduction to the potential for online collaboration and the spirit of OSS occurred in the late 1980s. At the time, only a small team of professionals had access to the Internet. He recalls participating in an online newsgroup where he would ask questions about the C++ programming language and on occasion receiving advice from Bjarne Stroustrup — the creator of C++. However, the state of the technology at the time meant that only technically skilled people could take advantage of this online community and near-instantaneous communication. Interviewee B realised that there was a "great business opportunity" in this area if people at large could access the Internet using tools that they could learn to work with relatively easily. Unfortunately, initial feasibility studies indicated that the level of capitalisation available was not sufficient to fund the infrastructure needed to realise such an opportunity. The way to make an entry into the field was by doing consulting work based on the emerging Internet technologies and the related open standards and software.

One of the areas in which Company B has competitive advantage is in the area of OSS as it was one of the pioneering companies. The company also has a very high reputation in providing superior client service and catering to clients' specific needs. Hence, the company receives many of its projects through referrals as has happened in one of its recent projects when an Australian University on recommendation from another university contacted the company to tailor its student database to comply with the federal government's reporting guidelines by using the ERP system. In this instance, the company made use of existing codes from "open source framework called Open for Business," along with their expertise in programming to successfully complete the project in less than half of the time and cost than if the company had to write the source code from scratch. By using existing codes on the OSS, the company can reduce the price of their products and accordingly is more competitive than its counterparts. By having access to codes and research and development (R&D) at their disposal, the company also is able to provide prompt service as compared to other large software companies who may not have their respective service offices in

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Australia. The company does not bind its clients into a lifetime contract and the latter have full access to their codes that they can decide to move to another vendor/company if they wished without being penalised/disadvantaged in any way.

Working toward the "betterment of the mankind" by sharing his knowledge and expertise with others while operating in an exciting, dynamic sector are the motivations for Interviewee B to remain as an e-entrepreneur. One of the challenges encountered by the company and others in the information technology sector is when trying to market their products to third parties and businesses. It has been noted that most technology experts do not have marketing and business skills that can often disadvantage them in the marketplace.

Interviewee B and his company had different experiences while interacting with the government sector. At the time of the interview, Interviewee B had been working with the federal government to create a document/database that would provide access to all government "agencies on the procurement of open source software." The document would explain legal ramifications if the third party decides to take up the OSS modules from the document. The database also would act as a networking site for individuals and organisations who wish to safely use OSS modules. The federal government is consequently working to "remove impediments towards the adoption of open source." At the state government level, the focus is still at industry development. The New South Wales (NSW) government recently announced a US$40m Linux project which is one of the largest in the world.

Company B had been in operation long before the dot-com crash, and the authors were interested in understanding how the company had survived it as opposed to many other unfortunate competitors. Interviewee B noted that unlike other new companies emerging at the time with hundreds of people being employed in the company within weeks, the number of employees had remained more or less the same in Company B. Many people contemplating to expand their wealth also had invested huge funds in their newly established companies. Company B, however, did not receive any such funds. This does not imply that Company B's products and services were any less reliable or competitive. Nonetheless, its experience had cautioned them against investing or accepting impulsive projects and funds alike. Thinking and operating strategically as well as employing experienced staff saved the company while other businesses vanished within days after the dot-com crash. In an attempt to capture the already saturated market, new information technology companies spent huge amount of resources and was another reason for their failing: not conducting sufficient market and competitive analysis, a prerequisite for establishing and running any type of business.

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Interviewee B cautioned existing and new entrepreneurs of being aware of globally existing patents for various programs and software codes as even without their knowledge the programmer could be held liable for potentially plagiarising other patented softwares. He proposed that for emerging economies and businesses to be successful, it was essential that the software patent system be either made redundant or more flexible with clear guidelines with a database for searching all the existing patents.

When asked about the future of e-entrepreneurship, Interviewee B commented that this was going to expand in the coming years. To emphasise his point, he gave the example of the music industry. Until very recently, popularity in the music industry was gained by singing face-to-face to a wider audience and generally it took years to get a reputation and make money. In this current era, however, by using the technology and the Internet, the singer can make hundreds of copies of the music on CD and simultaneously distribute it worldwide capturing the global music market. This would not have been possible using the traditional manufacturing and distribution system.

Interviewee B strongly believes that for existing and future e-entrepreneurs and information technology companies it is essential that laws relating to patents should be changed, otherwise the progress could come to a standstill. Entrepreneurs also need to be aware and cautious of the situation and take comprehensive legal consultation and protection.

Discussion

For an e-entrepreneur, the software tools used are likely to be the enabling factor of the novel service being provided. In fact, the entrepreneurial product may be software or a combination of hardware equipment and software. Given that such is the case, how should various entrepreneurs decide whether to use software solutions and/or which model to use for development?

To become a successful entrepreneur, it is essential that a person learns from the experience of others and avoids making the same mistakes. The reoccurring themes within the literature and interviewees complement each other. Halloran (1991), for example, discussed the 20 commonly experienced pitfalls which should be avoided, including: having unrealistic expectations; short-sighted financing arrangements; missing the target market; buying costly and ineffective advertising; and inconsistent and chaotic management.

Explaining the similarities and differences between an entrepreneur and an e-entrepreneur, Interviewee B viewed that both have similar attributes and skills.

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Both need to be able to "visualise future potential [that is] above and beyond just the vision for making money." One major difference between the two is that while working in the information technology sector, an e-entrepreneur requires comparatively less funds and infrastructure when starting a business and, consequently, less total investment dollars. Once a comprehensive market and competitor analysis has been undertaken and the service that would be delivered has been finalised, only access to the Internet is required to start the business, which can be done from any location.

Andal and Yip (2002) postulate that companies should combine traditional and new-economy bases of competitive advantage into their business models in order to be successful in e-business. The generally accepted "e-bases" (Andal & Yip, 2002, p.1) include community effects, first mover advantage, fulfilment/delivery, technology, teamwork, and scalability. They also suggest that some e-business start-ups failed to implement these advantages effectively or found that they needed to be augmented with traditional bases of competitive advantage. For instance, the e-base first mover advantage should be combined with traditional product/service advantages. Getting to the market first with a novel product or service can result in significant benefits such as in the case of Amazon.com and Yahoo. Also, while the use of new and emerging technologies is considered an e-base of competitive advantage, realistically, most technology can be easily replicated. Despite this, some companies, notably Google, have been able to convert technology into an asset and sell it.

The interviewees' comments indicate that they are at least intuitively aware of such implications. Both Interviewees A and B perceived a business opportunity in connection with an emerging technology, namely, embedded devices and the Internet, respectively. At the same time, they also realised that over-committing themselves merely on the basis of new technology did not make business sense, and they relied on other sources of revenue such as consulting work and Web development to acquire the infrastructure and capital to develop their e-entrepreneurial ideas.

Interviewee B mentioned that the fact that they were the pioneers in the industry of open source solutions was a major source of competitive advantage, thus, underscoring the first-mover e-base of competitive advantage. However, Interviewee B regards their use of OSS as another — and perhaps less traditional — source of competitive advantage. By candidly disclosing to their clients the fact that a solution is based on open source software, the clients are reassured that they can, should the need arise, go to other vendors for maintenance, support, and development. There is also an undercurrent of transparency at work; when a company agrees to provide an OSS solution, their entire system is potentially subject to scrutiny by their clients. This may give the clients a sense of confidence; a vendor supplying a completely open solution that can be verified

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by independent technical staff must surely believe in the technical quality of their product.

A possible interpretation of the comparative ease with which certain technological functionality can be replicated is that the intrinsic value of the software that provides such functionality does not amount to much. In cases like these, OSS offers the opportunity for an e-entrepreneur to focus on services that are enabled by or based on technology rather than wasting resources developing technology which will soon be replicated and widely available anyway. Certainly, it is still possible to try and sell technology, as Google has done. But this involves ensuring that one's technology is constantly evolving at a rapid enough pace to consistently stay ahead. As pointed out by Interviewee B, such research and development (R&D) can be prohibitively expensive for e-entrepreneurs, particularly in the Australian market where capitalisation can be harder to come by than, say, in the United States.

Teamwork amongst a diverse mix of people with varied skill sets and experience is another commonly cited e-base of competitive advantage (Andal & Yip, 2002). Apart from the contributions from team members within the organization, making software available in open source form allows participation from the wider community. One of Interviewee A's open source projects has built up a virtual community of users, some of whom are able to contribute by asking questions and reporting errors that enabled Company A to enhance the quality of their product. In some cases, they are even able to offer "patches" — snippets of software code that add functionality or repair an error. Interviewee B also is aware of this effect and mentioned that Company B is an organization that tries to contribute its expertise and knowledge to the improvement and enhancement of OSS that they deploy. Interviewee B considers the process a way of "bartering IP." In this sense, releasing software developed by an e-entrepreneur as OSS is not giving away something at no charge, it is an offer to exchange and share expertise, knowledge, and time with the possibility of mutual benefit to the developer(s) of the software and the wider community. Successfully trading IP with the global community is potentially a very powerful way of harnessing the synergy arising from a team of diverse backgrounds and abilities.

Based on the understanding developed from the experiences of the interviewees, the authors have identified the following three key requirements for being a successful e-entrepreneur in the field of OSS.

1. **Being Technically Competent**

   Both interviewees recognised the critical importance of technical ability. Interviewee B mentioned the depth of knowledge required and the "wizards" on Company B's staff. Interviewee A also is emphatic on the need

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to be "technically sound." By definition, e-entrepreneurial activities are strongly dependent on the underlying technology. The e-entrepreneur must not only be thoroughly familiar with the state of the art of the relevant technology but also possess a deep understanding of the underpinning principles in order to be able to analyse trends and foresee opportunities. Interviewee B does caution that in the context of Company B, high quality technical ability is often found in people who are unable to liase well with customers, and it can be a challenge to find staff that strike the right balance between being "tech" and "suit." Hence, the latter can act as a marketing challenge when "tech experts" need to explain their product in layman's language to their customers.

2. **Taking the Customer Service Perspective**

Interviewee A, while emphasising technical ability of the product, insisted that the focus should be on what the technology can do for the consumer. Ideally, the technology should be transparent and the customer should see the benefits of the technology without needing to understand the details. In many cases, they should not even have to care whether the solution is open source or not. What should be clear to the consumer is what the technology can enable them to do and what the e-entrepreneur can make possible for them via the services related to the technological product. These views hold for Interviewee A's e-entrepreneurship plans in embedded media – small, portable devices which must, by their very nature, be consumer specific. They are also relevant to Company A's online content management system products. The base product itself is available to everyone, but the true source of revenue comes from consumers wanting services based on the existing product. These services include maintaining the customers' online presence and customisation of the base product to deal with customer-specific requirements.

Interestingly, while Company B operates in a slightly different arena, the customer service and technology transparency issues are the ones that they strongly identify with. For instance, they have a product called the small business server. This is meant to be a turnkey solution that can be set up quickly and easily. It provides small businesses the most commonly needed functionality such as Internet connection sharing and acceleration, e-mail, anti-virus, fire walling, and file and printer sharing. It so happens that the software installed on the server is all OSS. However, in Interviewee B's experience, the customer does not necessarily care — or need to know — that this is the case, as long as they are instructed on how to use and administer it. Further, Interviewee B asserts that the open source nature of the software in this product ensures that they have full access and complete control over all aspects of the software functionality, thus placing them in

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a position to provide maintenance and service as long as the customer is willing to pay for such services.

3. **Being Clear on the Reasons for Going OSS**

Neither interviewee recommends OSS as a panacea. It is clear from both their interviews that a number of factors influence their choice of whether a solution is made OSS or not. In fact, while doing some consulting work, Interviewee B recalls being specifically asked to provide proprietary software-based solutions, which Company B was comfortable providing. Hence e-entrepreneurs should not perceive OSS as the next "bandwagon" or something to be done purely out of ideological reasons. The interviewers, as well as some existing literature (see Cusumano, 2004), caution against this. Still, there can be solid business reasons for focussing on OSS as evidenced by the activities of big business such as IBM, Sun, Red Hat, and Novell (Mahoney & Naughton, 2004). In fact, both Companies A and B produce or have produced offerings and services based on proprietary and open source software. One or more of the following reasons have been compelling enough for both Companies A and B to go open source:

- *To harness the distribution and marketing power of the Internet* Interviewee A decided to release Company A's content management system under an open source license over the Internet. The idea was to make it easy and obligation free for prospective customers to download and use the product. If they were technically inclined, they also could inspect the source and assure themselves that the product was technically sound. While there are a large number of people who have chosen to use this for free, they have at least become aware of the existence of the product and Company A. Further, some of the users have requested services and support for which they have paid Company A. Interviewee B made the observation that in order to get commercial entities to try out one's software, the fact that it is open source gives them further incentive. This is because a potential customer is ensured that they can make some use of the software even if the original vendor is not readily available because they have the code and can modify it to suit their purposes, if the need arises.
- *Avoid re-inventing the wheel.* When the functionality of the product and the services are paramount (such as Company B's turnkey product), the software itself is the means to an end. Therefore, it makes sense for an e-entrepreneur to make use of the readily available OSS rather than having to devote valuable resources to rebuild what has already been done (and often done well). For e-entrepreneurs seeking to move quickly and offer novel services, this can be a major motivation. Interviewee B finds that by

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avoiding a lot of duplicated R&D, they are able to provide cost-effective solutions.

- *Interaction with the community.* Interviewee A acknowledges that Company A has indeed benefited from the questions, suggestions, and contributions of the online community that uses their open source content management product. Interviewee B views his Company B's building solutions based on existing OSS as bartering IP. Company B benefits from the IP of the developers of existing OSS and in turn feeds back expertise to these open source projects.
- *Get an edge over proprietary software vendors.* An e-entrepreneur may have an idea for a new product or service that can be enabled by a software package (or, indeed, the product may be a software package itself). It is often the case that the e-entrepreneur would struggle against the big businesses that offer similar products/services based on proprietary software. By releasing their product as OSS, the e-entrepreneur can get the attention of some potential customers who are deterred by the higher prices or the closed nature of the proprietary vendors. These potential customers could become a source of revenue based on custom modifications and other support-related activities. Of course, if there are already a number of OSS solutions available, then the e-entrepreneur should try to come up with a different idea.

Apart from the discussed business reasons, a strong ethical undercurrent did seem to underlie some of the issues outlined by the interviewees. For instance, Interviewee A saw releasing a proprietary product as OSS after it had reached its end of life as one way of letting customers know that they were not being left in the lurch. By granting access to software that Company A had previously developed under a proprietary license, users of that software would be able to continue to use and maintain the product well after Company A declared it as discontinued, if they so wish. For Interviewee B trying to "make the world a better place" is more important than "making a buck."

Another common factor is the passion for technology and the excitement that comes from developing new technology or watching the technology evolve by following and perhaps collaborating with the open source software community.

As a result of these findings, we agree with Mahoney and Naughton (2004) when they say that for some companies, OSS can be a strategically valuable weapon. However, the idealistic tendencies of both interviewees would cause us to stop short of agreeing completely with them when they say that it is difficult to find the "ideals of freedom, volunteerism, and a shared community of values in today's world of Monetized Open Source."

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Conclusion

In this chapter, we have examined the increasing usage and growing acceptance of open source software within the technological world. E-entrepreneurship is a growing field and the experiences of two e-entrepreneurs trying to survive in this competitive field were presented. The underlying attributes and skills necessary for an e-entrepreneur are very similar to that of becoming an entrepreneur. These include: being a visionary; the ability to develop short- and long-term strategic plans; providing leadership; developing flexible structures; and remaining responsive to changing environmental and market demands.

Presented next are the recommendations we have elicited from the interviewees that can enable e-entrepreneurs to be successful in their ventures.

Flexibility in Strategic Planning and the Work Environment

There is a need for maintaining flexibility when doing business irrespective of the organisational size. Especially in this technologically-dominated business world, the organisation needs to have a flexible structure so as to be able to respond to the ever-dynamic and ever-changing environment. At the same time, long-term strategic decisions should be made which reinforce the vision of the company.

Provision of High Levels of Service

A high emphasis needs to be placed on providing regular and outstanding service to clients. A company's reputation (communicated though "word-of-mouth") plays a major part in obtaining repeat business from existing clients and attracting new clients.

Developing Basic Management Skills

A successful e-entrepreneur must acquire basic management skills and attributes such as leadership, negotiation, and business planning. Furthermore, a balance needs to be maintained between the technical demands and the business demands of the company, especially those relating to people management — customers, suppliers, and employees. Motivating employees will remain a key task for managers regardless of the type of organization.

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Taking the Long-Term Perspective

Establishing a new business requires significant commitment in terms of effort and financial resources over a significant period of time. Hence, returns in the short-term should not be the motivating factor. Building a robust and stable business requires patience. One way of maintaining motivation over a long period is to ensure that all individuals involved keep an open mind and enjoy the journey that can provide numerous challenges and highly satisfying outcomes.

Listening to Technologists

In order to maintain a competitive advantage, it is imperative that managers regularly communicate with their technical personnel since they are ones who will have firsthand knowledge of what is happening in the technological world.

This chapter has contributed to our understanding of OSS and e-entrepreneurship. The literature highlights the need for further research in this area, particularly to do with small businesses with Internet usage (Steinberg, 2003). Gaps in the existing literature in the area of OSS and e-entrepreneurship needs to be filled with more studies. One way this could be initiated is by more qualitative studies incorporating both in-depth case studies and focus-group discussions exploring experiences of e-entrepreneurs in the current technological environment. The experiences of entrepreneurs who have now become e-entrepreneurs also need to be further explored.

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Endnote

[1] Netcraft (*www.netcraft.com*), in fact, reports a 67.92% market share for the open source Apache Web server in October 2004, which is a bare 0.07% change since October 2003.

Acronyms Used

ERP	enterprise resource planning
IP	intellectual property
MYOB	Mind Your Own Business (accounting software package)
OSS	open source software
SAP	"Systeme, Anwendungen, Produkte in der Datenverarbeitung," meaning "Systems - Applications - Products in data processing" [url:wiki_sap]
SQL	structured query language

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Chapter V

Personalized Relationship E-Marketing and the Small Medium-Sized Enterprise

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Abstract

Many small businesses are beginning to adopt at least tactical solutions to enhance relationships between themselves and their customers. This chapter focuses on a UK-based marketing communications company which has developed an innovative personalized relationship e-marketing tool, utilizing mobile technology aimed at the SME sector. Current marketing practices, such as database marketing and CRM systems, are discussed in terms of SME adoption and whether the tool, Sign-Up.to is an effective replacement for established CRM systems. The authors conclude that while the case study company has developed a tool that will aid SMEs with their relationship marketing, the philosophy of relationship marketing must already be imbedded within the SME. The authors' intention is to illustrate how

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technology can be implemented in the SME sector and to explore how technology and marketing can help each other.

Introduction

It is recognized that the small business demonstrates certain characteristics that are not conducive to long-term strategic planning. Indeed, many small businesses perceive that the level of risk associated with marketing and marketing decisions is prohibitive and any marketing undertaken by a small business tends to be limited to a more tactical marketing communications approach as opposed to a strategic approach.

Studies (Ritchie & Brindley, 1999) indicate, however, that the **small or medium-sized enterprise (SME)** is rapidly becoming aware of the potential for competitive advantage that can be gained via e-marketing. Research has indicated that the initial primary impact of e-marketing is in terms of the business–to-customer relationship, with SMEs developing Web sites to provide basic product range information (Ritchie & Brindley, 2000). The evidence suggests that while some SMEs are developing their strategic thinking about the potential use of the Internet, this is still primarily focused on the marketing communications and sales strategies. Changes in the wider business environment have led to significant adaptations of technological advancements in the field of marketing, such as the use of specific software. Much of these developments have taken place alongside the shift from transactional aspects of doing business with a customer to relational aspects. Technology has therefore provided businesses with a means of collecting and manipulating customer data that will aid loyalty management, such as the introduction of sophisticated measurement systems, customer targeting based on lifetime value, and defection analysis. In confirmation of this, Zineldin states "Relationship marketing will not be established without IT-based relationships using advanced technological tools" (2000, p. 7). As a consequence, therefore, the use of **CRM** software systems is becoming more widespread. At the same time, smaller businesses are starting to address the wider opportunities associated with e-marketing (Brindley & Ritchie, 2001), and many are beginning to adopt at least tactical solutions to enhance relationships between themselves and their customers.

This chapter focuses on a case study of a UK marketing communications company which has developed an innovative personalized relationship **e-marketing** tool, utilizing mobile technology aimed at the SME sector. The majority of current technological systems designed to aid the marketing efforts of organizations are geared to the larger companies rather than to the SME sector.

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The aim of the chapter is to explore whether the new e-marketing tool, Sign-Up.to, can help SMEs use technology to develop their relationship marketing efforts, while avoiding the issues and costs of implementing the more "established" CRM systems. The chapter begins with a discussion of marketing practice in terms of database marketing and CRM before moving onto explore the experience of SMEs and technology application. A section on CRM and SMEs is included. The e-marketing tool developed by the case company is then described and examples of its application are given. Conclusions are then drawn to its effectiveness in aiding SME relationship marketing strategies.

Background

As mentioned, many of these tactical solutions have been focused on marketing communications, as the SME begins to take advantage of the technological developments. To consider these developments in more detail, it is clear that the manipulation of customer data is important to feed the new obsession with measurement reinforced by the argument put forward by Buchanan and Gillies (1990) that what gets measured or lends itself to measurement is likely to be implemented. Measuring relies on the manipulation of data; in the case of marketing, this is customer data. The use of specific customer data, while fundamental to many aspects of marketing, is traditionally associated with two specific areas, namely database marketing and direct marketing. Given the confusion that surrounds the distinction of these terms, it is appropriate at this point to dwell on them in some depth.

Fletcher, Wheeler, and Wright (1997) define database marketing as how to use market data to the best advantage through whatever medium. They list three aims for database marketing: strategic improvement through better use of marketing information; the identification of strategic advantage through the use of customer and market information (product/service development); and the development of long-term customer loyalty evident in the reduction in brand switching and the enhancement of cross selling. The basic requirements for database marketing also are presented, namely a relational database (information from different files linked by a common field), a query language for access, software for market segmentation analysis, forecasting, merge/purge functions, and others. Thus, the database should be able to be manipulated in a useful manner. Peters (1997) argues that companies need to use customer information in a structured fashion if they are to gain value from it and build customer relationships. Customer information files for relationship marketing purposes should include profitability information, so that the lifetime value of the customer can be forecast (Gronroos, 1996).

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The functionality of database marketing is recognized by Sisodia and Wolfe (2000, p. 185) who refer to it as "automated transactional marketing." Murphy (2000) notes that databases are often product-oriented, not customer-oriented, again underlining their functional (short-term) as opposed to their strategic (long-term) nature. Morris, Brunyee, and Page (1998, p. 361) indicated even earlier that database marketing is nothing more than "building detailed customer intelligence files, that permit ongoing, customized communications." Thus, database marketing is seen by many as a tool to help maintain contact with a customer. By contrast, relationship marketing goes much further than that, focusing as it does on the development of an ongoing long-term relationship.

The other area of marketing often associated with concentrated data manipulation is **direct marketing**. Bird (2000, p. 16) defines it as "any advertising activity, which creates and exploits a direct relationship between you and your prospect or customer as an individual." Fletcher et al. (1997) see it as a way of using direct media for a target market. There is a strong emphasis on measurability and return on investment, thus often encouraging a short-term focus.

While still thought to be primarily used for marketing communications, Long et al. (1999, p. 5) recognize the role that both **database marketing** (DBM) and direct marketing (DM) have played in the development of **relationship marketing** (RM): "Companies have identified personal data as the foundation of direct marketing and database marketing, which are two of the immediate forbears of relationship marketing in consumer markets." Thus, in the academic world, there is a developing recognition, that while undisputedly linked, RM is not the same as DBM or even DM.

Customer relationship management (CRM) is a further development in technology and appears to be even more closely linked to relationship marketing if only by name. Definitions of CRM focus on the organization driving the relationship. For example, Galbreath and Rogers (1999, p. 162) define CRM as "activities a business performs to identify, qualify, acquire, develop, and retain increasingly loyal and profitable customers by delivering the right product or service, to the right customer, through the right channel, at the right time and the right cost. CRM integrates sales, marketing, service, enterprise resource planning and supply-chain management functions through business process automation, technology solutions, and information resources to maximize each customer contact. CRM facilitates relationships among enterprises, their customers, business partners, suppliers, and employees." Another definition offered by Hamilton (2001) interprets CRM as being "the process of storing and analysing the vast amounts of data produced by sales calls, customer-service centres, and actual purchases, supposedly yielding greater insight into customer behaviour. CRM also allows businesses to treat different types of customers differently, in some cases, for instance, by responding more slowly to those who spend less or

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charging more to those who require more expensive hand-holding." Therefore, the use of CRM software systems presents on the face of it a potential solution to the small business and it is understandable that the SME may consider exploring CRM developments as the next stage on from database marketing and direct marketing when seeking to develop the opportunities presented by e-marketing.

Indeed the SME sector has generally been recognized as the seedbed of inventiveness, creativity, and innovation (DTI, 1994). Smallbone, North, Vickers, and Roper (2001) identified a positive link between innovation and business performance within SMEs. However, differences between sectors (e.g., manufacturing and services) may prevent the treatment of SMEs as homogenous in regard to developing conclusions and advice on imbedding organizational learning to foster and sustain innovation. As well as sectoral differences, there also is the issue of size. For example, the micro business may be totally dependent on the owner/manager to sustain innovation.

Unfortunately, the owner/manager's zeal for the development of new concepts and ideas — an "innovation orientation" — can dominate or exclude a dedication to the principles of customer orientation. The idea comes first and the check for market acceptance second. Thus, innovation and entrepreneurial flair without the application of marketing may not only prove unsuccessful in the short-term but also in the failure to imbed the knowledge and cultural changes necessary to sustain longer-term performance. Ideally then, there should be a symbiotic relationship between marketing and **entrepreneurship**. Doyle (1998, p. 225), quoting Peter Drucker's view "that management have only two key tasks: marketing and innovation," reinforces the accepted view that the two are intimately interlinked. As Geroski (1998, p. 1) illustrated, "it is vital to think creatively about markets…as it forms the basis for successful strategic innovation."

It is widely recognized that innovations in the areas of knowledge transfer and communications represent significant opportunities for competitive advantage (de Geus, 1988; Slater & Naver, 1995). Kanter (1997) believes that engendering innovation is key to ensuring companies remain competitive and are market leaders. According to Kanter (1997), appropriate skills and attributes include comfort with change, clarity of direction, thoroughness, participative management styles, persuasiveness, persistence, and discretion. Quinn (1985) produced a similar inventory of the necessary characteristics for the innovators and entrepreneurs, which are crucial to success for innovative small companies. Often, the role of **organizational learning** is explored as a possible explanation for the failure of SMEs to sustain their innovative advantage, although they are still continuing to survive. The issues associated with the time that they needed to devote to innovation encompass being too busy running the business to worry

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about such developments and is perhaps a reflection on the nature of the problems encountered by the smaller organization. At issue here is not the recognition of the importance of innovation, but the human resource capacity necessary to devote to this work and therefore become acquainted with new technology. In terms of technology, Smallbone et al. (2001, p. 305) identified that "technology may be underutilised" and is more commonly used in medium-size firms as opposed to small firms.

Research suggests that SMEs possibly lag behind in their utilization of e-business technology because of the lack of opportunity for organizational learning. A view supported by Dawn, Bodonik, and Dhaliwal (2002) who identified that Canada is exemplified by low e-business readiness due to the low adoption of e-business applications i.e. if they don't use the available technology how can the SMEs exploit its benefits? Similarly, Brown and Lockett (2004) also identify the low engagement of SMEs in e-business as do Houghton and Winklhofer (2004). They argue that trust in a third party is an important requirement in the adoption of higher-level complexity e-business applications by SMEs. Trust is a key antecedent of take-up, either by the SME themselves or their customers. This is what Houghton and Winklhofer (2004, p. 380) call "a trusting and committed relationship." Similarly, Smallbone et al.'s (2001) survey indicated a slow take-up of online selling within their sample of SMEs, suggesting that this may be due to consumer reluctance in terms of trust/security.

If it is assumed that there are barriers to innovation within SMEs, then it seems pertinent to explore Smallbone et al.'s (2001) premise that supply-chain initiatives may support innovation — perhaps what Dawn et al. (2002) call opportunities to co-commercialize innovations. Indeed for Smallbone et al. (2001), there is a clear link between innovative propensity and the involvement of the SME in external networks. External links that may help reduce risk, improve costs. Yet Freel (2000) and Chell and Baines (2000) recognized that smaller firms tend to have fewer external linkages. However, Coviello et al. (2000) point out that focusing on the tactical approach limits marketing to its traditional framework of transactional marketing. They point out that what is likely to happen is that by the very nature of a small business it could adopt a relational approach and may be more likely to practice an interaction and network approach to marketing.

Thus, there is a dichotomy between SMEs being innovative but not necessarily in all quarters; for example, they may develop an innovative product that is not innovative in terms of process (Damanpour, 1991). This viewpoint is contextualized by Dawn et al. (2002) who argued that SMEs inherently facilitate innovation and that the Internet can facilitate clusters of SMEs, with members of the supply chain working together (Ritchie & Brindley, 2001). The issue is compounded when one views e-business innovation as a continuum (Daniel, Wilson, & Myers, 2002; Peet, Brindley, & Ritchie, 2001). In this chapter's case study, Sign-Up.to is operating like a portal cluster.

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For Dawn et al. (2002, p. 139), it is SMEs (like Sign-Up.to) that "create and commercialise evolutionary new technologies and directly output new innovations." It is argued that innovation networks enable communication facilities to reach the right people, creating partnerships of stakeholders and aggregation of their competencies for greater chances of innovation success (Jutta, Bodorick, Weatherbee, & Hudson, 2002; Kaufmann & Totdling, 2001 cited in Dawn et al., 2002). These networks and partnerships may be viewed as another form of relationship. Similarly, CRM systems are developed to enable communication between buyers and suppliers.

Main Focus of the Chapter

CRM Systems

Consequently, these issues could go some way to explaining why the recent development of **CRM systems** has tended to focus on larger organizations and are apparently inappropriate for the smaller business. More recently, there have been criticisms related to the implementation, effectiveness, and success of CRM systems, and Gartner Research (2001) suggests that the failure rate is around 65%. A key factor is that vendor hype, product immaturity, and product cost are contributing to user dissatisfaction (Frost & Sullivan, 2000). Bearing in mind the potential costs involved both financially and in terms of the time taken to implement fully, the risks could be great for the SME where resources are often limited. These issues serve to confirm the scepticism of small businesses toward marketing, especially when their specialisms are often outside marketing. Consequently, marketing is not always a priority, so the steps taken to begin to utilize technology from a more strategic approach could be thwarted.

Taking a more philosophical approach, further problems can be found in today's implementation of CRM. Law, Lau, and Wang (2003) suggest that such an approach is dated and that customers should no longer be treated as passive groups and assigned "to" some categories. They state that the approach to CRM should be changed, focusing on the customer as the starting point. Although many organizations may accept that relationships should be two-way, putting this into practice becomes difficult and the technology available under the guise of CRM perpetuates this problem. Research undertaken by Wright and Hurlstone (2004) questioned whether CRM systems were indeed customer focused, as many do not provide products that focus directly on benefits to the end consumer but "sell" benefits based on increased efficiency to the organization. Another criticism is that CRM systems tend to embody standardized views of relationship manage-

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ment processes, and therefore are a long way from the "customer managed relationships" talked about by Law et al. (2003).

The Case Company: Sign-Up.to

This chapter uses a case study of a UK-based marketing communications company that has attempted to identify and address the issues and risks of existing CRM tools for the SME while exploiting the benefits that technological developments have brought. The company has consequently developed an innovative personalized relationship e-marketing tool, aimed at the SME sector. This tool is called Sign-Up.to and has been designed to establish a personal dialogue with potential customers, gradually exposing them to the organization's messages.

Sign-Up.to is an online application that allows the user to take control of data capture, processing, campaigning, management, and analysis, across all channels without technical expertise. In this tool, the threads of database marketing, direct marketing, and relationship marketing are evident and are discussed.

In the Sign-Up.to model, the basic requirements for database marketing as referred to by Fletcher et al. (1997) are evident including a relational database, software for market segmentation analysis, forecasting, and a merge/purge function. The Sign-Up.to database can include a wide range of information about the consumer, which can be updated at any time by the consumer. Whenever it is updated, all member company databases are immediately updated, so consumers do not need to remember to change their details with every company they are subscribed to. This encourages cross selling across member companies. Data can be captured from Web forms and SMS messages or can be transported from an existing database. Any survey questions or additional data can be added to the registration process, and all captured data is automatically verified via a double opt-in. It also is possible to perform very detailed targeting of the database. The Sign-Up.to model handles and structures data by using "**products**" and "**consumer profiles**" to organize information. The "product" is a powerful form of mailing list (a product could represent a Web site newsletter, a competition, or a special offer for example) whereas a "consumer profile" contains an individual's contact information and basic personal details. Products are created in the system and people "**subscribe**" to these products. This is how data is captured and allows the organization to gain the user's permission to contact them. When someone subscribes to one of the products, details from their profile are attached to the product and disclosed to the organization — a product, therefore, contains a list of consumer profiles. The distinction between products and profiles allows a business to perform very detailed targeting of their database. This targeting

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allows them to send relevant and personalized information to subscribers, thus catering to individual needs.

Since Sign-Up.to is designed to be a communication tool using direct media to reach a specific target market, then the influence of direct marketing is also obvious. Messages can be created and sent via mobile and via e-mail directly to the target market. The correct type of message can be sent to recipients based on their preferences, so personalized, regular contact can be maintained with thousands of contacts easily. The time and date for sending can be selected at any point up to a year in the future. Sign-Up.to seems on the face of it to conform to the definitions for direct marketing as tracking and data manipulation is an important feature of the tool — a point that is raised by Bird (2000) as being a feature of direct marketing. Whenever an e-mail campaign or an SMS is executed, the tracking feature allows the company to keep a copy of each message sent, details of who it was sent to, and statistics about the message. These statistics provide an invaluable insight into the target audience, allowing the organization to see what particular content and subjects work best with specific groups of consumers, what time they read the messages, and even see how different content structures affect click-through rates. By paying attention to this information, the business can constantly improve campaigns, making them more relevant for the audience.

Sign-Up.to vs. CRM Systems

The research indicates that the Sign-Up.to tool has moved down the CRM path as the messages become personalized and individual needs are catered for. If CRM and RM are about building loyalty and loyalty has been identified as one of the enduring factors of a positive relationship, then Sign-Up.to should be able to secure such loyalty with permitted, appropriately targeted messages and take the small business in this direction. A particular feature that is useful for small businesses is the ability to target by location and often — making it local can make it much more personal. For example, if someone's favorite restaurant around the corner from their office gets permission to contact them and then e-mails the consumer on Monday with a lunch special offer, there is a high chance that they will redeem it because they have already expressed an interest by signing up. Indeed, mobile is such a personal medium that local offers work far better as it is less intrusive when the consumer knows the sender. They also are more likely to use word of mouth communications when the sender is local — another feature of relationship marketing.

The tool also has addressed some of the issues associated with CRM systems. As mentioned, a CRM system would be prohibitive in cost terms for a small

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business, whereas the Sign-Up.to tool is much more accessible to the small business, with an initial setup fee, no charge for e-mails sent, and SMS charges at low rates. A further criticism is the passivity of the customer and the customer's lack of involvement in what should be a two-way relationship. However, because Sign-Up.to is a permission marketing system, it ensures that the customers, who are being communicated with want the relationship because they have volunteered (opted-in) to be marketed to. This enables the organization to begin to establish a dialogue and ensure that communications are personal, anticipated, and relevant to each consumer. As the dialogue progresses, this offers consumers an incentive to give deeper levels of permission — more information on themselves and agreement to offer them more services and information on offerings. So in this sense, Sign-Up.to begins to develop (albeit tentatively) what was customer relationship management to customer managed relationships.

However, although Sign-up is going someway to address the issues raised regarding CRM systems and their drawbacks for the small business, it also has highlighted an interesting anomaly regarding innovation. Although the SME sector has been seen as innovative, the sector has not taken-up the opportunity of the Sign-Up.to product in the numbers originally anticipated in its business plan. The product has been actively sold to the small business sector and received with great enthusiasm, but has yet to be adopted by a significant number of SMEs. However, what is interesting is the type of organization that has adopted it with tremendous success. One such organization is V2 Music, Richard Branson's record label. After a highly successful trial, V2 Music, home to artists such as Paul Weller, Stereophonics, and Estelle, adopted the Sign-Up.to platform to manage their worldwide e-mail and mobile marketing and fan communication. The Sign-Up.to platform has allowed V2 to integrate more than 100 separate databases into a single system used by all worldwide offices — providing a global view of fan data and allowing localized e-mail and mobile campaigns to be run by V2 staff without the need for technical training. This integration has already saved V2 an estimated £150,000. The adoption has been hugely successful, consolidating V2's databases and improving communications to their fanbases. The features have meant that V2 staff can be creative but, more importantly, can measure how effective their communications are on a case-by-case basis, creating a responsive community environment.

Another organization that has successfully implemented the product is BT and their **Mobile Commerce Platform**. Sign-Up.to designed, produced, and now maintain the mobile commerce system for BT, named *Click&Buy*. This uses a system based on the Sign-Up Mobile Marketeer platform to enable BT's micro-payment systems to securely accept and authorize orders by SMS. Other organizations adopting the Sign-Up.to tool are Duracell as well as the Thai government.

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These are not organizations that were originally targeted as potential customers and indeed came upon Sign-Up as a result of an Internet search and saw the potential for their own business. In the case of V2 and BT, awareness of technological developments are crucial as a means of establishing a competitive advantage, as well as providing means of communication that will appeal to their own target audiences, who, especially in the case of V2, are likely to be progressive innovators or early adopters. It could be this awareness and the *need* to adopt innovative techniques that have enabled these organizations to see the potential of such a tool.

In response to this shift in their target market, Sign-Up.to have developed a tool named FanBase which allows artists and labels to capture and store fan data, run e-mail and mobile marketing campaigns, track results, and even generate revenue directly using premium SMS from what is probably their most valuable asset — their fans.

Paradoxically, although a huge technical or training investment is not necessary and indeed is a feature of the tool, it is those organizations for whom the tool was designed (i.e., the small businesses who have not adopted it) and yet those that have the expertise and the financial backing to adopt more expensive and more technical solutions have welcomed the simplicity and effectiveness of Sign-Up.to.

Future Trends

In functional terms, the developers of Sign-Up.to have seen the potential for future developments, and an optional feature is recently available that allows acceptance of mobile payments, which could signify a further step along the e-commerce pathway for SMEs. However, there is still the need to continue to address the issues that have been raised in the context of the small business and the need for a more strategic approach to their e-marketing. Possibly, therefore, the next set of developments could be to move SMEs further along the e-marketing developmental pathway by offering comparative data, or there could be a greater opportunity to develop the theme of customer managed relationships by generating more customer feedback, so that ultimately the customer is the starting point. There could be the potential for further integration of messages, not only between mobile and e-mail but also via other channels. As McDonald (2003) pointed out, a single integrated process, shared information, and a shared technology platform make for a total customer experience, decrease the chance of "experience disconnect" and increase the potential to retain customers.

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The reasons for the apparent lack of acceptance of this product among small businesses may be threefold. First, it could be seen that the customers (i.e., the SMEs) lack of familiarity with the technology could be acting as a barrier to purchase. Smallbone et al. (2001, p. 305) identified that "technology may be underutilised" and is more commonly used in medium-size firms as opposed to small firms which may suggest that the target market for Sign-Up.to needs to be reviewed. There also is the owner's/manager's technical competence to consider; a distinction may be drawn between those that are comfortable with technical developments and those who are not. The dependence on the owner/manager, typical in the SME sector, could be limiting take-up.

Smallbone et al.'s (2001) survey indicated a slow take-up of online selling within their sample of SMEs but they suggest that this may be due to consumer reluctance in terms of trust/security. Thus, if the case company while exemplifying the innovativeness recognized by the DTI (1994) is to be successful, it needs to act as a trusted bridge with its supply chain partners. The company mirrors a number of the characteristics of innovative best practice (DTI, 1994) in that the owner is a visionary, enthusiastic champion of change and knows his customers. These are characteristics that bridge the marketing/entrepreneurial interface. However, as the product is sold online, larger companies who may have the necessary technical expertise in-house are comfortable with the technology, whereas the smaller company needs a trusted individual to sell them the proposition in the first place. By removing the Sign-Up.to owner from the equation, trust becomes more difficult to engender.

Moving customers of Sign-Up.to along the adoption continuum (Peet et al., 2001) is the next challenge. One set of customers, the early adopters of Sign Up.to, have realized its benefits and are open to more innovative applications as seen with V2 and "Fanbase." These early adopters also have put their trust into Sign-Up.to and are now viewing the company as part of their supply chain. Therefore, these customers become the product champions that can cascade the innovation to members of their own networks (e.g., other suppliers, chambers of commerce, business clubs). Thus, the low take-up of the Sign-Up.to product means that its benefits are not cascading through the SME network.

Also, as technology is renowned for its "me too" products, it is necessary for Sign-Up.to to continue to innovate. Innovation for the product lies in the hands of the owner of Sign-Up.to and as he exhibits the innovative characteristics identified by Roffe (1999), then it seems likely that product innovations will continue. Roffe (1999) argues that different skills are needed for the different steps of the innovation process, namely:

- idea generators,
- information gatekeepers in touch with knowledge sources,

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- product champions to promote new practices,
- project managers to keep the work on track, and
- leaders who encourage and sponsor.

Sign-Up.to has moved through the first three phases and now has to focus on the final two stages.

Indeed, on the one hand, these leaders may be seen as other SMEs or SME support agencies, or, on the other hand, the Sign-Up.to owner has to be prepared to sell the product face-to-face and employ staff to act as demonstrators to keep the work on track and instill the confidence that necessary support is available online.

Conclusion

Although Sign-Up.to is providing small businesses with the opportunity to gain competitive advantage via new technological developments, there is still the argument that this is a tactical tool used as a substitute for the more strategic approach that is often lacking in the small business. The tool also focuses primarily on marketing communications rather than developing more strategic thinking about the potential use of the Internet. Despite these limitations, the tool addresses some of the criticisms that have been levelled at CRM systems in terms of cost and customer involvement. It has taken advantage of technological developments to adapt database marketing and direct marketing and make them accessible and workable. The tool enables the small business to enhance relationships with customers and potentially start to address the wider opportunities associated with e-marketing. If SMEs are encouraged to think strategically, then the tactical tool (Sign-Up.to) will aid the implementation of the strategy and help them achieve their objectives. However, the lack of strategic thinking, inherent techno-phobia, and the issue of trust hamper Sign-Up.to's marketability. As Sign-Up.to operates in a highly competitive, technologically-driven market, then the issue for the owner is how to maintain an innovative advantage. Organizational learning, both in his own company and within his customer companies, appears to be a key factor.

The chapter has discussed whether Sign-Up.to is an effective replacement for a CRM system or if indeed it is one. It is certainly marketed as a relationship marketing tool, but the authors argue that although it has a role to play in implementing a relationship marketing strategy, to call it a CRM system is a

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misnomer. However, Sign-Up.to uses permission marketing, so it could be argued that it can take the SME along the relationship marketing pathway.

So, is Sign-Up.to better than other CRM tools in engaging SMEs with technology to aid relationship development? Certainly this is an innovative relationship development tool insofar as it is technically simplistic and affordable, but its success depends on whether the SME that adopts Sign-Up.to has a RM philosophy in place. If Sign-Up.to is only used as a tactical tool, then it could possibly be subject to the same criticism as established CRM systems.

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Appendix

Terms and Definitions

CLV (Customer Lifetime Value)

The value that a customer brings to an organisation over time

CRM (Customer Relationship Management)

The process of storing and analysing the vast amounts of data produced by sales calls, customer-service centres and actual purchases, supposedly yielding greater insight into customer behaviour. (Hamilton, 2001)

DBM (Database Marketing)

The ability of a company to use the vast potential of today's computer and telecommunications technology in driving customer-oriented programmes in a personalised, articulated, and cost-effective manner. (Rapp, 1989)

DM (Direct Marketing)

An interactive system of marketing which uses one or more advertising media to effect a measurable response, from a defined target market.

Permission Marketing

A two-way permitted dialogue between business and customer that focuses on providing relevant, timely, and specific information to a specific target market.

RM (Relationship Marketing)

Relationship marketing is the ongoing process of engaging in cooperative and collaborative activities and programmes with immediate and end-user customers to create or enhance mutual economic value at reduced cost. (Parvatiyer & Sheth, 2000)

SME (Small/Medium Enterprise)

Defined by the EU as a company that has less than 250 employees.

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Chapter VI

Strategies for Virtual Learning and E-Entrepreneurship in Higher Education

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Abstract

This chapter presents the strategies of higher education institutions and how they can be described using the balanced scorecard approach. The pedagogical ICT strategy describes the virtual learning and e-entrepreneurship in higher education. Strategic themes are presented to describe what management believes must be done to succeed and achieve the desired outcomes in virtual learning and e-entrepreneurship. Strategy maps are used to describe the strategy in a graphical representation. In addition, the study presents an example of the cooperation between a higher education institution and a spin-off company. This chapter helps the educational administrators to better describe and implement strategies for virtual learning and e-entrepreneurship.

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Introduction

Higher education institutions (HEI) usually try to adapt their strategies to the local community, to society as a whole, and to educational policy. HEIs are trying to ensure competitiveness and employability for their students. To a large extent, the competitiveness is based on good skills in **information and communication technology (ICT)**. They are linked to entrepreneurship, which is seen by the local stakeholders and educational authorities to create economic growth and welfare.

The primary purpose of this study is to explore the strategies for **virtual learning** and **e-entrepreneurship** in higher education. The **pedagogical ICT strategy** is a specific functional strategy, which describes the strategic outlines for virtual learning and e-entrepreneurship. The aim also is to explore the methods to communicate and implement the strategy in an understandable and efficient manner.

Strategic management is a matter of developing the organisation and its present activities to achieve the desired objectives in the future (Fidler, 2002; Davies & Ellison, 2003). The new strategies of HEIs typically reflect the existing strategies, which are tailored to meet the needs of the organisation and its stakeholders. The strategies are typically fairly stable, but they reflect the changes in society, economic development, and educational policy.

The strategies typically focus the activities on specific fields of education according to the needs of the local community or society. Another typical strategy is the operations excellence theme. HEIs usually try to improve their quality, achieve more, and reduce costs. These strategies also can be found in the business literature, where Porter (1990) has presented the strategies of focus and overall cost efficiency.

The **balanced scorecard (BSC)** approach developed by Kaplan and Norton (1992, 1993) is used in this study to describe a pedagogical ICT strategy. The strategy must be understood before it can be implemented. The balanced scorecard creates a shared understanding of the selected strategies because it translates the strategy into tangible objectives and balances them into four different objectives: customer and regional development; financing; internal processes and structures; and learning and growth. The significance of the present study is to show how the competitive strategies and the balanced scorecard can be applied in HEIs.

A qualitative study is made based on the concepts of strategic planning and the balanced scorecard approach. The focus on interpretation in how the participants make sense of these rather than numerical exactness is the strength of qualitative research. When a qualitative study is carried out, qualitative data are

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required to clarify and illustrate the meaning of findings. Typically, a relatively small number of cases is studied preserving the individuality of each of these in the analyses.

The overall strategy of Turku Polytechnic emphasises high-quality learning. The pedagogical strategy is a functional specific strategy, which provides outlines for the development of education to promote the overall strategy. The pedagogical ICT strategy focuses on the pedagogical strategy to the virtual learning and e-entrepreneurship. The strategies of the educational departments are aligned with the functional strategies. The balanced scorecard can be used to communicate and implement both the overall and specific strategies.

The establishment of new businesses is an effective way to transfer new knowledge from higher education to the local environment. The spin-off activities result from the transfer of people and know-how from the HEI. The transfer of the skills and tacit knowledge embodied in the human capital differentiate this technology and knowledge transfer mechanism from technology sale, licensing, joint ventures, and alliances (Davenport, Carr, & Bibby, 2002). The spin-off activities and e-entrepreneurship are means to implement the strategic plan of HEIs.

This chapter is organised in that the next section presents the overall strategic outlines of the HEI and presents how balanced scorecard can be used to communicate and implement the strategy. Then, the pedagogical ICT strategy is presented, including virtual learning and e-entrepreneurship. Strategic themes and strategy maps are used to describe the strategy. An example of a spin-off company and e-entrepreneurship are then presented. Finally, the results of the study are summarised and discussed in the concluding section.

Strategic Planning in Higher Education

Strategic Outlines for Educational Institutions

Strategic planning is needed to move an organisation from its present position to a desirable but uncertain future position. The strategic plan is a description of the route described by the mission to a desirable future position described by the vision (Wheale, 1991; West-Burnham, 1994). The strategic plan is a holistic description of how an organisation adapts to its environment and develops its activities for a better future.

The **competitive strategies** by Porter (1990) provide the general strategic framework for the planning of the strategy in different kinds of organisations.

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These strategies also have been applied successfully in educational institutions (Treacy & Wiersma, 1995; Kettunen, 2002). **Turku Polytechnic** has selected the focus strategy, which concentrates on the most promising clusters of Southwest Finland. The focus strategy is combined with the strategy of cost-efficiency, which enables resources for high-quality learning and research and development.

The focus strategy means that the organisation selects a market segment and builds bonds with the most important partners within the selected segment. Finnish polytechnics are higher education institutions, which aim to serve their geographical regions particularly well. Each polytechnic has selected its occupational groups, where they educate experts. The focus strategy enables the polytechnics to enhance their knowledge in their specific market segments.

The most promising growth clusters in Southwest Finland are ICT, biotechnology, and the metal and maritime industries. ICT is especially suitable for entrepreneurship training and incubator activities, because the ICT industry is based to a large extent on the knowledge of graduates obtained in education. ICT is not a capital-intensive industry with high entry barriers for most graduates.

When an organisation selects a cost-efficiency strategy, it delivers a combination of price and quality that is recognised by customers and stakeholders. It is a natural choice for educational institutions, which typically have predetermined unit-priced funding and annual budgets. The strategy aims to remove the overlapping activities to achieve cost reductions. Even though the cost-efficiency strategy does not primarily aim to focus the activities it achieves also focusing on specific activities. The focus and cost-efficiency strategies complete each other.

Balanced Scorecard Describes the Strategy

The balanced scorecard is used to translate the strategy and vision into tangible objectives and measures, which can be communicated and translated to the staff and external stakeholders. The balanced scorecard approach also can be used to plan and evaluate strategies (Kettunen, 2004). The balanced scorecard has a balanced mix of objectives in the different perspectives to indicate the strategy. The perspectives can be defined according to the needs of the organisation.

The perspectives can be defined in higher education as follows:

1. **Regional development and customer.** The perspective includes the desired objectives of regional development. It also describes the value created for students and employers in the internal processes.

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2. **Finance.** The financial perspective describes the public funding and external outcome. The funding is aligned with the internal processes and structures in the budget of an organisation.
3. **Internal processes and structures.** The internal processes and structures perspective describes the internal sequential processes and structures of organisational units. These processes create value for customers.
4. **Learning and growth.** The learning and growth perspective describes the drivers for future performance and what learning and capabilities are required in the internal processes.

These perspectives have been found to be necessary and sufficient across a wide variety of organisations in the private and the public sectors (Kaplan & Norton, 1996, 2001). The balanced scorecard was originally developed for business companies. The desired objectives of the private sector are typically in the financial perspective, but in the public sector organisations the financial result is typically not the primary objective. Therefore, it is reasonable to place the customer or recipient of the services at the top of the hierarchy.

The customer-oriented process begins by defining the objectives of the regional development and customer perspective asking, "What value do we create for our customers in the internal processes?" Then, the process continues by asking, "What are the objectives in the financial perspective to enable the internal processes?" and "What is the cost-efficient way of producing the services?" Finally, the process asks, "What capabilities and learning are required to achieve the objectives in the internal processes?"

The Pedagogical ICT Strategy

The pedagogical ICT strategy of Turku Polytechnic is based on the development plans of the Finnish Ministry of Education (1999, 2003a). The purpose is to increase the pedagogical research and develop virtual learning in order to increase the competitiveness. Education should provide skills for applying, managing, and evaluating the information flow of the modern e-networks and knowledge society. The plans emphasise the importance of local networks, which combine ICT, modern cooperation methods, independent learning, public and private partnerships, regional development, and entrepreneurship.

The pedagogical ICT strategy is part of the pedagogical strategy of Turku Polytechnic. The pedagogical strategy is a functional strategy, which provides general outlines for the development of education. The pedagogical ICT strategy

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emphasises the development of virtual learning and e-entrepreneurship. The pedagogical strategy is aligned with the other functional and department strategies.

E-business is defined in the *European e-business Report* as automated business processes (both intra-firm and inter-firm) over computer mediated networks (European Commission, 2004). It has been done in full accordance with the definition used by the OECD (2004). E-entrepreneurs can be generally characterised as entrepreneurs who take advantage of the Internet. They are not necessarily expert in ICT or Internet technologies, but there may be many who are interested in including an Internet component in a more traditional business (cf. Benjamin & Wigand, 1995; Bakos, 1998; Coates, 2004). Virtual learning and e-entrepreneurship are tied to each other in education.

The pedagogical development includes new working and learning environments, new content production methods, content production, communication and interaction in the e-networks, guidance and evaluation, information security, and copyright. The pedagogical development produces a wide range of teaching methods, contents, and cooperation with working life. The purpose is to provide skills to meet the needs of the local, national, and international partners in the public and private sector.

New forms of communication and virtual communities emerge in **e-networks**, when virtual learning is developed. The Finnish Virtual Polytechnic, which is a joint development network of all the 31 polytechnics in Finland, has adopted a widely used approach of developing virtual education. Guidance and support are important at the beginning. These are followed by independent learning and support. Finally, teachers and students can use various flexible methods of virtual teaching and learning (cf. Collis & Moonen, 2001). The approach of developing virtual learning can be described as follows:

1. **Guided and supported virtual learning.** Guided and supported virtual learning is based on teaching based on collaboration in groups where the teacher and students interact with each other using different kinds of digital software and equipment. The education may include pair and group tasks, which may entail discussions and negotiations on the e-networks.
2. **Independent learning in e-networks.** The students study and solve problems independently using the virtual material in e-networks supported by the instructions. Independent learning does not include interactive support given by the instructor or interactions with other students.
3. **Various methods of learning.** Implementation includes several kinds of flexible learning methods. The teaching has long-distance and contact sessions. The study takes several forms. The students may study indepen-

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dently, in pairs, larger teams, or they may take lectures. The students use e-networks, and the learning may take place on campus, at the working place, or at home. The presence of the students is required both in the live meetings and virtual environments.

Strategic Themes

Strategic themes describe what management believes must be done to succeed and achieve the outcomes in the different perspectives. They are in line with the objectives and describe the causal relationships between them. Each organisation has a unique set of strategic themes, which are specific to the organisation's potential to create value in its environment. The strategic themes also are linked to the organisation's internal processes because the essence of the strategy is in the activities (Porter, 1996).

The strategic themes of the pedagogical ICT strategy have their roots in educational policy, the needs of local community and the practices of the development work in virtual learning and e-commerce. The specification of strategic themes caused extensive thinking at Turku Polytechnic. The general strategic statement and strategic themes can be written as follows:

Virtual learning skills and e-entrepreneurship for working life:

- Various pedagogical methods are used in virtual learning.
- Virtual learning is included in the curriculum.
- Teacher teams are used to plan and implement the study modules.
- The learning material is used in a broader context.
- The change of virtual learning contents between the HEIs is increased.
- The entrepreneurship and intrapreneurship culture of the HEI is promoted.

The **pedagogical methods** include especially problem-based and virtual learning with the emphasis on the interactive skills and self reflectivity of students. Virtual learning requires a shared understanding and teamwork of teachers. The virtual learning material is mobile and is used in other degree programmes, the Open Polytechnic, and other polytechnics through the National Virtual Polytechnic. There are cooperative production teams for virtual learning material. The material is bought and sold by the partners of the production teams among the different institutions. This supports the entrepreneurship of teachers.

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Strategy Map

The **strategy map** developed by Kaplan and Norton (2001, 2004) is a graphical representation of the functioning of the organisation. The strategy map helps the employees and stakeholders to understand why the objectives of the organisation have been set and how the desired objectives can be achieved. It is like a road map, which describes only the essential characteristics of the strategy in a simple way.

The description and communication of strategy requires an understandable "organisational theory" of value creation. Strategy maps can be used to translate the strategic themes into objectives located in the different perspectives. They also provide tools to describe the causal linkages between the objectives. The measurement system indicates the strategy through a sequence of relationships between performance drivers (leading indicators) and outcome measures (lagging indicators).

The strategy map clearly communicates the objectives of an organisation and describes why they have been set. The strategy must be understood before it can be turned into action. The objectives, corresponding measures, and performance targets are derived from the organisation's strategy and vision and balanced into four different perspectives. The performance of organisational units and workers can be directly linked to the strategy.

Figure 1 describes the strategy map of the pedagogical ICT strategy of Turku Polytechnic. The regional development and customer perspective includes lagging indicators that report on the desired outcomes of an organisation. The financial perspective is always linked with the internal processes and structures. The internal processes illustrate the value chain describing the sequential internal processes and organisational units cooperating with each other. The learning and growth perspective includes the capabilities and learning of employees, which are the driving forces of future performance.

Regional Development and Customer Perspective

The first objective of this perspective is to equip all the students with good virtual learning skills so that they can use them in working life and adult education. According to the pedagogical strategy, Turku Polytechnic is moving from a closed learning environment toward an autonomous and open expert organisation and network facilitating continuous learning. The polytechnic develops and provides learning and working environments, which enable the experiments and study of new activities and procedures together with the companies and other working life organisations.

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Another objective is to provide entrepreneurship skills. Various learning methods include projects, practical training, and theses, which are part of the entrepreneurship training and shared with spin-off companies and other customer organisations. Research and development produce methods of modern entrepreneurship training and incubator activities. In addition, continuing education includes virtual learning and e-entrepreneurship training.

The objective also is to achieve customer satisfaction with e-networking. Customer satisfaction is what virtually every organisation is trying to achieve. The purpose of the Polytechnic is to support customers' virtual learning skills, working life skills, and e-entrepreneurship skills. The purpose is to create long-lasting customer relationships, which enable life-long learning and continuous cooperation between the educational institution and customer organisations.

The Financial Perspective

The first financial objective is to obtain sufficient funding from the Ministry of Education. The degree programmes and longer educational programmes in continuing education are funded by the Ministry. It also funds some part of the research and development and certain development projects of major national or regional importance.

Another financial objective is to obtain sufficient funding from the City of Turku. The funding from the Ministry of Education is paid to the City of Turku, which is the owner of Turku Polytechnic. The City of Turku contributes a minor share of the funding. The city supports some software, which is used at Turku Polytechnic. It finances and develops, for example, shared intranet and extranet solutions of the city organisations.

The objective also is to increase the external funding. External funding is obtained mainly for continuing education, research and development, and services provided by the Polytechnic. The funding bodies include the European Social Fund (ESF), other funds, companies, public sector organisations, and the Finnish Virtual Polytechnic. The external funding is used to create new contents and improve the quality of education.

Internal Processes and Structures Perspective

Research and development (R&D) is used to create content and methods of virtual learning. Content also is required in cooperation and networking with other educational institutions. The content of virtual learning is typically developed at the same time as the curriculum development. Research and develop-

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ment also supports the development of infrastructure, library, and information services.

The Pedagogical Support Unit of Turku Polytechnic promotes educational development in many different ways. The support activities of virtual learning include the development and implementation of new methods of virtual learning. Educational development also includes many other development approaches such as problem-based, work-based, and research-based learning. These approaches can be combined with virtual learning.

Quality assurance (QA) is based on documented procedures. The development of quality assurance has been agreed in the Bologna Process by the European Ministers (Berlin Communiqué, 2003). Quality assurance is at the heart of the setting up of the European Higher Education Area (EHEA) by 2010. Each HEI has the responsibility for quality assurance representing their academic and organisational autonomy. This provides the basis for accountability within the national quality framework. The purpose of the EHEA is to increase student and staff mobility in Europe.

The ICT infrastructure is a combination of data networks, systems, equipment, and software. They include wireless networks, modern audiovisual solutions, and personal mobile learning equipment. The ICT Unit of the Polytechnic is developing an electronic learning portal constructed on the existing information services, digital information sources, e-business instruments, virtual learning environments, and existing network services of the departments. Physical and virtual learning environments are developed interactively with each other taking care of information security.

The library provides the main electronic sources and databases for students and staff. The library helps them in finding the relevant pieces of information and provides equipment for information processing. The librarians teach on the degree programmes and personnel training and participate actively in virtual learning projects. Cooperation between the support staff, teachers, students, researchers, and the members of the working life organisations is necessary. Electronic journals and books reduce the proliferation of printed material.

Virtual learning is expanding at Finnish HEIs. The government has set a target to provide at least 30 credits of virtual education for each bachelor student (Ministry of Education, 2003b). Virtual learning provides alternative ways of studying, especially for those who work during their studies. The replacement of contact learning with virtual learning helps the working students to avoid dropout. The virtual learning platform also can be used to carry out other activities such as tutoring during practical training, study counselling, international projects, and continuing education.

Cooperation with other HEIs is an important characteristic of the internal processes and structures. Turku Polytechnic participates in many production

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teams of the Finnish Virtual Polytechnic. Typically, the production team of several institutions makes a written contract, agreeing to produce virtual learning material. The contract also defines the financial transactions between the institutions. Cooperative and entrepreneurial teacher teams are usually needed within an institution to participate in the production teams.

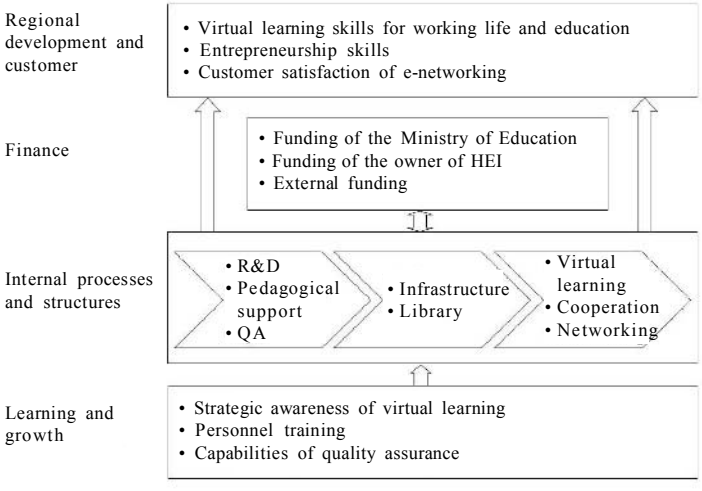
Networking is a way of producing large study archives from small virtual learning materials. The network itself is used as the instrument of guidance, where the instructors and learners can select the information according their specific needs (Silander & Koli, 2003). The purpose is to use the learning material several times in different learning combinations or at different educational levels. Often the smaller modules correspond best to the various needs in working life situations of adult education.

Learning and Growth Perspective

Strategic awareness is created in the strategy process, where the expert team for virtual learning prepares the strategic plan with the experts and management team of the polytechnic. The existing strategy and the changes in the environment and technology are evaluated in order to update the strategy. The strategy is approved by the Board of Turku Polytechnic. Finally, the strategy is communicated and implemented using the balanced scorecard.

Personnel training is an important way of introducing new methods and software used in virtual learning and e-entrepreneurship. The departments of the Poly-

Figure 1. Strategy map of the pedagogical ICT strategy



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technic are responsible for the short-term education and working life periods of the personnel. The Personnel Development Unit of the Polytechnic arranges longer personnel training and creates preconditions for the implementation of the pedagogical ICT strategy.

The capabilities of quality assurance have been developed constantly, while the quality system of Turku Polytechnic was developed. The procedures of quality assurance have been documented and are also used in virtual learning. The procedures and documents include evaluations of the Finnish Higher Education Evaluation Council, the quality manual of the institution, internal audits, internal target discussions, and feedback from students and employers.

E-Entrepreneurship of a Spin-Off Company

A Spin-off Company as a Partner

The **spin-off companies** result from the transfer of people and intellectual property from educational institutions. The continuous transfer of skills and tacit knowledge embodied in human capital differentiates the mechanism of technology transfer from technology sale, licensing, joint ventures, and alliances (Davenport et al., 2002). The supporting of start-up companies is an effective way to transfer the expertise of HEIs to working life and make it commercial.

The case of Mansoft Tietotekiikka Ltd. is used as an example to illustrate how the pedagogical ICT strategy of Turku Polytechnic is implemented and how technology transfer takes place. Mansoft Tietotekniikka Ltd. is a spin-off company in software business and application development. The company was established by a senior lecturer at the Polytechnic. He is still the managing director of the company.

The purpose of Mansoft Tietotekniikka Ltd. is to develop the expertise to achieve customer satisfaction. In order to achieve this aim, the products are tailored to meet the needs of the customers. The strategy of Mansoft Tietotekniikka Ltd. also includes the cooperation with Turku Polytechnic as described by Adamsson and Puukka (2004). The company has planned solutions for specific needs of knowledge-based organisations. It also carries out consulting, maintenance services, and several boxed products with a fixed service. As a financially independent and customer-oriented company, it aims to be a productive and safe partner in long customer relationships.

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The company has been developed in a sustainable way. The business profit has always been ploughed back into the company and product development. All eight young permanent employees of the company are graduates of Turku Polytechnic. One of the main principles of company policy has been to offer permanent positions to young experts starting their careers in the ICT business.

The managing director of Mansoft Tietotekniikka Ltd. is a member of the Turku Polytechnic's Advisory Board. The advisory boards of Finnish polytechnics include members from working life and help the polytechnics to develop the curriculum to meet the needs of companies and other organisations. The advisory board is a network of experts who helps the polytechnic and the participating companies to adapt to the changes of the environment and conceive new development ideas.

The recruitment of the company is focused on the final year students of Turku Polytechnic. Turku Polytechnic has arranged the education so that students can participate in the company's projects. The arrangement of the ICT fair is another mode of cooperation between Turku Polytechnic and Mansoft Tietotekniikka Ltd. The ICT Fair is organised in Loimaa, where Turku Polytechnic operates. The fair helps local small companies to recruit new staff, market their services, and participate in regional development.

According to the company owner, some customers have expressed their opinion that the company should have older experts to achieve credibility, but the managing director has felt that the young staff brings more flexibility and fresh ideas and fewer predetermined attitudes regarding the business culture. The company is represented by the managing director, who takes care of the business relationships and project management. The software and system development are left to the younger colleagues. The long experience of the manager and the fresh ideas of the young colleagues complement each other in the company. This is an important characteristic of the social capital and competitive advantage of the company.

Cooperation in Software Development

Turku Polytechnic has designed project management software for itself and other knowledge-intensive organisations. The software Projektori was created in association with Mansoft Tietotekniikka Ltd. Originally, Projektori was created to manage development projects on the intranet. Then the R&D unit of Turku Polytechnic expanded the use of the software into other project-related activities. It can be used, for example, to manage project plans and disseminate project information on the Internet. These features make the software a useful tool in many publicly funded projects.

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The software was designed to be used in data networks so that cooperative projects can use different kinds of intranet and extranet options. There is a general understanding about the roles between the partners. Turku Polytechnic is responsible for content planning and production while Mansoft Tietotekniikka Ltd. takes care of the database planning and implementation.

The guidelines for the cooperation can be found in the strategic plans and quality assurance manual of the Polytechnic. The cooperation with the spin-off company is regional development, which is an important characteristic of Finnish polytechnics. The quality manual contains guidelines for project management. Many of the basic principles of cooperation and software solutions can be traced from the commonly observed needs of databases and action models of large organisations (Groth, 1999).

The Projektori software is not only a technical instrument to arrange documents; the use of the software changes organisational behaviour into high-quality project management. The software guides the individuals and units to the process and team-oriented organisational culture. It also provides an interactive connection and a virtual meeting place for public sector institutions, private sector companies, and other working life organisations.

Turku Polytechnic also has sold the Projektori software to some other large knowledge-intensive organisations in Finland with the cooperation of Mansoft Tietotekniikka Ltd. The user rights of the software can be purchased by installing the application to the customer's server. It also can be rented as an application service provider (ASP) solution by locating the application and its database on the servers of Mansoft Tietotekniikka Oy. The rent includes both the application and its daily database back-up.

The Projektori software can be connected with other software such as the Puplikaattori software which is software designed for e-publishing. This software is the result of cooperation between the Publication Unit of Turku Polytechnic and Mansoft Tietotekniikka Ltd. Both software can be purchased and used as independent solutions. The software helps to increase the Web-based resources, which are increasing in educational practice (Collis & van der Wende, 2002).

Conclusion

Information and communication skills are needed in the modern knowledge society. These skills are among the basic professional skills in most industries. The ideal is an individual who is aware of the information sources, has the information reading skills, is capable of acquiring and communicating information

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efficiently, evaluating the information acquired, and using the information in an ethically and legally correct way.

High-quality and flexible learning is the overall strategic statement of Turku Polytechnic. The strategy focuses on the needs of the growing clusters in Southwest Finland. The ICT cluster is one of the most prominent clusters including software development and mobile telephones and TV production. Nokia Mobile Phones Ltd. is one of the best-known companies in this region. The strategy also focuses on entrepreneurship training, which includes e-commerce, incubator activities, and other forms of entrepreneurship.

The pedagogical ICT strategy is a specific functional strategy aligned with the overall strategy, other functional strategies, and department strategies at Turku Polytechnic. The pedagogical ICT strategy describes the strategic plan of virtual learning and e-entrepreneurship. The strategic themes of the pedagogical ICT strategy include various pedagogical methods, the inclusion of virtual learning in the curriculum, the role of teacher teams, the use of learning material in a broader context, transactions between other educational institutions, and entrepreneurship culture.

The balanced scorecard approach is useful in accomplishing the strategic themes, objectives, and measures for virtual learning and e-entrepreneurship. The strategy map was used to translate the strategy into a graphical representation which clearly describes the objectives in the different perspectives of the balanced scorecard. It was used to describe the main characteristics of the strategy to achieve better expertise in virtual learning and e-entrepreneurship.

An example of the implementation of the pedagogical ICT strategy was presented. This example illustrates a case of how a spin-off company was established and how it cooperates with the educational institution. Project-based education is followed by recruiting graduates. The competitive advantage of the spin-off company is based on continuous cooperation with the HEI and the innovative and fresh ideas of the graduates employed.

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Chapter VII

The Beginnings of a Postal E-Marketplace: Innovation or Natural Evolution? The corProcure Story

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Abstract

This e-business case study of the corProcure enterprise is instructive as it reflects three recurrent themes of the dot-com period:

1. *First, the seemingly powerful but unstable corProcure's business model was created between a number of large corporate institutions in response to the corporate pressure to enter the dot-com world.*
2. *The quick revelation that the initial business model was incompatible for the founding corporate partners.*

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3. *The buyout of the venture by one of the partners, Australia Post, and re-engineering the direction of corProcure for a more workable e-marketplace business direction. This was considered to be the way forward.*

This evolution, learning curve, and redirection of the e-purchasing cartel was in one way just a snapshot at the macro-level of what happened to many ventures during the dot-com boom. At the micro-level, the change in direction was reflective of a more pragmatic business sense approach, when all the late 1990s hype was stripped away from the initial e-business model. The new business model incorporating an e-marketplace also reflected the need for the new owner to diversify into non-traditional products as part of new e-business and e-logistic strategies. These strategies were being examined globally by Postal Authorities.

Introduction

In 2001, the **Universal Postal Union** and the World Bank released a report that proposed that the Post Office was potentially headed for being a sunset industry unless it addressed the issue of its product erosion (UPU, 2001). A further international postal e-logistics report examined various ways that this "postal sunset industry mentality" could be addressed and the actual declines arrested through the introduction of some critical strategies (Hassall, 2003). In Australia, however, since the advent of the dot-com wave, what was the local postal authority doing to stem the stagnation in the demand for its traditional postal products? Was it trying to leverage the new Internet-based technologies, thus enabling a range of new services?

What the **Post Office** did was change its focus to internal e-procurement and implement utility bill payments. As well, Australia Post instigated a warehousing and fulfillment business, which ran in parallel to the existing postal network. What was perceived to be the e-business "showstopper" was its partnership with 13 other major corporates, in a buying consortia called "corProcure" (www.corprocure.com). This buyers' club began life at the tail end of the dot-com hype in 2000. By January 2002, the 13 partners cleared the deck chairs and allowed Australia Post to purchase the **corProcure** entity and technology. Why had the potentially largest buying cartel failed so quickly? What lessons were learned and what was the obvious e-business strategy that needed to be implemented?

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Background to the Evolution of a Postal E-Marketplace

In 2003, a study into the impacts of e-logistics and e-business and what it might mean to the traditional post office was published through the Universal Postal Union (Hassall, 2003). The research surveys spanned 40 countries with the summary findings being refereed by the e-commerce Unit, Postal Technology Branch of the Universal Postal Union (UPU). The UPU, which is a division of the United Nations, is the coordinating and representative body of all national postal authorities at the international level. The research findings were listed on the UPU's Web site in January 2004.

E-Postal Research Findings

In a reassessment, (Universal Postal Union and World Bank Report, 2001), the global post office needs not become a sunset industry, as was suggested, if it were to embrace new electronic products. Many of these products could be facilitated by the adoption of new Internet-based technologies and the processes that this technology may play in enhancing the traditional postal services. The first round of this research was conducted by the Centre for Freight & Logistics Research, as a Delphi survey through 28 interviews across some 11 countries.

The highest scoring strategy emerging from the survey was to embrace "new electronic products." With regard to the specific electronic and logistics products described in Figure 1, the proposition for a postal e-marketplace scored highest in the future directions estimates with some 43% more important in future strategic and business focus than at the current time. In fact, 8 of the 12 options had a future importance factor of some 25% greater than their current perceived importance. This chapter examines the history and potential for the launch of a major postal **e-marketplace** from Australia in what is a rapidly changing electronic and Internet environment.

Fundamental Business Issues for Markets and Even Postal E-Marketplaces

To be effective, markets require participants to share their business processes (e.g., purchasing). Companies are increasingly unwilling to standardise these processes as they seek to maintain their uniqueness as a competitive advantage and control over their supply chain for purchasing direct goods. This is not the case, however, for indirect goods. For this reason, horizontal marketplaces have better success in connecting traders than do vertical ones.

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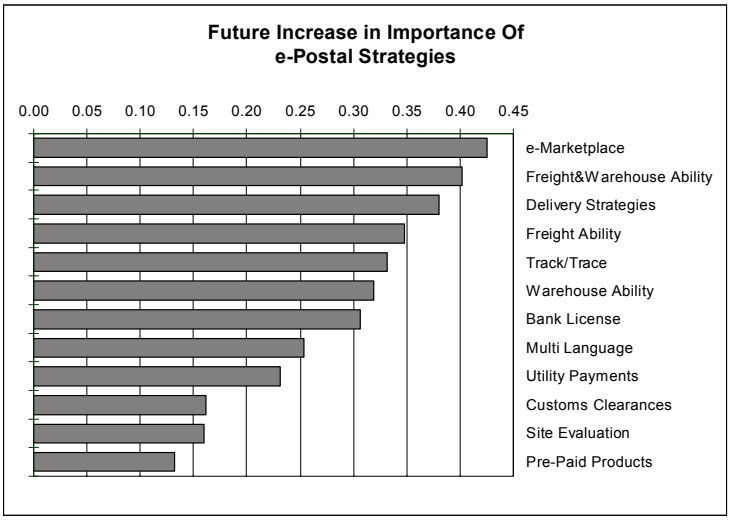
Figure 1. List of postal options sorted by of future "strategic and business" importance



Source: UPU Web site 2004

Marketplace security is another big issue for corporations. Most will purchase direct and indirect goods from online environments that sit behind the corporate firewall.

The Need for New Services as Deregulation Grows on the Home Front

While postal volumes were declining in many countries during the 1990s (UPU database of Postal Statistics, www.upu.int), on the Australian domestic scene, micro economic reform also was occurring. This meant continued deregulation across many industries including the Postal Industry. Following an Industry Commission review in 1992, Australia Post's monopoly was reduced in 1994 and more services were opened up to competition. **Australia Post** retained a monopoly over mail weighing up to 250 grams and with a minimum charge of $1.80. This meant that couriers and freight operators could pick up and deliver much business and industrial mail, which was heavier or cost more than this price threshold. In 1995, "**GiroPost**," a multi-bank **Eftpos** option was introduced as part of a range of financial transactional services, such as utility bill paying, at Post retail outlets. In 1995 as well, a five-year postal network renewal program costing $500 million began, aiming to equip Post with the latest technology for mail processing and delivery operations.

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The Australian National Competition Council (NCC) again reviewed Australia Post's operations in March 1998 and recommended an almost complete deregulation of mail services by 2000, except for standard personal letters sent by households within Australia. Australia Post would be exposed to competition in 93% of its services, compared with only 50% in 1998. Australia Post's submission to the Council had argued for the retention of the current position, with a review in 2003. Linda Nicholls, the chair of Australia Post, had commented that the report went further and faster than Post believed was practical. She noted that the NCC had no plans for any safeguard if the changes had unexpected outcomes. Graeme Samuel, the then president of the National Competition Council, responded that Post was abnormally profitable with returns double that expected from such a business.

The New Focus at the Global Postal Level

Australia Post, and other postal organisations around the world, are challenged as revenue from traditional sources is under threat from electronic alternatives. Post's competitors, including other postal organisations, have increasing global ambitions and search for new markets and opportunities that exploit network economies of scale. Post's customers expect them to understand the customer and their businesses to a greater degree than ever before and to be able to interact with them online.

E-business is acting as a catalyst for innovation and value creation. Online shopping, although turbulent, will continue to grow providing Post with a raft of opportunities. The proportion of personal bills being presented and paid electronically is increasing at the expense of payment by mail or payment in person at post offices. There also is renewed growth in purchasing goods and services online as industries review areas that can save cost and add efficiency to the day–to-day procurement process. Improved productivity through efficiency gains is a key driver of e-business in many organisations including Postal Authorities.

Thomas E. Leavey, director general of the Universal Postal Union, was quoted in Australia Post's 1999-2000 Annual Report:

For postal services the challenge is to be totally immersed with customer concerns, proactively seeking to determine their needs and listening to their evaluation of the services provided. Customer focus is now central to the strategy of every successful business — from banks to manufacturers — and dominates the dynamics of the business environment of the new millennium.

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What has Changed on the E-Logistics and E-Business Front to Support a Postal E-Market Business?

The major "operational" finding from the first round of Delphi analysis into future Postal e-business options (Hassall, 2003) was that some "track and trace" mechanism be available to customers for "selected postal products." The major future "strategic and business" initiative, however, was to "offer an e-marketplace" to small businesses (SMEs) and to large businesses. Such an e-marketplace concept is new to Postal Authorities. As such, there are many variations in both applications and marketplace business rules that will sit behind any chosen e-postal marketplace model.

Gaining acceptance for such a new product, be it an e-marketplace itself, is fraught with many challenges for the traditional Post Office culture. However, should the e-marketplace become successful in any particular country, then this concept will generate considerable interest internationally, perhaps more so than any postal product has done within the last 30 years.

An Overview of E-Marketplace Fulfillment

In the case of an **e-marketplace**, **fulfillment** and delivery services can be achieved:

1. through a number of third party logistics providers selected by the buyer,
2. through the marketplace owner's fulfillment processes and services, and
3. through logistics providers that are also e-booth holders on the marketplace. (This is certainly a powerful option for international buyers who want to attain fulfillment in the offshore country where the purchase will be fulfilled.)

This third option is a considerably important option for international companies wanting to physically trade in, for example, Australia. Who do you call for service X? Try the marketplace. This could be for office space, financial advice, freight-forwarding services, even a bottle of champagne for a birthday, and so forth.

Getting the balance right with fulfillment is often very customer specific. Various marketplaces offer B2B and B2C services through express carriers, non-express transport carriers, and even through the post office itself. A postal e-

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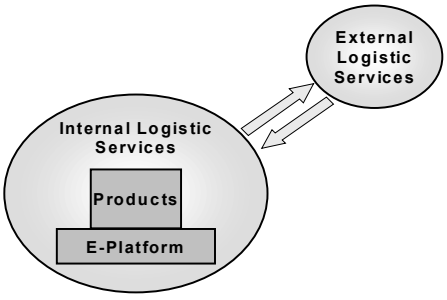
Figure 2. Variations of marketplace fulfillment



Source: *Supply Chain Review*, August 2001

marketplace should offer similar services for B2B and B2C clients, that is, those services that also are offered by other online trading hubs or other e-marketplaces.

Difficulties with B2B Fulfillment through the Post Office

It is very simplistic to talk of B2B, however the subclassifications of B2B are quite large. This was pointed out at the OECD/ECMT e-transport and **e-logistics** Summit (Nemoto & Visser, 2001). However, for a marketplace, the easiest way to offer B2B services is in fact to list B2B providers that offer B2B services. Certainly Postal authorities such as LaPoste and Deutsche Post, via Danzas and AEI, as well as New Zealand Post have all acquired a range of premium and non-premium B2B logistics providers to supplement their postal parcels capability.

Provision of a "warehousing and freight capability," did in fact score second to the establishment of an e-marketplace in terms of future strategic importance (see Figure 1). It is probably in the best interests of a traditional postal authority who may be inexperienced to the requirements of B2B that B2B fulfillment services be available through its own marketplace, as opposed to a single channel offered by a long-term preferred supplier. In this way, much wider combination of fulfillment services can be offered, with significant flexibility to any customer requiring these B2B services.

A third B2B option was examined in the initial research (Hassall, 2003): that B2B capability be offered by the postal authority but with differing customer service standards to those offered to existing Postal products. In discussions with both La Poste's warehousing and fulfillment divisions, as well as **Deutsche Post Logistics**, it was seen as somewhat unfavourable to mix B2B with the existing postal network. To provide B2B freight and warehousing at differential service

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levels, new freight entities were acquired specifically for such purposes. These operations often worked out of independent terminal and distribution centres.

From a marketplace perspective, B2B fulfillment agents and services should be listed on the e-marketplace These services will not be sought through the marketplace owner but from specialised buyers that may even be e-booth holders on the marketplace themselves.

B2C can be Expanded in the Marketplace through New Delivery Options

B2C is considered the expert domain of each domestic Postal Authority. But could this change in the future? Table 1 lists 12 home delivery strategies. The several Postal authorities that participated in the e-postal business research (Hassall, 2003) offered less than half these listed options.

Table 1. Current and future variations of home delivery strategies

STRATEGIES for Household Delivery	Greater Channel Complexity	Greater Recipient Complexity	Land Use Variation
1. Continual Household Attempt	Yes/Maybe	No	No
2. After-Hours Delivery	No/Maybe	No	No
3. Attempt one delivery, phone follow-up for second attempt.	Yes	Yes	No
4. Phone booking for initial delivery slot.	Yes	Yes	Yes
5. Attempt home delivery, failure redirected to retail agent for customer pickup	Yes	Yes	Yes
6. Attempt delivery to home parcels box	No	Yes	Yes
7. Customer pickup from retail key-hole site	No	Yes	Yes
8. Customer pickup from secure depot storage	No	Yes	Yes
9. Delivery agent to retail agent, by direct drop	No	Yes	Yes
10. Initial delivery to preferred post office of choice.	No	Yes	Yes
11. Delivery agents loads orders direct from retail site not a specialised distribution hub.	No	Yes	Yes
12. Optional flexible delivery strategies as stated on the customer order form	Maybe	Maybe	Maybe

Source: Supply Chain Review, December 2001

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Certainly it is to be expected that further specialised home delivery services will appear on the home shopping front, which will be competitors to the post office. New mixtures of delivery strategies will emerge and will offer a higher level of customer satisfaction, more so than any single option or delivery strategy. Certainly the specific commodity to be delivered also will restrict many of the householder delivery choices. High value goods and bulky goods such as garden furniture have even generated niche operators for such deliveries where the population base is very large.

International Fulfillment Opportunities Emerging for B2C and B2B

Emerging from an analysis of international Internet purchasing requirements (*Supply Chain Review,* December 2001), the following new demand patterns became apparent. This shift showed that there was considerable scope for new international postal services to emerge in the support of both B2B and international B2C.

In both cases, an international 5-business-day service, or certainly a less than a 7-day service, would be a highly favourable option, well worth further consideration by international postal authorities. This option of a "deferred express" service can generally reach not only capital cities but also major regional cities in other countries. The service would be far more acceptable than the 10-day international air services, the basic international parcels' service currently offered by postal authorities.

Table 2. Expectation of delivery — domestic and international comparisons

Type of Order	**Service Standard**			
Domestic	< 2 days 9%		5 to 7 days 91%	
International Standards Offered	<= 2 days	<= 5 days	<= 7 days	>= 10 days
Actual % surveyed		14% (express)		86% (Normal)
International Preference				
Consultant/Large Business	5%	**82%**	13%	0%
Small Business/Household	0%	7%	**93%**	

Source: Hassall, 2001

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Other International E-Marketplace Considerations

Is Internet Purchasing Being Accepted Globally?

Purchasing advantages through an Internet medium was, and still is, considered to be one of the greatest benefits of sourcing suppliers from the Web. In a business-to-business (B2B) sense, this is hypothetically true. Take a small or even medium-sized manufacturer in Europe or the United States. This manufacturer sources three inputs into his or her business production line. There may be dozens of suppliers who produce the inputs that this small company would not know about if the suppliers do not have a Web site. The suppliers may be in an adjacent state or, in a European context, an adjacent country. If language is no barrier to the supplier's Web site, then better business deals can, with some confidence, be done.

In an Australian B2B context, an island continent with only 0.3% of the population of the new Europe and North America but nearly one half of the geographic area, a small manufacturer will almost certainly know all the potential suppliers for his requirements. Unless the Web offers cheaper, or more reliable, international sources for the manufacturer's inputs, B2B product sourcing is significantly more limited than if this company was being operated from a European, U.S., or even an Asian base. That is, it is more limited unless the base is moved to one of these locations where cheaper inputs can be sourced. However, if the manufacturer remains in Australia, it is arguable that the purchasing power of the Internet is limited for B2B buyers.

Language Barriers

Although it is becoming more common since 2003, very few Web sites could be converted into the chosen language of the potential Web customer. This means that a potential supplier to a manufacturer, who may be a near neighbor, may not communicate his or her existence to that potential customer because the Internet site is established in only one language. This has since been recognized as a barrier, and, as a result, software vendors now build these options into packages being sold.

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Disintermediation: Another Difference between B2B and B2C

Purchasing new goods and services through the Internet is a reality because the Web now provides connectivity where information linkages were previously non-existent. B2C customers will no doubt surf and stumble across any new selling site.

To consider that the impersonal Web site supplier would replace a more personalized sales force for business products is probably only true at the margin. In all probability, this "dis-intermediary" nature of the Web will not prevail over a non-relationship-based B2B suppliers. This was the essence of a presentation on Chinese partnering and business relationships delivered at the 5th International Conference of Quality Management and Innovation held in Melbourne, Australia in 2001 (N S Y Yeung). A Web site may attract short-term diversion and competition within a B2B environment, but long-term relationships are also worth considerable value to all businesses. Entrants into the Chinese B2B domain, for example, should consider the balance with this distinction between an impersonal Web site and long-term personal business relationships. B2B relationships often encourage the uptake and use of Web-based marketplace trading activities.

Avoiding the Market Conflict of Interest: The Postal Owner Interest vs. a Public Marketplace

The marketplace should facilitate trade between buyers and sellers of any services even if it is in competition to the post office itself. For example, new courier services, new express delivery services, new competitor logistics services, and a myriad range of other services could be seen as a threat to existing postal products or services supplied by the post office's preferred contractors. Such existing products have the potential to be vetoed from a new marketplace because they are "perceived" as competition to existing products.

This is a real concern. This possibility, that existing preferred suppliers or the post office itself can dictate what suppliers in marketplace categories can or cannot list, will immediately shrink the full potential reach of the marketplace. However, competition from the marketplace itself for existing postal products is often more a perceived threat than an actual threat, especially as some 95% plus of market revenue will come from offshore sales. In the marketplace, the customer is king, not the marketplace owner.

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Payments: "Great" but in Which Currency: Dollars, Dinar, or Drachma?

One major problem that needs to be addressed early on in the internationalisation process is the clearance of cheques and credit cards across a range of e-booth holder currencies. Certainly not accepting cheques or making one single payment option in only one currency is unacceptable to most countries where trade occurs on the Web.

At the Micro Level B2B and B2C Customer Transactions Are Different

The dynamics are different in a B2C transaction. An easy payment process is the foundation of any customer-friendly operation. A number of B2C payment methods advertise themselves as "easy to use" and "completely secure" and, therefore, have been adopted by online retailers. In the B2B community, payment has moved from being largely paper-based despite the large amounts of cash exchanged to credit card or electronic funds transfer. A number of products are on offer by banks, banking consortiums, financial institutions, and pure-play dot-coms. The problem is choosing the right option. Most "payment processing vehicles" can be expensive and have hidden costs, which are rarely highlighted in the promotional and marketing materials.

Through a marketplace, however, an exact same platform could be configured for a B2B customer as well as the B2C customer. With the smaller B2B buyer or supplier paying for their purchases via credit card or EFT, there is very little between the two models. The larger buyer, however, sees their electronic transaction being fed directly into their enterprise resource planning (ERP) system. This frees considerable resources for both organizations, thus reducing the cost of sale when accessed via a marketplace.

Are Customers Ready for an E-Marketplace?

Australia Post's traditional customer base can be segmented into three very broad groups: majors, SMEs, and consumers (see Table 3). The "majors" segment is the most important to Post.

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Table 3. Australia Post's customers

Customers	Description	Proportion of Post's Total Revenue
Majors	Post's 360 largest customers, spending >$500K pa each	49%
SMEs	Approximately. 35,000 businesses with charge accounts with Post	19%
Consumers	Ascertained from "cash sales." Will contain some SOHO, micro, and other small businesses who do not have charge accounts.	32%

Source: Australia Post (Annual Report 1999/2000b, based on 1999/2000 revenue figures)

Any new e-venture which Post's e-business activity needs to leverage off include:

- The Post brand: trusted, reliable, highly regarded, and marketplace sustainable;
- Australia Post's retail outlets (4,500 Australia-wide): Post's "bricks" provide it with an unmatched retail network;
- The payment processing infrastructure that supports "GiroPost" (Australia Post's Banking facility) and bill payment;
- The ability to offer end-to-end solutions to their customers;
- The breadth of the delivery network; and
- Australia Post's database and "addressing" capabilities.

In general, Post's customers are satisfied with Post's performance. However, Australia Post's National Major Customer Monitor (November 2000) reveals some opportunities for Post to serve their major customers better.

These opportunities include:

- improving Post's business processes
- increasing flexibility
- simplifying and improving account invoicing and reconciliation

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The major customer group, while only 360 in number, provides Post with almost half of its total revenue and is believed to provide an even larger share of the organisation's profit. It was estimated that the top 50 customers contributed 26.3% of revenue but an estimated 42.5% of profit.

Apart from their financial weight, there are other significant reasons why this group of customers is of great importance to Post:

- In an increasingly competitive environment, these customers are the most likely targets for competitors.
- But most importantly, these customers have a vital strategic importance as they are more likely to be possible alliance partners in new offerings and may provide Post with new revenue streams or any new value chain. This may be particularly true of mail houses and billing and financial institutions.

Customer E-Technology and Their Internet Environment within Australia

In November 2000, the National Office of the Information Economy (NOIE) published a comprehensive report entitled *The Current State of Play*. The report builds a picture of Australia's online performance in the global information economy. Highlights of the report include:

- The ABS (Australian Bureau of Statistics) estimated that 48% of the adults in Australia, or 6.6 million people, accessed the Internet from August 1999 to August 2000.
- The estimated value of Business-to-Business [B2B] e-commerce activity in Australia for the year 2000 is US$5 billion. Australia ranked 8th out of the 20 countries surveyed.
- From February 1999 to February 2000, the percentage of small businesses online in Australia increased from 48 to 60%.
- Globally, Jupiter Communications in 2001 estimated that there were over 1,000 trading hubs. This figure is expected to double by the end of this year and reach 20,000 by 2002.

Did this Internet connectivity mean that a new Postal e-marketplace is possibly a timely new strategic option?

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Australia Post Joins the corProcure Business Venture: The Difficulties Become Apparent ImmediatelyOn July 5, 2000, 14 of Australia's largest companies gave birth to a buying cartel known as "corProcure." The new e-marketplace was unveiled as displaying cooperation between the "big fourteen" — or was it? The 14 were identified as being Amcor, ANZ, Australia Post, BHP, Coca-Cola, Amatil, Coles Myer, Fosters, Goodman Fielder, Orica, Pacific Dunlop, Qantas, Telstra, and Wesfarmers. In a joint statement to the Australian Stock Exchange, the companies said they would each be a shareholder in the corProcure initiative.

According to the eCommerce Report (July 2000), "The total value of their indirect spending on goods and services stood at over A$300 billion annually." It was anticipated that the goods and services traded through corProcure would include office and cleaning supplies, fuel energy, telecommunications, facilities management, human resources services, legal services, promotions and advertising, computer services, insurance, and capital expenditure items. The article goes on to say "corProcure is committed to the development of an open-platform, standards-based, and multiple-industry regional trading network."

Suppliers to the "big fourteen" became a little nervous as this cartel potentially cut across deals already inked by some of the companies. It was anticipated that a savings of 5 to 8% could be achieved across each of the categories of goods and services.

There also were some concerns around which technology was to be used as the "big fourteen" were using various technologies and systems. It was not at all clear to them that an e-marketplace is a well-defined entity and that e-procurement is a defined technology. According to corProcure's Web site, a number of different types of online catalogues could be supported. The eCommerce report (July 2000) goes on to say "in the industry it is well accepted that 'a common catalogue' is both the holy grail of procurement, and no more attainable or accessible than the legendary cup has been for centuries, Internet or no Internet."

Australia Post joined corProcure to improve its purchasing and supply chain efficiencies. Price Waterhouse Coopers (PwC) worked with Australia Post to identify the value:

- of Post's total nonstrategic spending;
- of the amount that Post was willing to commit to corProcure; and
- to Post in joining corProcure.

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Table 4. The core value drivers for the corProcure venture

Purchasing Power	Process Efficiency	Supply Chain Integration	Aggregated Content/ Community	Market Efficiency
Aggregate buyers into consortiums	Electronic product searches/catalogues	Improved visibility across market supply chains	Industry best practices	Online market- making mechanisms to match buyers and suppliers
Volume pricing	Electronic order taking and management	Reduced lead times	Knowledge management	- e-catalogues - auctions - exchange - bid processes
Better information for supplier negotiation	Electronic requisition and approval	Reduced inventory levels	Bench-marking	Access to broader range of suppliers and buyers
Supplier consolidation	Auto replenish	Rationalisation of product lines	Monitoring/ control reports	Improved information access
Spending and control reports	Electronic bill presentment and payment	Improved logistics management	Discussion forums	Risk of single-sourcing reduced while volume benefits are maintained
	Improved information access	ERP Integration	Product information and reviews	
	Better spending control	APS integration	Frequently asked questions	
	Reduced transaction costs		Industry collaboration	
			Newsletters	
			Network effect	

Source: corProcure personal communication, 2004

It was found that within Australia Post some $521 million, or 64% of the total identified spent, could be channelled through corProcure to obtain benefits through spending consolidation and supply chain efficiencies.

Australia Post identified two significant elements preparing for and participating in corProcure. During preparation projects, Post needed to accelerate strategic sourcing and implementing e-procurement systems. The benefits would be:

- exercise purchasing power across all Post business units;
- cutting down maverick spending;
- capturing information through reducing manual order processes;

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- supply chain integration; and
- market efficiency.

Saving for Australia Post alone ranged from benefits of $10 to $30 million dollars.

Background Problems for the corProcure Group

In 1998 and 1999, the Australian procurement was introduced to electronic procurement. The two largest players at the time, Ariba and CommerceOne, were competing fiercely in the offshore market and decided to enter Australia with the goal of replicating their successes from the United States. What they failed to recognise was that:

1. There is a finite supplier market in Australia.
2. Australian business culture prevented the disruption of long-term relationship between buyers and suppliers.
3. The procurement function as a whole was not as developed in Australia as that of the United States where procurement had begun to be recognised at a strategic level.
4. The U.S.-based electronic procurement technology proved to be too costly (U.S. currency was high) for the "perceived" benefits it represented.
5. Finally, the back-end systems integration confused the market and potential clients.

The Australian market was not convinced that the benefits would outweigh the cost of implementation, so the two largest software players scaled back and dramatically reduced their operations in Australia in 2001 and 2002.

Concurrently, two Australian buying groups were developed: Cyberlynx and corProcure. They each had different technologies (Ariba vs. CommerceOne) and two sets of support companies that sponsored their development. Merging purchases and collaborating to buy non-competing products at lower prices seemed like a good idea. However, what resulted was a strong resistance from suppliers whose negotiated rates (based on volume price reduction) no longer justified doing business with those large customers. After all, each of those large founders already had negotiated rock bottom prices and was requesting a few additional percentage point savings; supplier margins had been reduced too far.

To make this transition even more difficult, no large sponsor was willing to commit their entire spending to play the game. In addition, wanting to "connect

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from anywhere to anywhere" proved too difficult and again too costly for the "perceived" benefits.

While the largest Australian companies had formed the two most envied procurement groups in Australia, most have now scaled back to their old procurement ways, for example, CBA and Australia Post have respectively adopted Cyberlynx and corProcure.

As a new era begins, how will corProcure and Cyberlynx both succeed in a market as more players such as ANZ ebiz, Optus Marketsite, Shell's "Opti-Buy," Australia-wide loading, Smartbuy, and other government sponsored agencies were offering e-market options? How should corProcure position itself to succeed in a market that was all too wary of the failed promises of electronic procurement?

Projects connected with e-business in Australia Post were allocated some $92 million as capital investment funds during 1999to 2000 and 2000 to 2001. Between 15 to 20% of these costs pay for infrastructure that will in itself not contribute to revenue but is necessary to accommodate the availability, scalability, security, and flexibility required for future e-business activities. Developers should be aware of such facts.

Australia Post Buys corProcure: January 2002

In less than two years, the corProcure cartel had gained no traction in the purely domestic market. Besides the non-uniformity of technology, corProcure suppliers were supplying to cartel members externally and not through the marketplace. In January 2002, Australia Post purchased the corProcure shell. Most of the large companies, however, have continued to trade in some corProcure categories after the Postal buyout.

Australia Post acquired corProcure in 2002 primarily for its technology. However, it was believed that upon purchasing corProcure the technology had the capability to address business issues such as:

- extending the use of the mails network (letters business was in decline);
- improved access for customers to information and services to Post;
- third-party logistics and collaboration with other parties; and
- a logistic push via physical parcel hubs (smaller business and transport centres).

Australia Post's technology strategy for 2002 and 2003 was to ensure the best possible outcome for Post to deliver:

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- cost reductions;
- improved time-to-market;
- creation of competitive advantage using technology;
- greater secure, reliable, and flexible connectivity between Post and its customers and partners; and
- improved value of IT investments.

Australia Post established the use of corProcure's technology (July 2002) as the preferred e-procurement gateway for its own entire business. Purchasing arrangements were restructured so that goods and services could be purchased by corProcure and used by Australia Post. Australia Post at the time was seeking to increase the volume of online procurement transactions while also increasing the use of corProcure's services. Australia Post proposed to affect this by including a preference for its contracts with suppliers to use the Australia Post e-procurement gateway.

It was also worth noting that 50% of Deutsche Post's "e-cista" electronic marketplace was eventually sold in 2003. This was the reverse of what had historically happened to corProcure.

corProcure's New Evolution in 2004: A Buyers' Hub Becomes an Open Marketplace

In early 2004, the corProcure Board approved a new e-business model for corProcure. Considering the insignificant commissions being received since the 2002 buyout (see Figure 3), there was possibly no choice. Against the initial forecasts, corProcure was not channelling billions of dollars in spending, but less than $100 million through the hub. Commission was less than 1% of this amount. Any new direction must revolve around the development of a much more widespread, even global, e-marketplace, and not a tight-knit buyers' club with a purely domestic focus.

This change in strategy mirrored, quite coincidentally, the international e-business postal research that been posted on the Universal Postal Union's Web site in that very same month. (Hassall, 2003). The potential reach of a reborn corProcure could and should, realise a totally new revenue and commission stream, which is forecast to be 10 to 20 times greater than it had seen in its previous incarnation.

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"corProcure dot-com" was now to focus on attracting "active trading Internet users" in over 40 countries to its newly focused global trading platform. New e-booth holders would pay a minimal subscription cost and minimal transaction fees. The only future hope for any e-market in Australia is to become part of a global market network. The days of just dealing with a handful of buyers was now over. Staying domestic would have seen the business wind up by the middle of 2004. This international focus is a must for Australian e-business. It is an all too salient fact that all Australian Internet businesses should heed.

The Two E-Market Growth Strategies

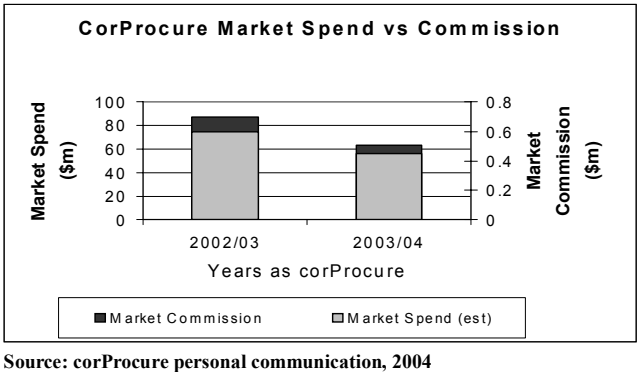
Strategy 1: The International SME Market

Australia represents less than 0.3% of the populations of the European Union and the USA combined. Australia's online businesses similarly represent about 0.4% of the "active" businesses trading on the Internet, from the top 44 trading countries.

In moving corProcure from being a small, domestic, buyers' hub, to an international marketplace with global sellers reaching global buyers, corProcure's connectivity would be arguably augmented enormously.

Table 5 reflects an estimate of the SME businesses target that corProcure could globally attack. These are SMEs that were trading online on a "regular basis" at the beginning of 2004. Table 5 reflects the target of just 0.01% of these businesses (one in every 10,000) in a phased manner, over the next three years, that is, attracting some 13,700 businesses as e-booth customers to the marketplace.

Figure 3. corProcure revenue and commission 2002 to 2004



Source: corProcure personal communication, 2004

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Table 5. Estimated potential SME target spends via corProcure (top 44 countries)

Europe	North America	South America	Oceania	Asia	Other	Total
42.07 million	55.37 million	5.68 million	0.67 million	32.09 million	1.41 million	**$137.3 million AUS Spend**
Estimated fees and commissions						**$4.5 million AUS**

Source: Centre for Freight & Logistics estimates 2004: Top 44 countries

The assumptions for all these businesses:

- They are SMEs, which is a highly conservative assumption.
- Have a maximum trading revenue of $A200.000, which is again a highly conservative assumption, and whose Internet revenue is only 10% of this amount.
- Using a market subscription fee of $200 Australian and a transaction fee of just 1.25%.

Thus, the corProcure marketplace could generate a commission of about $4.5 million dollars Australian per annum.

When compared to the current domestic spending through the market of around $70 million, the expanded spending of some $137 million is a considerable boost. Subscriptions as well as transaction fees would considerably lift the under $1 million commission received since the 2002 Post buyout of the cartel.

It should be noted that the expected Australian domestic contribution to the commission stream is less than 8% of the forecast total marketplace commission.

Table 6. Estimated potential ME target spends via corProcure (survey only)

Domestic Trade	International Trade	Total
$1.66 billion AUS Spend	$416 million AUS Spend	**$2.08 billion AUS Spend**
$20.8 million commission	$5.2 million Commission	**$26 million Commission**

Source: corProcure personal communication, 2004 (forecast)

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This would indicate that keeping corProcure as a domestic entity would be to cripple its potential. The future market focus must essentially be global.

Strategy 2: Domestic Advertising to the Medium Enterprises

The second strategy was a purely domestic strategy. It targeted 1,000 medium enterprises with revenue each between $20 million AUS and $50 million AUS, and staffs between 100 to 300 employees.

The feedback from the 2004 telephone call centre survey suggested that a staggering 59.5% of all respondents were interested in trading both domestically and internationally on the marketplace. This result was some 30% points higher than expressions of interest in traditional variations to new postal products. On the domestic front, this finding reversed the notion that only major B2B corporate enterprises would be the major marketplace users.

In essence, the potential revenue and associated commissions from the marketplace (Table 6) will be in the order of five-to-one, skewed to the medium enterprise clients versus the SME target. The first trading year will confirm these figures. However, what is certain is that there is a very realisable role for both the global small and medium enterprise player and the domestic and international medium enterprise clients to be represented in this marketplace. Both client bases will help in delivering a successful outcome for the marketplace itself. Such forecasts will be fascinating to follow.

Conclusion

The corProcure story is an interesting case study which also reflects much of the associated fashion of the time. As the initial large corporations' buyers' group, which was begun in 2000, collapsed and was sold off in 2002 to a Postal Authority, a significant reengineering of the e-business concept then began. This initial reliance on the throughput of the large corporate customers failed, and the second strategic rethink was effectively forced in 2003. However, it was not until the middle of 2004 that the global open marketplace strategy was adopted, and it is the very nature of this non-postal product offering that is beginning to be successful. Even though an e-marketplace is a non-traditional Postal product the 2003 e-Postal research undertaken for the Universal Postal Union (UPU) suggested that from a strategic direction an e-marketplace was a very strong offering for all Postal Authorities.

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The evolution of *corprocure.com* has been a learning curve for not only those involved, the initial owners, and the new owner Australia Post, but also for all the interested e-business observers. The initial buying cartel failed. This was largely due to the fact that the all large corporate members did not have a collaborate culture in participating in what was a totally new e-business venture. Collaborative "strategic intent" for joint corporate ventures is still to be fully realised in much of the e-business world.

The Australian experience somewhat bears this out, but it seems that not all business models will work. Certainly the ME and SME markets are expected to be the stable "bread and butter" for the marketplace, although some very large corporations may well take up an e-booth or even a bounded hub for their own clients within which to trade.

Certainly, the new direction of the e-marketplace has been encouraging. The next step is to trade off the profile of the *corprocure.com* reach globally and to connect several thousand international MEs and SMEs. This strategy is being pursued. Commentators could possibly criticise that the international market should have been placed ahead of the local domestic market, which is very small when measured against the full reach of a global e-market. To revisit the 2004 strategy in two years will be even more instructive to review the expectations of the corProcure e-marketplace forecasts against actual revenue and retained commissions.

Acknowledgments

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Chapter VIII

Sensis.Com.Au: An Uprising Star of E-Innovation and E-Entrepreneurship

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Abstract

Sensis Search, a young entrepreneurial dot-com launched in 2004, is the first mover in redefining the Australian search market and creates a new paradigm for Internet searches that delivers relevant, quality local, and global results. This chapter focuses on exploring the experiences of Sensis Search and identifying key issues of its operation. Data for this qualitative case study was collected mainly from two primary sources: (i) a documentary research into Sensis' business reports, online newsletters, memos, agendas, and other official publications, and (ii) an in-depth interview with a senior manager of sensis.com.au. The case study illustrates how Sensis has been managed, how it has succeeded, and what lessons can be learned from its experience.

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Introduction

In 2002, **Sensis** Pty Ltd was launched as a new corporate brand and company name to replace the Pacific Access Pty Ltd, a wholly-owned subsidiary of Telstra Corporation, Australia's largest telecommunication company. According to the CEO of Sensis, the name of the company Sensis reflects the essence of today's business — keeping people in touch through appealing to the key human senses of sight, sound, and touch, using different media — print, voice, online, and wireless (Sensis, 2002). To strengthen the strategic position of Sensis in **online advertising** business, the company acquired CitySearch Online and BMC Media Ad Sales, adding new lines of advertising business to Sensis. After two years' operation driven by an aggressive growth strategy, Sensis has developed into one of Australia's leading advertising and search companies, offering a suite of print, online, voice, and wireless products designed to bring buyers and sellers together any time, anywhere. Sensis Pty Ltd has a team of over 3,100 employees, among whom 2,300 are directly employed by Sensis and 800 by its wholly-owned subsidiary the Trading Post Group of companies.

Sensis' products and solutions include:

- **Sensis Search** (www.sensis.com.au) — an Internet search engine that utilises some of the most comprehensive and up-to-date product and service listings in Australia, with a much greater emphasis on local and national businesses. The Web site was launched in July 2004 and used by 59% of Australians with more than 5 million visitors every month, according to a recent Neilsen/NetRatings (Sensis, 2004a).
- Yellow Pages® — with more than 14 million copies in circulation, the Yellow Pages® print directories are found in virtually every home and business in Australia.
- White Pages® — print and online business directories.
- City Search® — Australia's leading online culture and lifestyle guide, offers tailored Internet solutions.
- Whereis® — Whereis® products and services are the location (digital mapping) and navigation brand of Sensis Search.
- Sensis1234 — With sensis®1234, callers can find a business (and residential listings) through a single number, whether they know the business name or not.
- MediaSmart® — Provides consulting services on the best sites and advertising formats to reach your target market.

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- Trading Post® — a print and online private and classified advertisements directory for goods and services.
- JustListed.com.au — a new commercial and residential online real estate portal currently based in Sydney, where its inventory includes over 42,000 rental and sale properties and 1,670 real estate agents. Due to the very successful performance of the portal, Sensis plans to develop it into a national, online real estate portal.

As shown, Sensis Search (sensis.com.au) is a key component of Sensis multiple dimensions of business and plays a central hub role in the interfaces between online and print searches of information. This chapter focuses on exploring the experiences of sensis.com.au and identifying key issues of its operation. Data for this qualitative case study was collected mainly from two primary sources: (i) a documentary research into Sensis' business reports, online newsletters, memos, agendas, and other official publications, and (ii) an in-depth interview with a senior manager of *sensis.com.au.* The case study focuses on how Sensis has been managed, how it has succeeded, and what lessons can be learned from its experience.

Sensis Search: Creating a New Paradigm for Internet Search in Australia

Sensis Pty Ltd launched its search engine Sensis Search (sensis.com.au) in July 2004, which constitutes all the online/electronic portfolio of Sensis Pty Ltd including www.whitepages.com.au, www.yellowpages.com.au, www.whereis.com, and www.CitySearch.com.au (Sensis, 2004c). By doing so, Sensis Search is able to provide Australians with fully blended search results across local proprietary and global Internet content. For example, Australians can use sensis.com.au to find a local florist anywhere in Australia and also to locate and purchase a pair of shoes in New York. The search engine provides local, commercial, and global searches from which customers can get blended results from local Yellow Pages®, White Pages®, CitySearch®, and Whereis® data, combined with global Web content. Sensis Search is the first mover in redefining the Australian search market and creates a new paradigm for Internet searching that delivers relevant, quality local and global results. Sensis Search represents a "world first"' among search engines as it integrates Internet Web page content and structured content (e.g., the Yellow Pages directory) into a

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"one-stop shop" for searches, unlike other search engines such as Google, where these services are available but under different URLs. As such, searches can be performed locally, nationally, globally, and throughout the Sensis sites. The strategy to develop synergies among Sensis' businesses contributes to the success of Sensis and Sensis Search. The focus on and pursuit of Sensis Search for relevant, local, and quality return results herald the maturity of online search services. The success of the online search is no longer measured by the volume or the size of the Internet index but by the extent of meeting specific users' search needs. Moreover, Sensis Search provides Australian users with very easy access to commercial content through Internet access. Commercial content is classified under nine categories: products, services, people, places, events, jobs, cars, houses, and "consumer classifieds," which might include searches of Sensis directories such as the Trading Post.

Due to the initial success of Sensis Search in managing to provide the most innovative and comprehensive online search engine in Australia, Sensis management decided to expand the business further. In December 2004, Sensis acquired one of Australia's most successful mapping and street directory businesses, Universal Publishers Pty Ltd. The acquisition has significantly strengthened the market share and position of Sensis Search which now boasts the largest and most up-to-date database of navigable mapping content in Australia. Unlike its competitors, as one line of its business, Sensis Search provides nearly 100% geographic coverage of Australia and "its contents covers everything from urban streets, to points of interest, four-wheel drive tracks in the remote outback, and smaller roads you'd never see on a normal map" according to the CEO of Sensis Pty Ltd (Sensis, 2004a, p. 1). This aggressive growth strategy of Sensis through acquisition aims to accommodate the increasing demand of Australia's local consumers for localised advertising and map-based search to find local businesses, products, and services. Sensis Search's digital mapping business now serves more than 18 million digital maps online every month through its Whereis® brand on the www.sensis.com.au site (Sensis, 2004a).

To survive and succeed in today's fierce competition in the search engine industry, Sensis Search pursues two complementary lines of businesses — online advertising and online search. The market share of Sensis Search online advertising has now exceeded 23% of online advertising in Australia, and, meanwhile, it has seized approximately 70% of the combined search and directories market in Australia (Sensis, 2004b). According to the Online Advertising Expenditure Report issued by the Audit Bureau of Verification Services, the revenues from online advertising grew by 58% to AU$300 million in the 2003/2004 financial year in Australia. The stellar growth in online advertising is both an opportunity and a challenge to Sensis Search. The company develops its corporate strategy and direction focusing on local online search within Australia, thus becoming the major player in local Australia's search through providing

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relevant and complete localised business information. The success in providing relevant and quality search results to meet specific user searches helps boost the online advertising business of Sensis Search as well as the entire business of Sensis Pty Ltd.

Sensis Search, the online/electronic portfolio of Sensis Pty Ltd, recorded a 40.7% growth for the year 2004 and 34% online usage growth for the same year (Sensis, 2004b), while Sensis' print business only grew by 5.6% compared with the previous financial year (Sensis, 2004d).

Key Lessons Learned

Sensis Search's experience presents several fundamental management lessons for the business operations and development of today's dot-coms and e-businesses. This section examines and explores these lessons.

First, the success of Sensis Search is one of combined **innovation** and **entrepreneurship** in the e-business world (thus called e-innovation and e-entrepreneurship). Today's e-business operates in a highly competitive market-place where sustainable competitive advantage is almost impossible as there are minimal barriers to new entrants and competitors in the marketplace. Innovation faces constant challenges of imitation and erosion. There have been different views in the literature about the benefits of first movers in the e-business marketplace. Mellahi and Johnson (2000) asked the question "Does it pay to be first to market or should e-commerce firms wait for first movers to make an investment and then cannibalize the idea with lower entry cost?" The cause of the concerns are raised by a general belief that it is safer and less expensive to imitate the first mover in the e-business environment, where there is a higher level of technical uncertainties and rapid rate of technological innovation. For instance, many new dot-coms rushed to build an e-marketplace and chose imitation as a business strategy rather than innovation. This author argues that it is the lack of a combination of innovation and entrepreneurship capacity that has caused the demise of many imitators in the dot-com industry. The essence of innovation and entrepreneurship is taking a new idea to market, not imitating a new idea without taking into account the special needs of local markets, and being innovatively and proactively responsive to environmental changes by introducing a new product, process, service, or implementing a distinctive business model. Sense Search's success has clearly been contributed by the first mover advantage (being the first company in the world that took its directory products online).

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Both empirical and theoretical studies show that innovation interacts with entrepreneurship to achieve business success (Zhao, 2005; Kanungo, 1999; Drucker, 1994). The key elements of entrepreneurship include risk-taking, proactivity, and innovation (Miller, 1983). However, Slevin and Covin (1990, p. 43) have argued that the three elements are not sufficient to ensure organisational success. They maintained that "a successful firm not only engages in entrepreneurial managerial behaviour, but also has the appropriate culture and organisational structure to support such behaviour." Thus, there is clearly overlapping and interdependence between entrepreneurship and innovation. Both are needed for firms to be successful and sustainable. Furthermore, entrepreneurship is related to the development of new products and services. Innovation is sometimes not necessarily related to new products but concerns doing something differently and better. While entrepreneurship is related to working with new products and services, it is not necessarily about doing things better. Innovation, however, is about doing something better by doing it differently. As such, entrepreneurship carries extra financial and risk issues because of the newness of the venture. According to the experience of the company's senior manager interviewed for the study, there are no conceptual and/or practical differences in terms of online and off-line entrepreneurship and innovation. The approach is the same, regardless of the online or off-line environment, although the skill set required is obviously different. The company believes that entrepreneurship and innovation are crucial to their success and innovation should be inculcated into the organisational culture and is developed internally. It includes encouraging staff to interact with customers and undertake research and development. Sensis Search is not only an entrepreneurial company in terms of its aggressive growth strategy but also a pioneer of innovation. Sensis has claimed to be the first company in the world that took its directory products online. Sensis Search has identified seven factors which it believes drive innovation and which it has subsequently applied to all new product areas:

1. Clear vision communicated throughout the company
2. Development of a culture of innovation — through rewarding people and taking calculated risks
3. An organic organisational structure — rather than having a central group of IT managers, producers, and product managers, each product unit employs their own staff with their own responsibilities and P&L statements
4. Job role clarity
5. Accountability and responsibility
6. Clear **key performance indicators** (KPIs)

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7. Sufficient funding, realistic revenue expectations, and people positively motivated

The entrepreneurship strategy that Sensis Pty has taken is actually that of an **intrapreneurship**, that is, entrepreneurship within an organization. Sensis' story indicates that development of entrepreneurship and innovation should be dependent on the size of the company. For instance, the Sensis group includes large, established companies such as Yellow Pages®, and the much younger and relatively smaller Sensis Search. Yellow Pages® is built on an established, traditional business model, while the Sensis Search approach is entirely different. As such, there is a need to separate the companies and to allow new business units within the group to "quarantine space," where they can grow (within set time frames), using different people with different rewards, finances, and so forth, rather than trying to fit in with the old models.

Second, Sensis Search can be viewed as a successful start-up of a new generation of dot-coms which are more mature in terms of business models and information technologies, focusing more on justification and accountability of business processes and outcomes than on a "can do" mentality only. The post-2000 e-business successes generally tended to be those that were first to market and which were sufficiently funded to weather the crash. These companies also managed to maintain their people and stay sufficiently focused on their core strategies, rather than diversifying too greatly. Therefore, they have distinctive features from their counterparts in the earlier days of e-commerce. In hindsight, e-commerce failures tended to be the "Me2" brands (see Endnote), which were merely copying existing, successful e-commerce models under the premise of "build it and customers will come," wholly failing to recognise the power of established branding.

Sensis Search is Australian-based but competes against global giants such as Microsoft, Yahoo, and Google. As such, they have identified two ways by which they can be competitive. The first is by providing a higher amount of business and commercial content, and the second is by having good relationships with global partners in order to deliver their solutions in the most efficient and cost-effective manner. For instance, Sensis Search has partnered with Fast, a Norwegian company specialising in algorithmic search technology which powers the Sensis Search engine. It has continued to achieve strong growth and to develop leading edge online search solutions for Australians. It offers its advertisers the opportunity to put their companies' existing print content online at little or no additional cost. For example, businesses do not need to have a Web site to be found on sensis.com.au but simply be listed on the Sensis' Yellow Pages® online site.

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Third, successful dot-coms require sufficient funds and people skills, as well as adherence to the seven-step innovation model. Sensis Pty has made significant investment in developing its online/electronic dimension of its business as a long-term corporate strategy. Generally speaking, there appears to be a shortfall in people with specific expertise in e-commerce in Australia. This may be because international demand is high and it takes time for the right skills to be taught in universities. The shortage in human resources and skills remains a significant barrier to online entrepreneurship and innovation in Australia. Sensis believes that retention of staff is a very significant driver of innovation, and as such, they have developed reward systems which will commit their people to the company and offer them recognition, training, and opportunities. The ompany also has developed relationships with universities and regularly engages speakers to address staff.

Other lessons learned from Sensis Search are also fundamental. According to the Sensis' CEO, the key factors contributing to the company's success are Sensis's continued focus and commitment to its people and customers. Survey data showed that its customer satisfaction improved 10% in 2004 and its employee satisfaction has continued to rate up to 10% higher than the Australian average with regards to key satisfaction measures (Sensis, 2004d). In addition, there is a need to be realistic (particularly if the company is competing against established players), and to identify what differentiates the company from its competitors and the sustainability of that differentiation. Further, companies also should have firm milestones, which can be derived from a user point of view, customers, brand recognition, or advertising, with which to gauge the progress of their investment. Finally, a calculated risk assessment is crucial to an online business. Companies should know when to let go or substantially change their model or sell it to others in order to go to the next level.

Conclusion and Future Research

The overall improvement of economic conditions worldwide in 2003 and 2004 and the recovery of investors' confidence in high-tech and e-business industries have refueled the growth of e-businesses. Indeed, the public interest in Google's IPO launch in August 2004 is an indicator of the recovery. After two days trading, Google's share price jumped 27% and the company's value (around $US29 billion) equaled that of the Ford Motor Company (Wood, 2004). According to the projection made by Forrester Research, online sales will grow at a year-over-year pace of 19% to US$225.9 billion in 2008 in the United States. Further, the number of online shoppers also will increase significantly, and nearly 5 million

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new United States households will shop online every year (*TechWeb News*, August 5, 2003). The mega economic environment entails a positive and promising future for e-business, although there are many challenges and hurdles that need to be surmounted. There is clear evidence as provided by companies like Google, Yahoo, and Amazon.com as well as the case company of this study that e-innovation is alive and well. Consumer behaviour has changed, and people are more likely to accept new Internet technology than five years ago. **E-entrepreneurship** and **e-innovation** will help an e-business get to the stage where they are profitable and sustainable.

However, dot-coms also are facing greater challenges than ever. First, dot-com industries need to achieve sustainability, due to a more uncertain economic environment and the increasing complexities of new technologies and a more globalized economy. Second, the business success and fast expansion of Amazon.com, Dell, travel.com, and the like through e-business partnerships reinforce the value of strategic alliances. Corporate e-partnerships will be a crucial factor and play a key role in the future development of e-business activities. In the frenetically changing competitive landscape of today's business world, few organizations can rely only on their internal strengths to gain a competitive advantage in national and/or international markets. Continued expansion to global markets will push more international dot-coms to form strategic alliances in e-business. Yahoo, Google, e-Bay, and E*trade provide good examples of global expansion using alliances with local e-businesses worldwide for smaller players who will follow the trend to go global. Finally, the key principles of **total quality management (TQM)** will be the fundamental cornerstone to e-business success, which include customer focus, and continuous improvement and measurement to achieve customer satisfaction. The failure of many e-businesses and the dot-com crash have on the whole been caused by poor quality customer services and support, problems with Web site security and technologies, and weaker change management (Janenko, 2003).

Future research could focus on:

- the complex, dynamic, and sophisticated structures under which e-business can operate,
- identification of the e-business networks and relationships that are most likely to succeed, and how they succeed,
- the specific nature and characteristics of the operations of dot-coms in different industry sectors and in different country settings,
- the impact of specific e-business technological innovations on specific functional areas of e-businesses, and

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- the effectiveness of the current technological trend of "one size fits all" e-business solutions built on "industry best practices" for e-business.

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Endnote

- "Me2" brand: The term "**Me2**" **brands** refers to merely copying existing, successful e-commerce models under the premise of "build it and customers will come," wholly failing to recognize the power of established branding.

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Chapter IX

Using E- and M-Business Components in Business: Approaches, Cases, and Rules of Thumb

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Abstract

This chapter discusses using e- and m-business components in supporting and enhancing existing businesses and in creating new business innovations. A framework illustrating two different approaches companies have to adoption of e- and m-business components is proposed. Three cases of how Finnish companies have, in an innovative way, used e- and m-business components to support, enhance, and launch businesses are presented. Based on the illustrative framework and the cases, some rules of thumb for using e- and m-business components in business are proposed. The aim of

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this chapter is to offer managers helpful insights for planning e- and m-business component investments.

Introduction

It is quite clear that electronic (e) and **mobile (m) commerce** are here to stay and that they give established companies a set of new alternatives to conduct their businesses and opportunities for starting new companies. In general, we can characterise e- and m-commerce as the different ways of supporting and conducting business over the Internet (e) and/or with mobile devices (m). Examples of **e-commerce** can be a store operating exclusively on the World Wide Web (e.g., Amazon.com) or a company offering only very limited services through the Internet (e.g., e-mail-based reservations). m-commerce can be understood in equally diverse ways, indeed there may be a number of different definitions for e- and m-commerce which are all correct. Due to the possibility of very diverse views in understanding what e-commerce and m-commerce are, in this chapter, we refer to the application of e- and m-commerce techniques to business as using e- and m-business components.

There are, and have been, many misperceptions as to what e- and m-commerce are, about what they are not, and especially about how and how much they generate value. These misperceptions have led to a number of spectacular failures, such as those of the online grocer Webvan and the Internet clothing retailer Boo.com, which for their part have made many managers feel suspicion toward applying e- and m-business components in their companies.

The aim of this chapter is to support managers in understanding what kind of e- and m-business components would possibly suit their companies. A key issue in assessing the suitability of e- and m-business components for a company is understanding the orientation that the company has in its approach to e- and m-business components (i.e., is the company a technology- or a business-orientated e- and m-business component adopter?). Observing the different orientations of approaches of different companies to adopting e- and m-business components helps managers to better understand the orientation of their own company and may significantly reduce the risk of misinterpreting the e- and m-business component investment needs of the organisation.

It cannot be argued that e- or m-commerce would be almighty forces that guarantee success. Indeed, if such statements are made, they are undoubtedly wrong. However, there are a number of positive experiences from successfully using e- and m-business components to enhance and to revitalise existing businesses, such as the British grocer Tesco, whose online endeavour Tesco.com

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is profitable. Another example is the e-commerce early adopter Lands' End. There also have also been successful starts of new businesses, such as that of the profitable online community Classmates.com.

The successful applications of e- and **m-business** components are often the result of insightful innovations, more specifically, insightful innovations within the core business (idea) of the company. A business innovation can be to replace an old way of doing business with a new way, or by introducing a business idea that has never been tested before. In many successful e- and m-commerce cases, the success has often come from the insightful application of existing technology that a company has used to support, enhance, or extend its core business (Coltman, Devinney, Latukefu, & Midgley, 2001).

There is a wide amount of literature about how companies should use their competencies to gain competitive advantages and how they should go about updating their operations and ways of doing business in the changing world. Core competence thinking, usually attributed to Prahalad and Hamel (1990) is one way of characterising how companies can build competive advantage through consolidating skills and technologies within companies to core competence areas. Such consolidation is reached through enhanced communication and constructive managerial involvement in the areas, which have been identified as the strengths of the company. The basis of the competitive advantage of a company, according to the core competence thinking, can be the systematic application of the things the company does best in everything the company does.

Creating competitive advantage through concentrating and developing core competencies is one issue, while retaining the competitive advantage is another. Companies need to change in order to keep up with the changes in their environment, otherwise they are likely to lose their competitive advantage (i.e., ways of applying core competencies must change as the competitive environment changes). The efforts that companies make to change have been given different names and concentrated on different issues within the organisation of a company (e.g., **TQM**, reengineering, right sizing, restructuring, cultural change, and turnaround). Despite the different approaches, the basic goal has been the same — to make fundamental changes into how business is conducted to cope with the changing environment (Kotter, 1995).

We can view e- and m-business components as tools that can be used to transform the business processes to retain competitive advantage, or as the core competence area of a company. In fact, we can view e- and m-business components as any other core competence or tool of business transformation. For the companies that base their business idea on e- and m-business components, they are parts of the core competence areas, while for other,s they are tools to retain competitive advantage.

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Companies with an existing core business that decide to analyse enhancing their operations with e- and m-business components should keep their eye on the ball, that is, on their core business, and not get carried away (Ross, Vitale, & Weill, 2001). We want to point out that creating core competencies out of e- and m-business components is as difficult as creating any core competencies, hence, *very* difficult.

If companies utilise e- and m-business components to transform their core business(es), it is very important to critically analyse if the revenue logic of the business changes. If the revenue logic remains unchanged, then it is to be expected that also the valuation principles of the business most likely remain unchanged. In other words, there is no reason to draw the conclusion that e- and m-business components will miraculously increase the profitability of the company. Indeed, overstatements of the value of e- and m-component-based companies and investments have been common enough (Glasner, 1999; Kanter, 2001).

Value creation in e- and m-business is one of the most important issues in deciding about e- and m-business component investments. Amit and Zott (2001) discuss the sources of e-commerce value creation based on six different theoretical frameworks and summarise that each of them suggests possible sources of value creation. It has been argued in many occasions that e- and m-business offer the companies that utilise them enhanced potential for greater earnings through the new possibilities they enable due to convenience, speed, ease-of-use, cost- and labour savings, and enhanced communications (Lederer, Mirchandani, Sims, 2001). By using e- and m-business components, companies can increase the possibility of reaching higher earnings in the future. However, using e- and m-business components does not necessarily mean that such higher earnings are reached. This is why it is important to understand the effect of the enhanced potential to the value of the business, the mistakes that have been made, and when potential has been misrepresented as value (Fernandez, 2003).

There are some models available for measurement of potential, for example, the real options approach is a collection of methods to understand, measure, and value potential. The real option approach offers valuation rules that can be used to assist in the analysis of the profitability of e- and m-business investments in companies (e.g., Mehler-Bicher & Ahnefeld, 2002). Like with any other methods, the correct use of the methods used in the real options approach is important. All methods can be made to show desired results; at the end of the day, it is in the interest of everyone to be realistic.

In the next section, we will propose a framework to illustrate the different orientations that companies have in approaching e- and m-business component investments. This is followed by a presentation of three cases from Finnish companies that illustrate adoption of e- and m-components in business. Based on

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the introduction, the proposed framework, and the cases, three rules of thumb for successful application of e- and m-business components are proposed and shortly discussed. The chapter closes with a summary and conclusion.

The Technology- and Business-Oriented Approaches

To E- and M-Business

In the introduction, we argue that there are undoubtedly a number of different definitions for e- and m-commerce and that business components or concepts that are based on e- and m-technology — "e- and m-business components," — can be used in different ways. We point out that e- and m-business components can be used to support existing core businesses by replacing old ways with new e- and m- methods and for creating totally new core business areas. In both of these ways, companies can retain their competitive advantage.

We feel that it is important to separate companies according to their orientation to e- and m-business component investments and starting e- and m-business. Do companies develop technology and utilise existing (or create new) business ideas to commercialise the technology, or do they develop business ideas and utilise existing (or create new) technology to commercialise the business ideas?

To discuss this interesting issue, we propose a framework that illustrates the two different orientations of approaches. This framework is useful in understanding the different approaches and in raising questions about the difference in risks and possibilities that they entail to the success and profitability of e- and m-business component investments.

Companies with core competence areas in technical research and development of e- and m-business components often succeed in their e- and m-business by researching and developing new technology to do new things or to do old things in a more technically advanced (better) way. These companies mostly use the technology-oriented approach to e- and m-business innovation (see Figure 1).

The technology-oriented approach is based on the notion that new technology will create business, meaning, "this technology will make us money if we can figure out how to sell it." The companies that use the technology-oriented approach to e- and m-business fund the development and **commercialisation** of the majority of new e- and m-technology.

Companies with a core competence in other areas than R&D usually do their e- and m-business by using the business-oriented approach (see Figure 2) and

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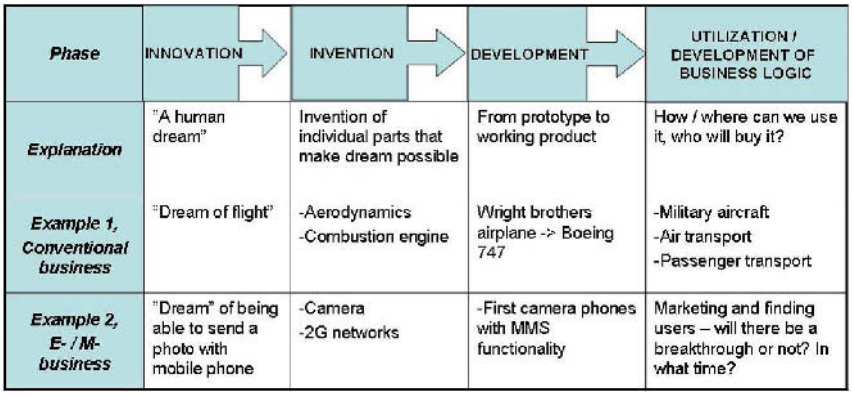
Figure 1. Technology-oriented approach



utilise available or future e- and m-technology in their core business areas. Their e- and m-business supports their core business areas, and often the decision to adopt e- and m-business components is justified on cost savings or maintaining competitive advantage.

The **business-oriented approach** is based on the notion that we need to have a good business concept and revenue logic, then find the matching technology to realise it. This includes finding cost savings for an existing business, and the basis of the approach is: "We could make money if we had this technology."

The separation of the technology- and business-oriented approaches may seem to be trivial, because no matter which approach we have to achieve success, a company needs to have both the right technology and the right revenue logic. Indeed, it is intuitive, however, it is too often forgotten. Because it is easy to understand the differences in the technology- and business- oriented approaches, it may become easier to understand and identify the potential for failures of e- and m-business component implementations. Starting from understanding the core competence areas and their effect on the orientation and approach of companies to e-and m-business innovations, it is easier to pinpoint the risks that managerial myopia and misunderstandings connected to the orientation may cause.

In the next section, we will present three business innovations based on e- and m-components which are actual implementations from Finnish companies. Finland is a country of 5 million inhabitants in Northern Europe, ranked by many surveys and analysts as one of the countries with the highest penetration of the Internet and mobile devices.

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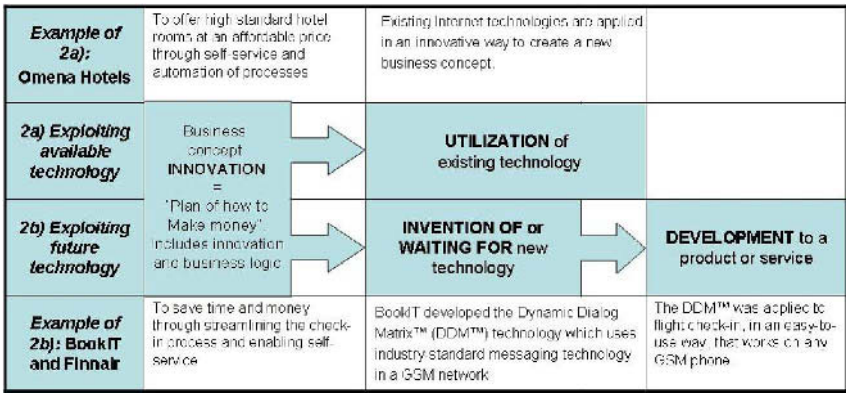
Figure 2. Business-oriented approach



Some E- and M-Business Cases

We explore three cases that present business innovations that use e- or m-business components to enhance existing core business of companies. A short background of the companies and their business is given, then the innovation is described, and the viability of the innovation discussed.

Case 1: Omenahotellit – Hospitality Online[1]

In spite of the fact that many players in the travel industry have been forerunners in the field of IT, the information systems and technologies used in the hospitality sector have, as a rule, been constructed to support or extend — but rarely to radically alter or replace — the existing, conventional business models. The traditional services and functions continue to exist along with the new technological solutions, and the business models have tended to remain relatively unchanged after the implementation of new technologies and systems. Thus, **information and communication technologies** (ICT) primarily have been used to broaden the market share (by making the product available to more people), to cut costs, and/or to enhance the efficiency of a particular business process. However, we will continue to witness the emergence of many innovative and interesting business models — even in the somewhat conservative accommodation sector — with the great advances in ICT, the progress in the next generation of Web sites and services, and the increasingly positive attitudes among consumers to embrace the Internet as an advanced commercial medium.

Omenahotellit (Omena[2] Hotels), a new Finnish hotel chain, is a good example of a company which fundamentally builds its operations on a new, innovative e-

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business model. The company challenges the traditional service concept used by most other players in the accommodation sector by fully exploiting the Internet and other forms of ICT in its operations. Spurred by new insights as well as innovative — and successful — attempts and methods to utilise IT and the Internet in the travel sector (e.g., the paths shown by successful low-cost air carriers), Omenahotellit has developed an IT-enabled business model previously unseen even on a global scale in the accommodation sector.

The basic idea in the operational concept of Omenahotellit and the main promise of the company is to offer travelers high-standard hotel accommodation at prime locations (in city centers) at a truly affordable, fixed room rate. High class, yet inexpensive, prices may seem like an impossible equation, but Omenahotellit's business model excels in cost-efficiency by offering the core product of hotel operations — a room for the night — without expensive built-in auxiliary services. Maximum occupancy per room is four persons. All rooms are similar in terms of size, amenities, and interior design, and they certainly do not pale in comparison with the typical 4-star hotel rooms offered by the main competitors on the Finnish market as far as the room size and amenities are concerned.

The inexpensive room rate offered by Omenahotellit is largely a result of the radical cost-cutting achieved by truly maximizing the use of IT and the Internet in the reservations and payments, reception procedures, customer safety and convenience, as well as management and maintenance tasks.

The entire booking/cancellation process is handled by the customer himself or herself through the company's proprietary online reservation system at www.omena.com. The customer makes a reservation, pays for it by using secure online banking/credit card payment solutions, and receives a booking confirmation which shows the room number and the key to the room — a 5-digit numerical personal door code which is valid throughout his or her stay. The customer also can book and pay for extra services such as pay-TV services and broadband Internet access when booking their room, or later through the in-room TV. Companies and organizations that have signed a key customer agreement with Omenahotellit do not have to pay for the reservation online, but can choose to get an electronic invoice (which is automatically generated and sent by the reservation system and entered in the ledger) instead. As a result, even the traditional invoicing tasks have been fully automated.

All Omena hotels operate without a reception desk or reception personnel, as all traditional reception tasks have been completely automated using IT. Since all reservations have already been paid for and the room keys have been delivered electronically in advance, there is no need for check-in or check-out procedures such as handing over keys or charging the customer. The entrances are equipped with Internet-connected electronic service points — "kiosks" — through which walk-in customers can make reservations and pay with their credit cards.

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Also, customer safety and convenience are highly IT-supported, without compromising security. All doors are always locked, and only guests with a valid door code can enter the premises. The entrance and the hallways are monitored by recording surveillance cameras, and the digital recordings can be accessed remotely by the security personnel. In case of emergency/problem situations, the guests can contact the security company through the in-room TV or by phoning the help desk (on duty 24 hours). Through the TV system, the customers also can get all the necessary hotel information and contact the service company for maintenance or extra housekeeping and so forth.

Many time-consuming management and maintenance tasks, such as providing key partners and government authorities with important data, have been almost completely automated. The lists of rooms to be cleaned are automatically generated and delivered to the housekeeping staff by e-mail every morning. The hotel room textiles (e.g., bed linens, towels, etc.) are ordered from the laundry service directly by the system based on the number of rooms booked and the total number of occupants.

The business model of Omenahotellit also marks originality when observing the company's organizational structure: Since the routine tasks have been arranged according to self-service principles and automated using IT, the company is, to a certain extent, managed by its customers and by computerized systems. Omenahotellit has, in fact, only one employee — the managing director. Instead, the company draws on a rather extreme outsourcing strategy, relying on a large network of partners to handle tasks such as: (i) project management relating to opening new hotels (architects and engineers); (ii) IS (hosting, system monitoring, etc.); (iii) housekeeping (cleaning and maintenance); (iv) security; (v) customer service; and (vi) marketing. The company has no office facilities but is operated through "laptop management" using a virtual, largely paperless office. The foundation stone in Omenahotellit's strategy is the proprietary online reservation and hotel administration system (launched in May 2003), which has been tailor-made for Omenahotellit's exceptional, automation-based business model.

Omenahotellit has set up an ambitious expansion plan: The company wants to operate almost 40 small units, a total of 2,000 rooms[3], in the 30 to 35 largest cities in Finland by the year 2008. From 2006 onward, the company also will aim at an international expansion, primarily into the neighboring countries.

The main driving factor in Omenahotellit's chosen strategy was that a company cannot exploit, in full, the many potential benefits of IT and e-commerce by using new technologies just to support (or as an extension of) existing processes and operations. Although many big players have been able to attain a dominant position on both traditional and electronic markets (largely thanks to their established reputation and sufficient financial resources), it can be argued that

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such a phenomenon reflects the insecurity and lack of trust among online customers in the early phases of e-commerce rather than superiority in terms of online value creation. Optimizing the special advantages offered by IT and e-commerce requires, as a rule rather, pure e-business models and a lack of restraints set by existing bricks-and-mortar operations. For Omenahotellit, this meant focussing exclusively on the electronic sales channel, thus not offering alternative sales channel such as call centers or sales offices — not even reception desks or personnel.

Value creation is a complex process which strongly relates to every aspect of a company's operation and the choices it makes (i.e., what it sells and how its products are marketed). The key value proposition of Omenahotellit primarily relates to: (i) the provision of real-time information, instant gratification, and high quality of content and applications online; (ii) simplicity of lodging (no check-in/check-out procedures); (iii) and especially a fixed room rate and a very attractive price/quality ratio. The low prices are the end result of numerous factors, the most important of which are:

- A full automation of many tasks with a resulting reduction in labor costs in comparison to hotels using traditional business models.
- Customer self-bookings: Following both intuitive logic and established theory, Omenahotellit reasons that online self-bookers, which clearly cut costs for suppliers in comparison to reservations handled by a sales workforce, both can and should be rewarded in the form of lower rates.
- Disintermediation[4]: No middlemen are used in the booking process, meaning that no commissions have to be paid to intermediaries. The savings are returned to the customers in the form of inexpensive prices.

At present, four **Omena Hotels** are in operation in Finland, but several new units will be opened in the next two years, primarily by transforming existing office spaces located in city centers into new, modern hotels.

Thus far, the marketing efforts of Omenahotellit have been limited, but more massive advertising campaigns will be carried out as soon as the number of hotels increases to 8 to 10 by middle 2006. In spite of that, the first year of operations has showed promising figures, with room occupancy rates clearly exceeding the expectations set for the initial period and passing the break-even margin at a surprisingly early stage. The early adopters were primarily young people, groups, and families who recognize the value of an inexpensive room which can accommodate four persons, a fact which is confirmed by the extremely high average number of guests per room (2.45). However, a significant increase in the number of business travelers has taken place in the recent months, as more and more companies learn about this new, interesting alternative.

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In this brief case study, we have presented Omenahotellit, a new Finnish hotel chain which challenges the conventional service concept used by most other players in the accommodation sector by drawing on a new, innovative e-business model. In doing so, we have aimed at providing insights as to the opportunities the Internet and IT can offer even in a sector which justly can be characterized as conservative. In addition, we have highlighted a number of important issues that are at the core of the customer value creation process in an online environment, where new modes of competition emerge.

Case 2: The Helsinki City Transport Company – mTicket

The Helsinki City Transport Company provides public transport services for the Helsinki metropolitan area. The company operates buses, trams, subway lines, and ferries to the islands outside the city centre. In 2003, the company sold 93.4 million bus, 56.8 million tram, 55.4 million subway, and 1.3 million ferry fares, altogether 206.9 million fares.

For smoothly running public transportation, customers need easy and fast ways for paying their fares. In 2001, the regular HKL customers usually paid with travel cards, in the form of smart cards, but the customer group using the public transportation less bought their tickets either from vending machines, service counters, or the drivers of the various vehicles, causing extra work and slower operation. Also in 2001, the company decided to develop a mobile ticketing service for its customers. The system, developed by Plusdial Ltd (www.plusdial.net), was first piloted in trams and the Metro (subway) and was expanded to wider use in 2002.

The system is extremely simple to use for the customer. The user sends an SMS containing the code "a 641" to a service number and receives, within a minute, a SMS- ticket, valid for one hour that can be shown to a ticket controller. The ticket is billed in the customer's telephone bill, just as any service line call or similar.

The system benefits to an occasional user of public transportation are obvious: It is easy to use and requires no cash or other means of payment, no ticket counter or vending machine, no registration, and makes boarding public transports faster, since there is no hassle with the ticket.

The system has proven to be a success: In 2003, 55% of the single-fare tram tickets were purchased via SMS. In all of the HKL's transports, the percentage of **SMS-tickets** was 9.4% of all single fare tickets, or around 130,000 tickets per month.

From the service providers' point of view, the system also has proven to be beneficial: Easy ticketing increases ticket sales, freeing the drivers from selling

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tickets makes transportation faster, and costs for printing and distribution as well as investments in vending machines decrease. The ease of use of the system has even decreased the amount of passengers travelling without a valid ticket.

The basic technological innovation underlying the system is simple: building a system that can distribute valid ticket code via SMS to the customers and through mobile terminals to the controllers. The business model innovation is by far more crucial: There are clear benefits for the users of the system compared with the earlier ways of buying tickets. The core benefits of mobile electronic business are encompassed by the system: It is used on the move, is simple to use, and satisfies a need that can arise unexpectedly. The success of the system proves that a well-designed mobile system, satisfying a true existing need of the customers, will be used to its full potential.

Case 3: Finnair and BookIT – Check-In with SMS

Airlines are globally struggling to reach profitability through cutting costs and streamlining operations, while news of rising oil prices and airline bankruptcies continue to flow in (Jonas, 2004). At the same time, providing value for customers remains important. E-ticketing is one of the biggest trends in the airline business, reaching almost 100% in the United States, while other countries are following suit (Michels, 2004).

Check-in is another area where airlines have sought to restructure operations through offering customers unmanned computerized check-in kiosks and online check-in self-services. These alternatives are said to offer the customers freedom and time savings, while cutting down on personnel costs for the airlines. The situation in Finland is the same as elsewhere; Finnair Airlines is facing increased competition from budget airlines and needs to provide its customers with novel services in order to maintain its competitive edge.

In October 2004, the Finnish company BookIT Ltd launched, in cooperation with Finnair Airlines, a service for participants in their frequent flyer program to check in to their flights with their cell phones; a service that they claim to be unique in the world. The service enables customers to move straight to the boarding gate and bypass the check-in desk, thus saving the customers the aggravation of standing in line and lightening the workload of check-in counter personnel.

In contrast to e-check in, it gives the user the added freedom to use the service wherever (e.g., in the taxi or in his or her hotel room) without needing to boot up their laptop. The service can be used on all cell phone models and with any operator's subscriptions, without having to modify any settings or download additional components. It is easy to use; BookIT CEO Jussi Salonen states "The service operates on a one-button principle — it identifies the user automatically

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without passwords or codes. Using the service is so simple that even operating instructions are unnecessary." He also states that the guiding idea was that he did not believe in the fast advent of broadband Internet for everyone, instead he deemed it sensible to build applications for an existing technology, in the check-in case the short message service (SMS).

In addition to emphasizing the importance of utilising an existing infrastructure, he underlines the necessity for know-how regarding commercialization of ideas. "Organizing an international supply chain, marketing, and customer support is a bigger endeavor than technical details." Before starting any entrepreneurial venture, the business logic must be in place. He brings up the example that there is no sense in building an SMS-based service to a country where sending SMSs is free of charge and the operator cannot charge for it.

While submitting this chapter, the service has only just launched, and it is too early to give predictions of usage numbers, customer satisfaction, or the overall success of the service. The logic of launching this service in a country where cell phones are ubiquitous and SMS services widely used seems sound. The service can very well claim its place alongside e-check-in and check-in kiosks, provided that the service is as easy to use as promised. Widening the service to include, for example, Finnair's partner airlines, might be feasible in most of Europe where SMS usage is common.

Three Rules of Thumb

Next, we will propose three rules of thumb that may guide managers wanting to explore why, when, and how to implement e- and/or m-business components in their businesses, or to launch a new business based on e- and/or m-business components. The rules of thumb presented are explained and analytically commented and (we hope) will give managers easy to follow advice on some basic issues on adopting e- and m-business components in businesses.

Rule 1: E- is Not Free

From the point of view of profitability, investing in e- and m-business components is just like any other investment that managers make in their organisations, they must be profitable. In other words, the investments are profitable only if the proceeds from the investments pay for the investments and give an adequate return on the invested capital. Investments in e- and m-business components cannot be said to be categorically riskier than any other types of investments, risk for each investment must be assessed separately.

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Valuation of e- and m-business component investments is to be made using realistic estimates of future cash flows. Some common mistakes causing overly optimistic cash flow estimates from e- and m-business components are caused by erroneous expectations such as:

- It is an error to expect that e- and m-business components are somehow cheaper than other investments. It is a notorious fact that information system investments that are a relatively close match have a bad track record for when it comes to being able to stay in budget. It is enough to observe the problems many companies are facing when implementing (e.g., SAP and other ERP systems).
- It is an error not to calculate costs of changes that have to be made to other existing ways of doing business for enabling e- and m-business components to work. These costs have to be included in the total cost of e- and m-business component investments.
- It is an error to think that the additional potential that is brought by e- and m-business component investments will necessarily be realised. While the case that all potential realised is the optimal case, how many times do things play out in the best possible way? When valuing potential, one has to understand the valuation methods, their possibilities, and especially their limitations.
- It is an error to expect that e- and m-business components bring profits, only because they represent the latest in technology (Sarker & Wells, 2003). This is something that we call the "engineer's approach" and it does not work. Latest technology is exciting, however, it does not guarantee profitability. It is easy to point out a number of cases where superior technology has not been the one adopted by markets, such as Beta vs. VHS video standard and OS/2 vs. Microsoft Windows.

Correct expectations are based on pragmatic thinking and on a realistic view of the world. Sometimes even a slightly pessimistic attitude toward the future may be especially useful for new businesses struggling with limited resources. Many small entrepreneurial businesses cannot wait long for the potential from e- and m-business component investments to be realised, they need the cash fast. Examples of cases where e- and m-component investments can deliver almost immediately and hence the harvesting of the gains from the investment can be started relatively fast are:

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- Situations where e- and m-business components can be used to replace more expensive existing ways of doing business (see the Omena Hotellit case)
- Situations where e- and m-business components can be used to enable a way of doing business that is otherwise prohibitively expensive to the company
- Situations where e- and m-business components add value to the customer in a way that it significantly supports the business value chain (see the BookIT case and the HKL case)

Bottom line: *e- is not free* — it pays to analyse profitability realistically — "show me the money." This line of thinking is often more compatible with the business-oriented approach to e- and m-business component investments than with the technology-oriented approach. Having analysed consumer potential, consumer needs, markets, and business logic already at the beginning of the development cycle lessens the risk of unrealistically high revenue expectations.

Rule 2: Right Time at the Right Place

You may have the best idea in the world, but it does not fly if you are not at the right time in the right place. This oldie-and-goodie is especially true for e- and m-business components and means that if the innovation is not yet in the utilisation phase, or a business concept innovation lacks existing technology, it is likely that the revenues are further away. Managers must ask themselves:

- Is their project *technology-oriented* or *business-oriented*?
- If their project is *technology-oriented*, is there underlying, sound business logic? For example, is there enough potential consumer interest in the product or service to make adoption possible?
- If their project is *business-oriented*, is the needed technology in place? For example, does a sufficient percentage of the targeted consumer segment own the necessary mobile device technology to use the service?

An illustrative example of this is how the highly hyped WAP services were not able to take off, while the phones were not at the right level. In a Finnish survey answered by 485 consumers in 2001, 86% of the respondents had a GSM mobile phone, but only 7.6% had a WAP-enabled phone (Anckar & D´Incau, 2002). At the same time, WAP was being labelled a failure and companies were quickly moving their efforts away from consumer-centred applications. A survey made

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three years later, in January 2004, showed that the adoption of advanced handsets in Finland was still at a low level, below 5% for smart phones (Carlsson, Hyvönen, Repo, & Walden, 2004).

A study conducted in 2001, asking mobile commerce companies what they thought to be the largest barriers to mobile commerce, among other things, reported that the companies thought the availability of mobile devices to be the least of conceivable barriers (Carlsson & Walden, 2002). It seems that companies do not have sufficient knowledge of the environment they are operating in (i.e., the actual market situation regarding the diffusion of the necessary technologies to the consumer). The availability of suitable devices in shops does not necessarily mean they have found their way to the hands of the consumers. It can be argued that since a significant majority of consumers did not own a suitable device in 2001, the possibilities for a large-scale WAP success were slim to none at the time. The marketing of WAP services was essentially marketing of a technology, not marketing of value-adding services, which also meant that the average consumer could not see a reason to upgrade his or her device.

- If the time is right but the place seems not to be, it makes sense to see if the "place" can be constructed at an acceptable cost; For example, NTT Docomo achieved this by heavily subsidizing easy-to-use i-Mode-enabled replacement mobile phones, thus effectively constructing the right environment for i-Mode success (Digital 4Sight, 2001). They succeeded in bringing interactive mobile services to the everyday life of millions of Japanese consumers. This kind of strategic marketing is an example of a successful business-oriented approach to m-business innovation done proactively.
- If the place is right but the time is not, it makes sense to wait and see or to licence out or sell the idea to someone else willing to wait or willing to be proactive. For example, many governments in Europe sold their 3G bandwidths to private companies with the desire to get in place 3G services that they were not ready to invest in themselves.

Bottom-line: *Right time at the right place* means a higher probability of success. Technology without business logic or business logic without technology does not constitute the grounds for successful implementation of e- and m-business components.

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Rule 3: Old Customers Learn New E- and M-Tricks

Sophisticated e- and m-business elements can be adopted by unsophisticated customers, if they are made easy to use and if they offer substantial benefits to the customer. Instead of "nice-to-have" services companies should aim at offering "must-have" services (Järvenpää, Lang, Takeda, & Tuunainen, 2003). Again, hot technology does not sell itself, it has to be marketed to the consumer in the shape of value-adding services that are easy to use. Ease of use, important in e-business conducted online, has been found to be even more essential in a wireless m-business context (Venkatesh, Ramesh, & Massey, 2003).

When customers see a good concept, they become more interested and are likely to adopt the technology. If the product or service that is based on an e- or m-business component is not complete in a way that it delivers the promised functionality or value added, it is defective like any other malfunctioning product. Independent of the approach (technology- or business- oriented), the product must be finished before launch, or there may be irreparable damage done to the possibilities to reach large-scale success. The minimum requirement for the fast adoption of any new innovation that replaces an old one is that it works at least as well as the old one. New e- and m-business component-based services can replace existing old ways if they are so much better that they justify learning. Customers must want to adopt; when there is a will, there is a way.

All the presented cases illustrate a clear added value to the customers: The Omena Hotellit Internet booking system has lowered the room price and thus made the product very interesting due to the direct cost reduction that has been passed on to the consumer. The HKL mobile ticket and Finnair/Book-IT cases illustrate a value added for the customer in the form of added convenience and speed. In the HKL case, the product has already proven to be successful; learning how to send a text message and receiving an m-ticket is more than fully compensated by the fact that one no longer needs to carry spare change to be able to travel by local traffic in Helsinki.

There is established literature on technology acceptance and adoption that supports our third proposed rule of thumb.

Bottom-line: Look at the e- and m-business components with the eyes of the customers. If the product justifies the "cost" of learning, then where there is a will there is a way.

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Summary and Conclusion

This chapter discusses an interesting issue of companies using e- and m-business components in their businesses. Some use them to support and enhance their existing core businesses and some to create new core business areas, in either way they are often perceived as providing a way to keep up with the competition and to retain the competitive advantage of businesses.

A framework is proposed that presents the different orientations of approaches that companies have to e- and m-business. The framework illustrates the fact that different orientations perhaps also affect the factors important for the success and profitability of e- and m-business component investments in companies. This intuitive framework sheds light on an issue that has been in the minds of many and also discussed in the philosophy of invention discussions, however, not often used in the e- and m-business arenas.

Three cases from Finland are presented that show how different companies having the business-oriented approach to e- and m-business investments have utilised technology to support and enhance their core business ideas and, in the case of Omena Hotellit, built a new core competence that relies on the use of an e-business component, namely an e-booking system.

Three rules of thumb are proposed integrating the ideas in this chapter. Profitability and realistic approach in valuing e- and m-business component investments, the orientation to commercialisation of e- and m-business in companies, and the importance of looking at the e- and m-business component with the eyes of the customer.

This chapter offers some shortcuts to managers thinking about e- and m-business component investments for asking the right questions. Businesses are like snowflakes, there are never two exactly the same, however, when things get too hot, businesses, like snowflakes, melt. Hopefully, the proposed rules of thumb help managers to keep their heads cool when thinking about elaborate e- and m-business schemes.

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Endnotes

1 This section largely builds on the paper "Omenahotellit: A Room with a View for the Internet Generation" (Anckar & Patokorpi, 2004), which won a best paper nomination at the *10th Americas Conference on Information Systems (AMCIS),* New York, 2004.

2 Finnish for "apple."

3 Which translates into a market share of approximately 4%.

4 Disintermediation points toward an elimination or reduction of intermediaries altogether due to direct producer-consumer relationships.

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Chapter X

Entrepreneurial Opportunities On the Internet

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Abstract

This chapter highlights and discusses entrepreneurial opportunities on the Internet. It provides a brief introduction to entrepreneurship, examines the characteristics of entrepreneurs, and talks about cyber entrepreneurs. It includes a case study which demonstrates the opportunities and challenges of cyber entrepreneurship. The case study illustrates the ease of setting up a business on the Internet by the younger generation with little capital and resource requirement. It highlights the fact that an intensive marketing campaign, perseverance, and some technical knowledge are important traits of cyber entrepreneurs. The other issues apparent from the case study are an opportunistic mindset, innovation, and the ability to create value where there was none before.

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Introduction

Entrepreneurship has long been considered an important economic activity. The past 20 years has witnessed an explosion of research into entrepreneurs and their actions (Venkataraman, 1997; Hannafey, 2003) with considerable emphasis on the elements that constitute successful entrepreneurship.

There is no doubt that entrepreneurship has tremendous impact on the economy and on society. In 2004, a report by the Global Entrepreneurship Monitor (GEM) stated that a considerably large number of people are engaged in entrepreneurial endeavours around the world. Based on a sample of 34 countries representing a total labour force of 566 million people, GEM research estimates that 73 million adults are entrepreneurial (Acs, Arenius, Hay, & Minniti, 2005). The study also reveals that entrepreneurial activity varies significantly by geographic region, types of business, and entrepreneurial motivation. For example, the proliferation of the World Wide Web, the vast network that links computers around the globe via the Internet and opens up oceans of information to its users, has spawned thousands of entrepreneurial ventures since its beginning in 1993.

It is not surprising that entrepreneurs are as varied as the kinds of businesses they start. For every characteristic or behavior that defines one successful entrepreneur, you can find another completely different, yet successful, entrepreneur who displays different characteristics and behaviors. For example, there are four broad categories: the home-based entrepreneur, the serial entrepreneur, the traditional entrepreneur, and, more recently, the **cyber entrepreneur**. The first three categories are self explanatory, but the birth of the commercial Internet gave rise to the cyber entrepreneur, one who takes pride in the fact that they do not have a "bricks-and-mortar" operation. Cyber entrepreneurs transact all their business with customers, suppliers, strategic partners, and others on the Internet and deal in digital products and services that do not require bricks-and-mortar infrastructure like warehousing and physical distribution (Allen, 2003).

To add to this, Venkataraman (1997) points to a lack of previous research acknowledging the integrated and contextual nature of entrepreneurship. Most researchers define the field solely in terms of who entrepreneurs are and what they do, independent of the situations in which they find themselves (Shane & Venkataraman, 2000).

What is Entrepreneurship?

There are about as many definitions of entrepreneurship as there are people who have written about the subject.

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Entrepreneurship has long been described by researchers and writers with terms such as *new, innovative, flexible, dynamic, creative,* and *risk-taking*. Many authors have said that identifying and pursuing opportunities is an important part of entrepreneurship. Other authors have said that entrepreneurship involves the creation of value, the process of starting or growing a new profit-making business, the process of providing a new product or service, and the intentional creation of value through organization by an individual contributor or a small group of partners. Another definition of entrepreneurship that has been used is "the process of creating something different with value by devoting the necessary time and effort, assuming the accompanying financial, psychological, and social risks, and receiving the resulting rewards of monetary and personal satisfaction" (Coulter, 2003, p. 4).

To go back to basics, the word "entrepreneurship" derives from the French words *entre*, meaning "between," and *prendre,* meaning "to take." The word was originally used to describe people who "take on the risk" between buyers and sellers or who "undertake" a task such as starting a new venture (Barringer & Ireland, 2005, p. 5). At this juncture, it is important to distinguish between inventors and entrepreneurs as they differ from each other. An inventor creates something new. An entrepreneur assembles and then integrates all the resources needed — the money, the people, the business model, the strategy, and the risk-bearing ability — to transform the invention into a viable business.

Therefore "entrepreneurship" is the process by which individuals pursue opportunities without regard to resources they currently control. The essence of entrepreneurial behaviour is identifying opportunities and putting useful ideas into practice. The tasks called for by this behaviour can be accomplished by either an individual or a group and typically requires creativity, drive, and a willingness to take risks (Barringer & Ireland, 2005, p. 5). It does not have to be a new product and/or service, but a new insight and the preparedness to be committed and take risks.

Whereas most people think of entrepreneurship as launching a new business, it is often considered to be an individual's activity. However, ongoing firms also can behave entrepreneurially. Typically, established firms with an entrepreneurial emphasis are proactive, innovative, and risk-taking. That the degree of entrepreneurship can be dependent on the type of industry also is significant. For example, where there is environmental instability, it is more likely to facilitate entrepreneurial activity.

What is an entrepreneur then? An **entrepreneur** is one who creates a new business in the face of risk and uncertainty for the purpose of achieving profit and growth by identifying significant opportunities and assembling the necessary resources to capitalise on them. The three primary reasons that people become entrepreneurs and start their own firms are:

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1. To be their own boss — because either they have had a long-time ambition to own their own firm or they have become frustrated working in traditional jobs.
2. Pursue their own ideas — some people are naturally alert, and when they recognise ideas for new products or services, they have a desire to see those ideas realised.
3. Realise financial rewards — this motivation is typically secondary to the first two and often fails to live up to its hype (Barringer & Ireland, 2005).

Regardless of the motives for being an entrepreneur, it is the act of creating business (i.e., perceiving an opportunity, assessing and risking resources to exploit the opportunity, managing the process of building a venture from an idea, and creating value) that makes it the entrepreneurial act.

Characteristics of Entrepreneurs

Entrepreneurs are not of one mould; no one set of characteristics can predict who will become entrepreneurs and whether or not they will succeed. Indeed, *diversity* seems to be a central characteristic of entrepreneurs. However, even given this wide variety of definitions of entrepreneurship, we can detect some common themes.

Although theory in entrepreneurship is said to be underdeveloped (Shane & Venkataraman, 2000), the literature does reveal a preoccupation with the success or failure of individual entrepreneurs and firms (Venkataraman, 1997). It is more valuable to have a more comprehensive view of successful entrepreneurship which is based on both foundational classics and more recent literature in the field. This results in a view of entrepreneurship that reflects elements of innovation (Schumpteter, 1934), social and economic change (Menger, 1892), risk (Mill, 1848; Knight, 1921), and reward (Hawley, 1901; McClelland, 1961). These elements of successful entrepreneurship are generally recognised in the more recent literature which advocates a focus on the behaviour of creating new ventures (Gartner, 1988).

By combining the diverse perspectives of **elements, an "entrepreneur"** appears to exhibit the following characteristics:

- **Vision** — Entrepreneurs are considered successful, in part, if they visualise a future not seen or thought possible by others in their industry (Hamel &

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Prahalad, 1994). Also, key to entrepreneurs' success is their ability to enact that vision or actually create the future that they envisioned. As without action, it can only be a dream.

- **Innovation** — As entrepreneurs are people who create new markets, new products, and/or new services, it involves changing, revolutionising, transforming, and introducing new approaches or systems. Innovators, therefore, endow resources with a new capacity to create wealth (Drucker, 1985). Importantly, innovation allows entrepreneurs to stay ahead of imitators whether it be by evolution of processes or revolution of ideas (Shane, 2003).
- **Passion for the business** — This passion typically stems from the entrepreneur's belief that the business will positively influence people's lives. This passion explains why people leave secure jobs to start their own firms and why billionaires such as Bill Gates of Microsoft and Michael Dell of Dell Computers continue working after they are financially secure. Passion is particularly important for an entrepreneur because, although rewarding, the process of starting and building a new firm is demanding. Entrepreneurship is not for a person who is only partially committed. A caution, it is important to be enthusiastic about a business idea, but it also is important to understand its potential flaws and risks. An entrepreneur also must remain flexible enough to tweak the idea when it is necessary to do so (Barringer & Ireland, 2005).
- **Product/customer focus** — This underscores an understanding of the two most important elements in any business. An entrepreneur's keen focus on products and customers typically stems from the fact that most successful entrepreneurs are, at heart, craftspeople. This is important to remember, particularly in an era when it is tempting to envision new businesses resulting from every advance in technology (Barringer & Ireland, 2005).
- **Opportunity identification** — Whether opportunities are created or opportunities are identified, entrepreneurs seize opportunities. Entrepreneurs' special talent lies in recognising and exploiting particular opportunities (Shane & Venkataraman, 2000; Shane, 2003). Sarasvathy, Simon, and Lave (1998) show that successful entrepreneurs see opportunities where others tend to see risk. Moreover, "they can spot opportunities that turn the commonplace into the unique and unexpected" (Mitton, 1989, p.12). The concept of opportunity identification thus spills over into elements of vision and innovation.
- **Creating value** — This involves the ability to fashion a solid business idea into a viable business. This means developing a business model, putting

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together a new venture team, raising money, establishing partnerships, managing finances, leading and motivating employees, and so on. It also demands the ability to translate thought, creativity, and imagination into action and measurable results (Barringer & Ireland, 2005).

- **Growth** — Traditional definitions of entrepreneurial success have included tangible growth indicators such as revenue growth, increase in market share, and growth profits. But, it is sometimes at the neglect of considering the intangible outcomes in growing a business and pursuing opportunities as they arise.
- **Social and economic change** — Arguably, a key outcome of entrepreneurial activity is reward for the individual entrepreneurs. Longenecker, McKinney, and Moore (1988, p. 70) find that entrepreneurs are more likely than others to "approve of actions that maximise personal financial rewards" even when such rewards come at other people's expense. Thus, entrepreneurial activity can bring about economic and social change both positive and negative (Baumol, 1990). Positive benefits may include advancements in technology, increased levels of employment and productivity, and enhanced quality of life as well as improved efficiency (Kirchhoff, 1991). In contrast, negative outcomes such as environmental damage, social disruption, and violation of individual rights may occur. While there is an expectation that entrepreneurial activity will advance the economy and society, some innovations can be argued as achieving quite the opposite.
- **Financial risk** — Almost always entrepreneurs' actions involve financial risk, both for individual entrepreneurs and for external investors (Shane, 2003). A return on funds invested in the business is often uncertain — but it is that uncertainty that, in the first place, provides the opportunity for profit (Rumelt, 1987). The success of entrepreneurs is closely tied to the way they perceive and manage risk (Sarasvathy, Simon, & Lave, 1998).
- **Tenacity despite failure** — Because entrepreneurs are typically trying something new, the failure rate associated with their efforts is naturally high. Developing a new business idea may require a certain degree of experimentation before a success is attained. Setbacks and failures inevitably occur during this process. The test for entrepreneurs is their ability to persevere through setbacks and failures. In fact, a certain measure of fear is healthy when pursuing new ideas (Barringer & Ireland, 2005).

Overall, there appears a consensus of opinion that an entrepreneur has to have a vision which is innovative about which they have a passion. This is while they are customer-oriented and have the ability to identify an opportunity as well as

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creating value with the expected outcome of growth as well as fundamental change. Ironically, the notion that entrepreneurs are prepared to take risks is a myth, and, in fact, it is not unusual for entrepreneurs to fail — they just never give up!

Although these studies have identified several characteristics entrepreneurs tend to exhibit, none of them has isolated a set of traits required for success. Added to this conundrum, Schumpeter (1934) proposed *creative destruction* which is defined as the process whereby existing products, processes, ideas, and businesses are replaced with better ones. He believed that through the process of creative destruction, old and outdated approaches and products were replaced with better ones. Therefore, rather than taking a checklist approach, we should recognise the important role that the entrepreneur plays. It is a process — a process being a set of ongoing decisions and actions. Entrepreneurship is not a one-time phenomenon; it occurs over time. It involves a series of decisions and actions from initial start-up to managing the entrepreneurial venture, to even, at some point, exiting it.

Particularly in the technology arena where current and potential entrepreneurs face new challenges and opportunities in a time when the conventional wisdom regarding ways of doing things and what it takes to be successful no longer holds. In this industry, there are major driving forces that need be considered.

First is the role of information which is now readily available to practically anyone from anywhere on the globe at any hour of the day and in almost any format. The almost instant availability of almost any type of information has radically changed the nature of the economy. This, in turn, affects the context of entrepreneurship. Second, technological trends where all organizations, regardless of size, type, or location, use some form of technology to do their work. Although some industries are by necessity more technology-intensive than others, all organisations use some type of technology. And there is no doubt that trends in technology are changing the way we work and the type of work we do. Four key technological trends that are affecting the context of entrepreneurship are the increasing rate of technological change and diffusion, the increasing commercialisation of innovations, increasing knowledge intensity, and increasing recognition that advanced information technologies are the cornerstone of successful businesses. Third, globalisation is where the linkage of economies and cultures that fosters a business and competitive situation in which organisations have no national boundaries. And, finally, changing demographics identifies a series of vital statistics of population: The world's population is growing geometrically and at a very fast rate; the world's population is getting older and younger at the same time; the world's population continues on the move; most of the world's economically active people live in cities and urban areas; and the division of the world's population into three broad bands (poor, middle, and upper classes) (Coulter, 2003, pp. 42-49).

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All these considerations are evident in the next case study where entrepreneurial opportunities on the Internet are illustrated.

Case Study: rentfast.com.au

It all started in May 2001. Two international students, Michael and Lisa, were looking for accommodation in Melbourne, Australia. They were both enrolled in IT undergraduate degree programs at two different universities. House hunting was a difficult and demanding task for both these students as they had to attend lectures and at the same time visit real estate agencies during business hours to find accommodations. Due to a heavy workload at a university, comprising lecture attendance, completing assignments and projects, and keeping up with readings, they wished they could browse a Web site which consisted of information on shared accommodations for students. The idea of an online accommodation service for international students was thus conceived.

Although Michael had some interest in setting up and owning a small business, without capital and a business plan it was only a desire. As the problem of finding suitable accommodations intensified for them, Michael and Lisa initiated discussions with other international students in their respective universities to ascertain the demand for an online accommodation service. They met with personnel in the international arm of one of the universities to understand the international student recruitment and enrollment process. They needed to know if the university would be prepared to offer an additional service, such as accommodations, to international students as they accepted them to pursue studies at these universities. At this same time, RMIT University was encouraging students to participate in business plan competitions. These competitions support students to come up with an idea and convert it into a business plan. Prizes for this competition ranged from $1,000 to $30,000. The format of the competition was adopted from Michigan Institute of Technology in the United States. The group of students working together could be from different disciplines and universities. Each group was given a mentor who was an academic with relevant interest, experience, and knowledge.

Michael and Lisa were students at RMIT University and the University of Melbourne, studying for bachelor programs in the information technology discipline. They came up with an idea which was a real-life problem for international students in Australia. They both formed a group and participated in the business plan competition at RMIT University.

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Development Process

The competition was a motivating factor for Michael and Lisa to start work on a business plan for a small start-up business on the Internet. They brainstormed issues regarding accommodations from other international students in Melbourne, identified suitable real estate agents, and investigated the legal requirements of signing a lease and securing a property. They were enrolled in IT degrees which gave them sufficient knowledge of setting up a business on the Internet.

- **Business and Revenue Model.** An important consideration for any business is to have a revenue model to foresee income streams and profits. These entrepreneurs were to establish a business on the Internet, generally referred to as a **cyber business** to provide a broker service to the students and to the real estate agents. The agents would provide a list of properties to be included in the database, and the student would pay for the service. Three methods of payment considered suitable for this venture were electronic funds transfer, payment on arrival in Australia, and payment by credit card. The pros and cons of each method were considered carefully. An electronic fund transfer required 72 hours with high bank charges. Unless a payment was made upfront, there was no way of knowing if a customer was genuine. At the same time, the real estate agents required a payment within 24 hours to hold a property for a customer. Thus, payment on arrival in Australia was ruled out, leaving the credit card payment method to be the only apt scheme. This was considered the best, as it enabled instant payment and identified genuine customers, with lower charges than electronic funds transfer.

The business model was a start-up cyber business offering broker service and was developed with the guidance of a mentor who had extensive knowledge of entrepreneurship, substantial experience in particular industries, or was an MBA or other business discipline postgraduate of the University. A networking night was organised to establish teams. Once the team was confirmed, the entrepreneurs carried out a survey with the clients to identify issues pertinent to finding accommodations in Australia. These included:

- the type of accommodation international students preferred,
- whether customers were prepared to pay for a service that would allow them to secure accommodation before their arrival in Australia,

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- if customers would be prepared to sign a lease without physically seeing the property,
- the number of students coming to Melbourne to study each year,
- a breakdown of the numbers from each country,
- status of residential colleges to determine how many students would be renting privately, and
- who the competitors were in this business.

These surveys were accomplished via a questionnaire handed out to new international students at the University of Melbourne and at RMIT University during the orientation programs. Other international students were contacted via their associations. Some data on the number of international students arriving in Australia each year also were obtained from the Australian Bureau of Statistics. An analysis of the data gathered revealed that about 50% of the students wanted to secure accommodations before they arrived in Australia. Survey findings indicated a clear need for such a service for international students. This gave Michael and Lisa the confidence to embark on the business plan for a start-up business on the Internet. They decided to call it rentfast.com.au.

Customers and Suppliers

This business was dealing with customers who were global and purchasing a product without physically inspecting it. To be successful, it was absolutely essential to develop trust with these customers. To do this the following issues were considered:

- They were mostly first time international students who had never been to Australia before.
- Most of them being from South East Asia would have never rented a property before this as they live with parents and in joint families.
- It was important to win both customer and supplier trust and to educate them about both the rental market and the Australian Tenancy Act to ensure that they understood the legal and contractual issues they would be entering into.
- All partner relationship management issues had to be considered in detail. The real estate agents needed some form of security that the tenants would honour their commitment and not change their mind when they arrived in

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Australia. This would save them loss of time, effort, and money if a customer changed his or her mind. It also would have a negative impact on their relationship with their landlord.

- Scepticism of the online world required a greater effort from the entrepreneurs as the suppliers (real estate agents) needed a lot of convincing to accept that international students would be good tenants.
- The selling point with the suppliers was an emphasis on the advantages such as less administration costs, less students to deal with face to face, less paperwork, and a zero vacancy rate due to customers starting to pay rent as soon as the property becomes available.
- To secure a property, a security bond and one month rent in advance had to be paid by the tenant.

For any **online business**, developing and maintaining a relationship with its customers is important. Therefore, for Michael and Lisa, it was important to ensure that their customers knew exactly what was involved and also what product they were paying for. To provide tenants with as much information as possible about the rental property, it was important to help them while they were still overseas to view the apartment layout and facilities. This could be accomplished via virtual tours with an immersive 360 degree image of the property online. The tenants could view each room of the property, zoom in, zoom out, and pan around each room. To help the customers determine the dimensions of the room, a floor plan of each property was incorporated using some programming code. This made the virtual tour interactive with a compass panning around on the floor plan showing what the tenant was viewing. A map showing where each property was situated relative to different universities in Melbourne also was included.

To help international tenants understand the rental market in Australia, literature on tenant responsibilities, average rent of different type of properties in different areas, explanations of rental processes, and maps of different regions were presented as links on the Web site. The business plan was completed with all the relevant details of the business. The rental business processes were addressed in detail from the student browsing the Web to them physically coming to Melbourne and picking up the keys to their property.

As part of a competition, the business plan had to be presented to a panel of judges. A prototype had to be constructed to show how things would work and to identify flaws if any. Developing a prototype at this stage also had the following advantages:

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- The information flow and processes became much clearer. It also helped determine new and better ways of doing things.
- It provided a good idea of how big the whole system would be and the length of time it would take to fully develop it.
- The usability issues were incorporated right at the onset. As mentioned, the only communication channel between *rentfast.com* and its customers was the Web site. Therefore, it had to be easy to use and understand, as well as culturally sensitive since the customers were international students whose first language was not English.
- Another consideration was that the real customers could be students' parents and not just students. In most cases, the parents have a big influence on the students' decision of where they would stay, as the parents are most often the source of financial support. Therefore, explanations of issues in greater detail were included.
- It helped determine the sections of site information that needed to be secure.
- It provided a clearer picture of what it was aiming for to other people.
- It was easy to explain the service this business was going to offer to business partners.

At the prototype stage, the payment method was not included because although the confidence of the real estate agents was gained through a number of face-to-face meetings, gaining the support of the banks proved to be more difficult. This was due to the banks requiring an actual physical location for the business which could not be provided by the fully online business.

- **Team Orientation.** The mentor allocated to this project was an experienced and well-qualified academic who provided support all throughout the development stage. He asked questions that helped address numerous technical and business issues. He provided motivation that all first-time entrepreneurs would have appreciated. At a later stage, a programmer joined the team to help develop the business system.
- **Business Plan Presentation.** Michael and Lisa presented to the panel of judges their plan for a start-up cyber business. The presentation initiated much interest among the members of the audience, some of whom offered to provide support in promoting the business. The panel of judges was very impressed by the business plan format. It included diagrams and was easy to read and understand. The business plan won a $5,000 second prize in the

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competition. This money, together with $12,000 contributed by Lisa and Michael, covered the costs of developing the system and hosting the site. The RMIT Business Plan Competition also gave this project much publicity across the University. Another set of users for the business was found when the study abroad unit from the University approached Michael and Lisa to use this service for exchange students.

- **System Development.** The next step was to develop the whole system. Lisa designed the Web site which was the front-end of the cyber business. The back-end proved to be more work intensive because credit card information is very sensitive and a secure link was needed. This required advance level codes for which a programmer was hired. The database used was php/MySql, which is open source and requires no license fees, it is robust and scalable. Other reasons for using this database are that it is freely available, could handle a large database, has been tried and tested as a database server, and could be easily linked to the HTML files on a Unix server via php scripts.

Once the information flow and processes were determined, a good idea of what rentfast would look like became apparent and the development of the Web-based business commenced. The system development started off with system analysis and business requirements analysis sessions. This was done by Michael, the programmer, and Lisa. The Web site was mapped out on paper, and the functionality was defined in detail. All constraints were discussed, and a first version of the Web site was created on paper. Lisa overviewed all developments, and Michael took charge of the financial side. Financial issues were heavily dependent on the uptake of this cyber business by relevant customers. While the number of hits on a site can be encouraging, however, in an online business, completed transactions are more useful. There was no way of predicting the success of this business, although one advantage of an online business is that it is not capital intensive. A cyber business does not require physical premises with the associated lease, rates, bills, insurance on assets, and has less employees. The only assets required were a fax machine, a camera, a tripod, different lenses, a few laptop computers, relevant software (virtual tours and floor plans), and the Web site itself.

The system development process was expected to take about three months. A programmer was hired for this period of time. To develop the system, the mentor suggested the use of Xtreme programming (XP) methodology. This programming technique is based on values of simplicity, communication, feedback, and courage. It brings the whole team together with enough feedback to enable the team to see where they are (Lindstrom & Jeffries, 2004). It helps to find bugs in the programs more quickly.

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The business' system development started in late November 2001. The Web site should have been ready by February 2002. However, the project did not go as well as anticipated. There were two parts to the Web site, the public site and the administrative site. The public site would be the part of the Web site the customers would access and use, and the administrative part was for the rentfast staff to monitor customers, upload properties, and to run reports on both properties and users of the site. The administration part was important from the entrepreneurs' points of view to further develop and build the system.

- **The Web Site.** To capture important customer information, e-mail addresses were needed from prospective clients. To do this, the Web site was designed to ask the customers to register before they could access the database of properties. They could view the brochure part of the Web site but not the properties. The registration established where the customers were from, their e-mail address, type of property they were looking for, how many bedrooms they preferred, what university they would be attending, and approximately when they would arrive in Australia. This information allowed the *rentfast.com* team to decide on the type of properties they should load onto their databases. For example, there was no need to put three bedroom properties on the database, when most of the customers were looking for one bedroom apartments.

The Web site also included functionalities that helped students through the application process. Some of these were:

- It allowed them to view the property by taking a virtual tour supported by interactive floor plans.
- It allowed them to shortlist a list of the properties they were interested in.
- It allowed them to save this shortlist, come back to the Web site another day, and select more or drop some properties.
- It allowed them to submit a list of properties they were interested in.
- It allowed them to check the status of their application, whether it was pending, in progress, accepted, or rejected.
- It allowed them to fill in a property profile to enable rentfast to respond by sending them information on properties matching their profile.

After a few months of intensive work, the Web site seemed to be quite far from finished. The functionalities were more complicated than anticipated. The

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reason for this was that more constraints needed to be added than what was initially considered. To ensure that no junk data was included in the database, much data cleaning had to take place.

At this same time, a number of companies were contacted to host the Web site. Problems encountered here were that either these companies could not support the php-based MySQL or were very expensive. Initially, a U.S.-based company that could support MySQL was selected, but because of an inability to provide a 24-hour and 7-day per week hosting service, a refund was obtained from this company in order to select another host. In the meantime, the programmer hired to develop the system had expanded his business and agreed to host *rentfast.com.au*.

As the system developed, the entrepreneurs had to incorporate the payment system to support credit card payment. They approached a number of banks in Australia, who scrutinised the business plan and then rejected the application due to the following reasons:

- According to banks, a cyber business was a high-risk business, as transactions were to be made without the physical presence of a card.
- This was a fully online company with no actual physical premises.
- One transaction could be as high as $2,000 on the card and so charge backs would end up costing a lot of money to the banks.
- The financial statements did not show sustainable cash flow.
- This was a start-up business and had no track record.
- Being an online company there were no assets, so it was not credible enough for a merchant facility.
- This was only a service and did not sell an actual product.

The only way for this business to go ahead was to incorporate the telegraphic transfer payment system. The Web site was launched at the end of May 2002. Students could view a database of properties and apply online for any property in which they were interested. The business was now up and running. At this stage, the mentor helped Lisa and Michael by suggesting the implementation of a flat fee charged to the real estate agents instead of students. This would have meant ongoing income for Lisa and Michael.

- **Marketing.** At this point, brochures were designed with the intention of distributing them to international students from all universities within Australia and to selected International Development Program (IDP)

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offices in Asia. IDP is an education agent overseas supporting Australian universities' student recruitment. IDP has offices all around the world for prospective students who wish to apply to study in any Australian university. Lisa considered this an ideal way of promoting the business. Although a lot of detail was provided to IDP, the offer was not taken up due to scepticism of an unproven business. It was difficult for them to accept anything other than face–to-face negotiation and information sessions. With considerable convincing, RMIT University agreed to assist and sent the company brochure with their normal acceptance/enrollment forms.

Each setback enabled Michael and Lisa to think of newer and better strategies for making the business a success. Further brainstorming with international students at RMIT University and the University of Melbourne was organised. This highlighted the fact that many students from South East Asia need to do the IELTS English test to be admitted to an Australian university. To help these students, there are many English language schools in Asia. The schools were contacted to see if they would distribute the rentfast brochures to students. They agreed to help. This was only one avenue, not enough, however, for the business to be a success. At this same time, Lisa discovered that the business could be advertised in a magazine that IDP distributes to all its offices around the world. Although this advertisement was expensive, the entrepreneurs had little choice.

International students also get their information from friends and relatives. Almost one in five currently enrolled international students knows someone in his or her country who is planning to travel to Australia to study. This secondary or word-of-mouth marketing was another way of promoting the business. Lisa and Michael contacted the RMIT Association of International students and the Melbourne University Overseas Student Service to pass their message along. These two organizations mail their magazine to all their currently enrolled international students. Brochures for rentfast were mailed together with the magazine at a reasonable rate.

The business at this stage started getting "hits" and was flooded with e-mails by the middle of June 2002. It highlighted the demand for specific types of properties. For example, one bedroom apartments were preferred over larger accommodations. The entrepreneurs tried to build a relationship with the prospective customers by responding to their e-mails with relevant, polite, and friendly e-mails. Additional help also was offered.

- **Eventual Outcome.** The business achieved 150,000 hits during the period of May to September 2002, but only five customers paid online and fully utilised the service. From the system development point of view, this was a success as it did what it was supposed to do (i.e., offer an online service

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for international students to investigate accommodations in Australia). From the business point of view, it was not successful as the proportion of completed transactions was minimal. Michael and Lisa measured their success, not in financial terms, but as that of a learning experience. They have since moved on to other ventures.

Interesting cyber entrepreneur issues identified were:

- It was comparatively easy to get the customers interested, but extremely difficult to close the sale with a completed transaction.
- The customers were to pay the bond, first month's rent, and a broker service charge before arriving in Australia, which was difficult for them to accept. The reason being suspicion and a lack of trust in an online business. For many, this way of doing business was very new and intimidating.
- In spite of the virtual tours and interactive floor plans, many customers preferred physical inspection of properties.
- Many customers were new to rental issues of contracts, bonds, and payment upfront, and so were reluctant to use the service. This would be compounded when customers were from international countries where legal requirements differed.
- Of interest, this service was more popular with exchange students from European countries at universities in Australia as compared to students from Asia.

Although Lisa and Michael have moved on to other IT positions in large organisations, the rentfast.com concept has evolved into other global businesses such as RentFast Apartment Locating Service (*www.rentfastcharlotte.com*) and RentFAST: *Charles Reinhart.com.*

Discussion

This case study is an example of an Internet start-up company developed by two cyber entrepreneurs. The Internet is a new platform for setting up business, providing entrepreneurial opportunities to those who may not be capital rich. It enables people to turn business ideas into reality. It also is apparent from the case study that like any other business, just an idea is not enough, a business plan and a revenue model are essential for developing the enterprise. Cyber entrepre-

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neurs in the example had to make an enormous effort in marketing and promotion of the business for customer acceptance. This is probably due to online businesses being unproven, and a change in the business culture. So how do these cyber entrepreneurs fit the "characteristics" identified by researchers?

Lisa and Michael had a *vision* — a sense that there was an opportunity to accommodate international students and that technology is a significant enabler of this vision. But to have a vision and not act upon it is merely a dream. Hence, they were *innovative* in designing a new service, it was technology-based; it was one of the first, allowing these entrepreneurs to stay ahead of other competitive innovators. It is evident throughout the discourse that these two cyber entrepreneurs had the *passion for the business.* During the development of this project, they were fully committed despite considerable difficulties, and they remained flexible when it came time to negotiate with crucial stakeholders when required. Their enthusiasm was contagious in that they were able to convince sceptical parties to support the venture despite it being new and unproven.

But motivation for such a venture needs practical strategies for it to become reality — in this instance, they *knew and understood their customer base*. It was based on personal experience as they knew that there was a large cohort of potential clients and that such a Web site service was conspicuous by its absence. They used the competition as a catalyst for the initial idea, and the real *opportunity* was utilising the Internet. The process of gaining acceptance and support for the venture confirmed that it was viable as a business, as they were able to translate their vision by being creative in developing the system on the Internet as confirmed by the successful hit rate. Thus, the *value creation* led to personal *growth,* particularly with respect to the intangible aspects of increased self-confidence and improved business acumen.

The consequence of their venture is that the Internet has once again come to the fore as a platform for entrepreneurs. For example, it will now *change* the habits and expectations of international students when searching for accommodation. This case is but one example of the countless opportunities in which those with vision and commitment can capitalise on the Internet as a vehicle for converting dreams into reality.

This of course is not in isolation. To take risks without considering the consequences is being foolhardy. Entrepreneurs are not gamblers per se, but take "*calculated*" r*isks* in that they balanced the possibility of success with risk that is within their capacity to manage. In most instances, entrepreneurs are linked to short-term outcomes, whereas, in the case of technology-based application, they are more long-term oriented. This leads to an important characteristic in that entrepreneurs are *not afraid to fail*. In fact, such a term is not in their vocabulary as it is considered part of the learning cycle.

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As stated earlier, the distinctive characteristic of cyber entrepreneurship is that it pertains to technology-based business. In this instance, as well as appealing to those who are technologically savvy, team effort and partner relationship management issues were identified as being critical for completing the project. Their positive attitudes and ability to think of new strategies to deal with setbacks are seen to be entrepreneurial characteristics essential for success. Motivation from the competition gave these entrepreneurs that extra encouragement, although it is their persistent and persevering nature that saw the completion and implementation of the project. They identified customer issues addressing global and cultural applications as well as developing trust with all participants as being important for online start-up businesses.

In summary, cyber entrepreneurs are faced with many challenges. These include issues of setting up a business based on technology, winning the confidence of the stakeholders to accept and support an online business, acquiring financial assistance, developing secure transactions, and turning it into a successful venture by getting customers to accept.

Conclusion

There are many implications for cyber entrepreneurs arising out of the driving forces in the technology-based industry. These include continual turbulence and change, reduced need for physical assets, vanishing distance, and compressed time. Change is a fact of life in today's business context. In addition, success in today's economy does not rely simply on physical assets. Value can be found in tangible factors such as information, people, ideas, and knowledge. Also, the influence of physical distance on organizational decisions has disappeared. A cyber entrepreneur's potential market can be found anywhere, but so can competitors. As the limitations of physical space have disappeared, so have the limitations of time. The instant interactivity between customers and businesses, between employees, and between companies and suppliers has created a context in which marketplace advantage can be temporary if an organisation does not stay on top of the changes (Coulter, 2003, pp. 49-52).

From the issues discussed, it can be concluded that an entrepreneur is someone who creates a new opportunity in the marketplace and assembles the resources necessary to successfully exploit that opportunity. Entrepreneurs have the ability to see opportunity where others do not because they have a well-developed opportunistic mindset. The businesses they create are generally growth-oriented and innovative; they create value where there was none before; they disrupt the economic equilibrium, and they change the way we do this.

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Describing what entrepreneurs do in any particular industry is not an easy task. No two entrepreneurs' specific work activities are exactly alike. In a general sense, entrepreneurs are creating something new, something different. They are searching for change, responding to it, and exploiting it. The Internet is a virtuous opportunity for cyber entrepreneurs.

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Chapter XI

Online Information Privacy and Its Implications for E-Entrepreneurship and E-Business Ethics

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Abstract

This chapter reports the results of a national survey which investigated Australian Internet users' attitudes and behaviours toward online information privacy using a typology that combines specific demographic and attitudinal measurements with behavioural data. The chapter contains a comprehensive examination of the internal, external/environmental, and behavioural dimensions of information privacy, incorporating a profile of each of the typologies' categories along with a general profile of total respondents. The implications of the findings for e-entrepreneurship and e-business ethics also are discussed.

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Introduction

In the e-business world, owning consumer data is essential to the development of customer relationships. **Consumer knowledge** can lead to value-added product offerings and marketing communications if businesses know what their customers already like and might need, reducing costs (Dembeck, 1999) and improving sales. Ultimately, collecting **consumer data** can help organisations enhance the level and quality of service or product they provide, enabling them to make gains in terms of competitiveness and efficiency. However, there also is a potentially negative cost because this practice can raise information privacy concerns and may have legal, ethical, and strategic implications.

Information privacy has been defined as:

the claim of individuals…to determine for themselves when, how, and to what extent information about them is communicated to others. (Westin, 1967, p. 7)

Arguably, the Internet has had the biggest impact upon information privacy than any other technology. "As a place to eavesdrop, cyberspace is without peer in all of human history" (Wright, 1993). For instance, the Internet can facilitate the explicit or covert collection of consumer data using a variety of methods. Being a fully digital medium, a consumer's lifestyle and profile can therefore be reduced to "bits and bytes" (Attaran, 2000), revealing a "digital persona" (Gindin, 1997) and presenting a variety of violations of social norms, one of which is invasion of information privacy. However, in its defence, the Internet also is an enabler of other privacy functions, such as physical privacy, through the states of solitude, and to some extent anonymity. Nevertheless, consumer online privacy concerns relating to the information practices of commercial entities are at an all-time high in public consciousness. Many consumers feel that their lives and personal preferences are being used and exchanged without their knowledge or consent, which has compromised the growth of e-commerce and inhibited consumer trust toward online business.

Information privacy is therefore now a core consideration of business policy, not only in order that organisations meet consumer ethical obligations or the legal requirements of Australian data protection legislation, but also because there are sound commercial reasons which indicate that fair information practices can be beneficial to business. In fact, it is commonly acknowledged that **consumer privacy** concerns have resulted in direct and indirect negative impacts on the commerciality of the Internet. For instance, Jupiter Communications indicated in

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1999 that consumer concerns about privacy would effect a loss of $18 billion in e-commerce revenue by 2002 (cited in Scholtz, 2001).

Clarke (1999) suggests that there are three implications of how consumer privacy concerns can affect the sale of goods and services in the Internet environment:

- the opportunity cost of lost sales
- a shift in demand back to off-line business channels
- the intangible cost of privacy to consumers

In addition, those companies who do not comply with consumer privacy demands could encounter negative publicity and a decrease in share price (The Economist Intelligence Unit, 2001).

Clearly, if consumers believe that their privacy concerns are being addressed, then this could be beneficial to e-commerce. Therefore, Attaran (2000) asserts that businesses could view privacy as a threat and act defensively, or treat it as an opportunity and be proactive in maximising the gains. Many companies choose the latter, however reactionary "firefighting" may not have the desired effect of reducing privacy concerns. For instance, Meridien Research (2002) suggests that a lack of understanding of privacy issues in the finance sector has led to misdirected spending toward technical solutions such as encryption, arguing that they do little to mitigate the risks to consumers and merely serve to increase the costs associated with good privacy practice.

In contrast, Culnan and Bies (1999) argue that proactive privacy strategies can serve as a market segmentation variable. On a practical level, fair information practices also make good business sense; Citigroup reported how they had saved money by only sending direct marketing material to people who indicated that they wanted it (The Economist Intelligence Unit, 2001); Culnan and Armstrong (1999) found that organisations gain business advantage through customer retention when they use procedures to protect individual privacy, while a further argument supporting consumer information privacy is that by letting people opt-in on mailing lists you will create a more valuable list, thereby reducing transaction costs (Scholtz, 2001). Privacy protections can in fact be designed to ensure more accurate files and bring about more efficient data management, representing savings for a business. It is, Smith (1993) argues, when systems have to be retrofitted to accommodate privacy demands that the costs accumulate.

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Consumer Privacy as a Factor of Consumer Trust

Upholding consumer information privacy may not only be good for business in terms of increasing information efficiency and reducing privacy concern, it also may help to engender consumer trust online. Trust has been declared the "*sine qua non* of the digital economy" (Papadopoulou, Andreou, Kanellis, & Matrakos, 2001). Indeed, Rao and Singhapakdi (1997) assert that customer trust is an organisation's most precious asset. The absence of **confidence-engendering measures** such as physical proximity, handshakes, body language, and so forth may not be exclusive to Internet relationships, however, the online environment also suffers from a lack of common legal jurisdiction, along with the high perception of risk normally associated with recent technology (Clarke, 2001).

For Internet commerce to continue to develop and grow, there must be a relationship of mutual trust between buyers and sellers (Fukuyama, 1999), however, privacy concerns will inevitably harm this process, potentially turning long-term relationship-based business deals into short-term transactional ones. In fact, Harrison-McKnight and Chervany's comprehensive model of **customer trust** in an e-commerce relationship indicates that Web site information practices (including the use of privacy policies and seals) is a major influence on trust-related Internet behaviours such as purchasing (2001). Enhanced customer trust also increases the likelihood that a relationship will be continued. The question for many companies should therefore not be how much good information practices will cost, but what the price of *not* having them would be.

Consumer Privacy as an Ethical Choice

Under ethical theory, e-businesses have an obligation to treat consumer information fairly. Indeed, many consumers, employees, and shareholders do not view the practice of making commercial gain from the sacrifice of ethical principles as appropriate. As a result, corporate liability is no longer limited to products and services, but extends to their processes and their associated consequences for individuals and society (Posch, 1993). Many financial analysts even view ethical performance as a measure of corporate performance.

One way that organisations can govern their ethical behaviour is to view their interactions with society as part of an implicit social contract. This implies that organisations have an obligation to be socially responsible and comply with social norms, such as respect for information privacy (Milne & Gordon, 1993). In such a situation, consumers consent for their information to be collected, as long as their information privacy rights are respected.

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Increasingly, consumers are applying social criteria to purchasing decisions (Reder, 1995), and therefore expect ethical corporate behaviour (Creyer, 1997). Murphy and Laczniak (1981) and Singhapakdi, Rawwas, Matra, and Ahmed (2001) both found that consumers initially make an ethical judgement about an organisation that is likely to influence their purchasing behaviour. In addition, Creyer (1997) found that customers "rewarded" ethical corporate behaviour through a willingness to pay a higher price, and while consumers were still likely to buy from an unethical firm, they would want do so at lower prices, in effect "punishing" the unethical acts.

Unethical information practice also may break the consumer "value chain," where consumers return to Web sites, receive offers, and provide feedback for ongoing improvement (Culnan, 1999). Further, Culnan (1999) found that when fair procedures are in place to protect individual privacy, customers showed a greater willingness to disclose information to businesses.

In effect, consumer privacy can be viewed as an ethical choice (by both consumers and companies), as a factor of consumer trust, which is imperative in the online environment, and as good business practice in terms of efficiency of information systems.

Formulating a Privacy Typology

Information privacy concerns may manifest in specific consumer attitudes and behaviours. If individuals can be categorised according to their privacy orientations, it may be possible for businesses to sufficiently meet their privacy demands and manage the contextual and individualistic nature of online information privacy. Therefore, this chapter reports and discusses the results of an empirical study which aimed to identify and model Australian Internet users' online information privacy orientations by combining specific demographic and attitudinal measurements with behavioural data.

The foundation for this research lies in Westin's tripartite typology, developed in conjunction with a regular American consumer opinion poll by Harris & Associates, based upon their attitudes toward privacy[(1)]. The most recent poll conducted in 2003 found that at one end of the spectrum are "privacy fundamentalists" (26% of consumers). The fundamentalists are most protective of their privacy, and therefore are unlikely to engage in behaviour that might compromise it. At the other end of the spectrum are the minority "privacy unconcerned" (10%) who least value their privacy, frequently trading it off in favour of other interests or values. Between these extremes lies an intermediate group Westin refers to as "privacy pragmatists," who though concerned about their privacy, try

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to reach an equilibrium between the potential benefits and threats associated with yielding their privacy (Taylor, 2003).

In summary, **Westin's model** is succinct and is certainly well acknowledged in the literature, however, it fails to capture the subtle distinctions between and within each category. Indeed, one could argue that in an environment such as the Internet, where privacy appears to be even more context-dependent than traditional off-line environments (Sheehan, 2002), it may be impossible to accurately depict the nuances of online privacy in a tripartite model. Further, the original model is based on responses to three closed-ended attitudinal questions which do not encompass the many underlying dimensions of information privacy. Westin's typology is also based on a study of American consumers, therefore, cultural differences (including privacy legislative frameworks) may mean that it is not applicable to Internet users of other countries.

Finally, it also is important to note that privacy, like other values, predicts but does not confirm behaviour. Privacy is the desirable, however, our actions are relative to both the individual and the context (Hofstede, 2001) because even the most private individuals may find themselves trading off privacy in favour of other competing interests. Any substantial instrument should therefore include both attitudinal and behavioural measurements.

The Privacy-Sophistication Index (PSI)

This study extends Westin's typology by utilising an instrument that measures the underlying dimensions of online information privacy by combining demographic and attitudinal information with the behavioural characteristics of Internet users. We refer to the resultant typology as the privacy-sophistication index (PSI). "Privacy" refers to individuals' attitudes and behaviour toward online information privacy, while "sophistication" refers to the level of the individual's Internet experience. Thus, Internet users are defined as "experienced" or "inexperienced" according to factors such as length of Internet use and number of activities performed online (e.g., banking, shopping). As such, the typology is developed:

1. inexperienced privacy unconcerned (IPU)
2. experienced privacy unconcerned (EPU)
3. inexperienced privacy pragmatist (IPP)
4. experienced privacy pragmatist (EPP)

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5. inexperienced privacy concerned (IPC)
6. experienced privacy concerned (EPC)

In order to develop a validated measurement instrument and privacy typology, it was necessary for the dimensionality of the construct information privacy to be considered. The internal, external/environmental, and behavioural privacy factors were identified after a comprehensive review of the literature, pilot tests, and discussion with expert judges.

Internal Factors

1. **Trust**

   Privacy and trust share an interdependent relationship; trust is both necessary for and dependent on privacy (Fried, 1996, p. 212). When people disclose personal information to a Web site, they trust that the information will remain confidential and our privacy will be maintained.

   There are three constructs of trust:

   i) disposition to trust, including personality and cultural factors;
   ii) institution-based trust, or the perceived propriety of the conditions within which trust is required, including laws, regulations, and so forth; and
   iii) initial trusting beliefs, including reputation, initial contact, and so forth. (Papadopoulou et al., 2001; Harrison-McKnight & Chervany, 2001)

   Each of these constructs appears to have an effect on the way people value privacy. For instance, Lyon (1996, p. 15) posits that in a highly-regulated environment, concern for privacy is less apparent. This is measured in the PSI by the extent to which third-party verification devices for privacy practices (such as TRUSTe) influences data disclosure. Further, reputation, or an individual's perception of the organisation, also may lower or raise our privacy thresholds. In fact, initial trusting beliefs even extend to the industry in which the organisation resides, as some sectors are perceived to be more trustworthy than others (Long, Hogg, Hartley, & Angold, 1999). This factor is measured in the PSI by the extent to which a Web site's reputation influences data disclosure.

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2. **Perceived value of benefits received in exchange for loss of privacy**

   Individuals often trade-off privacy in return for implied or expected benefits in return. These may include tangible rewards such as competition entry or a free gift for completion of a market research survey, or less tangible benefits such as the convenience of a Web site "remembering" your registration details, thus streamlining the purchasing process. These benefits may therefore affect an individual's willingness to relinquish privacy (Phelps, Nowak, & Ferrell, 2000; Sheehan & Grubbs Hoy, 2000; Long et al., 1999). This factor is measured in the PSI by the extent to which the value received in exchange for the information will affect an individual's willingness to disclose personal information.

3. **Familiarity/previous history with the organisation involved**

   People's previous experience with an organisation fundamentally shapes their future interactions. Sheehan and Grubbs Hoy (2000) and Lyon and Zuriek (1996, p. 15) assert that the more familiar individuals are with an organisation, the less they are likely to believe that their privacy will be compromised. Of course, this relies on the individual experiencing only favourable encounters; a negative experience with an organisation may actually raise our privacy levels even if it does not end the relationship. To this end, the PSI measures the extent to which individuals depend on their familiarity with a Web site before disclosing personal information to them.

4. **Perceived risk**

   When individuals enter into a transaction with an organisation, they — consciously or not — will make an assessment with regard to the extent of the potential harm to themselves. There are many factors that contribute to perceived risk in the context of privacy. If the individual has been subject to a privacy invasion previously, or the perceived propriety of the conditions is low, concern for privacy is likely to be high. Perceived risk may change over time; this may be due to the direct effects of the relationship with the organisation (e.g., positive or negative encounters) or indirect factors such as a heightened awareness of threats to privacy due to media reports (Smith, Milberg, & Burke, 1996). The PSI assesses the relationship between perceived risk and privacy by measuring the extent to which the sensitivity of the data required and the reputation/trustworthiness of the Web site influences data disclosure.

5. **Individual personality factors**

   Smith, Milberg, and Burke (1996) found that a number of personality factors influenced concern for information privacy. Distrust was found to positively correlate with concern, as did paranoia and the extent to which an individual engages in social criticism.

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External/Environmental Factors

6. **Information management practices**

One of the most significant influences on our privacy thresholds is the way in which our information is managed (Long et al., 1999). Information management practices include:

i) control over information;
ii) transparency of information collection;
iii) intended primary and secondary uses of the data;
iv) whether the data will be shared with other entities;
v) type, amount, and age of the information requested; and
vi) level of anonymity offered.

Behavioural Factors

7. **Privacy-seeking behaviour**

Individuals may adopt a number of strategies to protect their privacy online. These include "hard" technological approaches such as encryption or using anonymising software, or their "soft" counterparts, such as the use of a separate e-mail account for "junk mail" or setting Internet browsers to detect and reject cookies. Non-technological alternatives include inaccurate or incomplete data disclosure, or other avoidance strategies. This behaviour is a product of our values rather than an influence on privacy, therefore, individuals who exhibit privacy-seeking behaviour are likely to value privacy more highly (Sheehan, 2002; Phelps, Nowak, & Ferrell, 2000). To this extent, the PSI measures individuals' privacy-protecting behaviours.

8. **Internet experience**

A number of studies have found that privacy concerns are inversely related to Internet experience. The more sophisticated people are in terms of Internet usage, the lower their privacy thresholds are likely to be (Culnan, 1993; NUA, 1998). The direction of the influence between the two constructs is, however, less apparent. On the one hand, privacy may influence experience. For instance, Smith, Milberg, and Burke (1996) found that individuals were less likely to engage in activities which may require data disclosure if they had high levels of privacy concern. In the context of the Internet, this may suggest that concern for privacy may prevent

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individuals performing online activities such as purchasing goods or services, thereby increasing our Internet experience. Yet, equally, an individuals' Internet experience may alter their privacy thresholds. Phelps, D'Souza, and Nowak (2001) found an inverse relationship between privacy concern and purchase behaviour among catalogue shoppers; thus, the more experienced shoppers were less concerned about privacy. In other words, positive online experience may serve to allay our concerns and decrease our privacy thresholds in future interactions. In this study, we posit that experience is a defining influence on people's online information privacy thresholds. As such, the PSI measures Internet experience in terms of length and frequency of usage, and the number of online activities the individual has performed, including purchasing goods or services, online banking, or participating in online "chat."

9. **Frequency of data disclosure**

   Sheehan (2002) found a correlation between privacy concern and the frequency with which individuals register for Web sites; those individuals who most highly valued privacy were less likely to disclose personal information. The PSI, therefore, measures the frequency with which individuals disclose information to Web sites.

10. **Complaining behaviour**

    Smith, Milberg, and Burke (1996) found that individuals with higher levels of concern for privacy were more likely to contact official agencies or companies regarding information management practices, while Sheehan (2002) supported this contention by correlating privacy concern with the frequency with which an individual complains to their Internet service provider (ISP) about unsolicited e-mail. However, given the proliferation of unsolicited e-mail since 1998 when Sheehan conducted the study, it could be argued that although many individuals may still consider "junk mail" to be an invasion of privacy, it may not be feasible to complain to an ISP after every instance. The PSI, therefore, measures the likelihood of an individual contacting a consumer "watchdog" organisation, the Privacy Commission (an Australian federal organisation) or their Web service provider in the event that they had an unresolved complaint about the way their personal information was treated by a Web site. Further, it was posited that the most concerned individuals would be more likely to contact the Privacy Commission.

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Demographic Factors

11. **Gender**

A number of studies have found that women exhibit more privacy concerns than men (Dembeck, 1999; Cranor, Reagle, & Ackerman, 1999; Sheehan & Hoy, 1999), although Phelps, Nowak, and Ferrell (2000) found no differences between the sexes and Milne and Boza (1999) reported that men appeared to be more concerned than women.

This may be startling news to some theorists who believe Internet communication transcends physicality, arguing that with visual anonymity one can adopt the online persona of one's choice. Nevertheless, behavioural differences between the sexes does occur, such as in purchasing (Sheehan, 1999). Therefore, if online behaviour is related to privacy concern (both as an antecedent and consequence), we may expect differences according to gender. Further, Allen (2000) posits that although in cyberspace both sexes face threats to their privacy, like traditional spaces, women are more vulnerable to this peril. It is beyond the scope of this chapter to debate such a claim, however, if this perception is shared among women, concern for privacy will undoubtedly be higher than men's.

12. **Age**

Sheehan (2002) found that older respondents exhibited the lowest and highest levels of privacy concern. The literature pays scant regard to the reasons why age may affect people's privacy thresholds, but we can hypothesise that older individuals may be less familiar with technology and therefore have an insufficient understanding of the risks to information privacy online (e.g., an over- or under-estimation). This study, therefore, also investigates the relationship, if any, of age with information privacy thresholds.

13. **Level of education/knowledge of privacy management**

A number of studies have found the most educated respondents exhibit the highest levels of concern for privacy (Sheehan, 2002; Lyon & Zureik, 1996, p.15). This may be simply because they are more aware of the practices that constitute a threat to their privacy (e.g., technical knowledge of programs such as "cookies"), or, alternatively, if we posit that educated individuals are likely to be more affluent than their less-educated counterparts, we could look to Maslow's hierarchy of needs (1987) and suggest that higher-order needs, such as the need for privacy, become more important when fulfilment of basic needs is effortless. Equally, wealth also corresponds with enhanced choice for the consumer. To this extent, it is posited that those individuals most concerned about privacy would be more

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knowledgeable about issues such as privacy law. The PSI, therefore, assesses respondent's basic knowledge of privacy legislation in Australia.

14. **Geographic location**

Privacy, like many values, is derived from the culture in which people are raised (Hofstede, 2001, p. 34) and, as such, aspects of privacy beliefs differ worldwide. Donaldson and Dunfee (1994, cited in Milberg, Burke, Smith, & Kallman, 1995) describe privacy as a "hypernorm," a principle that is "so fundamental to human existence that [it serves] as a guide across all cultures." Anthropological evidence appears to concur with this theory (Michael, 1994), however, the extent to which privacy is valued differs globally, nationally, and even within sub-cultures (Perrolle, 1996, p. 50; Westin, 1967, p. 29). Each society negotiates privacy differently (Westin, 1967, p. 12), and a clear example of this is the diversity of approaches to privacy regulation globally. Milberg et al. (1995) proposes that a country's regulatory approach may even in turn influence its inhabitants' privacy values. The relationship between geographic location and online information privacy orientation was therefore investigated.

Methodology

A national survey of Australian Internet users was conducted in early 2004 in order to administer the instrument developed as described in the previous section of this chapter. A total of 8,150 Australian Internet users were invited to participate in the research by e-mail notification which included a hyperlink to an online questionnaire published on the researchers' university Web site. The sample was obtained from a commercial list broker, and stratified to represent the Australian Internet population, by state and gender, in accordance with the characteristics recorded in the 2000 census published by the Australian Bureau of Statistics.

Invitations were sent over a 24-hour period between the 5th and 6th of February 2004. Seven hundred and three usable surveys were received, representing a 10.4% response rate.

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Findings

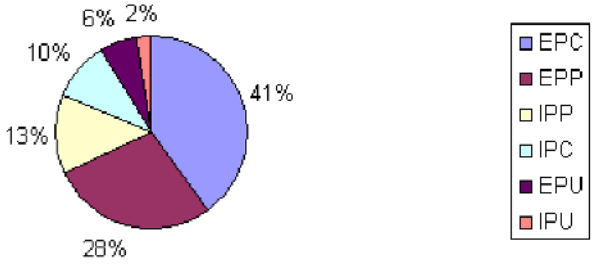
Summary of Results by PSI Segmentation

Figure 1 depicts the classification of respondents in the present study according to the privacy-sophistication index typology. The results clearly reveal that EPC users constitute the majority (41%), with a large disparity between this group and the next closest, EPP (28%), and IPC (10%). In fact, the combined IPU and EPU segments only represent 8% of total respondents. Therefore, we may suggest that Australian Internet users not only appear to highly value information privacy, they have had a rich Internet experience within which they have formed their views.

The survey found that the "inexperienced privacy unconcerned" (IPU) Internet users are represented by all age groups but are more predominantly female. They infrequently go online, reflected in the low number of activities they generally perform, however, the majority have used a Web-based e-mail service and made a purchase using the Internet. Most IPU users will provide all personal information requested of them by Web sites, nevertheless, the reputation of the organisation and the time required to provide the data are important to them. The majority are unaware of privacy issues and this is consistent with their behaviour; IPU users do not check for Web site privacy policies or employ any privacy protection tools, and would do nothing in the event of an unresolved privacy complaint.

The "inexperienced privacy pragmatist" (IPP) Internet users tend to be older, of mixed gender, and exhibit moderate Internet use (two to three times a week). They perform a relatively wide range of online activities, but the total average is on the whole low for this category. The majority have used Internet e-mail,

Figure 1. Australian Internet users by PSI segmentation



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while slightly less than half have purchased or banked online. Disclosure of personal information to Web sites is dependent on the circumstances within which the request is made, and the IPP user will consider the reputation of the organisation, the sensitivity of the information required and whether the data will be shared with other parties. The majority have a basic knowledge of privacy issues, and they occasionally check for privacy policies on Web sites, however, they do not utilise any privacy-enhancing methods in general. In the event of an unresolved privacy complaint, the IPP user would contact a consumer watchdog.

The "inexperienced privacy concerned" (IPC) Internet users tend to be older and of mixed gender. They exhibit moderate Internet use but perform the lowest number of online activities of all the Internet users, the most common of which is the use of Web e-mail. Disclosure of personal information to Web sites is dependent on the circumstances within which the request is made, however, the reputation of the organisation, the sensitivity of the information required, how the data will be processed, and whether it will be shared with other parties is very important. The majority have a basic knowledge of privacy issues; they always check for Web site privacy policies before disclosure of personal information, however, they do not utilise any privacy-enhancing methods. Nevertheless, those who do so are likely to use "hard" technological tools such as "anonymiser" programs. In the event of an unresolved privacy complaint, the IPP user would contact their Internet service provider.

The "experienced privacy unconcerned" (EPU) Internet users tend to be younger males, accessing the Internet at least once a day and performing a wide variety of activities online, although these are commonly more practical and less social in nature. Most will provide all personal information requested of them by Web sites, and there is no one factor which will dissuade them from doing so, although the reputation of the organisation making the request rates highly. The majority of users within this category are unaware of privacy issues; they do not check for Web site privacy policies or employ any privacy protection tools, and would do nothing in the event of an unresolved privacy complaint.

The "experienced privacy pragmatist" (EPP) Internet users are fairly equally represented by all age groups and both sexes. They go online at least daily and perform a wide variety of both practical and social online activities. Disclosure of personal information to Web sites is dependent on the circumstances within which the request is made, however, the reputation of the organisation, the sensitivity of the information required, and whether it will be shared with other parties is very important. The majority have a basic awareness of privacy issues; they sometimes check for Web site privacy policies before disclosure of personal information, however, they do not utilise any privacy-enhancing methods. Nonetheless, those who do so are likely to use "hard" technological tools. In the event of an unresolved privacy complaint the EPP Internet user would contact a consumer watchdog.

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The "experienced privacy concerned" (EPC) Internet users tend to be of "homemaker" age, equally represented by both males and females. They frequently access the Internet and perform the highest number of online activities of all Internet users. Disclosure of personal information to Web sites is dependent on the circumstances within which the request is made, however, the reputation of the organisation, the sensitivity of the information required, and whether it will be shared with other parties is very important to EPC users. The majority have a basic awareness of privacy issues, and they take action to protect their information privacy by always checking for Web site privacy policies before disclosure of personal information, and employing privacy-enhancing methods such as deleting "cookies" from their computers. The majority of EPC Internet users would contact a consumer watchdog in the event of an unresolved privacy complaint, however, a significant proportion would contact the Privacy Commission instead.

Summary of Online Behaviours of Total Respondents Surveyed

Factors Influencing Personal Data Disclosure to Web Sites

The survey found that before disclosing personal information to Web sites, the most important factor respondents took into consideration was the reputation or perceived trustworthiness of the organisation (4.73 out of a possible 5). Other factors which were considered important to very important were whether the information would be shared with other organisations (4.55), the sensitivity of the information required (4.51), and the respondent's familiarity/previous history with the Web site (4.14). Less important were how the information would be processed (3.96), the value the respondent would receive in exchange for the information (3.81), and whether the Web site has external Web verification (3.62). The *least* most important factor in data disclosure was the time required to provide the information (3.41).

Online Activity

Internet e-mail (e.g., hotmail/yahoo) proved to be the most popular online activity among users (90.3%), while 78.5% had purchased goods or services online, closely followed by online banking (78.4%), and paying bills online (e.g., to utility companies) at 71.6%. One-to-one chat services such as Messenger were used by 43.7% of respondents, while 23.9% had participated in "group chat" (e.g., Web-based).

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Checking Privacy Policies

Contrary to previous reports (Culnan & Milne, 2001; Lessig, 1999, p.160), nearly all respondents sometimes or always checked Web site privacy policies before disclosing personal information (45.4% and 32.3%, respectively); this was significantly higher than a U.S. report which suggested only 35% of consumers did so (Princeton Survey Research, 2002). Only 20.2% of respondents reported that they *never* check Web site privacy policies.

Complaining Behaviour

In the event of an unresolved complaint concerning the way a Web site processes personal information, one-third of users (31.9%) would contact a consumer watchdog organisation, followed by their Web service provider (26.3%), and then the Privacy Commission (21.5%). However, nearly one-fifth (19.9%) of respondents would do nothing.

Awareness of Privacy Legislation

Two-thirds of respondents were aware that there is privacy legislation in Australia which encompasses both public and private sector organisations (65%).

Privacy-Protecting Behaviour

Over half of the respondents (52.3%) had engaged in at least one method of protecting their privacy. Of those, the most popular method was to use anonymising software (60.6%), contrary to a survey of U.S. Internet users which found that only 5% used such a tool (Princeton Survey Research, 2002). This was closely followed by setting Internet browsers to reject cookies (57.3%). Low-technology methods, such as setting up a separate e-mail account for junk mail and faking personal information, also were popular (45.9% and 34%, respectively), while only 9.8% of users had sent encrypted mail.

Frequency of Internet Use

The majority of respondents reported high Internet usage, going online several times a day (36%), or daily (32.3%). One-fifth of users accessed the Internet

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three to four times a week (21.2%), while the least frequent users (one to two times per week) represented 9.8% of respondents.

Implications of the Findings for E-Entrepreneurship and E-Business Ethics

One of the significant findings from the survey was that unlike other extant studies, the majority of Australian Internet users were classified as "privacy concerned." This finding has profound implications for e-entrepreneurship and **e-business ethics**.

As e-business deals with products and services in cyberspace, it is far more complicated to legally control Internet activities than bricks-and-mortar ones. Therefore, consumer privacy protection may be more of an ethical issue, rather than a legal one. Unethical behaviours in e-business, such as abuse of information privacy, spam, illegal use of **intellectual property, and so forth** have already greatly harmed the credibility of e-entrepreneurship and undermined customers' confidence and trust in online transactions and other e-business dealings. As discussed previously, the consequence of such unethical behaviours can be damaging not only to a single organisation, but to e-business as a whole. Privacy and trust share an interdependent relationship; trust is both necessary for and dependent on privacy (Fried, 1996, p. 212). Therefore, the basic constructs of e-entrepreneurship should contain the notion of online ethical responsibility, which requires e-entrepreneurs to safeguard the privacy of customers' information in order to obtain their trust. For instance, this issue may be addressed by a sound privacy management system which encompasses the principles of "fair information practice." These include:

1. principle of openness,
2. principle of individual access and correction,
3. principle of collection limitation,
4. principle of use limitation,
5. principle of disclosure limitation, and
6. security principle. (Bennett, 1992, p. 96)

There also are further practical implications for e-entrepreneurship. The survey results indicated that the most important precursor to data disclosure for

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individuals is the reputation or perceived trustworthiness of the organisation involved in the transaction, while familiarity rates as third most important. This suggests that establishing a reputable brand could be even more imperative for e-businesses than for bricks-and-mortar organisations. Nonetheless, the results of this research indicate that there is clearly an issue of consumer trust online. The question that needs to be resolved, therefore, is how can e-entrepreneurs foster trust in cyberspace? Of course, there is little physical affirmation within online relationships or transactions, however, consumer trust is not unattainable in the Internet environment. We cannot easily influence an individual's disposition to trust, however, we can consider the other constructs of trust. For instance, online organisations may attempt to increase the perceived propriety of online transactions by bringing privacy policies and opt-out notices to a consumer's attention prior to collecting their data. Reference also might be made to the individual's rights under current legislation. An individual's initial trusting beliefs also may be influenced by testimonials from other consumers, links to trusted third-party Web sites, or membership of privacy Web seal programmes. Alternatively, the mistrust may be directed toward the Internet medium. Therefore, the solution may lie within the education of Australian Internet users toward the rights and resources available to them, not only by privacy advocacy organisations, but on e-entrepreneurs' Web sites and their related industry organisations.

Given that the study found that there is a relationship between **information privacy** and certain demographic characteristics such as location and gender, a sound approach for e-entrepreneurs would be to consider their target population before developing data collection strategies. For instance, as the survey finds that women appeared to be more pragmatic than their concerned male counterparts, Web sites with a female target audience could emphasise the value of data disclosure — what will individuals receive in return, while one targeting men may want to accentuate how consumer information privacy is upheld. Interestingly, however, males had the highest reported usage of privacy-enhancing tools (an average of 1.22 tools out of a possible 5, compared to 0.93 reported by females). In fact, over 10% more men than women had used at least one tool.

Finally, the study also found an inverse correlation between the constructs "experience" and "total privacy" (as measured by responses to questions regarding the OECD Data Protection Principles). Thus, inexperienced Internet users had higher "total privacy" values than their experienced counterparts, which is consistent with the findings from a number of studies (Culnan, 1993; Stone & Stone, 1990; NUA, 1998). The implication of this finding is that e-entrepreneurs should give special consideration to new Internet users by introducing them to privacy-enhancing methods and technologies and reinforcing their value.

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Conclusion

This chapter reports and discusses the results of an empirical study which aimed to identify and model Australian Internet users' online information privacy orientations by combining specific demographic and attitudinal measurements with behavioural data. The resultant privacy-sophistication index clearly illustrates the subjectiveness of online information privacy and groups Australian Internet users according to a range of privacy-related characteristics, which could assist e-entrepreneurs to further understand the role of information privacy in cyberspace and hence better interact with customers in e-business operations.

Arguably the key finding from the survey is that the majority of Australian Internet users appear to be highly sensitive toward online information privacy and suggests privacy management must be an ongoing priority for e-entrepreneurs. This study also finds that there are differences in privacy-related attitudes and behaviours between the sexes, although there does not appear to be a significant correlation with any other demographic factor. Therefore, e-entrepreneurs who run gender-oriented businesses should consider the implications of these findings in relation to their privacy protection strategies.

Although there are methodological limitations which may affect the validity of the results, this study provides e-entrepreneurs with an in-depth insight into Australian Internet users' attitudes and behaviours toward online information privacy, the knowledge from which, may be applicable cross-culturally.

Some e-businesses may choose to use information privacy practices as a market segmentation variable (Culnan & Bies, p. 162), and the PSI profiles may assist in this respect. There is evidence to suggest that good privacy can actually result in gains to e-commerce, therefore, a proactive approach toward consumer privacy may not only be socially responsible, but strategically sound.

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Endnote

[1] Many of the Westin-Harris survey reports are available on the Privacy and American Business Web site www.pandab.org.

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Chapter XII

E-Organisation and Its Future Implication for Small and Medium-Sized Enterprises

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Abstract

E-organisations are expected to be one of the promising organisational forms in this Internet cultural era (ICE). E-organisations are different from traditional organisations; and most traditional organisations are evolving toward becoming e-organisations. These are organisations established and operated, based on the Internet and other related technologies in an environment referred to as Internet Culture, whereby organisations will be placing the Internet at the centre of their business and encouraging ubiquitous use of networked technologies. This chapter incorporates several perspectives to examine how small and medium-sized enterprises

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(SMEs) use the network technologies and information and communication technology (ICT) in their current business environment. Through the use of a literature review and interviews, we analyse the various options for managing the transformation and its effects to ascertain the appropriate strategies within a range of SMEs. The results of this study reveal that the SMEs' journey toward becoming e-organisations can be classified into three stages: 1/2-fusion; fusion; and the ultimate e-organisation stage. Based on this work, strategic solutions are proposed for future SMEs intending to adopt Internet and other network technologies.

Introduction

The Internet has gone from being a communication tool, used by a small sector of professional society (academics and military) to something that has permeated much of the business, corporate, and consumer world. Some of the largest and most able technological and information consuming organisations have seen this as an opportunity to create a totally new market for their products and services, and some have concentrated much of their day-to-day operations expenditure around the Internet to this end. This new technology has found a place in almost all organisations, as diverse as charities, public services, and corporate business. Both small and large enterprises have been motivated to use the technology, driven by the fear that they may be missing out on a great worldwide business opportunity by not being on the Internet, thus making them evolve toward becoming e-organisations.

In this chapter, e-organisations are companies which are established and operated, based on new technologies, such as the Internet and other related network technologies in an environment referred to as the Internet cultural era (ICE). The ICE can be defined as an environment where organisations are placing the Internet at the centre of their business and encouraging universal use of networked technologies for delivering their business processes, with emphasis on transparent communication and readiness to innovate and take chances on new ideas. Three economic entities, namely the government, organisations, and individuals, are the key players in the ICE.

Furthermore, in the 21st century and beyond, the Internet is one area of technological development that has and will continue to revolutionise modern organisations and the communication world like nothing before. It also is a medium for collaboration and interaction between individuals, their computers, and many business and non-business organisations without regard for geographical location. Shorter product development time, greater flexibility, mass-

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customisation, reduced costs, and higher expectations from customers are the several outcomes envisaged in the ICE.

Despite the demise of the dot-com ventures in the 1990s, the use of the Internet still has a strong and dynamic impact on today's economy. As early as 1997, Schwarzer et al. noted that among the most frequently postulated characteristics and advantages of new ICT and Internet-enabled organisation settings are: high flexibility in a rapidly changing environment; customer-focused business and service models; and increased competitiveness. From an organisational perspective, the Internet has grown into a tool for achieving timely delivery of quality services and operational efficiencies, such as e-procurement, tele-working, and online banking. In conjunction with this, much evolutionary network support software on the use of the Internet within and across organisations to enhance business efficiency and create sustainable competitive advantages have been developed. The use of **electronic data interchange (EDI)** has become a common underpinning technology to support exchange of information and dealing with order transactions with suppliers in the supply chain. Increased recent emphasis on the implementation of radio frequency identification (RFID) in the physical logistics field also can be identified. Such developments would not only support and strengthen the capability of organisations to manage business processes electronically, either via the Internet, intranet, or extranet, but would challenge the adaptability of the existing organisational form and the strategy formulation method in the ICE.

In this chapter, the researchers incorporate several perspectives to examine how small and medium-sized enterprises (SMEs) use the Internet and other network technologies in their current business environment. It is anticipated that ICT will be used to improve information flow, both internally and externally, with all the benefit that this should bring to the organisation. In this chapter, we examine the drivers that led SMEs to adopt the new Internet technologies and what strategy formulation processes SMEs took to enable realisation of their e-organisational goals.

Through a combination of literature review and interviews, we analyse the various options for managing the transformation and its effects, to ascertain the appropriate strategies within a range of South Yorkshire-based SMEs. Based on this work, some strategic solutions are proposed for future SMEs intending to adopt Internet technologies, in order for them to be able to overcome these transitional, organisational, and information barriers. In addition, recommendations on how SMEs can use the Internet to innovate, create value, and enhance and sustain their competitive advantages also are proposed. Finally, the authors propose the key differences of e-organisations, the processes and structures that must change, and those that must take their place to enable e-organisation to function properly. The opportunities for developing strategic alliances are analysed and used as the basis for further research.

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Literature Review

The Internet is a powerful enabling technology that can be used, wisely and unwisely, in almost every industry, and it plays a critical role in organisational strategy formulation processes (Porter, 2001). However, the use of the Internet differs among organisations. Over a decade ago, Maes (1994) noted that e-economy enterprises were now focusing on strategic choices that companies can make with regards to product innovation and novel coordination processes such as electronic trading. Previous research on virtual organisations (Goldman & Nagel, 1993; Hardwick, Spooner, Rando, & Morris, 1996; Byrne, 1993) concentrated on teamwork and individuals, and more broadly persons on computers and machines linked to networks to perform global functions, information sharing communities, gender, and cultural issues on the Internet. The near synonyms for e-organisation are **virtual organisations** or **e-enterprises**, where the organisation intensively uses network technologies, and the organisations and individuals in it have a commonality of purpose or interest, which collectively make up an identifiable and coherent business entity (Cothrel & Williams, 1999). The concept of all forms of virtual organisations is still in its infancy (Franke, 1999). The term has been used to describe different forms of recent entrepreneurial activity that thrives on networking. Within a virtual organisation, technology is seen as a tool to provide for rapid communication among those with common interests, and the human dimension would provide the stimulus to encourage **e-operations**. According to Muller (2000), e-organisations are organisations that use and continually explore the impact and benefits of information and communication technology (ICT) tools on organisations and on the markets in which they operate.

The early 1990s introduced the concepts of virtual organisations, e-enterprises, e-organisation, and all the e-terms as a particular form of corporate network organisations. The term virtual organisation was first coined by Mowshowitz (1986); the academic world paid little attention to this new organisational form and even now there is still little work done on e-organisations in SMEs. However, growing interest was identified in virtual organisation after Davidow and Melone (1992) worked on the virtual corporation. Such work has spawned many researchers to start researching on e-commerce and e-business, although these were applied in large enterprises, there is no reason why such a concept and application cannot be adopted to modern SMEs.

Many authors have created a variety of different e-terms and definitions to describe this new form of network organisation that has caused confusion in the e-terms, where sometimes their underlying concepts overlap, in short virtual organisations or e-organisations can serve the overall functions and needs of any kind of organisation that actively uses network technology to achieve its business

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goals and mission (Byrne, 1993). **E-terms** such as virtual company (Goldman & Nagel, 1993), virtual enterprise (Hardwick et al., 1996), and virtual factory (Upton & McAfee, 1996) can all fall under the umbrella of e-organisations and be applied to modern SMEs, but that has not been actively researched.

Byrne (1993) developed a virtual corporation model and stated in the definition that virtual corporations is a network of independent companies — suppliers, customers, and even rivals — linked by information technology to share skills, costs, and access to one another's market. The corporate model is fluid and flexible in that a group of collaborators could quickly unite to explore opportunities. We foresee that SMEs are among the modern day organisations that can exploit these benefits (and not only the large organisations).

A network technology such as Internet, intranets, and extranets plays a central role in the development of the e-organisation. Individuals in different organisations work together and cooperate with others concurrently rather than sequentially via computer networks in real time to fulfil business activities. These areas which SMEs can explore, have not received much research attention. In the context of establishing strategic alliances with suppliers, the network technology could support **supply chain management** (SCM) through improving efficiency in the procurement of items from suppliers, reducing inventory requirements, expediting design and orders, and engaging in mutually beneficial collaborations with suppliers. For example, through the use of an e-procurement tool, a paper manufacturing company in China managed to provide visibility of data and leverage supplier negotiations for the centralised purchasing group. The tool allows the company to control their suppliers when purchasing operating resources; hence, it has resulted in cost savings (Koh, Dong, & Arunachalam, 2004). The tool also interfaces with SAP's material management (MM), financial/accounting (FI), and controlling (CO) modules; therefore, it automates many purchasing and payment tasks. Although this was applied in a large enterprise, there is no reason why such a concept and application cannot be adopted to modern SMEs.

Additionally, it has been noted that the opportunity to apply Internet technology exists all along the company and industry value chain systems, offering considerable potential for improving operating efficiency, reconfiguring value chains, and lowering costs (Yen & Ng, 2002). The study also suggested that various e-procurement software packages reveal that the purchasing processes can be streamlined to eliminate or reduce considerable manual handling of data and by substituting this with electronic communication (e.g., e-quotation, e-purchase orders, e-acceptance, and e-shipping notices).

In contrast, inappropriate use of the Internet could result in business failures (e.g., selling inferior products over the net.) If one customer has a bad experience, they would tell many of their friends about it. With the global

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efficiency of the Internet, this news can easily spread on a larger scale. Hence, online businesses need a better understanding of appropriate organisational strategy formulation processes in order to sustain their competitive advantages.

Large, well-established organisations generally manage their business processes using the foundation of the "traditional economy" (i.e., rigid information sharing and low strategic network collaboration). Therefore, they might experience greater difficulties in adapting to the ICE than the new entrants and SMEs, which are usually set up with incorporation of the concept of the ICE. Nevertheless, large and well-established organisations might be better suited to take advantage of the Internet if they are prepared to invigorate their business strategies. They possess much of the required complementary assets and resources for developing and carrying out the ICE initiatives (Tripsas, 1997). Also, they tend to offer a mix of "clicks" and "bricks" and are better known than new entrants and SMEs, thus giving them the benefit from an increased customer trust (Steinfeld, Mahler, & Bauer, 1999; Gulati & Garino, 2000).

To date, the existing organisational and management theory that examines the virtual network organisation is not clear and does not provide more than a basic explanation about boosting technological developments related to emerging business opportunities to be seized by flexible organisations in a global, volatile marketplace (Burgess, 1994). Similarly, no in-depth analysis has been carried out regarding the management of virtual organisations and the key success factors that play a decisive role on the viability and potential success or failure of these fluid organisations (Davidow & Malone, 1992).

This review shows that SMEs requires clear support to compete in the ICE. Despite the extensive research, mainly in large enterprises, that showed success of the use of Internet and related network technologies, little can be found that signifies the adaptation of those strategies in SMEs. Although the fusion SMEs are innovative and able to differentiate themselves in the market, they are not fully incorporating Internet and the related network technologies into their core business and hence are not regarded as a type of e-organisation. SMEs face greater pressure than their counterparts in the supply chain. Hence, to be able to formulate clear strategy to compete in the ICE and make the desired transformations, e-organisation will be valuable to SMEs.

Based on the findings from the literature review, an empirical study has been carried out among 24 South Yorkshire-based SMES to identify the emerging forms of organisations in the ICE. In addition, we explored the adaptability of the existing strategy formulation processes for these organisations that would enable them to create sustainable competitive advantages, innovations, and developments.

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Research Methodology

Many Internet and organisational scholars find it difficult to choose the best research methods for the new Internet organisations. Relevant research has generally been fragmented and narrow in scope, making comparisons difficult (Bradley, 1999). Though there were many communication media available to us, such as face-to-face, mail, e-mail, and telephone, we chose telephone interviews as our primary method of collecting the required data for this research. This allowed questioning of appropriate individuals in the SMEs to elicit particular information to look for patterns among facts, values, and behaviours to make generalisations and conclusions. The main attraction of telephone interviewing is that it enables us to collect the research data from the appropriate individuals more cheaply and quickly.

The empirical study involves telephone interviews with 24 organisations based in South Yorkshire that were randomly selected from the Chamber of Commerce database of SMEs in the region. The 10th number was drawn from a poll of 1 to 20 numbers and was used in selecting the target SMEs. Some 56 organisations were originally contacted from the database using a random selection of every 10th SME on the list by e-mail and only 24 agreed to participate in the study. These included manufacturing, engineering, service, and IT-oriented. The interviewees range from director or owner-manager, and IT personnel to general managers. Only one interview per company was conducted. The verification of results was carried out through a telephone follow-up.

A mix of closed and open-ended questions is included in the questionnaire instrument, which was designed to conduct the structured interviews. This provided a collection of quantitative and qualitative data, and enabled comparison based on rating, ranking, and individual contextual analysis. The quantitative data was analysed using **SPSS**.

Results, Analysis, and Discussions

The results of this study have revealed that the SME journey toward becoming e-organisations can be classified into three stages: 1/2-fusion; fusion; and, ultimately, e-organisation stage. Figure 1 shows the proportion of these emergent organisational forms.

The 1/2-fusion organisations are those with minimum use of the Internet and network technologies. Their main business processes are still managed by using

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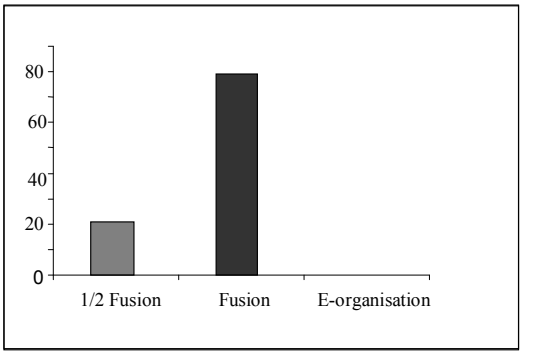
Figure 1. The emergence of organisational forms



the "traditional economy" approach. Such technology is perceived to be an add-on rather than an integral part of their business, for example, an organisation that has a basic Web site and uses e-mails for internal and external communication. The fusion organisation is one with committed and intensive use of the Internet and network technologies. Their main business processes are managed by using these technologies, and they perceived such technologies as an integral part of their business, for example, an organisation that uses e-commerce. The e-organisation is one that uses these technologies as the core of the business for managing the entire business processes, from the point of receiving a customer order, to processing the order and parts, and supplying and delivery, for example, an organisation, that uses e-business or online business. Based on this classification, the results indicated that none of our samples qualified to be an e-organisation. The evolution toward becoming e-organisation is not far removed from the fusion categories as could be seen in Figure 1.

Table 1 shows the sizes and industrial sectors of the emergent organisational forms. It was found from this study that almost 80% of the SMEs in the sample are fusion organisations. They were mainly high-tech SMEs. In the near future, it may be possible for the fusion organisations to evolve very rapidly to become e-organisations. The remaining 20% of the SMEs that formed the 1/2-fusion organisations are mainly from the service sector. The fusion organisation was found to be the most complex due to simultaneous operations of both traditional and network techniques. The majority of these forms are based in the manufacturing, service, and IT sectors. The results showed that various sizes of enterprises would emerge over time, which can take the form of e-organisation. Since 96% of our sample is SMEs, the results would only be inferred to the SMEs environment.

Figure 2 shows the results of the drivers or motives for using the network technologies. We explore the motives why SMEs implement these new network

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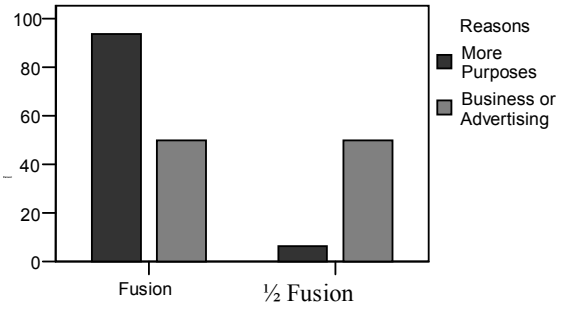
Table 1. Size and industry sectors of the new organisational forms

	Industrial Sectors						Types of emerging forms of organisation			
Size	**Manufacturing**		**IT**	**Service**	**Engineering**	**Others**	**A**	**B**	**C**	**Total**
Small (1-49 employees)	**3**		**4**	**8**	**0**	**2**	**3**	**14**	**0**	**17**
Medium (50-249 employees)	**3**		**1**	**1**	**1**	**0**	**2**	**4**	**0**	**6**
Large (>250 employees	**1**		**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**
Types of emerging forms of organisation	**A**	**1**	**5**	**6**	**1**	**1**	**0**	**19**	**0**	**19**
	B	**6**	**0**	**3**	**0**	**1**	**5**	**0**	**0**	**5**
	C	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Total	**7**		**5**	**9**	**1**	**2**	**5**	**19**	**0**	**24**

Keys: A: ½ Fusion, B: Fusion and C: e-organisation

Figure 2. Driver for using network technologies



technologies and use other forms of ICT tools. The results revealed that the fusion organisation has more than 90% intention of using these technologies than the ½ fusion in organisational management, advertising their products or image to the whole world, channel of creating business, and so forth,. In addition, both fusion and ½ fusion SMEs have shown that they do not fully exploit the Internet and other network technologies regardless of their organisational forms. The result reinforces suggestions that SMEs are slow in Internet uptake in the UK.

We also tried to examine the number of visitors to SME Internet sites and the reasons for such frequency. It must be noted that the reason for visiting these sites could not be accurately accounted for because there is no means of recording whether the visitors indeed were of any real benefit to the SMEs. The results also indicated that fusion SMEs attracted more visitors than the ½ fusion SMEs. The reason was that fusion SMEs have more use of the Internet and other

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network technologies than the ½ fusion SMEs. For example, the use of online order taking by the fusion SMEs has created many repeat purchases and supported **e-customer relations management (e-CRM)**. Nevertheless, the fusion SMEs are not in a position to fully incorporate e-CRM (Jelassi & Enders, 2005), in their business due to lack of true understanding of its impact as well as resource and skill shortages.

Figures 4 and 5 show whether the Internet, other network technologies, and ICT help or facilitate SMEs to remove some organisational and geographical barriers. A positive result indicated that both organisational and geographical barriers for both staff and customers have been reduced. This view also was supported by Bannett, Greve, and Park (1994) who stipulate that the impact of the Internet on business processes and communication has increased access to such a large audience and range of people, and this increased the ability of organisations to leverage the value of information to a scale that has never before been possible.

The impact of the Internet, other network technologies, and ICT on the decision-making process has revealed that these technologies help to facilitate faster decision-making. Figure 6 shows once again that fusion SMEs who incorporate

Figure 3. Number of visitors to SMEs site

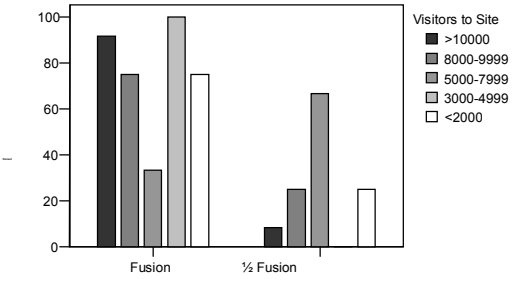

Figure 4. Breakdown in organisational barriers

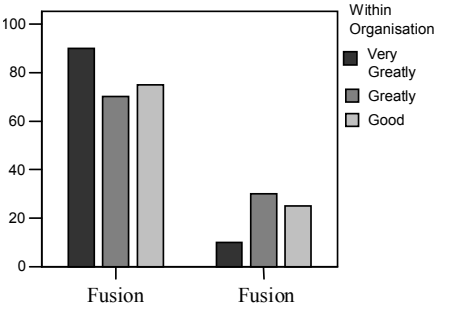

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Figure 5. Breakdown in geographical barriers

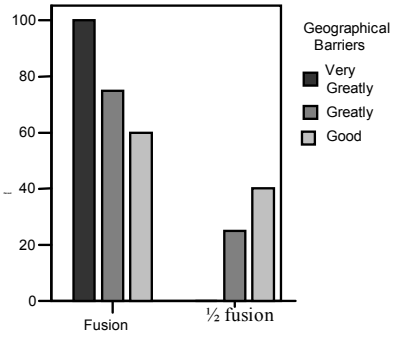
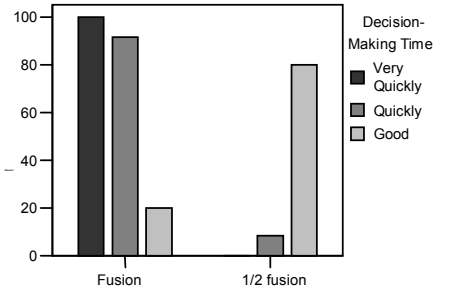


Figure 6. Time taken in decision-making



much of the Internet and other network technologies into their day-to-day business activities take a shorter time to make a decision than the ½-fusion organisations owing to the need of a quick response to customer demand. Increasing the speed in decision-making is essential. Norburn & Birley (1998) noted that success goes to firms that value experimentation — those that utilise trial and error are able to gather data quickly and assimilate it and those who accept failure, learn from it. With the support from the Internet and other network-related technologies, the results clearly demonstrated that fusion SMEs have reaped success from this.

Furthermore, the interview also revealed that SMEs leaders' and managers' expectations on the use of the Internet both now and in the future are 100% positive. This unequivical belief means that they are planning to use Internet and related network technology more fully, but they need a clear strategy formulation process for their transformation to e-organisation. We can infer this outcome has pointed to both management researchers and managers to put in more effort to reveal and exploit more of the business benefits of using the network technologies through further research and innovative exploitation.

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Figure 7. Organisational efficiency

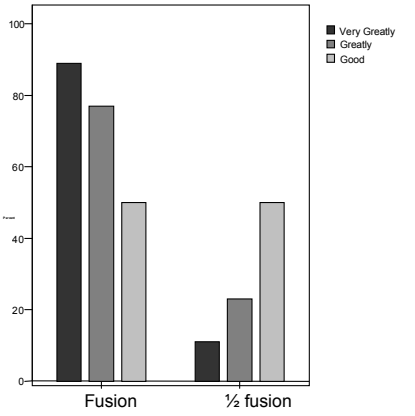
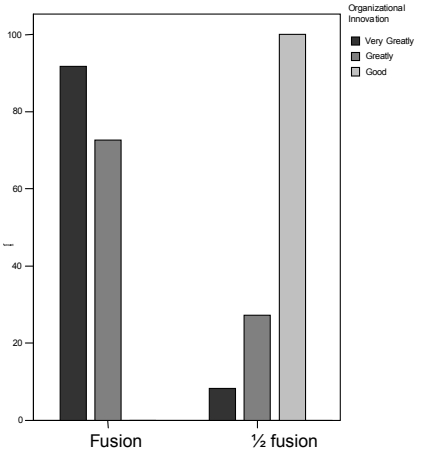


Figure 8. Organisational innovation



In the ICE, every business manager has a deep concern over strategic issues. Thus, these important business elements were not ignored in this research. The strategic elements covered were whether the Internet, other network technologies, and ICT had brought any efficiency, innovation, and flexibility in the studied organisations. The results showed that the fusion SMEs again were harvesting more of the strategic gains than the ½ fusion SMEs. These results are shown in Figures 7 and 8.

The interview results suggested that it is through the Internet and other network technologies that SMEs have been able to put their business on the Web to offer products or services nationally or internationally and also to be able to compete effectively. Also, for these SMEs to succeed, they need to identify their set of

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core competencies and to determine what kinds of competencies online competitors bring to the scene. They will then leverage alliances' strengths to gain a competitive advantage. It can be added that, for SMEs to succeed in the future they will need to drop the heavy attachment to the traditional method of doing business and switch fully to an e-organisation methodology. They also will need to find a way to leverage their strengths in such a way that they can offer something better than their traditional competitors who do not use the new network technologies. To leverage their strengths, it was suggested that organisational innovation could play a critical role. These innovations range from better selection, better service, better prices, and more interesting photos, and brief, but eye-catching, articles on Web sites. This type of innovation has been successful in attracting attention and inviting repeat buyers for the fusion and ½ fusion SMEs.

It must be noted that none of the sample organisations have reported any bad encounters in all of the aspects we investigated, namely, breakdown in organisational barriers, breakdown in geographical barriers, time taken in decision-making, organisational efficiency, and organisational innovation. The next stage of the study is to enlarge the sample to reveal both success and failure of these organisational forms.

Conclusion

This study has found that the application of the Internet and other related network technologies promise significant returns to SMEs. In particular, using Internet technologies both within enterprises and across the supply-chain could provide a real opportunity, not only for operational improvement but also for innovative strategic positioning. However, significant questions and fear of risk obscure potential investment in these technologies. The technical know-how and expertise on how to create value from it is still a big problem impeding many SMEs evolving toward becoming e-organisations and, more importantly knowing how this value will be shared and exploited among other SMEs is not fully realised.

Based on these findings, we conclude that the business strategies identified from these fusion and 1/2-fusion organisations that are adaptable to achieving e-organisation in the ICE are:

- Size of organisation appears to *not* be a factor to be competitive.
- Success of organisations *does* depend on effective use of the Internet.

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- Success of organisations *does not* solely depend on the use of high-tech network technologies.
- Strategic partnerships with suppliers *is* a prerequisite.

The action plan for companies to strive toward e-organisation status could include training on the use of the Internet, subcontracting e-commerce, a kind of keiretsu network, and building strategic alliances.

It must be noted that the findings identified are based on the current respondents available. However, the initial conclusion on the three types of emerging organisational forms is valid and could be further expanded. The overall results show the lack of adaptability of the existing business strategy formulation in the ICE.

Acknowledgment

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Chapter XIII

A Prototype E-Business Model to Create a Competitive Advantage in SMEs

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Abstract

This study explores new ways for SMEs to create a competitive advantage through the use of e-business. It examines the level of ICT use in SMEs and identifies the drivers and barriers which owners/managers face in adopting e-business. Furthermore, it explores the degree of awareness amongst SMEs of the opportunities available to them for developing their employees, their business strategies, and their attitudes toward the range of initiatives and options, on the use of e-business. Industry behaviour and organisational culture in relation to the creation of competitive advantage through e-

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business also are explored. Case studies and literature review are used to collect information from and about SMEs in the UK. The results of these are employed to propose a prototype business model, named CATE-b – "Competitive Advantage Through e-business."

Introduction

The economic environment in which businesses find themselves today is perhaps the most turbulent in history. It is dominated by three powerful influences: globalisation, knowledge and information revolution, and structural change of organisations (Booz Allen Hamilton, 2002). Therefore, in this new era of the e-economy, the traditional starting point for strategic business thinking in **small and medium-sized enterprises (SMEs)** is no longer appropriate. Small Business Services statistics show that SMEs are the backbone of the UK economy (99.8% of all UK businesses), yet, they are slow to adopt e-business as the basis for business communications and transactions (DTI, 2003). This may inhibit their current and future operational efficiency and innovation by limiting the competitive advantage that e-business could bring to their businesses.

Aims and Objectives

Thus, this chapter focuses on the following areas:

1. Review both academic and practitioner literature related to IT, e-business, and different business models, which have arisen due to recent technological advances.
2. Identify the drivers and barriers which owners/managers face in adopting e-business.
3. Investigate the degree of awareness amongst SMEs of the opportunities available to them for developing their employees and their business strategies.
4. Analyse attitudes toward the range of initiatives and options, and the degree of take-up, on the use of e-business.
5. Develop a competitive advantage through e-business (CATE-b) prototype model for SMEs to facilitate organisational effectiveness and speed in the new era of e-economy.

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As the last aim suggests, the outcome of this research is a new prototype CATE-b model. Its development was underpinned by the general alignment models (Scott Morton, 1995; Chen & Ching, 2002; Fillis, Johansson, & Wagner, 2003), was based on advanced theories and reasonable assumptions, and was shaped throughout by interviewing practitioners in nine SMEs. The prototype model represents a framework for the development of an e-business strategy for SMEs. Pragmatically, it was assumed that such SMEs would like to build their e-business strategy on the existing technology without taking the radical approach to e-business.

Research Methodology

The primary research methods used for this chapter were literature review and interviews with nine owners/managers of SMEs. A viable prototype of an e-business model was constructed based on the literature reviewed and nine case studies. This study has adopted an exploratory research approach (Yin, 2003) with the purpose to provide a level of understanding of SMEs' behaviour, their adaptability to the new economic demands, and the possibility of creating competitive advantage by using e-business. This research is based on a multiple case study methodology (Yin, 2003) in which semi-structured interviews were used to collect data from SMEs' owners/managers. Considering the well-known difficulty in obtaining real-life data of this kind, the choice of companies in which to carry out the study was pragmatic and opportunistic, rather than purposive. Access to all companies was achieved via senior managers who were all personally known to the researcher. The role of the researcher was to interpret events (Yin, 2003). Two detailed in-depth case studies are reported here and summary results are provided for the other seven SMEs investigated.

Literature Review

Internet usage continues to grow strongly throughout the world. In contrast to the field of dot-coms, many traditional firms have found viable applications for the **Web technology** (Coltman, Devinney, Latukefu, & Midgley, 2001). The dynamic development of information technology has resulted in major reforms of the traditional business environment and the way business is performed. Spearheading this transformation is the continuous spread of the Internet whose users all over the world will probably reach 1 billion in the next 10 years (Mentzas,

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Halaris, & Kavadias, 2001). This is already offering enterprises the ability to make direct contact and easy electronic transactions with clients throughout the world, often resulting in dramatic cost decreases and impacting severely on the way enterprises seek a competitive advantage. As a consequence, the Internet's role has been enlarged from a global communication vehicle to a key platform for global business development (Apostolou & Mentzas, 1999).

The performance of SMEs is an important issue for the economic growth of modern societies. It has been suggested that if SMEs are to create a competitive advantage in the new e-economy, they need to rethink their strategies, improve their attitudes toward the ever-growing need for change, and enhance their existing skill profile (DTI, 2003). To deal with these global changes and influences and to still keep their competitiveness, SMEs need government support end encouragement (Bennett, Robson, & Bratton, 2001). During the past three years, the UK Government has spent £67m, more than any other country, on a comprehensive programme to get UK businesses online. The aim was to increase the e-business readiness of SMEs (Booz Allen Hamilton, 2002). The challenge for the government was to convince generally reluctant SME owner/managers of the need to listen to external advice and persuade them to act on that advice. However, many owners have fervent beliefs about the uniqueness of their business, which leads them to become doubtful about new advice (Simpson & Docherty, 2004).

SMEs' Competitiveness in the New E-Economy

The term "**competitive advantage**" is one of the most enduring themes in the business strategy literature, and its theories have been well established (Porter, 1985, 1986; Ansoff, 1965; Barney, 1991). Porter (1995, p. 16) points out that the idea of competitive advantage underpins many business books. He defined it as the *"...value a firm is able to create for its buyers that exceeds the firm's cost of creating it"* (Porter, 1985, p. 3). Based on Porter's definition, that competitive advantage is the result of the strategies adopted by a firm with a purpose to add value to customers. This will consequently position a firm advantageously and enable it to compete over a period of time. The overall argument is that a company has a "competitive advantage" when its profit rate is higher than the average for its industry, and it has a "sustained competitive advantage" when it is able to maintain this profit rate over a number of years. The well-known basic condition to gain a competitive advantage, which must be satisfied, is that the amount of value customers place on the company's goods or services must exceed the cost of production. In other words, the concept of value creation lies at the heart of competitive advantage (Porter, 1985).

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In the traditional model, managers concentrate on being effective and competitive by putting well-understood products on the market. However, at the beginning of IT expansion in the early 1990s, Venkatraman (1994) argued that to invent value in the new environment, managers must reverse traditional thinking about the value chain in which businesses define themselves in terms of their products. Since then, many other researchers have supported the idea that in the new world of e-technology this traditional value chain needs to be reversed (Poon & Swatman, 1999; Kalakota & Robinson, 2001; Daniel, 2003). Thus, the new challenge posed by the business revolution is that if SMEs are to remain competitive they must achieve mastery of information and relationships in the new virtual e-economy.

Drivers and Barriers in Adopting E-Business

Despite the fact that 1.9 million small businesses in the UK are connected to the Internet, surpassing the government's original goal of 1.5 million (DTI, 2003), the UK's Federation for Small Businesses (2002) research indicates that the use of the Internet by SMEs is still relatively undeveloped. SMEs still tend to use the Internet only to send e-mails, transfer files or documents, or gather information. Although this statistical evidence suggests that new media technologies are being used by SMEs, Table 1 shows a range of factors thought to be influencing SMEs and their managers when deciding whether or not to adopt and invest in modern technologies.

E-Business

There is no universally accepted definition of **e-business**. To make the term e-business clearly understood, in this chapter, we adopted the definition used by IBM (Van Hooft & Stegwee, 2001, p. 44):

A secure, flexible, and integrated approach to delivering differentiated business value by combining the systems and processes that run core business operations with the simplicity and reach made possible by Internet technology.

E-business is a powerful vehicle for different kinds of improvement within a company. It can be used for effectively managing the transformation of a traditional business strategy that represents the *old* economy into a *new* strategy for the e-economy that symbolises a modern and visionary business approach

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Table 1. Examples of drivers and barriers for adopting an Internet strategy in SMEs

Drivers	Barriers
Improve business competitiveness (Chapman et al., 2000)	Lack of SME information pertinent to SMEs (Chappell et al., 2002)
Opportunity to try out new e-business models (Sadowski et al., 2002)	Mistrust of the IT industry (Van Akkeren & Cavaye, 1999)
Availability of better and faster communication and information channels, accessible global market (Chappell et al., 2002)	e-technology readiness and adoption vary by industry sector (Bodorick et al., 2002; Martin & Matlay, 2001)
Opportunities, based on cost, rather than for strategic reasons (Sadowski et al., 2002)	Limited resources in terms of time and effort to incorporate IT facilities (Chappell et al., 2002).
As a company grows in size it becomes more difficult to communicate with its customers so that e-business and the Internet become more important (Daniel & Myers, 2000; Actinic, 2002; UK Online, 2002)	The older the SME the less likely they were to use e-technology (Daniel & Myers, 2000; Simpson & Docherty, 2004)
External pressures by new customers and their value proposition of "what, when, and how they want it, at the lowest cost" (Kalakota & Robinson, 2001)	High running costs, lack of awareness of what e-technology involves, shortage of technological skills, insufficient knowledge and education, absence of help and time (Darch & Lucas, 2002)
To enhance customer relationships (Daniel & Myers, 2000); UK government provides help from the point of view that the Internet is a "good" thing (Martin & Matlay, 2001)	Perceived benefits by owner/managers in SMEs (Iacovou et al., 1995; Kirbi & Turner, 1993; Thong & Yap, 1995) – Owner/managers do not necessarily think that the Internet is a "good" thing.
The Internet as a "lifesaver" for ailing businesses (Wroe, 2002)	Most businesses prefer to use ICT to augment changes in how they connect with their customers and reduce costs through more efficient management of their internal processes (UK Online, 2002)
Technology brings more flexibility, and SMEs are more adaptable to change because of their size (Carrier, 1994; d'Amboise & Muldowney, 1988); SMEs can act faster (Katz, 1970) and are more receptive to new ideas and techniques (Hitt et al., 1991; Woo, 1987)	Lack of education, IT skills, and computer literacy as well as unwillingness of managers to be responsible for technological change (Kalakota & Robinson, 2001; Kirby & Turner, 1993; Thong & Yap, 1995; DTI, 2003; Local Future Group, 2001)
The Internet provides less costly and a more effective channel for advertising, marketing, and distributing goods and information services (Verity & Hof, 1994; Hoffman & Novak, 1996)	SMEs lack the human and financial resources and capabilities of large firms (Ettlie, 1983; March, 1981); lack of financial resources makes it critical for SMEs to pick their strategies carefully (Lynn et al., 1999)
As data has become more abundant and less costly, SMEs could use information in a more sophisticated way (Fann & Smeltzer, 1989)	Many SMEs use computers only to send e-mails and set up simple Web sites (DTI, 2003); slow rollout of broadband has also frustrated many SMEs (FSB, 2002)

(Van Hooft & Stegwee, 2001). Although e-business allows for the extended organisation to be connected together (Van Hooft & Stegwee, 2001), it is still a relatively new and underdeveloped practice in UK SMEs (Waters, 2000; Federation for Small Businesses, 2002). Therefore, for **owners/managers** who have become aware of the benefits associated with e-business applications and wish to duplicate these results, knowledge and understanding of e-business and its practices are essential (Kalakota & Robinson, 2001; Local Future Group,

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2001; DTI, 2003). Interestingly, King and Clift (2000) argue that "e" will soon be dropped and that e-business will be business as it comes to be generally understood. The key to e-business success is to understand how customers work as well as adapting the management of the business. It is a simple yet powerful concept which connects customers, employees, suppliers, and distributors to the business systems and information that they need (Van Hooft & Stegwee, 2001; Rodgers et al., 2002; Koh & Maguire, 2004).

E-Business Models

The emergence, growth, globalisation, and interest in Internet technology have resulted in the creation of various e-business models relating to Internet strategies. There are many e-business models, but not all of them are suitable for this study. To make the classification of these models easier, we identified three different kinds of e-business models:

- supply-chain management-based models,
- operations-based models, and
- strategic models.

Since this chapter focuses on the area of strategic management, we aimed our research toward the strategic approach to e-business models. These models, presented next, propose a fairly solid base for the adoption and integration of e-business strategy in an organisation. However, these existing models are lacking the unity that brings the industry, IT, an organisation, and human factors together. For example, Afuah and Tucci's (2001) framework offers strategies and tactics for this new electronic era and is valuable for both researchers and managers trying to make sense of this new world. On the other hand, Jelassi and Enders (2005) take a more classical approach, applying the ideas of Porter (1985). None of these approaches appear to give a complete picture of what is actually needed to create a competitive advantage in SMEs using e-business. This suggests that a new e-business model is needed which supports the following goals: customer focus, the Internet technology as a core competence, organisational readiness, lower cost, and greater efficiency. Only by integrating the Internet into an overall strategy will this powerful new technology become an equally powerful force for competitive advantage (Porter, 2001). The main problem to date is that this has not been done to any meaningful extent (Wagner, Fillis, & Johansson, 2003).

The MIT90 Framework is a model that uses IT-based capabilities of the organisation (Morton, 1995). In this model, an organisation can be viewed as

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being composed of five interrelated components: management processes, structure, strategy, technology, individuals, and roles. These components closely interact with one another, so changes to any of the components will require changes to the others to bring their objectives and activities back into alignment. This framework was originally developed to guide organisations through their adoption of IT as an organisational and strategic resource from their computer-automated environments (i.e., data processing, automated reporting, computer integrated manufacturing, etc.). This was done in the context of the traditional business model. It is looking at micro-factors affecting the adoption of e-business and not individual factors. The underlying assumption in the model included the adoption of a new organisational strategy and IT. For the organisation to benefit from this shift, all parts must be designed to work together. However, the MIT90 framework does not suggest its applicability to e-business (because it is a business model with a focus on IT) or indicate the sequence of events that leads to success.

A framework for moving to an e-business model was developed by Chen and Ching (2002). This model is based on the MIT90 framework and its purpose is to guide the successful transition from a traditional organisation to an e-business model. In this model, it is suggested that all aspects of organisational operations must be synchronised and co-aligned. The authors suggest that the organisation needs to first change its strategy and technology, which is in line with the ideas of Morton (1995). The authors believe that this will determine the structure, management process, individuals, and roles. They draw upon resource-based theory, which will bring sustained competitive advantage to the organisation. However, this model does not take into consideration the owner/managers attitude toward change, organisational readiness, and stages of adoption, external pressure, size and age, IT skills and knowledge, and so on. This is a major limitation of the approach by Chen and Ching (2002).

A conceptual model of e-business development has been developed by Fillis et al. (2003). This conceptual model attempts to consider how a range of internal and external factors influence attitudes toward e-business, as well as its implementation as part of the company's business strategy. Factors considered in the model are: macro-factors, industry/sector factors, and firm/managerial factors. Many important factors that might influence successful adoption of an e-business strategy have been taken into consideration, however, this is a theoretical model and has not yet been tested so far as we know. In addition, this model does not suggest when structural changes will occur and what will happen at the macro-level, industry-level, and firm-level. In reality, it only presents barriers and benefits of e-business adoption rather then the sequence of events that could lead to success.

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Results and Analysis

The following sections give an overview of the background and the level of e-business integration in the selected companies. Two case study companies were analysed in detail on the basis of both being manufacturing companies and both using e-business applications. These characteristics made the comparison possible. The remaining seven case study companies were discussed separately due to their diversity and general lack of e-business usage.

Case Study 1: Gripple Ltd

Gripple Ltd is a Sheffield, UK-based manufacturing company founded in 1988. The company employs 147 people and had a turnover of £14.6m in 2004. The "Gripple" is a device invented by the chairman of the company and is recognized as the world's most innovative way of joining, tensioning, terminating, and suspending wire and wire rope. Most of their products are exported, and they have a number of sales offices and agencies around the world but all manufacturing takes place in Sheffield. The company is strategically driven and highly innovative in applying the latest manufacturing technology to new products. Innovation through new product development has remained the core of the company's successful strategy. Due to strategic and operational positioning, the company invested in technology right from the beginning. Now, the company has an enterprise resource planning/just-in-time (ERP/JIT) system, and has a very strong research and development (R&D) department. Their latest technological investment is in a novel "Loadhog" (a reusable device for securing boxes to a pallet instead of shrink wrap plastic). This forward-thinking strategy and investment in the appropriate IT infrastructure has opened a wide global market to the company. In terms of ICT, the company is successfully using e-mails as an efficient internal and external communication tool, a Web site which positions them in the worldwide market, and e-commerce where they are able to order and pay online and maximise accessibility and speed. Nevertheless, the company is disadvantaged in the area of supply chain integration with other companies whose owners/managers are lacking the same enthusiasm for IT investment and are preventing Gripple from achieving full e-business integration. For example, the company's managers still need to use a telephone and fax machine to make sure that final material orders and deliveries are taking place as planned. This is due to a high percentage of human errors experienced in the past and the lack of appropriate IT infrastructure in their suppliers. To complete the supply chain, Gripple Ltd may need to help their business partners (suppliers and customers) by defining hardware/software/Internet service provider configurations, which

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would consequently emphasize the importance of close relationships between supply chain partners as a prerequisite to adopting e-business. In particular, the company may need to initiate the building of an electronic business to business (B2B) and business to customers (B2C) relationship. These can be realised by using an extranet that enables the company to share part of the business's information or operations with suppliers, vendors, partners, customers, or other businesses. This will enable business partners to develop a real appreciation of the power of the Internet.

Case Study 2: SMP Europe

SMP Europe is a Yorkshire, UK-based motor vehicle parts manufacturing company with 250 employees and a turnover of £15m in 2004. SMP Europe was trading under a different name until 1996. The original company was formed in 1967. The company expanded gradually over the years. However, their main products were copies of original motor vehicle parts, and the company performance had reached a peak and business had started to decline in the early 1990s. Thus, the company went from winning to losing rather quickly, as they did not have the ability to generate new value through innovation. They also ignored rapid advances in technology, and their rather outdated computers brought a previously very successful company to a standstill. The control of the company was poor, with low efficiency and high production costs. Lack of investment in better technology and the declining stage of the industry life cycle (producing copies of original parts) forced the owner of the company into a joint venture with a firm in the United States. However, in 1996, SMP Europe took back a controlling interest in the original firm, and they are now a wholly-owned subsidiary. In 1999, the owner of the company realised that their future was in innovation rather then in making copies. As a result, another company was acquired. This positioned SMP Europe as a manufacturer with an innovative marketing approach. Moreover, in 2002, they invested £1m in a new IT infrastructure. Due to a previously poor IT infrastructure, it took 18 months for the company to come back to where they started from before the IT upgrade. They also invested in staff training, a new telephone system, a new enterprise resource planning (ERP) system, and a new customer database. These investments were only a start for the company in terms of e-business applications. They are now willing to learn from their mistakes and try to keep up with the latest technological advances in the future.

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Analysis of Two Case Studies

Although both enterprises have an annual sales turnover of approximately £15m, it is interesting to note that Gripple Ltd employs almost 50% less staff than SMP Europe. In the interview with SMP Europe, it was confirmed that this is because the company employs low skilled staff and the organisation is not using their new IT infrastructure to its full potential. On the other hand, Gripple Ltd has an almost fully integrated system and it is only waiting for suppliers and customers to participate in technological advances to complete the integration of their supply chain. SMP Europe, who is presently on the brink of integration, showed that managers of profitable companies must anticipate the need for self-transformation and change when they can, not only when faced with difficulties. Their refusal to change resulted in stagnation of the business and loss of the ability to generate new value through innovation. The company went from winning to losing as they ignored rapid advances in technology. Our point here is that technology and e-business strategies should be treated as simply another technique for reinventing or rather rejuvenating the business.

Furthermore, during the past three years, the UK government has spent £67m on a comprehensive programme to get UK businesses online and to increase the e-business readiness in SMEs (Booz Allen Hamilton, 2002). Although government policy has been formulated to promote information technology and communications for SMEs, our experience is that SMP Europe did not use "UK online" for business or any other government-related agencies. It can be argued that if they can change their attitudes toward these initiatives, they could start taking advantage from them. On the other hand, Gripple Ltd is very much aware of the government initiatives in relation to improving SMEs technological standards. Unlike SMP Europe, Gripple Ltd is involved in many initiatives run by the government, and they also use support and help available to their full advantage. In addition, if the UK government is to make SMEs leaders in the G8 countries, it has to recognise the importance of human resources capacity that will support new technological advances. The government needs to commit and concentrate on the importance of owner/managers and their perception of e-business and the potential benefits of the technology that will contribute to the future successful adoption of e-business applications (Poon & Swatman, 1997). Above all, the UK government needs to rethink their strategies and focus on more efficient ways of passing the message through to SMEs.

However, just knowing the importance and structure of e-business is not enough. SMEs need to create and implement a plan that allows them to make the transition from an old system to a new e-business organisation. Although for Gripple Ltd, the e-business planning process may sound like common sense, for SMP Europe the e-business planning is much more difficult. However, to implement an e-business strategy correctly requires an ongoing commitment of

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time and energy. Our research shows that both companies are willing to make that commitment at this moment in time with a note that although they represent traditional companies, the owner/managers' beliefs are that technology has changed and will continue to change the way they do business.

Summary of Other Case Studies

Most of the companies looked at in this study were micro-businesses with less than 10 employees; one company was a small business with 25 employees. Micro-businesses generally suffer from a lack of resources, particularly financial resources, and this impacts on their behaviour toward any investment. In the interviews with the seven other owners/managers of SMEs, it was confirmed that they do not like to be pushed by anyone, especially by the government or the DTI in terms of their technological and organisational readiness. Our interviews revealed that companies would like to take a step at a time and incorporate e-business in their existing strategies gradually and when they feel they are ready. These findings support our earlier recommendation in this chapter that a new e-business model is needed that will help SMEs in this transition period. All seven owners/managers interviewed stated that they would like to change their business strategies but tend to stay entangled in the old way of doing things. The reasons for this are that these owners/managers are lacking appropriate skills and knowledge and do not have enough information on where to seek help. It can be argued that these findings support the challenge for government to convince generally reluctant SME owners/managers of the need to take external advice (Hankinson, 2000; Hankinson, Bartlett, & Ducheneaut, 1997; Simpson & Docherty, 2004). In addition, issues regarding government initiatives, skills, IT experience, and willingness of SMEs to upgrade their existing technologies need to be emphasised. Although government policy has been formulated to promote information technology and communications for all SMEs (DTI, 2003), our experience is that all seven organisations had never heard of UK online for business. The following statements collected from the interviewees illustrate this point:

I've never heard about UK online for business. Government should find better ways of communicating the information to local businesses, other than leaflets which we consider as junk mail.

Not heard about UK online for business. Government never listens to what practitioners have to say. They do their business, we do ours. We would like to change our strategy but don't know how.

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I don't know who UK online for business is. I am unaware of any help promoted by UK government. I would really welcome any government initiative to help me, mainly financially to set up a Web site.

We used some government agencies, but they are not useful. I tried to find some information about my business and the government representatives were very unhelpful. They sent me to find information myself. They don't communicate their ideas and plans to us and they don't talk to us.

Furthermore, this research confirms previous findings of the DTI (2003) that companies below £50k turnover found the cost of even basic IT equipment impossible to afford. The lack of broadband connections is reported to have frustrated small businesses (Federation for Small Businesses, 2002). However, our research did not find any evidence to support these assertions. Nevertheless, skills and organisational capabilities have come out as potential problematic issues for SMEs. We found enough evidence to support Local Futures Group's (2001) findings that if SMEs increase the level of technical skills across the board that will encourage further technological implementations. The following quote from an interviewee illustrates this:

We could do business without the Internet technology but we would like to get more out of it. It is expensive. We have some applications but they are not used properly, it is a skill problem.

Positive experience with IT has been noticed throughout the case studies with only one exception. One SME representative mentioned that the organisation raced onto the Internet at an early stage only to discover, quite painfully, that the Internet and technology did not spell automatic success. However, the owner is very aware of the advances in the Internet technology and is preparing a plan to implement new e-business applications at a later stage.

Our research identifies that in order to implement e-business, most of the companies interviewed are facing a complete overhaul of their existing strategies for which they are not ready at the moment. Some simply because of unsuitability of the industry sector they trade in, and others because they are not ready to take the next step. This study on the whole suggests that a new conceptual model is needed which could be used as a general tool for creating competitive advantage in SMEs, providing that owners/managers are receptive toward the usefulness of an e-business strategy and its implementation. This complements the study of Bharadway (2000) who argued that the ICT skills of SMEs owners/managers play a vital role and that IT capable firms outperform

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others on profit and cost-based performance measures. Although additional research in this area is needed, there also is some firm evidence supporting recent studies of Kalakota and Robinson (2001) that global reforms, technological transformations, and socio-economic changes will continue to affect SMEs and the UK economy as a whole. In that respect, this study confirms Coltman et al.'s (2001) findings, which argue that traditional firms have found applications for Internet technologies. Our research shows that technology has indeed transformed the traditional business environment and impacts on how businesses perform.

Our findings open an area for further study as we could not find measurable evidence that e-business always creates a competitive advantage in SMEs. However, our two in-depth case studies show that there is a potential that when companies integrate the Internet into their overall strategy, the new technology will lead to a competitive advantage. On the other hand, the remaining seven case studies showed that, although they use some form of technology to run their businesses, they are far from creating a competitive advantage from it. At this stage, our advice to SMEs would be: If organisations are to create competitive advantage and win e-customers, it is absolutely essential for businesses to have a sound and well-resourced integration plan of new technologies. Although this approach may seem to be common sense, it is surprising to see how frequently this is not applied in SMEs' practice.

Prototype of a New E-Business Model

Although limited, our study clearly shows that SMEs need to create and implement a plan that allows them to make the transition from an old system to a new e-business organisation. To help SMEs manage this transition period, we propose a prototype of a new e-business model named **competitive advantage through e-business (CATE-b)** as shown in Figure 1.

We call it a "prototype" because it is based on limited evidence and would require further development, refinement, and verification. Nevertheless, it is important to stress that this prototype model has a sound basis in the comprehensive literature review and was complemented by a limited number of case studies. The proposed prototype is regarded as an adaptable solution where a company with an old legacy system uses existing IT applications and builds upon them at their own pace. This way, companies with or without external financial support (e.g., provided by the government) can minimise risks associated with developing an IT enterprise requiring expensive planning and investment. Our research identified two critical areas in a traditional value chain, which supports theories

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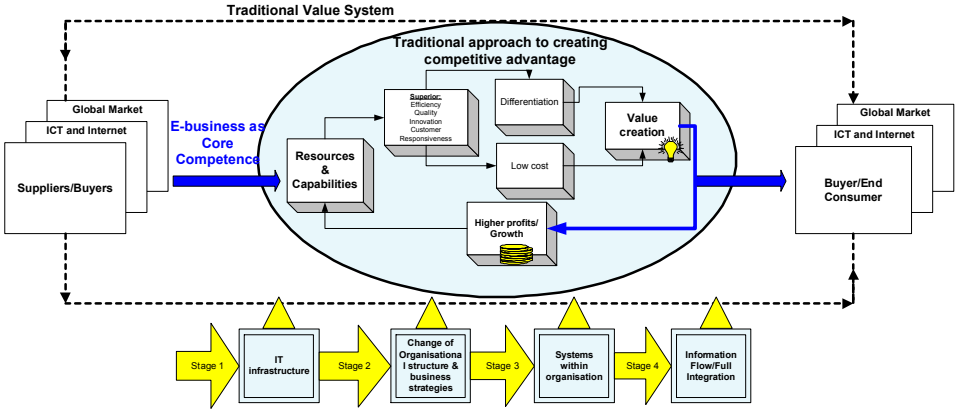
Figure 1. CATE-b prototype model



and models on a reversed value chain (Poon & Swatman, 1999; Kalakota & Robinson, 2001; Daniel, 2003).

As the starting point of e-business integration in SMEs, we propose four building stages:

Stage 1: Implementation of appropriate IT infrastructure. This is an **IT infrastructure integration**, which is seen as a starting element of an e-business implementation strategy. An SME needs to provide and invest in

Figure 2. Traditional value chain design (Source: Hill and Jones, 1998)

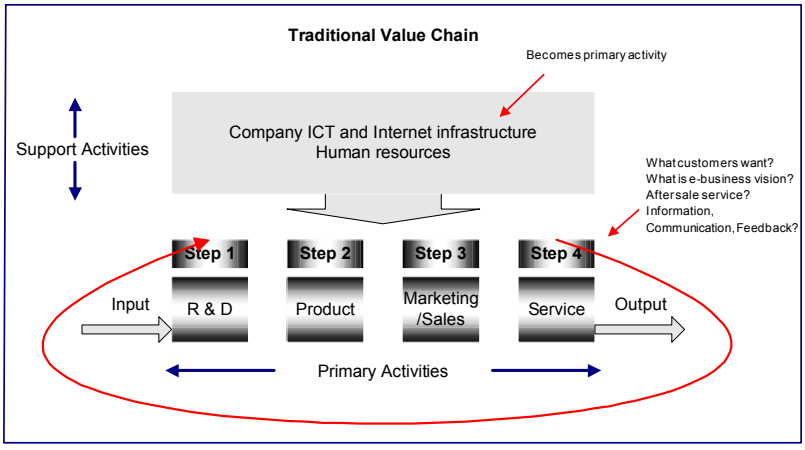


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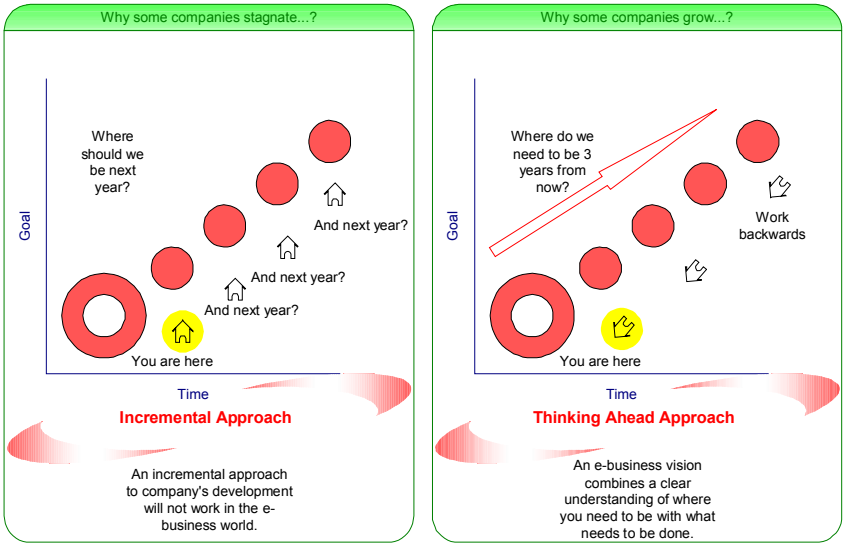
Figure 3. E-business planning approach (Source: Kalakota and Robinson, 2001)



the hardware and software required for the business to work. It seems clear that the first step in a successful e-business strategy is having the company's own systems in order (Feller, 2000; Porter, 2001). Our study showed that companies that are highly IT capable and employ more skilled staff outperformed others in terms of profit.

Stage 2: Changed organisational structure and business strategies. This is looking at structural change within organisations. At this stage, a company accepts that the Internet technology will become integral to their business and the value chain is reversed. This is seen as an important element of sustaining value creation by firms in the future. Organisations need an integrated and coordinated approach toward knowledge, technology, and relationship management (Walters, Halliday, & Glaser, 2002a, 2002b). In our study, we identified that companies which refuse to change and adapt to the new environment when necessary experience many difficulties. These are related to the overall success, profit, and the growth of the company.

Stage 3: Integration within an organisation. This is a complete internal integration. The business goal is to focus on cost reduction and internal efficiency (Cheng, Li, Love, & Irani, 2001). Our research showed that SMEs who are able to integrate internally are more successful and employ skilled and knowledgeable staff.

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Stage 4: Full integration with free information flow between suppliers, organisation, and customers. This is the final and full integration with a free information flow, where the business goal is to create market value and competitive advantage by using the Internet technology. This stage enables supply chain integration and more effective in-sourcing and outsourcing. It also allows for sophisticated online business to interrelate internally as well as externally (Van Hooft & Stegwee, 2001; DTI, 2000). SMEs presented in this study have not yet reached this stage of full integration. However, this stage is seen as an essential part of implementing an e-business strategy.

It is important to stress that the four basic elements of e-business integration should not be seen as a linear process, but rather as the "building blocks" of various factors helping SMEs to take a step at a time and when ready. The proposed building stages of integration support the government's e-business adoption ladder model (Kaplan & Norton, 2003) and contradict Levy and Powell's (2003) statement that the stage model is inappropriate and misguided. In addition, all four elements of e-business integration have been seen as key enablers of a full e-organisational integration that will allow free information flow between suppliers, the organisation, and customers. In exchange, this would create profitable growth that provides a customer-tailored product and service and add superior value to the firm (Porter, 1985).

The proposed prototype model is based on our findings and literature review, and it determines the strategic elements that translate into an enterprise that is both efficient and flexible, allowing the company to adapt, change, grow, and innovate. The relationship between value creation, innovation, and integration forms the core of e-business planning. This approach allows the company to take either a short- or long-term solution. The short-term solution is where a company uses existing applications and builds upon them in their own time. The long-term solution is where a company starts over with new applications as the core business. This way, companies with no financial support can minimise risks associated with an expensive enterprise framework planning and investment approach.

Conclusion and Implications

In this chapter, we have reviewed the current literature, government support for SMEs, benefits and barriers of adopting and implementing e-business strategies in organisations, and proposed a new prototype model, which suggests new ways

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of creating competitive advantage through e-business. Guided by the general alignment models and literature review, we presented a prototype model CATE-b that develops an e-business strategy for SMEs. It can be used for SMEs that do not want to take the radical approach to e-business and could build upon their existing technology, and also for SMEs that start over with new applications as a core business.

Our proposed agenda builds upon existing capabilities of the organisation and will ensure a proper fit with the strategic goals of the organisation as a whole. We expect this prototype model to aid SMEs in taking full advantage of the current publicity surrounding e-business, while avoiding projects which can turn out to be costly and disadvantageous. However, we anticipate that owners/managers will be facing some difficulties while implementing a prototype CATE-b model. For example, many organisations still have 20-year-old legacy IT systems which cannot be discarded, so it makes it harder for organisations to integrate. Furthermore, owners/managers may experience difficulties such as employee resistance when attempting to transform an old business design, based on physical realities into a new design rooted in the digital virtual requirements of tomorrow. Whatever the limitations of the prototype model CATE-b may be, our belief is that the benefits are greater than those offered by alternative models. E-business offers greater operational advances and opens wider markets than traditional business models. SMEs must follow the new trend of e-business if they are to stay profitable and continue to trade. Larger empirical research, followed by in-depth case studies, will be carried out to test the validity of current findings and suitability of the prototype model.

Our conclusion is that successful managers should anticipate the impact of recent economic and technological changes on their current businesses. Going digital is not a luxury anymore, it has become a necessity. However, digitalisation requires a systemic approach and gradual integration and application depending on the size and the capital available in the organisation. To thrive in today's dynamic environment, companies must consciously choose the next phase in their growth and evolution. This is the age of continuously assessing their e-business processes. The challenge confronting today's manager is in the creation, execution, and ongoing evolution of a successful e-business plan. So the message to SMEs would be: to be customer focused; value creation is a continuous process; transform business processes into digital form; start small, build on success, and learn.

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Chapter XIV

Impact of E-Innovation on Corporate Procurement Control: Electronic Marketplaces and Broad Spectrum Changes

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Abstract

This research addresses the very important question of the impact of e-innovation, namely, Web-based global electronic procurement systems and marketplace on corporate governance in relation to organizational purchasing — the organizational structures and processes for procurement control. This is undertaken through an action research case study of the failures and successes of competitor global organizations cooperatively establishing and utilizing a global electronic marketplace. Specifically, the research investigates how electronic procurement contributes to the adaptation and evolution of control structures — from highly structured, bureaucrati,c and rigid to flexible, adaptable, free flowing, and profitable, and these can result in substantial reductions in transaction costs.

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Introduction

This chapter explores and analyses the complex **electronic procurement marketplace** architectures and their inherent uncertainties, as well as broad spectrum changes. An **electronic procurement governance model** is placed in an electronic marketplace context. The electronic marketplace case studied comprised more than 25 major global mining, minerals, and metals organizations who were not only competitors in the marketplace but also were the collusive and cooperative founding shareholders of a vertical, direct, global electronic market. These marketplace competitors collectively invested more than US$100 million in the electronic market venture.

The objectives of the study were to research how organizations in hyper-turbulent conditions (McCann & Selsky, 1984) comprehend electronic procurement broad spectrum changes cross-sectionally and longitudinally in terms of adaptation at the organization level, and governance models at the industry level (Meyer, Goes, & Brooks, 1993; Huber & Glick, 1993). The multi-level nature of electronic procurement change processes occurs at the industry level where boundaries shift and are breached as rivalry intensifies; at the inter-organization level where competitors are drawn into networks of symbiotic relationships that overlay competitive relationships with collaborative and collusive ones; and at the organization level where top management teams formulate corporate governance strategies intended to align the organization with industry conditions (Huber & Glick, 1993).

This study addresses the following research questions which include:

- Must organizations adopt radically new procurement governance strategies in order to survive in hyper-turbulent environmental conditions? (Meyer et al., 1993)
- Are electronic procurement transaction costs important? (Williamson, 2002a)

Conceptual Framework

Organizational Hyperturbulence

In the 1990s and early 2000s, rapid technological changes created organizational environmental turbulence which peaked around the time of the dot-com crash (Figure 1).

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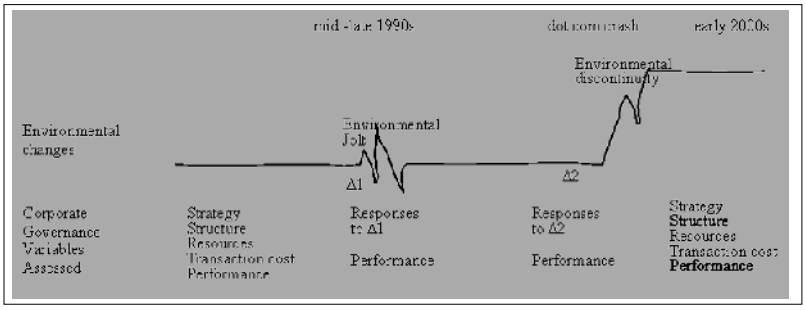
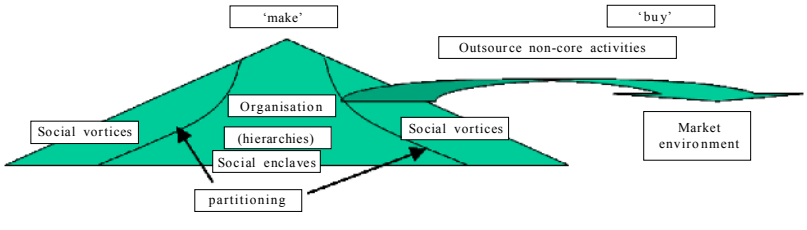
Figure 1. Environmental changes and organizational variables assessed (adapted from Meyer et al., 1993)



Under these environmental circumstances, there is a need to promote free-flowing forms of self organization and electronic procurement governance through the principle of minimum specification (Commons, 1934), and adaptation and resources are central problems (Axelrod & Cohen, 1999). Without slack resources, active adaptation is constrained because innovations such as electronic procurement cannot be protected and cultivated. There are no rules to the game (Morgan, 1997), so there is a need to develop approaches to electronic procurement corporate governance that foster an open-ended evolution which relies on competition to sort between modes of governance (Williamson, 2002a). Electronic procurement facilitates marketplace transactions where incentive intensity and adaptation are more, administrative controls less, greater innovation anticipated, and incentives apply (Williamson, 2002a). While electronic procurement transactions may differ in attributes, they align with their governance structures which differ in cost and competence, and so provide a measure of their economy (Williamson, 2002b) (Figure 2).

The corporate governance of electronic procurements in organizations originally idealistic and democratic, which eventually come to be dominated by a small, self-serving group of people who achieve positions of power and responsibility (Michels, 1915), cost more to support than networks and are less adaptive. The

Figure 2. Type 5 hyper-turbulent ('vortical') environment



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corporate governance of electronic procurement analytical frameworks around variation, interaction, and selection assist in the understanding and management of such complex adaptive systems (Axelrod & Cohen, 1999). Through electronic procurement, it may be possible to select for specific buyer or seller activity strategies rather than whole buyer or seller activity, while noting the need to tolerate uncertainty (Dorner, 1989; Hofstede, 1983).

Research Methods

Longitudinal Action Research Through Case Studies

Kemmis (1997) expressed the view that action research aims to help practitioners investigate the connections between their theories and their day-to-day practices — it aims to integrate the research act into the setting so that research can play a direct and immediate role in the improvement of practice, and it aims to overcome the distance between researchers and practitioners by assisting practitioners to become researchers. Kemmis and McTaggart (1988) defined action research as a form of collective self-reflective enquiry undertaken by participants to improve the productivity, rationality, and justice of their own practices, as well as their understanding of these practices and the situations in which these practices are carried out. Kemmis and McTaggart (1988) stress that action research is collaborative, though it is important to realize that the action research of a group depends upon individual members critically examining their own actions. Schon's (1987) metaphors are the master class in musical performance. Mintzberg's (1987) central concept is that of something which emerges that is literally crafted from the overlay of experience or intentions, from the ability to take raw data from the past and present and use it to advantage for learning and gradually shaping the future, working carefully with what is, while nurturing and shaping the possibilities for what might be; managers may have to live strategy in the future, but they must understand it through the past, and only by coming to understand the patterns that form in their own behaviour do they get to know their capabilities and their potential. This crafting strategy, like managing craft, requires a natural synthesis of the future, present, and the past and is consistent with Morgan's (1997, p. 267) "chaos-complexity" ideas on the art of managing and changing context in which "appropriate forms of self-organization can occur," that managers help to "shape emergent processes of self organization while avoiding the trap of imposing too much control."

Yin (2003a, 2000b) suggests that case studies can help provide an understanding of what is happening contemporaneously, and then making this data available to a wider audience for their judgement as to what may be applicable in their

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circumstance. This is well suited to the needs of this research. In Campbell's foreword to Yin's (2003b) case study research methodology, he suggests that case studies can meet a long awaited need for a mid-way option between scientific positivism and social science.

The Context

Figure 3 provides an overview of the typical architecture of an organization's electronic connections through electronic markets or "hubs," to its buyers and sellers. The purchasing (see Endnote 1) (procure-to-pay) activity (Figure 4) is a component of the overall procurement (see Endnote 2) activity (buy-make-sell) of an organization (Figure 3).

On Both Sell Side and Buy Side, It Is Necessary to Provide Services

The process shown in Figure 4 indicates the necessary Web-based electronic procurement processes between a buyer and a seller (supplier).

To deliver "off the shelf" commodity products within a specified time frame and to have a returns policy, there is a need to process each Web-placed purchase order for personalisation, to track the purchase order status, and to keep the buyer informed. Electronic-enabled supply chain logistics fulfilment options

Figure 3. Typical electronic procurement and purchasing governance architecture

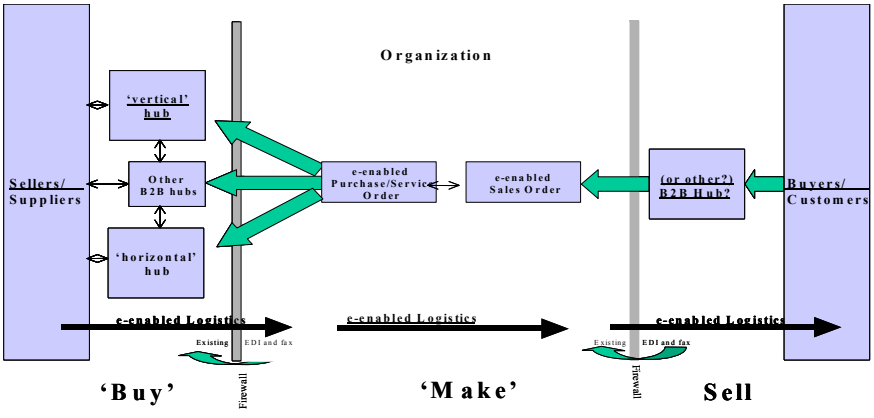

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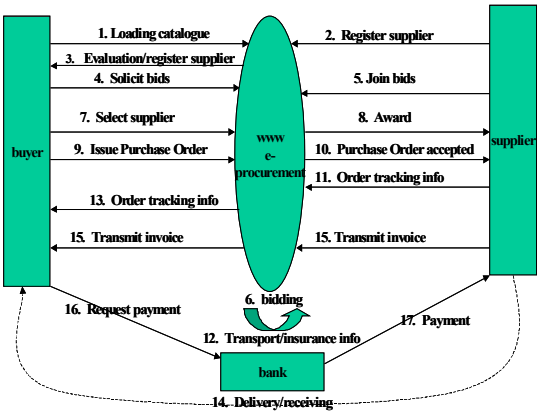
Figure 4. Typical electronic procurement "procure-to-pay" processes



include in-sourcing, outsourcing, and virtual warehousing through suppliers. **Electronic logistics** fulfilment requires a high degree of flexibility in infrastructure, people, and skills to adjust to various product mixes and unpredictable demand patterns. Electronic fulfilment logistics may be in-house, outsourced, or virtual. Technology upgrades, re-engineered business processes and an infrastructure to support logistics have to be provided to attain transaction cost efficiencies. Changed governance structure may result in disintermediation of intermediaries in the **value/supply chain** when using electronic supply arrangements, because buyers may attempt to go direct to the manufacturers.

The Core Functionality of Electronic Procurement Is Automating the "Procure-to-Pay" Process

The core interest in electronic procurement is automating the "procure-to-pay" process at the buyer's and seller's desktops. Multiple sellers want access to a buyer's desktop computer and to provide their electronic catalogues. The buyer can then select a product, obtain approval, and the purchase order is then electronically transmitted to the supplier, subsequently tracked through a B2B portal, followed by electronic invoicing and payment. Lowering the transaction costs of supply logistics in the "procure-to-pay" process can be expected because of the potential for **disintermediation** of entities between the producer of the product and the buyer. When a buyer's inventory in a given direct (see Endnote 3) or indirect (see Endnote 4) product (includes maintenance, repair, and operation [MRO] (see Endnote 5) supplies) reaches a certain predetermined

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point, the buyer's electronic system can be set to automatically send a message to the supplier in a language both can interpret.

Principal Perceptions

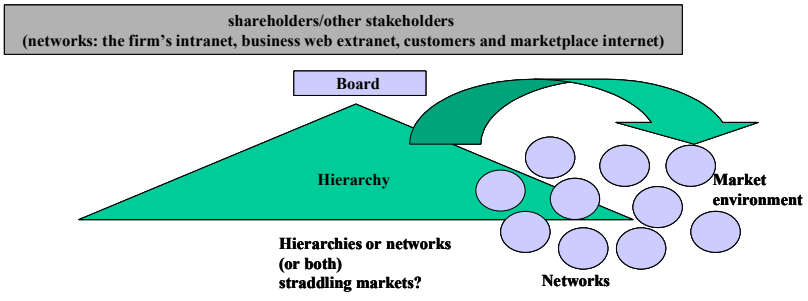
Large organizations acknowledge the need to apply electronic procurement. Their principal perceptions are often gained from the many promises made by consultants and the IT industry for the electronic automation of the entire procurement process. Sellers are challenged to get their catalogues online to offer content and its management, to maintain branding, to avoid commoditisation of their products, and to want buyers' decisions to be less price-based and more service-based that is, on a "value for money" basis. This creates a tension for sellers as to whether to join a B2B electronic market portal or try to retain their current buyer base and offer their own electronic services to their existing if not expanded buyer (customer) base, or both.

Architecture of Buyer-Seller-Portal Relationships Include Both Centralized Portal Hubs and Decentralized Networked Approach

The structure of the buyer-seller-portal relationships include centralized portal hubs and decentralized networked approaches that mimic the overall structure of the Internet (Figure 5) with distributed systems. Low-cost providers and implementers of electronic procurement software link buyers and sellers.

The emergence of more efficient electronic markets enables smaller sellers to compete with the largest sellers. Buyers can now expand rather than consolidate their seller base. Sellers are able to bid on contracts, negotiate terms, and

Figure 5. ***Corporate Governance****: heirarchies or networks?*



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transform the process into a purchase order — the specialization of B2B purchases across industries lends itself to customized solutions that sellers can put in place to encourage direct interaction with buyers.

Case Study: Use of Electronic Procurement Data to Provide an Analytical Framework

This case study explores the use of an electronic procurement database to facilitate electronic marketplace transactions and to provide an analytical framework for electronic procurement governance.

Electronic procurement data for individual product purchases can be grouped in to commodities and can be charted according to their procurement governance arrangements (Figure 6).

Select for Specific Buyer or Seller Activity Strategies Rather Than Whole Buyer or Seller Activity

Figures 7 and 8 are case studies demonstrating a summary view of how electronic procurement data was applied to provide an analytical framework for

Figure 6. Transactions involving buyers, sellers, and an electronic marketplace

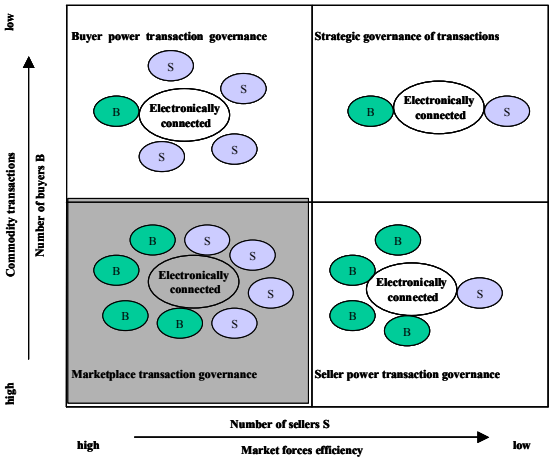

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Figure 7. Supply positioning analysis of $8b procurement spend – top 49 commodities

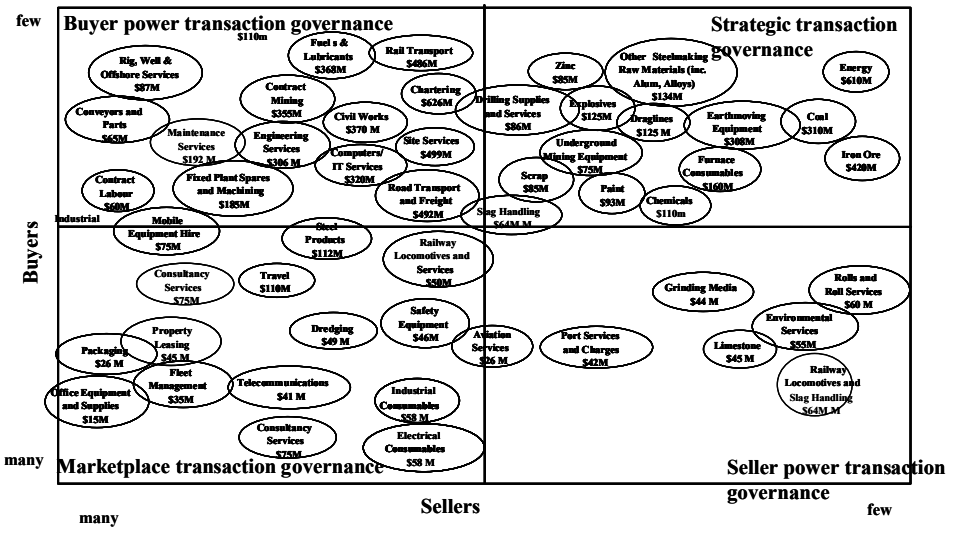
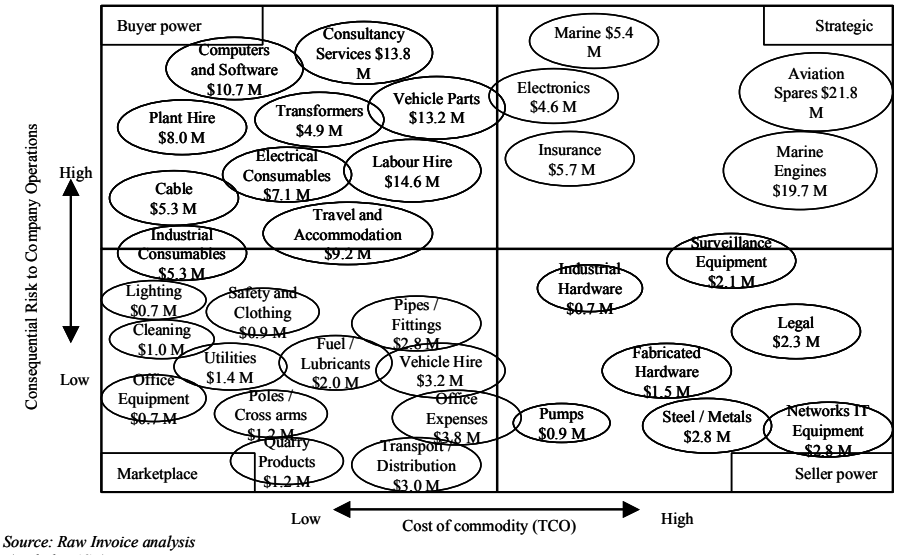


Figure 8. Energy industry use of electronic procurement database



Source: Raw Invoice analysis (excludes ASP)

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strategic and other sourcing activities. This enables procurement strategy selection to be based on actual and up-to-date specific buyer and seller activities. Selection for specific buyer or seller activity strategies can be undertaken, rather than for whole buyer or seller activity

Similarly, an energy sector business unit use of the electronic procurement database for strategic sourcing activities is shown in Figure 8.

Case Study: The Inter-Organization Level Where Competitors Become Collaborative and Collusive

This case study explores the inter-organization level where competitors are drawn into networks of symbiotic relationships that overlay competitive relationships with collaborative and collusive ones.

Selected for this purpose is the development of a global electronic market from soon after its inception through its early development period. The industry selected for this research had been under continuous cost and pricing pressure for many years. Cost reductions and operational efficiencies have been vigorously pursued. Until recently, the search for further cost reductions continued as a primary objective. The procurement function was centrally involved in meeting this continuing improvement objective, and electronic commerce presented itself as a new tool to be applied to this purpose. Business-to-business (B2B) electronic procurement marketplaces offered the prospect of a radical next step in the evolution of strategic sourcing, and provided the ability to globally optimise the selection of products (goods and services) to achieve lowest cost whole-of-use results. The new Internet-based technology offered the promise of allowing complex global enterprises to manage their procurement activities on a global basis and local companies to achieve global reach in securing their procurement needs.

The global electronic market's plan initially proposed the establishment of an Internet-based B2B procurement marketplace to facilitate the procurement of goods and services to the industry sector companies worldwide yielding sustainable value to owners, buyers, and sellers. An independent company, the global electronic market was to be founded by global industry sector shareholders. The global electronic market would design, develop, operate, and manage the marketplace to be open to all buyers and sellers who wished to participate; neutral, neither buyer or seller-centric; global, reaching all major regional markets; independent, financially and in approach; and secure and confidential, as to relationships and trading information.

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The global electronic market was perceived as having the distinct potential to become a valuable, stand-alone company with strong initial public offering (IPO) potential, if successful. The IPO value for the global electronic market was estimated to be more than US$1 billion, based on the financial forecast contained in the plan. The key success factors for the marketplace were building critical mass (liquidity) quickly through a compelling seller and buyer adoption effort; rapid execution of the business plan; and continuous innovation in products and services offered by the global electronic market, including introduction of a wide array of value electronic added services that are tailored to the needs of the industry participants.

Benefits to Buyers Lowest "Total Cost of Ownership" Solutions

This particular global industry included approximately 200 buyer companies, each with revenues in excess of US$50 million, and with an accessible spend, that is, spending that could logically be put through a procurement marketplace, totalling about US$140 billion per annum. Smaller companies and related industries could be included to expand marketplace size further to US$200 billion per annum. The amount of electronic procurement activity potentially impacted by this marketplace was enormous. Buyers could expect the marketplace to deliver improved cost across this spend by enabling better decision-making and selection of items, based on superior information and comparison of alternatives; identifying the lowest "total cost of ownership" solutions; shortening selection time frames, due to online, up-to-date catalogue access; facilitating purchasing aggregation, uniform pricing, and improved contract compliance across the buyer organization; offering sophisticated pricing and bidding tools, such as online auctions, reverse auctions, and requests for quotes uniquely tailored to individual business needs; and offering connectivity with buyer enterprise resource planning to streamline and automate buyer procurement processes and cut costs.

Benefits to Sellers but Many Marketplaces Were Facing Problems in Attracting Sellers

The seller universe for this industry was conservatively estimated to include 35,000 companies, varying greatly in size, geographic reach, and sales volumes. Sellers would be attracted to participate in this marketplace for a number of important reasons, including opportunities to directly target a large community of relevant buyers to more efficiently gain sales and market share; easy access to

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an expanded buyer base through global participation; lower cost of delivery through the streamlined online buy/sell process, and also from savings in inventory and warehouse costs that result from improved supply and logistics planning by both buyers and sellers; lower cost of catalogue production, issuance of standard price list updates, and management of special buyer discount programs; and lower selling and marketing costs. To the extent sellers were able to service other industries from their established position in the marketplace, they would further reduce their setup and connectivity costs across multiple systems. It was recognized that seller adoption was a critical area of focus for the business. Many marketplaces were facing problems in attracting sellers. The key issues raised by sellers revolved around concerns that their products would become commodities with consequential loss of revenue; costs to become electronic enabled were substantial; and sellers may be required to join numerous exchanges to maintain markets.

Benefits to Shareholders: Sharing the Risks and Development Costs

The founding shareholders would benefit from the substantial advantages promised to buyers by participation in the marketplace. In addition, the shareholders also would share in the benefits from their direct equity ownership in the global electronic market. These benefits also promised to be substantial and included value through retention of an ownership position in a business entity with good projected earnings and strong IPO potential at attractive market pricing multiples that significantly exceeded then shareholder industry multiples; and synergy by sharing the risks and development costs of an electronic procurement solution relevant to the industry. In the absence of this project, each individual shareholder company would have to spend considerable resources to join multiple marketplaces that were likely to only deliver a fraction of the supply chain capability planned for the global electronic market. Also, founding shareholders would have a degree of control in the form of the opportunity to guide the development of a marketplace that would cater to the specific needs of the founding shareholder's industries, while also allowing sponsors to better understand and be an early starter with implementation compared to non-shareholders; and the gaining of knowledge by providing an opportunity to immerse staff from founding shareholder businesses in a technology-driven, cutting edge electronic business process redesign that will support other work within shareholder businesses in the future. The dozens of mirror teams created within shareholder companies would support the capture and sharing of that knowledge.

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Technology Issues: Reputable Software Providers Selected

The marketplace would utilize a robust, sophisticated technical architecture to be provided by Commerce One and SAP Markets. The software provided by these companies, and tailored to solutions to be developed in collaboration with the global electronic market team, were at the heart of the functional and financial objectives of the marketplace. The technology partners were contractually responsible for the delivery of a functional software tool that met rigorous performance specifications. The technology contract contained 149 specific software functionalities to be delivered.

The Competition Did Not Have Critical Mass of Owners to Attract Sellers, or a Base of Transactions That Would Sustain the Business

There were several vertical procurement marketplaces in the industry already that would share potential market space. While they had been active in some cases for more than 12 months, they did not possess the key strengths embodied by global electronic market. Instead, they were backed by venture capital or single company funding, which slowed their development progress and market acceptance, and they did not have the critical mass of owners/participants to attract sellers to participate, ensure a base of transactions that would sustain the business, and provide the attractive suite of products that would attract more customers to their exchanges.

Essential to Develop Momentum, Value and Services to Move on from a Transaction Processing-Based Business

Competition in this emerging business space was intensifying. There were a number of other vertical exchanges, targeted to other industries that could overlap with this global electronic market over time. The existing competitors in the industry could consolidate and receive backing from a group of buyers or sellers who otherwise would be natural participants in this marketplace. Horizontal exchanges would continue to form around unique product offerings that seek to cut across the global electronic market offerings, as certain sellers chose to organize in that configuration. Regional exchanges also would continue to form, seeking to build wider offerings than the horizontal exchanges and seeking to exploit regional affiliations and unique regional market needs. The sell-side

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exchanges also were expected to integrate back into the procurement exchange space over time, and to build wider offerings to their customers once their success was established on the sell-side. Another scenario saw the potential for value electronic-added service providers to bleed throughput away from the global electronic market if services were offered in more compelling forms elsewhere. For all these reasons, it was essential that this marketplace gather and maintain its momentum, do a better job of delivering value to both buyer and seller participants, and develop a distinct and valuable array of value-added services that moved it on from simply a transaction processing- based business. This global electronic market was expected to rapidly attain leadership status because of its wide industry sponsorship. This sponsorship offered the ability to build a truly global marketplace with solutions tailored to industry needs, a wider range of value-adding services, along with a significant pool of people and financial resources to support the development process. The global electronic market had staked out a strategic position by announcing its intention to form, and now it must execute well and rapidly in order to capitalize on being first to market with a broad, comprehensive global solution. The ownership profile of global electronic market brought with it access to substantial throughput, and advanced the collective shareholders' readiness time table for electronic procurement. This ownership affiliation was considered to be a huge advantage for the global electronic market at the time.

Product Development: Establish Links to Buyers and Sellers, Services and Supply Capabilities

The global electronic market planned three sequential releases of products (goods and services) for the marketplace based on an objective to capture early value and market share, then moving into more advanced value-added services offerings as rapidly as possible. These releases were to establish links to buyers and sellers, purchase order and invoicing facilities, buyer-initiated auctions, request for proposal/ request for quotation (RFP/RFQ) capabilities, credit and payment facilities, as well as foreign exchange management and catalogue maintenance services. Next was to create capabilities for the provision of common warehousing, sophisticated data usage and management, access to advanced financial services, logistics services, and strategic sourcing. Finally, it was necessary to create capabilities for the provision of uniquely tailored solutions to participants' supply chain needs.

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Market Development Using Surveys and Contact with Industry Buyers, Sellers, and Shareholders

Marketing efforts would include market surveys and initial contact with major global sellers to the industry in order to assess seller attitudes and beliefs, understand readiness for electronic commerce, and test availability of catalogue content to support the global electronic market. Input would be sought from the shareholders as to those specific vendors who needed to be targeted for early entry into the marketplace in order to maximize marketplace liquidity. Personnel from regional operating centres of the global electronic market in conjunction with representatives of the shareholders' companies, would then undertake the direct marketing and enrolment efforts. Marketing would be targeted at senior personnel within selected companies, downstream processors, strategic sellers, MRO sellers, office sellers, and contract engineering firms. The plan called for the early adoption of 3,600 sellers globally.

Seller Adoption and Catalogue Strategy: Sellers to Retain Ownership of and Responsibility for Catalogue Content

The initial focus would be on identifying those sellers who would maximize global electronic market liquidity. It was expected that approximately 3,600 sellers from the global pool of 35,000 could support about 80% of the transaction volume in key MRO and consumables segments. These high-priority sellers would be further ranked and targeted based on their importance to the founding shareholders, their significance within their market segments, and their readiness and willingness to deliver relevant electronic catalogue content to the global electronic market. The regional organization structure would facilitate this seller adoption effort by leveraging existing seller relationships. The catalogue content to be developed would be detailed enough to support the value propositions of both buyers and sellers, and would support value-added services over time. To the greatest extent possible, sellers would retain ownership of the catalogue content. Responsibility for content accuracy and depth of presentation would reside with sellers, and would be managed by them as defined by marketplace rules and processes. The financial plan provided for US$20 million to be used as incentives for the early enrolment of key sellers and development of important catalogue content.

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Challenges: Building the Customer Base

The global electronic market must attract buyers and sellers in all of the regions as rapidly as possible. Maximizing throughput would create the greatest savings to users and would minimize the global electronic market development funding demand on the founding shareholders. To ensure this happened, a sophisticated seller rollout program was developed. A key component of this was a clear demonstration of the benefits that sellers would enjoy by participating. A thorough understanding of seller supply chain economics was required to achieve this. Pricing strategies were developed that made early participation particularly attractive. The global electronic market was fortunate to be supported by founding shareholders motivated to participate. They had the potential to bring a high spend level to the business early on. A detailed buyer adoption program also was developed for buyers who were not founding shareholders. This involved making contact with all key industry participants around the world.

Challenges: Regulatory Compliance

Regulatory compliance safeguards were developed to ensure that marketplace practices were acceptable to regulatory authorities in the European Union, the United States, as well as in other jurisdictions. The need to ensure that all transfer-pricing arrangements were well documented, robust, and capable of withstanding challenge from tax authorities were clearly identified.

Challenges: Complexity of Technology Necessary Required Highly Structured Platform Development and Alignment of Principal and Agents

The complexity of technology necessary to realize the global electronic market vision required that platform development be very highly structured. For this reason, a world-class provider, **Commerce One/SAP Markets**, was tentatively selected. The achievement of key platform capability delivery targets was to be ensured through contractual incentives and/or penalties as well as by diligent project management. Enablement of buyers' ERP systems to transact business with the marketplace also posed a major challenge. To ensure maximum support for this work, the marketplace needed to develop comprehensive change process guidelines and adaptor kits for all major ERP products, certify selected consultants in their use, and provide continuing technical support with Commerce One/SAP Markets.

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Challenges: Human Resources

It was essential that the global electronic market obtain sufficient staff of the highest calibre. It needed to aggressively recruit and hire top quality management that would in turn serve to attract others key managers. It was expected that several permanent employees would be sourced from the founding shareholders. Additionally, the electronic market was hoping to borrow staff from founding shareholders as temporary personnel who would be needed for the ramp-up process. Appropriate safeguards would be employed to protect competitively sensitive information. To the extent that these temporary personnel were not available, it would be necessary to use outside consultants to bridge the gap. All founding shareholders were competitors.

The global electronic marketplace aimed to reshape procurement for the global resources industry by establishing a B2B Internet-based marketplace between multiple buyers and sellers for outsourcing general purpose products purchases. All founding shareholders were competitors and included Alcan Aluminium Limited, Alcoa Inc., Anglo American plc, Barrick Gold Corp, BHP Billiton, Corporacion Nacional del Cobre de Chile (CODELCO), Companhia Vale do Rio Doce (CVRD), De Beers Consolidated Mines Ltd., Glencore Int AG; Imerys, Inco Limited, MIM Holdings; Newmont Mining Corporation, Noranda Inc., Normandy Mining, Pechiney, Penoles; Phelps Dodge Corporation, Rio Tinto, the Votorantim Group, WMC Limited, and Morgan Stanley Dean Witter. The global electronic marketplace's greatest success was predicted to be through electronically enabling commodity marketplace transactions (low-value, high-transaction numbers), rather than as an intermediary between an otherwise one-to-one buyer-supplier, longer term contractual relationship.

Challenges: Corporate Governance

The global electronic marketplace was funded by venture capital contributed by marketplace competitors in one industry – it was a case of competitors becoming collaborators. But by being in the one industry sector, there were products, commodities, and sellers (suppliers) in common; therefore, founding shareholders had many common interests. The governance drivers were market efficiency, aggregated content, supply chain integration, process efficiency, and purchasing power. The governance structure was directed by a Board of 15, with 8 regional offices globally. A comprehensive sustainable electronic procurement market was planned on the basis of an innovative, open, neutral, independent, and global procurement marketplace, governance voting rights based on equity ownership, and the guidance of 10 electronic procurement principles. These principles were marketplace neutrality, purchase functionality, no barriers to

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operations, 24x7 operation, content and confidentiality, back office integration, value-added services, one technology vendor, support buyer and seller adoption programs, links with other exchanges, and the maintenance of the segregation of buyers and sellers information to ensure independence.

Challenges: Range of Programs

There were a range of programs to encourage and support participation by buyers and sellers with an offering of complementary supply logistics services across global regions and the provision of purchase functionality and best practices. The participants were to evolve to best practice in a staged way with all participants able to easily participate in the marketplace. There was to be seller catalogue content and confidentiality, tight integration with a diverse range of back office systems, improved total supply chain management, core business services were to be offered from day one, and one technology vendor would be held liable for marketplace creation and performance. Rapid liquidity was to establish itself through aggressive buyer and seller adoption programs, with the support of open and flexible integration with other electronic marketplaces and exchanges.

Challenges: Prospective Revenue Generation and Major Risks

Prospective revenue generation for the global electronic marketplace **was** to be cash positive after 24 months, with a maximum equity investment from shareholders of US$130 million. Business benefits and implied **IPO** were valued at an order greater than US$1 billion.

Outcomes

1st to 6th Month

Founding shareholder procurement statistics were collected and these indicated an US$18 billion throughput after five years with ramp-up of spending. Pricing of transactions would start at 1% of the value of the transaction, declining over time to 0.5%. Revenue was to be based on throughput and pricing percentages. Build costs included Commerce One licenses and installation, maintenance, hosting, and other software costs. Catalogue development costs were costs to

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acquire stock keeping unit items in an inventory. Implementation consulting costs were estimated to be $4 million for Years 1 and 2, with start-up costs for regional networks estimated to be US$10 million. Corporate costs would principally be for 41 to 47 staff over 5 years, with burden rates at 25% and recruiting costs $12 million over 3 years. Facilities requirements would be based on 150 sqft/full-time employees (FTE).

7th to 12th Month

Immediately after the market was established, the next steps were for four electronic procurement capability releases. Major cost items were technology, human resources, and general and administrative costs. Major risks were perceived as the development of seller catalogues, maintaining momentum, technology, personnel, ERP links, and the competition.

A memorandum of understanding was signed by all founding shareholders. Phase 1 was the limited launch "proof of concept" and architecture arrangements. The first phase, "proof of concept" testing, tested order acknowledgement by involved shareholders and discussed lessons learned. However, the "proof of concept" outcomes raised more questions than answers.

13th Month

The corporate governance privacy policy largely involved discussions between the global electronic market and founding shareholders about the confidentiality of marketplace participant information and the corporate governance of treasury policies. A corporate governance overview at that time called for a refocus on seller education and enrolment, organizational build out, 35 buyer integration projects, a re-write of the business plan and budget, a refocus on resources, and business build out to the customer. The corporate strategy and business development spending was below that planned, the catalogue content management offering needed to be significantly enhanced, customer communication remained a significant challenge, and the focus moved to creating a "preeminent marketplace for the industry." Resourcing and recruitment continued to be issues.

14th Month

Founding shareholder's views on corporate governance were requested, particularly on the annualised year-end expenditure and savings on electronic

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marketplace throughput. However, the original ramp-up program was found to be unrealistic due to technological complexity and the execution challenge.

15th Month

There was a move away from transaction fees to membership fees by the global electronic market because it could see that a revenue base of principally transaction fees would not be sustaining. A new business plan was developed which provided a more realistic picture for the future and foundation for scale up. The recruitment goal was to hire between 30 and 45 people. The shareholder incentive plan for global electronic market employees, particularly for the CEO had no clear outcome — the founding shareholders seemed reluctant to agree a plan. There were revised forecasts, with emphasis on execution and integration followed by a more rapid ramp-up in throughput in subsequent years. The cash positive point was tentatively proposed to be moved on six months.

16th and 17th Months

Corporate governance was focussed on the user agreement and the privacy statement, auction terms, electronic catalogue procurement terms, catalogue content terms, and the fee schedule. The marketplace's limited role was as a facilitator of purchases. The marketplace was not intended to be used by consumers, with access to and use of the marketplace to be through a username and password. The entire risk associated with use of the marketplace resided with the authorized users. Authorized users were not to reproduce, duplicate, copy, sell, or resell access to the marketplace. The legal governance of the market was to be under the Laws of England (its corporate headquarters and company registration was located in the tax haven of Bermuda). It was confirmed that the marketplace now planned to turn cash positive six months later than had been originally planned. The original ramp-up had been confirmed as unrealistic due to technological complexity and the execution challenge. There was a need for liquidity by seller on boarding, buyer integration, platform completion, organizational build out, and commercialisation of value-added services. A membership fee levy was to be applied.

A new Web site was launched, but there continued to be corporate governance sensitivity about the buyer pricing revision of the membership fees. The changes to the initial membership fees was based on tiered buyer membership fees, a "take or-pay" spend commitment with two bundled options to choose from. The low number of sellers currently signed, while increasing, was still of concern.

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18th Month

The selection of application service provider was made. The global electronic market was now a global corporate with 100 employees, 120 trading partners, 128 projects, 11 auction events, electronic catalogues, and regional offices established or being established in six global regions. As a business, it was making its statement. Positive cash flow was now pushed out a further six months. There were two objectives taking primacy: to put in place the remaining corporate governance and to update the business plan.

19th and 20th Months

Following a review of operations, a number of unknowns were identified by the founding shareholders regarding the key factors influencing predicted revenue streams.

21st and 22nd Months

The focus remained on continuation of buyer integration and seller on boarding programs. Other key challenges were the provision of content; buyer business buy-in; and change management with both buyers and sellers. Any equity appreciation was now downgraded to being a bonus. The global electronic market had not met the any of the targets set only a few months previously.

23rd and 24th Months

The global electronic marketplace proposed its revised business plan which emphasised a focus on buyers and sellers. By now a harsh business climate had developed for founding shareholders. There was an acknowledged need for restraint in ongoing investments and frustration at the lack of progress. The principal issue became that of value to buyers and risks to revenue streams. The global electronic market at this time had an average spend rate of only US$5 million per month.

Summary

After 24 months, founding shareholder disillusionment existed; trust was eroding; and functionality was not available. Many technology issues remained

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unresolved, and these severely affected transaction volumes. The trading environment was difficult, the industry was suffering commodity price pressure, and investor confidence in the dot-com sector had all but evaporated. Most buyer transaction revenue which had a corresponding seller transaction fee associated with it was anticipated from a small number of buying organizations already within the shareholder group. No founding shareholder was going to continue investing in electronic procurement benefits if it was not going to reduce the organization's transaction costs. The promised electronic procurement functionality was still not available in a proven, stable environment. However, after a further 24 months, this global electronic market had established electronic procurement connections with 251 buyer locations, 6,500 sellers (suppliers), 4,710 request for quotation suppliers, 8,000 active trading relationships, 2.2 million catalogued items (SKUs), 2.5 million procure to pay transactions (annualised), and US$3.2 billion volume throughput (annualised), and was touted as a success.

Conclusion

Changed Governance Structures Did Not Result in Disintermediation of Intermediaries in the Value/Supply Chain When Using Electronic Supply Arrangements

The researched evidence suggests that changed governance structures which included electronic marketplaces did not result in disintermediation of intermediaries in the value/supply chain when using electronic supply arrangements. This was because the founding shareholder buyers found that the manufacturers already had relationships, often contractual, with their intermediaries, as did the buyers themselves. In the short term, it was not possible in most cases to obtain supply direct from manufacturers. However, this prospect, driven by the potential for transaction cost reductions and other improved efficiencies will drive further changes in the supply/value chain arrangements between buyer and supplier. Many organizations also anticipated they would recoup investment in electronic procurement solutions by aggregating and reducing the number of suppliers, so achieving increased supplier discounts based on increased purchase volume through fewer suppliers (Wittman & Cullen, 2000). This also was found not to be the case in the short term, because the manufacturers and their intermediaries had margins to protect for their own survival. Also, the transaction costs of the buyer organizations for the installation of the necessary software and hardware to participate in the electronic marketplaces eroded the transaction

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cost benefits gained from any reductions in their transaction costs in dealing with their supplier through the electronic marketplaces.

The attention of industry seemed almost totally concentrated on the 80% of purchase orders for 20% of the buyer's spend, that is the purchase of commodity products, not the procurement of development products. This led to a number of misconceptions about the value propositions. The electronic marketplaces found it difficult to get to the transaction volumes necessary to survive on the slim margins to be obtained from each transaction, even assuming the end-to-end procure to pay technology was working, which it was not. The structure of the buyer-seller-portal relationships were expected to shift from a centralized portal hub to a more decentralized networked approach that mimicked the overall structure of the Internet with distributed systems. Low-cost providers and implementers of electronic procurement software were expected to emerge to link buyers and sellers. This has not yet happened for the multi-national organizations, many of whom remain tied to the surviving global electronic marketplaces. With the emergence of more efficient electronic markets, this would enable smaller sellers to compete with the largest sellers. Buyers could expand rather than consolidate and reduce their seller base. However, the actions taken by the founding shareholders were to reduce their numbers of suppliers and deal only with major suppliers or agents. This has effectively cut out direct contact between the multi-nationals with the smaller supplier, developer, or manufacturer. Such major buyer organizations need to review the facility of an electronic database to quickly, accurately, and easily to track each procurement transaction. Using electronic procurement data, there is no need to limit the number of suppliers. When this occurs, the smaller operators, who are often the innovators and the entrepreneurs so necessary for adaptation and survival of the larger organizations, will be connected directly with the larger organizations. Until such time, much intellectual property potential will remain dormant and unused.

Resources Available for Start-up Innovations

The pace of reform in this hyper-turbulent environment was furious, but there seemed to be resources available for **start-up innovations**, such as the regional and global marketplaces researched. These amounted to over US$100 million for the global electronic marketplace. The corporate governance of the global electronic marketplace was based upon the offer of transaction cost benefits to buyers through being the lowest "total cost of ownership" solution. There were benefits to sellers, but many marketplaces were facing problems in attracting sellers. The benefits to the founding shareholders were in sharing the risks and the transaction costs of development. Of course, there were technology issues,

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but the global electronic market selected reputable software providers. However, the electronic market competition took some time for a critical mass of owners to attract sellers, or a base of transactions that would sustain an electronic marketplace business. The global electronic market was quick to realize that it was essential to develop momentum, value, and services, and to move on from a transaction processing-based business. Challenges were in building the customer base, regulatory compliance, complexity of technology necessary required highly structured platform development and alignment of principal and agents, and obtaining skilled and qualified human resources.

Benefits Had to Be Made Convincing at the Working Level

For most founding shareholders, the benefits from directing their indirect procurement transactions through the regional electronic market had to be made convincing at the working level. Some founding shareholders procurement personnel considered that the deals and relationships they had already achieved were better than anything the regional electronic market had developed or could develop. There was some rejection at the working and mid executive levels to participate. Shareholder electronic procurement staff at these levels considered their companies large enough to have sufficient buying power in their own right, without carrying the extra transaction costs, risks, and other disadvantages for perceptions of (unproven) benefits. The hype and rhetoric about electronic business was giving way to a reality. At these levels, there also were issues of credibility and loss of power and control. If founding shareholders' procurement staff could see little evidence of the electronic market putting together better deals than they could, it was going to be difficult for the electronic market to be convincing. Also, some founding shareholders' procurement staff assessed that success of the electronic market arrangements would threaten their own jobs.

Technology Delays

There had been technology delays by all parties, including founding shareholder ERP and other incomplete back office systems, and incomplete buyer-seller connections. Technical connectivity with all founding shareholders and their suppliers was difficult and time consuming, so B2B communication was troublesome. Neither buyers nor sellers could transact unless the B2B technology and connections were working efficiently and effectively.

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Used to Managing Steady State Organizations

Many executives in the major founding shareholder organizations who were to plan and implement the technological changes were used to managing steady state organizations — there were few executives in the organizations researched who were ready to accept and cope with the difficulties of these massive technological innovations. This was particularly so when many did not have the knowledge or the expertise to do so, and there was little guidance, research, or experience to provide assistance despite the rhetoric from the various consulting organizations — it became a very threatening time for many executives. Essentially, most of the executives had gained their positions in the major mature organizations through being conformists, not innovators or entrepreneurs. They were mainly cautious people who looked for incremental improvements, and were not risk-takers or management revolutionaries. They had a lot to lose if they failed, and they had seen or even experienced how unforgiving their organizations had been in dealing with those associated with failed ventures. This was particularly noticeable in the differences in personalities and approach of the different CEOs.

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Endnotes

1 To purchase: the act or an instance of buying; something bought; acquisition through the payment of money or its equivalent (*Oxford Dictionary*).

2 To procure: to get by special effort; obtain or acquire; to bring about; effect; to contrive; to cause (ibid).

3 A direct product purchase is when an organization procures a product that is necessary for the ongoing core business.

4 An indirect product purchase is when an organization procures a product that is necessary for the support of the business such as office equipment, professional services, or educational tools.

5 Maintenance, repair, and operation (MRO) supplies are indirect goods and services required to operate an organization and include recurring items such as office supplies, professional services, travel, and entertainment expenses, as distinct from the cost of goods sold and human resource/ management expenditures. MRO items typically represent 20% of operation resources.

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[6] Portals provide access to large amounts of supplier catalogue information and enable electronic commerce transaction over the Internet. The power of portals is the ability to translate buyer and seller information over a variety of communication protocols, however, all data does not need to reside on their servers. Technology enables buyers to exit the electronic procurement application and hyperlink to a seller's Web site. This enables portals to bring more sellers into the content network, while enabling them to keep the content maintenance at their site.

Market makers attempt to capitalize on the B2B Internet commerce opportunity by aggregating buyers and sellers, and earn revenue from transaction fees, agency fees, access fees, and advertising fees.

Application service providers assist organizations with their electronic commerce strategies through value-added software products and services.

Vertical markets are those focused on one industry and aggregate buyers and sellers over the Web.

Horizontal markets are broadly focused and offer services across a range of different industries and aggregate buyers and sellers over the Web.

[7] As the U.S. Navy began to execute their competitive sourcing program, it became clear that competitive sourcing alone would not achieve the necessary savings, nor would it result in the most efficient Navy infrastructure. The business units that are commercial in nature and appropriate for competition are often integrated with inherently governmental functions and cannot easily be competed. The Navy determined that a broader, systems-engineering approach would be pursued to achieve maximum benefit and prevent sub-optimization. This approach, known as strategic sourcing, is consistent with the reinvention process. Strategic sourcing begins by reviewing an entire organization's functions to determine how related functions should best be organized or eliminated to achieve the maximum benefit. This review highlights those tasks or functions that show potential for execution in a manner different from currently conducted. After this review, decisions can be made as to which methods or processes can be employed to achieve the maximum benefit. The key step in the strategic sourcing process is properly defining the organization's functions.

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Glossary

B

Balanced Scorecard: The concept of the balanced scorecard (BSC) was created and introduced by Kaplan and Norton (1992) more than a decade ago. The BSC aims to provide a clear picture of the overall performance of a company in a single snapshot. In the knowledge-based economy, competitive advantage lies in an organization's intangible assets which include core competency; knowledge and skills; employee motivation; information technologies and databases; efficient and responsive operating processes; innovation in products and services; customer loyalty and relationships; and political, regulatory, and societal approval (Kaplan, 2001). The BSC combines four different perspectives - financial, customer, internal business processes and innovation and learning - of enterprise performance rather than emphasizing one perspective at the expense of the others. In other words, the BSC intends to evaluate the company's performance in a more balanced, comprehensive, and holistic way. The underlying assumption is that there are inherit synergies between financial measures and non-financial measures (Chapter VI).

C

Customer Lifetime Value (CLV): The value that a customer brings to an organisation over time

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Customer Relationship Management (CRM): The process of storing and analysing the vast amounts of data produced by sales calls, customer-service centres and actual purchases, supposedly yielding greater insight into customer behaviour.

Corporate Entrepreneurship or Intrapreneurship: Corporate entrepreneurship is generally defined as entrepreneurial behaviour in an established organization. Corporate entrepreneurship is important not only for large corporations but also for small and medium sized enterprises.

D

Database Marketing (DBM): The ability of a company to use the vast potential of today's computer and telecommunications technology in driving customer-orientated programmes in a personalised, articulated and cost-effective manner.

Direct Marketing (DM): An interactive system of marketing which uses one or more advertising media to effect a measurable response, from a defined target market.

Dot-Com Crash: Arrival of the twenty-first century was accompanied by the 'dot-com crash' with hundreds of Internet companies around the world laying off thousands of employees and filing for bankruptcies.

E

E-Business: E-business is a comprehensive term used to describe the way an organization interacts with its key constituencies including employees, managers, customers, suppliers and partners through electronic technologies. It is a broader construct than e-commerce. While e-commerce is part of e-business and is often used interchangeably with e-business in publications, e-commerce is limited to business exchanges or transactions over the Internet only.

E-Entrepreneurship: E-entrepreneurship describes entrepreneurship in e-business. The e-dimension of entrepreneurship incorporates all the key elements of entrepreneurship including risk-taking, proactivity, and innovation in building, running and managing e-business.

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E-entrepreneurship is also defined as the notion which principally uses the Internet to strategically and competitively achieve vision, business goals and objectives.

E-Entrepreneurs: E-entrepreneurs use the World Wide Web (WWW) to interact and complete virtual transactions both with other businesses (B2B) and their consumers/customers (B2C).

Entrepreneurship: "Entrepreneurship, in its narrowest sense, involves capturing ideas, converting them into products and, or services and then building a venture to take the product to market' (Chapter I). Entrepreneurship represents organisational behaviour. The key elements of entrepreneurship include risk-taking, proactivity, and innovation (Chapter I).

E-Innovation: E-innovation can be broadly defined as innovation that is related to e-business. Technology e-innovation is only one aspect of e-innovation. It may include establishing and/or implementing innovative processes, service, strategy, structure, technology, etc, in relation to e-business.

E-Organization: In this book, e-organisations are organisations which are established and operated, based on new technologies, such as the Internet and other related network technologies in an environment referred to as the Internet cultural Era (ICE).

E-Procurement: In most cases electronic procurement (e-procurement) refers to business-to-business electronic trade. It is undoubtedly a central function of e-businesses and plays a key role in the e-supply chain, as purchasing goods and services is always an integral part of the supply chain.

E-Marketplace: Most e-marketplaces offer online exchange transactions and auctions. The e-marketplaces or e-hubs, can be divided into four categories in terms of their core business activities: (i) maintenance, repair, and operating hubs (MRO), (ii) yield management hubs with a focus on operating resources or advertising, (iii) exchange hubs, and (vi) catalogue hubs that focus on non-commodity items (Kaplan & Sawhney, 2000). There is another classification of e-marketplaces in terms of the industry sectors involved: vertical and horizontal e-markets.

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I

Innovation: Innovation is a proposed theory or design concept that synthesises extant knowledge and techniques to provide a theoretical basis for a new concept. Innovation thus has many facets and is multidimensional. The most prominent innovation dimensions can be expressed as dualisms—(i) radical versus incremental; (ii) product versus process; and (iii) administrative versus technological (Chapter I).

Internet Cultural Era (ICE): The ICE can be defined as an environment where organisations are placing the Internet at the centre of their business and encouraging ubiquitous use of networked technologies for delivering their business processes, with emphasis on transparent communication and readiness to innovate and take chances on new ideas. Three economic entities, namely the government, organisations and individuals, are the key players in the ICE.

Intrapreneurship: See "corporate entrepreneurship" in this Glossary.

M

M-Commerce: In general we can characterise e- and m-commerce as the different ways of supporting and conducting business over the Internet (e) and/or with mobile devices (m). M-Commerce can be understood in equally diverse ways. There may be a number of different definitions for e- and m-commerce, which are all correct. Due to the possibility of very diverse views in understanding what e-commerce and m-commerce are, in this book, we refer to application of e- and m-commerce techniques to business as using e- and m-business components.

O

Online Advertising: Online advertising refers to employing the Internet as a means of advertising and a source of exposure to the consumers who use the Internet to research purchases.

Open Source Software: Open Source Software (OSS) involves access to the underlying source code. In addition, for a license under which software distributed is to be considered Open Source, it must permit redistribution of the

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software without requiring a royalty. Redistribution must be permitted in source as well as compiled (ready-to-run) form. Modification of the software and creation of derived works must be permitted. There are some other clauses that must be satisfied for a particular software package to qualify as OSS. However, the above criteria are arguably the most fundamental and, to someone not familiar with the OSS paradigm, perhaps the most revolutionary. Many organisations and websites use the term 'Free Software', whose meaning and interpretation is very similar to OSS, with 'free' implying freedom to access and modify the source as well as redistribute unmodified and modified versions. Strictly speaking, the definition of 'Free Software' might preclude certain software from being considered 'Free' even though it might be considered OSS. Since all 'Free' software would be considered OSS, we will use that term for simplicity and to avoid the confusion that comes from 'Free' meaning 'at no charge' (Chapter IV).

P

Permission Marketing: A two-way permitted dialogue between business and customer that focuses on providing relevant, timely and specific information to a specific target market.

R

Relationship Marketing (RM): Relationship Marketing is the ongoing process of engaging in cooperative and collaborative activities and programmes with immediate and end-user customers to create or enhance mutual economic value at reduced cost. (Chapter V)

S

Search Engine: Search engine refers to a program that searches for key words in files and documents found on the Internet.

Small/Medium Enterprise (SME): Defined by the EU as a company that has less than 250 employees. However, the size of a SME may vary in different country context.

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T

Total Quality Management (TQM): TQM is generally defined as a comprehensive management approach to improving quality of service and product. It refers to both a philosophy committed to customer satisfaction and continuous improvements and a set of guiding principles that set the foundation for an organization to improve quality.

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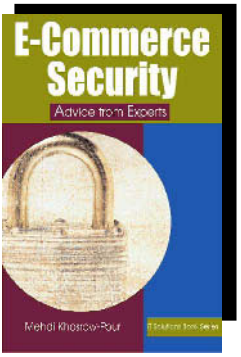

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