Towards a Process Model of Internetalisation: 
Becoming an e-Business.

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Abstract

This research seeks to develop a model of the complex dynamics of organisational charge, in particular the influence the interaction between a firm and its network of relationships has on the path a firm takes in becoming an ebusiness. It is suggested that the process of a firm’s involvement in Internet enabled business has many parallels to the more familiar and much researched issue of internationalisation. The process of a firm committing resources to Internet commerce and Internet mediated transactions; including communication and coordination of internal and external relations, we may think of as internetalisation. Drawing on the metaphor of internationalisation provides a starting point for classifying elements and identifying various interactions in the internetalisation process.
1 INTRODUCTION

Despite reports of ebusinesses rising 'phoenix like' from the ashes of the 2000 tech-wreck and continuing strong investment in Internet enabling technologies, there remains a great deal of uncertainty of appropriate ebusiness models and effective implementation strategies.

Researchers have largely focused on the adoption and implementation of electronic commerce technologies to develop both theoretical models and normative directions. However, organisational change is a social as well as a technological process influenced by diverse units and actors inside and outside the organization and within a complex and dynamic environment.

This research seeks to develop a model that captures these complex processes, incorporates the interaction between the firm and its network of direct and indirect relationships, and reflects the real world behaviour of firms.

By turning to metaphor, we can draw on that with which we are experienced to provide a new understanding of this new realm of the Internet.

It is suggested that the process of internationalization, a firm’s incremental commitment to international markets is a good metaphor for a firms gradual and commitment to Internet enabled commerce - the process of internetalisation, and this guides this research.

Worldwide, 1 in 6 people have access to the Internet, and although connectivity and Internet usage is significantly higher in North America, evolving technologies are beginning to change this imbalance leading to significant take up of new technologies in developing countries (Cairncross 1998).

Higher connection levels along with standardized low cost browser connectivity has further increased interactivity and networking capability and lead to predictions of sweeping migration of people and businesses to communities on the Internet (Vasudevan 2001) and destruction and reconstruction of the modern corporation (Roddy, Obrst et al. 2000). The late 1990’s saw these predictions reach a fever pitch. Heightened media and investor attention to everything ‘e’, and new dot.com enterprises reaching
record valuations, drove the cyber-thermometer – NASDAQ - to new heights. This added support to the cyber-evangelist, who suggested that the Internet changes everything, and there is “no business but e-business” (Coltman, et al. 2001). However in April 2000 this Internet bubble burst, it seems in part, driven by the realization that many of the business models that proliferated in the early ‘land grab’ for position in cyber-space were unlikely to ever be profitable. Subsequently many of the heralded ‘dot coms’ have become ‘dot gones’ adding support to the cyber-skeptics who had all along suggested that much of the claims of the Internet evangelist were over-hyped and that fundamental business principles remain (Coltman, et al. 2001). Internet commerce strategies have been reassessed and expenditure drastically cut as business markets have become more pessimistic about the Internet’s potential to deliver lasting benefits and firms are unsure of appropriate strategies for successful implementation.

Despite this current uncertainty there seems little doubt that evolving Internet technologies will continue to have a significant impact on both the social and business environment (Coltman, et al. 2001). A combination of growing ubiquitous and global presence, multi-media, and immediate interactivity, integration and yet individual handling of information, suggest it will continue to become a versatile tool that increases competition, reduces switching costs for customers and delivers real value to firms. (Timmers 2000).

Surveys in Australia and internationally indicate that business managers still expect Internet enabled systems to have a ‘revolutionary’ impact on their firm and industry in the short term, with intentions of increased investment in electronic infrastructure remaining strong (Coltman, et al. 2001; ebusinessforum 2002). However, the impact on business remains unclear and is further exacerbated when the future seems only distantly related to the firm’s current activities. A firm’s investment in technology therefore can be seen somewhat as an investment in an uncertain future (Vasudevan 2001).

The pervasive impact of the Internet on economies, markets, and industry structures; products and services and their flows; consumer behaviour and values; jobs, labour markets, and it is suggested on the broader society and politics (Drucker 1999) has seen it become a popular area for academic research. To date researchers from the Information Systems / Information Technology discipline have been the principle contributors. However they have been concerned with the adoption and implementation of specific
electronic commerce technologies and applications. Research has primarily used a deductive method drawing on innovation diffusion theory (Rogers 1962) and change management (Zmud and Cox 1979), in this case, the implementation of electronic commerce technologies. Together, these approaches have furthered our understanding of factors that affect adoption and implementation, but have not proven useful in explaining firm behaviour in subsequent stages of the process (Chan and Swatman 1998).

However, organisational change and development is influenced by diverse units and actors both inside the organization and that lie at the 'social and economic periphery' - the communities, organizations and institutions that frame human activity, which act as resources that both constrain and enable the way ahead (Seely Brown and Duguid 2000). Many factors, whose influence and relationship shift over time, may act simultaneously on different parts of the organization suggesting stable cause and effect relationships are difficult to define (Van de Ven and Poole 1995). Electronic commerce systems and applications are not a single defining technology but rather a number of technologies that can be configured in a variety of ways and may differ in organisational contexts. Importantly, technology has a socially constructed component. People construct meaning about the technology that affects how they behave and feel towards the technology and therefore how they adapt to the technology or how they adapt the technology to their situation. (Goodman and Griffith 1991).

Linear extrapolations of the past are therefore unlikely to provide useful information about the future. Instead, it is necessary to focus on dynamic systems and the patterns of behaviour they being generate. (Stacey 1996). Despite the power and influence of the Microsoft's, Intel's, Cisco Systems, or of government bodies, the future is not driven from above, but instead emerges in a bottom up manner, driven by feedback, local interactions and pattern recognition common to self organizing systems (Johnson 2001). 'The way forward is paradoxically to look not ahead, but to look around' (Seely Brown and Duguid 2000).

To date little work has been undertaken on modeling the complex dynamics of organisational change involved in becoming an ebusiness. The challenge is how to make sense of this complex and evolving world and in particular, the influence the interactions between a firm and its network of relationships have on the process.
In order to understand the world and function in it, we have to categorize it, in ways that make sense, by drawing on experiences that are familiar to us. We draw on metaphor to make sense of the world and as a way of seeing and learning, of extending language, to convey meaning about abstract, complex or evolving concepts (Fowler and Fowler 1958; Peters 1996). By turning to metaphor, we can draw on that with which we are experienced to provide a new gestalt of that which is new to us. In this way we are able to classify elements and identify interaction and thereby gain understanding of this new realm (Lakoff and Johnson 1980).

It is suggested that the process of a firm’s involvement in Internet enabled business has many parallels to the more familiar and much researched issue of internationalisation (Welch and Luostarinen 1988). Internationalisation is the process whereby a firm incrementally increases its commitment to international markets. The process of a firm committing resources to Internet commerce and Internet mediated transactions; including communication and coordination of internal and external relations, we may think of as internetalisation [Wilkinson, 2003 #355]

Just as a more comprehensive understanding of the internationalisation process requires drawing together often isolated and seemingly divergent perspectives

Firstly, the internationalisation process is in-part a learning process. The Upsalla internationalisation model (Johanson and Wiedersheim-Paul 1975, Johanson and Vahlne 1977) suggests that lack of knowledge about foreign markets is an obstacle to firm internationalisation [Fosgren, 2000 #130]. The firm can acquire knowledge and experience by operating in foreign markets. Risk is reduced by committing resource to international activities gradually. Alternatively, a firm may buy-in that knowledge through acquisition or hiring of personnel who posses the necessary knowledge or experience. A firm’s knowledge of the Internet, including perceptions of the opportunities and problems, is acquired to a large extent through the experience of engaging in various forms of Internet commerce. This experience generates business opportunities (and problems) drives the internetalisation process and over time reduces Internet commerce uncertainty. As it gains further knowledge and experience, a firm may be expected to make stronger resource commitments to Internet commerce.
The international process has also been viewed as analogous to the innovation adoption process. Internal and/or external stimuli initiate and drive successive decisions to increase involvement in international activities. External stimuli from buyers or distributors abroad in the form of unsolicited orders or information may drive a firm to increase their involvement in international activities. A firm’s international activities may also be driven by internal stimuli. A firm’s products, services or processes or internal resources, or management’s orientation or perception of international operations to satisfy their growth aspirations also may drive the firm to pursue international markets.

These have their parallels in internalisation. A firm’s first exposure to Internet enabled commerce may be; outward, as the firm endeavours to implement electronic commerce systems for selling or distributing their products or services; inwards, as the firm responds to supplier or distributor initiatives and implements e-procurement systems; finally, the firm may implement internal systems such as intranets and extranets to better coordinate and integrate internal operations and legacy systems. The learning that takes place in each instance is likely to migrate to other parts of the firm influencing the firm’s total eBusiness strategy.

These parallels suggest that internationalisation would be a suitable metaphor to guide research into the internalisation process of the firm. It provides different theoretical perspectives that helps gain a more comprehensive understanding rather than a partial account offered by any single theory (Van de Ven and Poole 1995). To see complex patterns of behaviour it is necessary to encounter them in several contexts (Johnson 2001).

This paper lays the groundwork for the development of such a model. A review of developments in electronic and Internet commerce is first presented. An overview of internationalization follows that presents a framework for this first step into understanding the internalisation process. A preliminary review of the internalisation literature follows, demonstrating the application of the internationalization metaphor.
2 DEVELOPMENTS IN INTERNET COMMERCE

Advances in computing power, data storage and communications at continually lower per unit cost have driven substantial investment in technology infrastructure in firms of all sizes and generated much debate about the continuing impact on the nature of the business environment and the broader society (Woodall 2000).

In communications, deployment of satellites and upgrading of existing land-based and submarine networks by installation of fibre optic cable have increased capacity and lowered the cost of long distance and international communications by about 25% annually during the last two decades (Cairncross 1998). Developments in compression techniques for the copper wire infrastructure, connecting the customer to the main network, such as ADSL, and conversion to digital exchanges, has boosted the carrying capacity of the local loop network and allowed a wider range of digital services. A combination of competition and deregulation of telecommunication markets has seen dramatic falls in long distance call charges and introduction of more innovative pricing plans. In the US 40%, and growing, of long distance calls are paid by the recipient (Woodall 2000). These impacts have been greatest in largely western countries with long established fixed line networks.

Telephone communication has become mobile promising to facilitate penetration and growth into developing nations where the cost of developing fixed-line infrastructure would be prohibitive. More Japanese now access the Internet through their mobile telephone than through desk top computers with predictions this trend will continue in other countries with rapidly developing mobile telephone systems, (Timmers 2000). It is expected that wireless Internet use will grow to in excess of a billion users by 2003, as more computing power and services are accessed using mobile devices such as personal computers, hand-held devices such as PDA’s (personal digital assistants) and other gadgets (Vasudevan 2001).

Computing technology has undergone similar dramatic changes. The power of computing has doubled approximately every 18 months following ‘Moore’s Law’, while prices have fallen, such that by 2006 it is estimated that computer processor chips will be 1000 times more powerful yet considerably smaller, and cost one-tenth as much as in 1996 (Woodall 2000).
Developments in computing have had impact on telecommunications and visa versa, with the shrinking size and increased chip technology facilitating the development of the mobile phone, and enabling ever smaller handsets with greater functionality. On the other hand developments in digital communication technology have paved the way for large scale networking of computers, increasing processing power exponentially and allowing users to exchange information (Cairncross 1998).

Business has influenced and been influenced by these evolving technologies. In the early 1980’s early forms of electronic commerce emerged as firms sought efficiency gains by automating business processes internally and across the value chain utilizing this inter-net (work) of computers (Timmers 2000).

Initial systems involved electronic application-to-applications information integration known as electronic data interchange (EDI). However the uptake of these systems has been limited with less than 44,000 enterprises (less than 1%) in the US employing EDI in 1996 by which time the development of the World Wide Web (WWW) employing graphics, sound and moving pictures, utilizing new browser technology had emerged. While EDI systems where largely proprietary and expensive systems with implementation usually driven by large powerful members of closed supply chains, Internet enabled systems promised open universal standards utilizing low cost or free graphical software interface. This contributed to an acceleration of the adoption of computing technologies and Internet use both in business and in the home.

Attempts to create new business models enabled by Internet technologies though have shown mixed results (Prahalad and Krishnan 2002). While many firms have found viable applications for Internet technologies and achieved significant production cost reductions and efficiency gains through improved business processes (Coltman, Devinney et al. 2001), many have failed or have struggled to achieve the full benefits.

Early promises of company-wide computing systems seamlessly integrated to business processes such as customer relationship management (CRM), enterprise resource planning (ERP) floundered on problems of incompatibility with existing technology legacy systems (Wood 2002). Business process and practices did not easily fit into universal vendor-designed packages and were inflexible to changing organization strategy.
However the capacity to change and adapt to developments in Internet enabled applications is embedded in both the social and technical infrastructures of the firm as well the environmental context within which it operates.

Success therefore also requires a change in culture, managerial capability and employee skills to implement systems capable of rapid response to a dynamic changing environment, and these take time to develop. Other organisational issues such as IT governance systems, senior management’s approach to IT investment and lack of line management involvement in IT decisions further complicate the ability to understand and successfully implement electronic infrastructure into business processes (Prahalad and Krishnan 2002).

Much was promised also of the potential to link beyond the firm back to suppliers, forward to customers and horizontally to business partners. However, obstacles to utilizing business partner and supplier data have limited the ability of firms to take advantage of these opportunities to automate forecasting and coordinate the supply chain. Data must be accurate, and agreement on standards of technology interfaces needs to be achieved. More importantly, a greater challenge has been the need to develop trust between those who wish to share information. This is often between companies with long history of competition, or with suppliers or customers who also deal with the competition (Wood 2002).

The current uncertainty is reflected in the nature of technology infrastructure investment trends currently emerging. Moving away from a one-size fit all approach, IT projects are beginning to be implemented in a step-wise, piecemeal approach (Wood 2002) using flexible funding methods. Rather than full implementation of enterprise wide systems, IT investment is being seen as a portfolio of multi-layered application modules connected together by flexible dedicated integration applications. This allows for greater flexibility in design, implementation and management of Internet commerce systems. While some business processes, application software and technology is evolving or in an embryonic stage of development, such as customer support interfaces, other remain stable, for example, payroll and general ledger systems (Prahalad and Krishnan 2002) allowing for concentrated investment in evolving areas and maintenance in stable domains.
Across industries competitive ebusiness threats vary considerably from slow to fast moving traditional incumbents to Internet-based newcomers (Coltman, Devinney et al. 2001). In those industries where Internet commerce development is driving change all firms need to be globally competitive as the Internet promises to have far reaching implications for internationalisation by easily linking firms to international markets. Shrinking time and distance resulting from the removal of obstacles of geography, time zones and location offers firms low cost, fast access and the ability to; communicate more easily with customers, distribute digital products, services and information faster, undertake world wide market research, and provide critical mass for niche markets. (Quelch and Klein 1996) This is likely to accelerate internationalisation, particularly for small firms, and suggests competitive threats may therefore come from local, national or international sources (Timmers 2000).

However recent research suggests that, apart from some special product markets, problems with security and credibility along with language and cultural barriers, the impact on internationalisation has been modest so far (Petersen, Welch et al. 2002).

Internationalisation is also likely to impact on a firm’s implementation of Internet commerce technologies. Multinational will benefit from the ability of Intranets and Extranets to create internal networks that facilitate communications and transactions between employees, suppliers, independent contractors and distributors (Quelch and Klein 1996).

Coordination of the value chain continues to be a source of sustainable competitive advantage to firms but requires continual rethinking of relationships with other value chain members (Vasudevan 2001). Internet commerce developments are reducing costs and facilitating this collaboration and meshing of business processes allowing some firms to concentrate on core competencies and outsource the rest. However this presents organizations, management and employees with new problems of how to manage the soaring number of inter-personal relationships that now extend beyond the firm and potentially beyond national boundaries to suppliers, customers and other business partners, to develop mutually beneficial value (Tapscott 2002).
The blurring of national borders is presenting problems for national governments. International law is lagging growth in trade of goods and services on-line threatening taxation revenues. Firms are able to quickly establish on-line anywhere in the world making it harder to collect corporate taxes, while freedom for individuals to work from anywhere will make it harder to collect income tax (Cairncross 1998) Influencing competitive policy is also compromised by the Internet’s ability to provide new mechanism for industry alliances and structures. For example eMarketplaces provide centralized exchanges for buying and selling goods. These have the potential to deliver pro-competitive outcomes, encourage new entrants and enhance efficiencies. They may also increase industry concentration and market power (Fels 2002). Regulatory bodies such as the Australian Competition and Consumer Commission (ACCC) are also faced with complex jurisdictional issues. Different competition laws across national boundaries require cooperation between enforcement agencies to coordinate regulatory structures and present a unified approach to consumer protection. Their challenge is to ensure the benefits of Internet commerce are realized while ensuring anti-competitive and unscrupulous conduct does not prevent realization of those benefits, while not stifling the development of the Internet (Jones 2000)

3 INTERNATIONALISATION

Internationalisation is considered complex and multidimensional and consequently a number of different theoretical perspectives are required in order to gain understanding. Initially economic perspectives were predominant as corporate growth; new market opportunities, internalization and vertical integration were seen as being the main driving forces for internationalisation (Törnroos 2002).

Recognition that decisions to internationalise often reflected less rational motives and instead were influenced by people within as well as outside the firm, saw ideas from behavioural theory applied to understanding internationalisation (Aharoni 1966). Internationalisation is therefore seen as a process whereby the firm incrementally increases its commitment to international activities (Johanson and Wiedersheim-Paul 1975; Johanson and Vahlne 1977) Commitment has both an attitudinal and behavioural dimension
(Stump, Athaide et al. 1998). The past experience and knowledge of international activities shapes management’s perception of the attractiveness of international activities to contribute to the firms goals. This shapes their decisions to make strategic or resources commitments to internationalisation (Wiedersheim-Paul, Olson et al. 1978). A firm may be more or less international in terms of the number and nature of foreign markets in which it is involved. The degree of a firm's internationalisation may be indicated by the percentage of production or sales derived from foreign markets, or the amount of resources such as labour, capital, technology or knowledge sourced from foreign markets to support the firm in its domestic or other markets. Different functional units within the firm may differ in their degree of involvement in the firms international activities. The firm may be highly international in its marketing activities and have solely domestic production.

A number of internationalisation models have been developed to explain internationalisation. Influenced by both the behavioural (Aharoni 1966) and growth (Penrose 1959) theories of the firm, internationalisation was initially viewed as an increasing or outward involvement in international activities.

The international process model first proposed by Johanson and Wiedersheim-Paul (1975) suggests that the firm first develops in the domestic market and in striving to maintain its long term growth, while limiting risk, follows a series of incremental decisions of deepening involvement in foreign markets with successively greater psychic distance. Psychic distance is defined as factors that prevent or disturb the flow of information between the firm and the market such as differences in culture and language, political system, level of education and industrial development (Hallén and Wiedersheim-Paul 1979).

Other researchers suggest lack of knowledge about foreign markets is the main obstacle to firm internationalisation and that firms will enter countries where they have more knowledge and experience (Johanson and Vahlne 1977; Hadjikhani 1997; Fosgren 2000). Decisions concerning foreign investments are made incrementally due to market uncertainty. The more the firm learns about the market the lower the perceived risk and the higher the subsequent level of investment in the market.

Observation of the gradual commitment of resources and incremental, stepwise involvement in international activities by firms, has led some
researchers to classify firms into different stages of internationalisation. In specific markets a firm may follow an ‘establishment chain’ of increasing commitment resulting from experiential learning in that market which is manifest in the changing operation modes of the firm (Johanson and Wiedersheim-Paul 1975). Others closely follow the ideas of diffusion of innovation put forward by Rogers (1962). Internationalisation proceeds in a stepwise manner of deeper experimental involvement in exporting to gradually more geographically and culturally distant markets. See Figure 2

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Stage 4</th>
<th>Stage 5</th>
<th>Stage 6</th>
</tr>
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<tbody>
<tr>
<td>Management is not interested in exporting</td>
<td>Management is willing to fill unsolicited orders, but no effort to explore the feasibility of active exporting</td>
<td>Management actively explores the feasibility of active exporting</td>
<td>The firm exports on an experimental basis to some psychologically close country</td>
<td>The firm is an experienced exporter</td>
<td>Management explores the feasibility of exporting to other more psychologically distant countries</td>
</tr>
<tr>
<td>Domestic marketing: The firm sells only to the home market</td>
<td>Pre-export stage: The firm searches for information and evaluates the feasibility of undertaking exporting</td>
<td>Experimental involvement: The firm starts exporting on a limited basis to some psychologically close country</td>
<td>Active involvement: Exporting to more new countries-direct exporting-increase in sales volume</td>
<td>Committed involvement: Management constantly makes choices in allocating limited resources between domestic and foreign markets.</td>
<td>Management explores the feasibility of exporting to other more psychologically distant countries</td>
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<tr>
<td>Source: [Anderson, 1993 #95]</td>
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**Figure 2 - Innovation Related Stage Models of Internationalisation**
The above internationalisation models suggest that international growth is always a desirable goal and that firms become more internationalised gradually over time. However, some firms may de-internationalise by reducing their level of international involvement in some markets due to changed market conditions, or because of economic or strategic issues. Firms may also reduce operations in some foreign markets in order to re-internationalise in other markets (Benito and Welch 1997).

It is also assumed that internationalisation is a gradual process with the firm proceeding through a sequence of pre-determined stages. [Barrett, 1986 #77] However an increasing number of firms have been identified that do not follow the traditional stages pattern in their internationalisation process. Instead, they aim at international markets or even global markets from birth. These firms have been termed ‘born globals’ [Madsen, 1997 #152; Oviatt, 1994 #163; McDougall, 1994 #157; Rasmussen, 1999 #323].

The network approach to internationalisation is seen as a process in which relationships are continually established, developed, maintained and dissolved in order to achieve the goals of the firm. Internationalisation strategies available to the firm are dependent on a variety of network relationships, which may drive, facilitate or inhibit a firm’s internationalisation. It is through a firm’s network of direct and indirect relationships that it accesses resources and learns of opportunities and threats (Johanson and Mattsson 1988; Johanson and Mattsson 1992). They may also influence a firm’s choice of foreign market and mode of entry (Coviello and Munro 1997). This dependency on a firms network partners and the influence of other firms within the network suggests that internationalisation is interorganisational as well as intraorganisational as is the case with the previous models discussed above (Laine and Kock 2000).

3.1 **Drivers of Internationalisation**

Previous work on internationalisation has identified a number of factors that shape the nature, extent and speed of internationalisation of the firm (Bilkey 1978; Aaby and Slater 1989; Ford and Leonidou 1991; Zou and Stan 1998).
These may generally be divided into two broad groups, factors internal to the firm and factors that are external to and outside the control of the firm that encourage and inhibit international activities (Cavusgil and Naor 1987).

Internal factors include management and firm related characteristics.

Management characteristics include; the personal characteristics of managers, such as age, education and amount of time spent traveling or living abroad, their knowledge and experience, and their attitudes and perceptions of international activities (Bilkey 1978; Welch and Weidersheim-Paul 1980; Barrett 1986; Barrett and Wilkinson 1986)

Firm related factors proposed as impacting on internationalisation by either supporting or constraining management decision-making (Cavusgil and Naor 1987) include; firm size, age and experience, resources, technology, organisational structure and the nature of the products and / or services offered (Barrett 1986; Cavusgil and Naor 1987; Zou and Stan 1998).

However a firm’s ability to internationalise depends not only on its own efforts, skill and resources, but is also dependent on other firms with which it has relationships. These may be direct relationships the firm has with its suppliers, customers or intermediaries, or indirect relationships with organizations that offer complimentary products or services. These may also include government organizations (Wilkinson, Mattsson et al. 2000).

We can therefore classify external influences on the firm as those that impact through the firms connected relationships and those related to the broader network environment of indirect relationships.

Connected Relationships – most of a firm’s business takes place within ongoing relationships with suppliers, customers and intermediaries that have been developed over time and in which substantial investment in relationship specific assets has been made (Blankenburg-Holm, Eriksson et al. 1996). Firms build up knowledge about each other and become interdependent over time, developing trust and mutual obligations that facilitate cooperation (Forsgren and Johanson 1992). Relationship partners may provide knowledge about market attractiveness and market intelligence or simply how to do business in foreign markets (Chen and Chen 1998). They may signal opportunities for the firm or potential threats, such as the degree and nature of
competition or the establishment of new relationships that may threaten the firm in foreign markets or in the firm’s domestic market. Such relationships may be within the domestic market or cross-national boundaries to firms in foreign markets (Martin 1998).

**Network Environment** – these may be classified as those that facilitate and inhibit internationalisation. Facilitating factors include the size of the domestic market compared to the foreign market, the degree to which other firms within a firm’s industry are international, the availability of government support schemes such as facilitating the development of effective relationships, availability of trained and skilled employees and the existence of suitable fast and efficient infrastructure for getting products and services to foreign markets. Inhibitors include the existence of differential trade barriers and the geographic and cultural distance between markets (Johanson and Mattsson 1988; Welch, Welch et al. 1997; Wilkinson, Mattsson et al. 2000).
Researchers interested in better understanding of effective Internet commerce implementation have seen the process of implementation as similar to other new technologies. They have therefore viewed it as either a diffusion of innovation/technology process or as an organisational change process.

Studies focusing on diffusion of innovation theory have been concerned with the implication of adopting specific electronic commerce technologies, principally electronic data interchange (EDI) but more recently Internet commerce technologies and applications (Pfeiffer 1992; Premkumar and
Ramamurthy 1995; Chan and Swatman 2000). The emphasis is on the initial adoption and subsequent spreading of the technology to other parts of the organization, including internal diffusion within the organization and externally within its wider user community such as the value chain or industry (Iacovou, Benbasat et al. 1995).

Research drawing on change management theory has instead focused on the implementation process, conceptualizing it as a series of separate stages to better differentiate and describe the process of organisational change. This extends over time from the decision to introduce the new system and ends when it is incorporated and integrated into the organization and accepted as routine (Cragg 1996; Poon and Swatman 1997).

More recently researchers have incorporated organisational learning to account for the learning process that takes place as the organization moves from one project implementation to the next (Chan and Swatman 1999).

In parallel to these studies researchers have investigated factors that influence both the adoption and implementation process. Many have indicated the role the characteristics of the technology play in influencing implementation, such as compatibility, complexity cost and relative advantage (Pfeiffer 1992; Premkumar and Ramamurthy 1995). In contrast other studies indicate that organisational factors have a greater influence. In particular people involved in the implementation within the organization are seen as an important influence on successful implementation. Factors such as commitment to implementation through management support, user resistance and the level of expertise available were important, along with firm specific factors such as firm size and resource availability (Iacovou, Benbasat et al. 1995; Cragg 1996; Chan and Swatman 1998), organization structure and the existence of legacy systems (Wortmann and Szirbik 2001) and ability to integrate systems (Coltman, Devinney et al. 2000).

The business functions supported by electronic commerce are varied and include manufacturing and production; sales and marketing; finance and accounting. Electronic commerce systems have been largely used to automate business transactions to provide cost savings, through streamlining processes and operations, integrating billing and payment systems in the supply chain management and improving customer service. However while electronic commerce has technical components similar to other technologies,
it also has inter-organisational elements, which distinguish it from other innovations (Grewal, Comer et al. 2001; Mehrtens, Cragg et al. 2001).

This suggests that implementation takes place within inter-organisational context (Timmers and Veer 1999). Studies have shown that relationships between established trading partners will influence adoption and implementation (Dos Santos and Peffers 1998), with electronic commerce solutions often imposed on smaller firms by larger more powerful customers or suppliers (Benbasat, Bergeron et al. 1993). Still other studies show that good relationship and trust between trading partners are important to successful implementation (Chan and Swatman 2000).

Other factors external to the firm have also been identified. These may be classified as environmental factors and include the market structure and degree of concentration and nature of Internet commerce technologies adopted by industry partners (Dos Santos and Peffers 1998; Kern and Willcocks 2002), and competitors (Benbasat, Bergeron et al. 1993; Premkumar and Ramamurthy 1995; Ling 2000). Critical mass or externalities are also important, without wide acceptance of technologies or applications firms may be reluctant to adopt Interenet commerce because of lack of infrastructure (Kern and Willcocks 2002), suitable platform or compatible technology standards (Ling 2000).

In addition national infrastructure issues such as the technical capability, capacity and reach of the communications network along with the level of government support and involvement in terms of government policies and initiatives (Timmers 2000). Concerns of privacy, security and data integrity (Reagle 1997) have also been shown to influence the uptake and rate of diffusion of Internet commerce systems.
INTERNATIONALISATION PROCESS MODEL

INTERNAL FACTORS

FIRM CHARACTERISTICS
- Size
- Age
- Resources
- Capability
- Culture
- Technology complexity
- Structure
- Product/services

MANAGEMENT CHARACTERISTICS
- Age
- Education/skills
- Knowledge
- Experience
- Attitudes/perceptions

INTERNATIONALISATION OF THE FIRM
- (OUTWARD)
- (eCommerce)

EXTERNAL FACTORS

CONNECTED RELATIONSHIPS
- Suppliers
- Customers
- Intermediaries
  - Absorptive capacity
  - Trust
  - Security
  - Privacy
  - Integrity

NETWORK ENVIRONMENT
- Industry structure/support
- Critical mass
- Cultural distance
- Geographic distance
- Government policy
- Labour availability
- Globalization
- Standards
- National infrastructure

INTERNATIONALISATION OF THE FIRM
- (INWARD)
- (eProcurement)

INTERNATIONALISATION PROCESS MODEL
Development of such a process model seems timely. Reports of dot com firms rising ‘phoenix like’ from the tech wreck of 2000 have begun to appear, the NASDAQ rallies only to quickly fall back on news of further failures of firms who survived the crash. It is reminiscent of the gold rush days when speculators were quick to rush reports of new gold discoveries in search of their fortune only to be disappointed.

Brick and mortar organizations have adopted a more conservative approach to investment in e-enabling technologies and search for effective metrics for assessing implementation and operational success. There is a realization too that innovative developments of organization Internet commerce initiatives requires innovation both elsewhere within the organization as well as within the organization’s network of relationships

Interpretation of internetalisation in terms of internationalisation should prove productive in stimulating research and provide those charged with implementing Internet commerce systems a better understanding of the challenges and opportunities they will confront as a firm gradually commits resources to becoming an ebusiness.
Towards a Process Model of Internetalisation\(^1\): Becoming an e-Business\(^2\).

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\(^1\) Internetalisation – the process of becoming an e-Business.
\(^2\) E-Business definition is adapted from that of Coltman et al (2001) – as a complex synthesis of business processes, enterprise applications, and organisational structure. It encompasses e-commerce – selling, e-procurement – buying, over the Internet – but includes any business exchange that is conducted, in whole or in part, through digital infrastructure. No distinction is made between Intranet, Extranet or Internet applications as these boundaries are no longer clear.
5 REFERENCES


