Innovative Behaviour of Small Firms

Essays on Small Firms’ Internationalisation and Use of Online Channels

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Abstract

The spread of information technology and the dissolution of international borders have had a significant impact on the challenges and opportunities faced by today's small and medium-sized enterprises (SMEs). Innovative behaviour on the part of SMEs is a prerequisite for a successful transformation of the opportunities offered by these structural changes into growth and profitability. Thus, the overall aim of this thesis is to advance the understanding of small firms' innovative behaviour as manifested in the adoption of online channels and internationalisation.

This doctoral thesis consists of an introductory chapter and six self-contained essays. The introductory section develops a general analytical framework for the thesis by reviewing the literature on innovation and organisational innovativeness and identifying key determinants and processes. The first four essays seek to explain a firm's propensity to adopt online channels and suggest that firm size and a firm's willingness to cannibalise, i.e. a firm's readiness to reduce the actual or potential value of its earlier investments, differentiate between adopters and non-adopters of online channels. Expectations of alienating resellers through online channel adoption may prevent a firm from adopting. Customers' pull, competitors' push and previous use of the Internet turned out to be strong drivers of online channel use. The fourth essay employs a two-wave research design and highlights that changes that occur in the technological and economic environment in which firms operate can, over time, change a firm's pattern of decision-making from innovation adoption to conventional cost-benefit approach. Essays five and six focus on the internationalisation of SMEs. In particular, essay five focuses on the process aspects of internationalisation and suggests that early importing has a modest direct influence on exporting, and that early importing activity indirectly enhances a firm's international experience and capabilities. Essay six investigates how competitive interactions affect internationalisation and suggests that cooperation with competitors, or coopetition, is a noteworthy internationalisation motive.

This thesis contributes to the literature on innovation, internationalisation, electronic marketing and small business management and demonstrates that the dynamic forces associated with innovative behaviour affect SMEs adoption of online channels and how they work with customers and suppliers abroad.

Keywords: Innovation, small and medium-sized enterprises, Internet, marketing, internationalisation, Sweden, Finland
Sammanfattning

Innovationsbeteende i mindre företag: Studier av internationalisering och användande av onlinekanaler i mindre företag

Spridningen av informationsteknik och en kraftig ökning av handel och samarbete över ländergränser har haft en betydande effekt på de utmaningar och möjligheter som dagens små och medelstora företag (SMF) står inför. De små och medelstora företagens innovationsbeteende är dock en förutsättning för att de framgångsrikt skall kunna ta tillvara de möjligheter som dessa strukturella förändringar skapar för att åstadkomma tillväxt och lönsamhet. Således är det övergripande syftet med denna avhandling att utveckla kunskap om innovationsbeteende i små företag, så som detta manifesteras i användande av onlinekanaler och deltagande i internationaliseringsprocesser.

Denna avhandling består av ett inledande kapitel och sex fristående essäer. I det inledande kapitlet utvecklas ett övergripande analytiskt ramverk för avhandlingen, utifrån en litteraturöversikt av begreppen innovation och organisatorisk innovativitet där de viktigaste determinanterna och processerna identifieras. De första fyra essäerna försöker förklara ett företags benägenhet till adoption av onlinekanaler och föreslår att företagets storlek och vilja att kannibalisera, dvs ett företags beredskap att minska det faktiska eller potentiella värdet av dess tidigare investeringar, skiljer sig mellan de som använder respektive de som inte använder kanaler på nätet. Förväntningar att återförsäljare skulle bli negativt inställda om företag börjar använda onlinekanaler kan hindra företag från att investera i dem. Karaktäristika hos kunderna, utmaningar från konkurrenterna och tidigare användning av Internet visade sig vara starka drivkrafter bakom användningen av onlinekanaler. I den fjärde essäen, som baseras på data insamlad under två olika tidsperioder, visas att de förändringar som sker i den tekniska och ekonomiska miljö i vilken företagen är verksamma, kan med tiden innebära att beslutsfattandet skifter från innovationstänkande till traditionellt kostnads-nyttotänkande. Essä fem och sex fokuserar på internationaliseringsprocesser i små och medelstora företag. Den femte essäen studerar i första hand internationaliseringsprocessen och visar på att tidig erfarenhet från importverksamhet enbart har en mindre inverkan på omfattningen av företagets framtida export. Tidig importfarenhet har emellertid även en indirekt positiv effekt på företagets proativa attityd till internationalisering. Essä sex undersöker hur interaktion med konkurrenter påverkar internationaliseringen och visar att samarbete med konkurrenter,
eller ”coopetition”, kan ha en betydande effekt på motiv till internationalisering.

Denna avhandling bidrar till litteraturen inom områdena innovation, internationalisering, digital marknadsföring och ledning av små och medelstora företag. Den visar att de dynamiska krafter som ligger bakom innovationsbeteende påverkar små och medelstora företags användning av onlinekanaler samt hur denna företagsgrupp arbetar med kunder och leverantörer utomlands.

**Nyckelord:** Innovation, små och medelstora företag, onlinekanaler, Internet, marknadsföring, internationalisering, Sverige, Finland
Appended papers


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I. Introduction

Because its purpose is to create a customer, the business enterprise has two - and only these two - basic functions: marketing and innovation. Marketing and innovation produce results, everything else is costs.

- Peter F. Drucker

Structural change and SMEs

The spread of information technology and the dissolution of international borders are regarded as major, global structural changes (Kemeny, 2011; Bräuninger and Vöpel, 2009; Sapienza et al., 2006; Archibugi & Pietrobelli, 2003; Porter, 1998; Gurbaxani and Seungjin, 1991). These structural changes are also so intertwined that considering both at the same time is almost a necessity. A report by the Organisation for Economic Cooperation and Development (OECD) stated that “the pace and scale of today’s globalisation is without precedent ... Information and communication technology has made it possible...” (OECD, 2007, p. 5).

The information revolution and globalisation have had a significant impact on the challenges and opportunities of today’s small and medium-sized enterprises (SMEs). With regard to the exploitation of new market opportunities, the Internet offers benefits such as increased market reach and geographical coverage, reduced transaction costs, customer-tailored communications and competitive pricing (Trusov et al., 2009; Spann & Tellis, 2006; Moini and Tesar, 2005; Bennett, 1997). The overall increase in the movement of goods, services, people, and capital, together with changes in global political, technological and financial environments create vast opportunities for SMEs to internationalise their businesses at an ever faster pace. With the use of information technology and with the increased interaction of local governments, large corporations and international organisations, SMEs can improve their international competitiveness (Ruzzier et al. 2006; Kumar and Liu, 2005).

The ability of SMEs to take advantage of the above mentioned structural changes is of great importance for both local and national economies. The contribution of SMEs to economic growth in terms of employment and innovative output is recognised by scholars and policy makers alike. Within the European Union, 20.7 million SMEs make up 99.8% of European enterprises (European Commission, 2011). A report by the European Commission (2002) concluded that “European SMEs are a major source of job creation: More than 50% of new jobs derive from a group of fast growing companies representing 4% of the total number of European SMEs. In addition, almost half of the two million industrial SMEs have recently introduced innovations to the markets.” In
the Swedish context, 98 percent of all private enterprises have less than 20 employees and 41.5 percent of the workforce in Sweden is employed in firms with less than 200 employees. The importance of SMEs in today’s economy is further reinforced when one examines where the increase in employment occurs. Even though many small firms lack growth capabilities and growth intentions (Isaksson and Vanyushyn, 2009; Davidsson, 1991), the actual growth of the SME-sector exceeds that of larger firms. For instance, between 1993 and 2007 employment in the smallest size categories (up to 49 employees) increased by 310,000 people, while firms with over 200 employees increased their workforce by 22,000 (SCB, 2009).

**The need for innovative behaviour**

Generating and adopting new ideas, technologies, strategies and practices are at the core of economic progress. SMEs adoption of e-business and internationalisation activities requires innovative behaviour. Therefore, the papers presented in this thesis examine behaviour aimed at generating and adopting new ideas, technologies, strategies and practices that are at the heart of economic progress.

The two major structural shifts mentioned in the opening section create opportunities to generate and adopt new ideas. They also create challenges for small and medium-sized enterprises. Innovative behaviour is a prerequisite for a successful transformation of the opportunities offered by these structural changes into growth and profitability. Enhancing the understanding of the drivers and processes of innovative behaviour is thus important (van Beers *et al.*, 2008; Galende and de la Fuente, 2003; Bharadwaj and Menon, 2000). This dissertation, consisting of six separate yet interrelated essays, seeks to add to this body of knowledge.

Readers of this dissertation should observe that even though the decisions to invest in online channels and begin exporting operations are conceptually and empirically distinct, both can give rise to changes in the activities of organisations with regard to current practices. Such changes may include posing new questions, developing new technical or commercial skills and finding new ways of resolving problems (Camison-Zornoza *et al.*, 2004). In fact, in the literature on e-business adoption (e.g. Höst *et al.*, 2001; Srinivasan *et al.*, 2002) and exporting (e.g. Samiee *et al.*, 1993; Jeen-Su *et al.*, 1991), manifestations of innovative behaviour are not uncommon. In a similar way, since the emergence of academic interest in international business almost 50 years ago, exporting has been regarded as “innovative, opportunity-seeking, risk-taking behaviour” (McNaughton and Bell, 2009). The decision to internationalise is considered an innovation from the small firm’s perspective (Andersen,
and is conceptualised as an export adoption process (Jeen-Su et al., 1991). A firm’s use of online channels has been conceptualised as an adoption of innovation influenced by internal and external determinants (Höst et al., 2001; Srinivasan et al., 2002; Jeyaraj et al., 2006).

The topic in focus in this dissertation highlights a contemporary problem that is possible to comprehend by following proposals made in earlier studies. Indeed, understanding and fostering the innovative behaviour of firms have been priorities for researchers, managers and policy makers for a long time. Such behaviour can assume many different forms, ranging from discovering new countries in the distant past to introducing new technology in the present. Innovative behaviour means dealing with risk and uncertainty, since doing something new is akin to venturing into uncharted waters. Innovative behaviour should, therefore, be assessed with regard to the novelty aspect of exploring new areas (Crossan and Apaydin, 2010).

Given the importance and widespread recognition of the role of innovative behaviour, considerable research effort has been channelled into uncovering the causes and processes of innovation. It is thus not surprising that a keyword like “innovation” produces more hits in the ISI Web of KnowledgeSM database than “marketing” or “accounting”. As the existing literature offers a wide range of approaches to innovation it is difficult to extract a universally accepted definition (Armbruster et al., 2008; Wolfe, 1994). Most attempts focus on what is “new” in an absolute or objective sense, without acknowledging that from the firm’s or organisation’s perspective the concept is relative.

An early definition that is fundamental in small business research is that by Schumpeter (1934), which states that economic innovation encompasses the introduction of new goods or a new method of production, the opening of a new market, the acquisition of a new source of supplies and the reorganisation of any industry. Given such a multidimensional nature of innovation, a number of sub-definitions have emerged that focus on a specific class of innovations, such as radical and incremental, administrative and technical, product and process innovations (Camison-Zornoza, 2004; Wolfe, 1994). At the general level, innovative behaviour may be seen as the adoption of an internally generated or externally acquired device, system, policy, programme, process, product or service that is new to the adopting organisation (Damanpour, 1991; 1996). This definition is relatively close to the Schumpeterian approach, in that it encompasses not only technological, but also administrative innovations. It also acknowledges that innovation can be defined in relation to what is new for the adopting organisation.

Some SMEs are innovative in an absolute or objective sense in that they introduce solutions that are completely new to the market (Rickne
and Jacobson, 1999), although the majority of SMEs are innovative in a relative sense in that they adopt new solutions as a result of the two major structural shifts discussed earlier. Even though radically new innovations and adoptive innovative behaviour are both important, researchers have put more effort into explaining the former type of innovative behaviour than the latter (Laforet, 2008). However, I believe that the latter is just as important for the development and economic growth of SMEs.

The key challenge is deciding what is new and, more importantly, for whom. As such, innovative behaviour can be compared to the explorative activities carried out by a firm in terms of the typology proposed by March (1991). In his view, any organisation is involved in two types of activities, which he refers to as exploitation and exploration. In this setting, exploitation is defined as “refinement, production, efficiency, implementation, execution”, and the exploration of new possibilities as “risk-taking, experimentation, flexibility, discovery, innovation”. Excessive reliance on either type of activity is detrimental, and a firm needs to find a balance between the two. Deciding which type of activity is a priority, and should therefore be allocated valuable resources, is a choice that any firm has to make.

The existing body of literature on organisational innovation has produced a wide range of approaches and insights into the innovative behaviour of organisations. It should be noted that the definitional inconsistency that is characteristic in the innovation field is also extended to approaches and insights. Such a state of affairs has led some researchers to actually conclude that the “most consistent theme found in the organizational innovation literature is that its research results have been inconsistent” (Wolfe, 1994, p. 405). Although the detailed discussion of these differences is reserved for the next chapter, some of the main approaches are outlined here.

*Understanding innovative behaviour*

Understanding the innovative behaviour of an organisation essentially requires answering two interrelated questions. The first question is ‘What determines organisational innovativeness?’ Most studies acknowledge the importance of uncovering the determinants of organisational propensity to exhibit innovative behaviour (Damanpour, 1996). Doing so involves identifying organisational determinants of innovativeness, such as size, organisational culture and organisational structure. However, an organisation is also part of a larger system within which the organisation interacts with competitors, partners, customers and suppliers. The influence, or anticipation of such influence, has the potential to shape a firm’s strategic direction. Pluralism and rivalry in the industrial setting
are argued to promote innovation (Anand and Kogut, 1997; Athreye, 2001). Porter (1998) argues that competition serves as a catalyst in dynamic industry clusters as competitors pressure each other to innovate, sustain or develop their competitive advantages. Håkansson (1987) and Von Hippel (1988) argue that both product and process innovation is often the result of a recurring interaction with suppliers and customers. Therefore, external, or environmental determinants of innovative behaviour need to be considered as well.

The second key question is ‘What are the processes that organisations go through when implementing innovations?’ As firms are dynamic entities the history of the organisation may influence its future, which in turn necessitates an evaluation of the contribution of a firm’s past experience to current practices and potential future practices (Ettlie, 1980; Rogers 1983). Thus, the temporal sequence of activities becomes important when implementing innovations.

This dissertation sets out to examine the complex relationship between determinants and process. In order to do this, the general aim of this dissertation is to focus on major areas like the influence of past experience and the effects of external and organisational determinants.

**General aim and outline of the thesis**

The overall aim of this study is to advance the understanding of the innovative behaviour of SMEs. This overall purpose translates into the specific objectives addressed in six different self-contained studies, which will be discussed in the subsequent sections. However, all the studies revolve around the three main areas of inquiry, which includes the answering of the following questions:

- How does past experience affect a firm’s innovative behaviour?
- What are the effects of environmental determinants on a firm’s innovative behaviour?
- How can organisational determinants contribute to the firm’s exhibition of innovative behaviour?

Figure 1.1 summarises the structure of the dissertation and the key research questions addressed. As has already been indicated, the greatest structural changes that characterise the world’s economy are the Internet revolution and globalisation – both of which create opportunities and challenges for small and medium-sized enterprises. Innovative behaviour is a prerequisite for the successful transformation of these opportunities into growth and profitability. The specific manifestations of such innovative behaviour are establishing online channels and internationalisation. These specific examples of innovative behaviour will
be addressed by investigating the effect of intra- and inter-organisational determinants and processes.

Figure 1.1 also shows the unit of analysis of the specific studies and the particular drivers that each study primarily focuses on. Studies (1) “Integrating the Internet and Marketing Operations: A Study of Antecedents in Firms of Different Size” and (3) “Innovation at the Intersection of Market Strategy and Technology: a Study of Digital Marketing Adoption among SMEs” primarily focus on organisational antecedents in order to explain a firm’s use of the Internet for marketing and sales. Studies (2) “The Dual Effect of Resellers on Electronic Business Adoption by SMEs” and (6) “Cooperation with Competitors and Internationalization: Evidence from the West Coast of Finland” examine how external parties, mostly resellers and competitors, can influence firms’ online or international expansion. Finally, essays (4) “A Two-wave Study of SME’s Use of the Internet for Marketing and Sales” and (5)
“Small and Medium-sized Enterprises’ Internationalization and the Influence of Importing on Exporting” show how decisions and events of the past can help to explain those of the present.

The introductory section also includes a review of the literature on innovation, electronic business and internationalisation. This chapter therefore develops the overall theoretical framework, identifies specific gaps in the existing knowledge and introduces the specific objectives addressed in the studies. This discussion is followed by an outline of the research approach, the presentation and discussion of the data and a review of the analytical techniques employed. The studies are then summarised and the key findings identified. These summaries are represented in the context of the overall framework and develop the abstracts supplied with the individual papers. The final chapter discusses the overall conclusions reached, the limitations of the studies, highlights the thesis’ contributions to the literature and outlines the possibilities for future research.
II. Theoretical Framework

This section develops a general framework for the thesis. The literature on innovation and organisational innovativeness is reviewed. Key influences are identified and then positioned within the specific context of small firm’s innovative behaviour manifested in the adoption of online channels and internationalisation. A conceptual framework is developed and subsequently translated into each individual study’s objectives.

The emergence and continuing growth of the studies of organisational innovativeness is rooted in the importance of innovation for a firm’s survival and in the “novelty” component of innovation itself. Both these aspects can be traced to Schumpeter’s notion of “creative destruction” (Schumpeter, 1942). Creative destruction occurs when a new product, practice or business model replaces or substantially alters those that already exist. Such displacement can occur at the industry level, for example telephones replacing telegraphs (Chandy and Tellis, 1998) and at the organisational level, such as a website replacing a sales department (Johnson and Bharadwaj, 2005). Changes at industry level require an organisation to catch up and come up with competitive offerings. In this context innovation is crucial for a firm’s survival, particularly in this day and age (Tushman and O’Reilly, 1996; D’Aveni, 1994).

The Schumpeterian approach (1934) outlines five domains in which innovation could occur: new products, new production methods, new markets, new sources of supply and new forms of organisation. Schumpeter takes a broad perspective of innovation and emphasises a creative re-combination of existing or new practices, knowledge or resources as a way for innovation to emerge and develop. His proposition thus accentuates the dynamic nature of innovation as opposed to an instance of invention. Social and organisational aspects play a significant, or even decisive, role in determining whether or not an innovation will take off and succeed. In particular, his early work stresses the importance of overcoming resistance to change and the need to depart from old and familiar experiences: “It is not objectively more difficult to do something new than what is familiar and tested by experience, but the individual

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1 Whether the term ‘creative destruction’ can be fully attributed to Schumpeter is open to debate, as the idea of “new replacing the old” is found throughout history in philosophical and religious writings (Reinert and Daastol, 1997). However, in the organisational innovation literature Schumpeter is generally credited with the concept.
feels reluctance to it and would do so even if the objective difficulties did not exist” (Schumpeter, 1934, p. 86). A major implication is that innovation is defined as relative to whether a particular activity or phenomenon is novel to the individual or organisation, and not necessarily to the world.

This thesis focuses on innovative behaviour rather than innovation. From this starting point it is recognised that innovative behaviour needs to be defined from the firm’s perspective as well as the degree of newness and challenge perceived by the firm when applying new strategies and ways of operating. Innovation in terms of new markets and new forms of organisation will be studied. The former is reflected in the internationalisation sequence and the latter in the online channel implementation sequence. It can be questioned whether international presence and Internet use can be described as innovations per se, as many firms have been established in the international market for a long time and have developed an advanced use of the Internet in their operations. However, I argue that for many small and medium-sized firms, establishing themselves in international markets or using the Internet in more advanced ways can be described as innovative behaviour. Although much of the literature on innovation and innovative processes focuses on technological innovations that are profoundly new, some of these ideas and thoughts can be used to understand the innovative behaviour of small and medium-sized firms. In the following I discuss the existing literature in this field and how it applies to the innovative behaviour of firms.

Innovation and innovative behaviour
This study is positioned within the somewhat fluid and fuzzy boundaries of the organisational innovation literature. Given the importance and widespread recognition of the significance\(^2\) of innovation (Tushman and O’Reilly, 1996; Mone et al., 1998), a large amount of research from a variety of disciplines has been invested in discovering the nature, causes and processes of innovation. The result is tens of thousands\(^3\) of articles in which the key word ‘innovation’ appears. However, recent attempts at conducting a meta-analysis of the literature proved inconclusive (Wolfe, 1994), inconsistent (Anderson et al., 2004) and extremely fragmented (Crossan and Apaydin, 2010). Such a state of affairs is largely due to the

\(^2\) “Innovative” is frequently used as a positive descriptor attached to a noun with an implicit assumption of a successful outcome. In fact, for an innovation to be considered as such it has to be successful – for example, see the discussion of the \textit{ex-ante} requirement of success as defined by the European Commission (Crossan and Apaydin 2010, p. 1180).

\(^3\) 33,684 as of May 2011, SSCI
multifaceted nature of innovation itself, since it could relate to both process and outcome, to an organisation or industry, and be a product or a service. Given such a multidimensional nature, different ways of classifying innovation are bound to emerge.

Many different typologies have been used to distinguish the different types of innovation. Depending on which part of the firm’s operation is affected, a distinction can be drawn between technical and administrative innovation. Technical innovation has to do with the productive process and technology, while administrative innovation is concerned with management and the structure of a firm (Damanpour, 1996; Kimberly and Evanisko, 1981). Product vs. process innovation typology is another example that is grounded in whether innovation affects the product and its features or the manufacturing process thereof (Damanpour and Aravind, 2006; Damanpour and Gopalakrishnan, 2001; Ettlie and Reza, 1992). The degree of newness is captured by radical vs. incremental typology, in which radical innovation gives rise to fundamental changes in existing organisational or industrial practices, while incremental typology enhances the already existing practices (Ettlie et al., 1984; Tushman and Andersson, 1986; Chandy and Tellis, 1998). Although common, these three typologies are by no means exhaustive. For example, Wolfe (1994, p. 419) lists over thirty other ways of classifying innovation based on its attribute definitions alone.

It could be inferred that developing an all-encompassing definition of innovation is a somewhat challenging and almost futile task unless an adopter’s perspective is taken into account. Crossan and Apaydin (2010) explicitly acknowledge that relative - as opposed to absolute - novelty should be considered when innovation is studied, because as long as a particular practice or activity is new to a unit under research it can be considered an innovation. Their study identifies the need to add a referent dimension to the research on innovation by formulating whether the phenomenon under consideration is new to the firm, market, industry or the world. Similarly, departure from the current practices of an organisation is a key indicator used to identify innovation in a range of studies aimed at literature review and integration (Camison-Zornoza et al., 2004; Damanpour, 1996).

With the relative perspective of the newness of an innovation in mind, we can now turn to the literature about innovation and the different dimensions that have been argued as being of importance for innovation processes. Abernathy and Clark (1985) summarise the impact of different resources and the competences and skills of an organisation engaged with innovation; a summary that is presented in Table 2.1. Their approach is particularly relevant in the context of this thesis, since it focuses on the innovative process and the changes related to it.
Furthermore, their approach shows that innovation is not only bound to technology or product, but also has a major impact on how a firm interacts with markets, customers and suppliers. Innovation might require a firm to reconsider its customer knowledge and establish new modes of communication and distribution. Innovation processes might require changes of essentially any aspect of an organisation’s skills and resources. Table 2.1 shows that regardless of which domain of innovation

<table>
<thead>
<tr>
<th>Domain of innovative activity</th>
<th>Range of impact of innovation</th>
</tr>
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<tbody>
<tr>
<td>I. Technology / Production</td>
<td></td>
</tr>
<tr>
<td>Design / embodiment of technology</td>
<td>Improves/perfects established design</td>
</tr>
<tr>
<td>Production system / organisation</td>
<td>Strengthens existing structure</td>
</tr>
<tr>
<td>Skills (labour, managerial, technical)</td>
<td>Extends viability of existing skills</td>
</tr>
<tr>
<td>Material/supplier relations</td>
<td>Reinforces application of current materials/ suppliers</td>
</tr>
<tr>
<td>Capital equipment</td>
<td>Extends existing capital</td>
</tr>
<tr>
<td>Knowledge and experience base</td>
<td>Builds on and reinforces applicability of existing knowledge</td>
</tr>
<tr>
<td>II. Market / customer</td>
<td></td>
</tr>
<tr>
<td>Relationship with customer base</td>
<td>Strengthens ties with existing customers</td>
</tr>
<tr>
<td>Customer applications</td>
<td>Improves service in established applications</td>
</tr>
<tr>
<td>Channels of distribution and service</td>
<td>Builds on and enhances the established distribution system/ established organisation</td>
</tr>
<tr>
<td>Customer knowledge</td>
<td>Uses and extends customer knowledge and experience in established product</td>
</tr>
<tr>
<td>Modes of customer communications</td>
<td>Reinforce existing modes/methods of communication</td>
</tr>
</tbody>
</table>

Table 2.1. Innovation activity and range of impact. Source: Adapted from Abernathy and Clark (1985)
is considered, the degree of innovativeness is related to how much a firm can break with earlier norms, routines and structures and the extent to which it can replace earlier resources and knowledge that render earlier experience obsolete. Such actions can be described as innovative behaviour. Studying this behaviour facilitates an increased understanding of the becoming of innovative outcomes.

Innovative behaviour is behaviour that is directly related to the performance of an innovation and the adoption or generation of new technology, products and processes (Meeus and Faber, 2006). An advantage of using the term innovative behaviour rather than innovation is that it facilitates an understanding of the becoming of innovation outcome in the form of marketable outputs and a firm’s growth (Powell et al., 1996). Furthermore, innovative behaviour highlights that it is the sequences of an organisations’ actions that are of interest, as opposed to deciding whether or not a particular product, service or business model is an innovation. Recognition of the innovation process as a social phenomenon bound by attitudes and established routines raises a question that is central to studies of organisational innovativeness, namely what is it that determines an organisation’s propensity to innovate (Wolfe, 1994)?

Organisational propensity to innovate: determinants and processes
Wolfe (1994) singles out the organisational innovativeness (OI) research stream as one that is specifically aimed at explaining an organisation’s propensity to innovate. Essentially, studies within this research stream seek to answer the question “what determines organisational innovativeness?” In this context, the unit of analysis is the organisation itself. Innovativeness, the explanandum, becomes the dependent variable. A common approach is to identify and group the determinants into “organisational” and “environmental” (Crossan and Apaydin, 2010), which serve as independent variables to be related to the dependent variable using various dependence and variance models. Such an approach has an intuitive appeal, since it essentially separates various factors into those that are internal to the firm and those that are external. The organisational determinants include the size of the firm (Damanpour, 1992; Camison-Zornza et al., 2004), aspects of organisational structure (Damanpour, 1991; West et al., 1998), organisational culture (King et al., 1992; Amabile, 1998), available resources and capital intensity (Adams et al., 2006) and a willingness to cannibalise (Chandy and Tellis, 1998). Environmental determinants include competitors and customers (Abrahamson and Rosenkompf, 1993; von Hippel, 1986), networking (Pittaway et al., 2004), and general
environmental descriptives (Tidd, 2001). However, as such a classification is not clear-cut, additional descriptors related to the type of innovation and a firm’s position also need to be considered (Damanpour and Aravind, 2006).

Examining the full list of determinants is outside the scope of this thesis, and studies with excellent summaries are readily available (Damanpour, 1991; Crossan and Apaydin, 2010). However, the overall conclusion in the OI stream of research is that no particular set of determinants has emerged from the different studies that have been conducted with the purpose of determining firms’ innovativeness. For example, even the effects of firm size - a fundamental factor identified by Schumpeter (1942) more than 70 years ago as a key determinant of innovativeness - are strongly debated, with no apparent consensus (Damanpour, 1991; Camison-Zornoza et al., 2004; Laforet, 2008).

Organisational innovativeness studies have also been criticised for their static approach. As innovation is not just an outcome but also a process (Wolfe, 1994), the time aspect also needs to be considered in order to fully understand the sequence of events in the development of innovation (Crossan and Apaydin, 2010). Shifting focus from the static innovation adoption decision to the extent of the innovation process has been posed as a major route for the field of organisational innovation to consolidate and advance (Van de Ven, 1986; Wolfe, 1994; Crossan and Apaydin, 2010) and is a recurrent direction for future research.

The process of innovation can be conceptualised in several ways. One of the approaches that has gained prominence over time is to model the process of innovation by partitioning it into a sequence of stages, hence the name stage model approach (Wolfe, 1994). While there is little agreement about what these stages actually are or entail, a general pattern has emerged. First, an organisation has to become aware of the possibility to generate or adopt an innovation. The organisation then evaluates this innovation. The outcome of such an evaluation is the decision to adopt or reject the innovation. If an organisation then decides to adopt a particular innovation actual implementation takes place (Ettlie, 1980; Rogers, 1983; Wolfe, 1994). It is worth noting that, apart from innovation adoption, many processes in the field of business are conceptualised along the lines of stage model approach, e.g. a firm’s international involvement (Johanson and Vahlne, 1977), its information technology system adoption (Daniel et al., 2002), or its growth (Churchill and Lewis, 1983).

An important insight gained from the stage models is that factors that influence the outcome of each stage of innovation may vary. A decision to adopt a particular innovation might be influenced by the attributes of the innovation, for example by the distinct advantages it might offer (Rogers,
However, the success of the subsequent implementation might be determined by an entirely different set of factors, such as the commitment of financial and human resources to the project (Klein and Knight, 2005). This distinction between adoption and actual implementation parallels that drawn between intention and actual behaviour in the theory of reasoned action (Fishbein and Ajzen, 1975) and the behavioural intention to use and actual usage behaviour in the technology acceptance model (Davis, 1989). While the decision to adopt or the intention to use generally leads to later implementation (Sheppard et al., 1988; Taylor and Todd, 1995), the link is far from deterministic. This observation led Wolfe (1994, p. 414) to suggest that the lack of an explicit definition of the stage of adoption is one of the key factors hampering the advancement of organisational innovativeness research: “ambiguity and inconsistency concerning innovation stage contributes to inconsistent and, at times, contradictory research results because the direction of the influence of some determinants is dependent upon the stage being considered.”

Although conceptualising and partitioning the process of innovation into a set number of stages contributes to the understanding of the process, weaknesses and imperfections of the stage model approach were acknowledged when the first models were formulated (Rogers, 1983). Such models imply a perfect linear sequence, where an organisation cannot return to an earlier stage or skip a step. Some innovation processes are complex and involve multiple parallel and overlapping activities with feedback loops. Research aimed at understanding such processes primarily relied on inductive approaches using qualitative data collection methods to capture the aforementioned complexity.

**Towards a general analytical framework**

The above review suggests that understanding innovation is a challenging task. Difficulties arise at the very first step – that of defining innovation. However, this thesis does not focus on defining or determining the relative merits of innovation, but rather attempts to shed light on and advance our understanding of innovative behaviour – behaviour that leads to the adoption of new practices or routines and that require non-trivial efforts on the part of the organisation. Understanding such behaviour requires identifying the (1) determinants of such behaviour and (2) understanding the processes of how these determinants influence innovative behaviour.4

4 The approach pursued here is similar to those of Crossan and Apaydin (2010) and Wolfe (1994), in that diffusion of innovation is not considered. Studies of diffusion examine how a particular innovation
The following set of relationships can be represented in the general theoretical framework of this study, as illustrated in Figure 2.1, below. Link A in the diagram represents the typical organisational innovativeness approach, in which a set of organisational and environmental determinants are related to innovative behaviour. In the organisational innovativeness literature, assessments of link A in the model have often relied on cross-sectional survey data and the establishment of co-variances between determinants.

**Figure 2.1.** General analytical framework of innovative behaviour: determinants and processes

The set of links in Figure 2.1 designated by the letter B includes the temporal aspect and aims to capture some of the process aspects of how innovative behaviour unfolds over time. Including time in the model allows for differentiation between the different stages of innovative behaviour, such as consideration, adoption, implementation and use. For example, intention does not necessarily lead to the actual development of an innovation. Furthermore, temporal perspective makes it possible to identify the sequences and feedback patterns of the determinants and innovative behaviour. For example, past innovative behaviour manifested in a particular technology adoption may influence current innovative behaviour. Past experiences can also influence the present determinants in a complex way.

A major caveat is due at this point. The framework discussed here is by no means an attempt to develop a general theory of innovation, but rather an attempt to structure, with a certain degree of simplification, the spreads through a population of potential adopters. As such studies have extra-organisational units of analysis, they fall outside the scope of this thesis.
inquiry into organisational innovativeness and innovative behaviour. Approaching a particular phenomenon or field of inquiry in the form of “determinants-processes-outcomes” is relatively common and resembles the organisational systems framework (McGarth, 1964; cited in Street and Cameron, 2007) that has been applied in multiple areas, such as e-commerce (Feindt et al., 2002), inter-organisational relationships (Street and Cameron, 2007), innovation and modularity (Schilling, 2000) and marketing strategy-making (Menon et al., 1999).

The following sections of this chapter will contextualise the general model to reflect the specific aim of this thesis: the innovative behaviour of small firms manifested in the adoption of Internet online channels and internationalisation. Contextualising the model is an essential step in order to minimise the potential for ambiguities in the studies. Wolfe (1994) suggested that in addition to identifying the stream of innovation research, an innovation researcher has to specify the type of organisations investigated, how the study’s outcome variable is conceptualised and the stages of the innovation process being considered. The following sections intend to do just that, starting with a discussion of the organisations studied – small firms.

**Firm size and its effects**

Firm size deserves a separate section in this introductory part for two reasons. First, it is argued by many to be a major determinant of organisational innovativeness, and the effects of firm size on innovative behaviour have been investigated in numerous studies over the years (Damanpour, 1992). The core discussion goes back yet again to Schumpeter’s (1942) hypothesis that larger firms are more innovative than smaller ones. While Schumpeter’s argument was formulated in the context of R&D undertakings, and also involved market structure considerations, size has repeatedly been used in innovation studies as a predictor of innovativeness (Camison-Zornoza et al., 2004). Second, different sized firms vary in terms of resources, decision-making and

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5 From the perspectives of economics and industrial organisation, the difference between firm size as something big and firm size as monopoly market power is important, although not essential in the context of this thesis. Tirole (1984, p. 390) summarised Schumpeter’s size argument as: “… large firms are better qualified or more eager to undertake R&D than smaller firms because increasing returns are prevalent in R&D; because R&D activity involves a high level of risk that is difficult to eliminate with insurance (for reasons of moral hazard), and large firms are more diversified and therefore more willing to take risks; because innovation, once generated is implemented more rapidly in a large firm because there is an appropriate production structure; and because a monopolist does not have competitors to ready imitate his innovation or to circumvent an existing patent on this innovation.”
other dimensions that can affect their innovative behaviour and innovation process.

Firm size is used to define an entire class of firms – small and medium enterprises (SMEs). The formal definition of what constitutes a small firm varies, with most definitions referring to number of employees, assets and turnover (Street and Cameron, 2007). The European Commission defines SMEs as companies with fewer than 250 employees. Companies with fewer than 50 employees are defined as small businesses and firms with fewer than 10 employees are defined as micro enterprises. In addition to the number of employees, the Commission also includes limits on the circulation of the balance sheet in their definition (European Commission, 2009). The US Small Business Administration Department defines small firms as having fewer than 500 employees for the manufacturing sector, and in some instances up to 1,000 employees (for example, in organic fibre manufacturing). Cut-offs for other sectors are a combination of number of employees and turnover (U.S. Small Business Administration, 2011).

Small and medium-sized businesses constitute the bulk of all enterprises in the world and are considered by most academics to constitute a nation’s growth engine (Storey, 1994; Davidsson and Wiklund, 2000); a view that is also fully shared by policy makers. The European Commission (2002) considered SMEs to be key players in turning Europe into the world’s most competitive world economy and the major source of job creation. Due to the prevalence and importance of this class of firms, a discipline of entrepreneurship and small business management emerged that investigated the ways in which SMEs were created and managed (Grant and Perren, 2002). It is presumed that firms that fit into the SME class share certain common features when it comes to resource availability, managerial practices and challenges, and that these challenges and practices differ from those of large firms.

Thus, the debate about small businesses is frequently based on contrasts with large established businesses (Raju et al., 2011). Furthermore, in that discussion small firms are assumed to be closer to one of two roles: traditional or innovative. The traditional role is reflected in some of the definitions of a small firm. For example, the Bolton Committee (1971) identified small firms based on their distinguishing features: possessing a small market share, being managed by owners in a personalised way, having no formalised managerial structure and being independent. In view of Schollhammer and Kuriloff (1979, cited in Carson 1985), small firms serve local or regional markets as opposed to national and international markets. These firms have a small market share, are owned by one person and are managed directly by that person. Finally, small firms are generally managed in a distinctive fashion. In
short, from the traditional viewpoint a small firm is a resource-constrained enterprise with a local geographical focus.

In stark contrast to the above view, small firms are also expected to introduce radical innovations and stimulate change and renewal. In particular, new technology-based firms are expected to play a significant role in the transformation of industries and the creation of new employment opportunities in the coming decades (Rickne and Jacobson, 1999). These expectations are deeply rooted in Schumpeter’s (1942) concept of “creative destruction”, which suggests that an entrepreneur comes up with a new idea that has a potential to become a radical innovation. The entrepreneur then starts a new venture, enjoys the flexibility that a small firm provides, successfully commercialises the idea and outruns the large incumbent firms that are too slow to catch up. The innovation then takes off and replaces an existing product on the market, which leads to large firms losing their market positions or going out of business. One can easily think of examples that fit such patterns, especially with regard to Internet-based firms. The success stories of Microsoft, Google and Facebook all fit into such a pattern.

Moreover, Baumol (2004) identified that different size categories of firms have complementary roles in innovation processes. Smaller firms specifically create major breakthroughs and new products, while larger firms contribute to the incremental development of existing products, which results in improvements in capacity, speed and user-friendliness. Damanpour (1992) claims that the richer resource base of large firms facilitates innovation processes, and their stronger competence profile indicates more professional routines for research and development, marketing, management etc. – all of which prove to be beneficial for successful innovation. However, there can be important differences between the different stages of the innovation process. The early stages are strongly linked to the talents and capacities of significant actors, how these people perceive potential opportunities and how they collect information and take action. Later stages in the innovation process are more dependent on the functionality of routines and abilities in order to effectively implement new products, services or business models. To use Baumol’s terms, many small firms can be strategic actors in the breakthrough of radical innovations, while actors in sectors that are dominated by large firms can be path dependent and locked into industrial recipes.

The fact that small firms account for a large proportion of innovations is hard to dispute, although there are indications that larger firms continuously close the gap. Chandy and Tellis’ (2000) examination of the innovation output of small and large firms showed that during the first half of the 20th century entrepreneurial start-ups accounted for a
significantly greater proportion of radical innovations than large firms. In the second half of the century the situation began to change. While in the early 20th century new ventures introduced four times more radically new products than large incumbent firms, this changed so that in the 1950s large firms accounted for 74 percent of all radical innovations compared with only 26 percent from small and medium-sized firms. Audretsch and Thurik (2000) arrived at similar conclusions and found that from the 1950s to the 1970s business activities supported Schumpeter’s thesis and that the development of mass production methods and the concentration of business ownership facilitated a reliance on large-scale innovation processes.

Research results indicate differences between and the benefits of small and large firms concerning the outcome of innovation processes, and claim the existence of sector-specific contingencies (Acs and Audretsch, 1988). In some sectors the size advantage may not be significant, and in such cases the innovative capacities of smaller firms have to be exploited. Small firm advantages can emanate from the innovation processes led by large firms that build on existing knowledge bases and generate incremental solutions and suboptimal advancements (Loch and Huberman, 1999). The autonomy, flexibility and entrepreneurial capacities of smaller firms indicate fewer restrictions to innovation on such path dependence premises (Utterback and Suárez, 1993; Teece, 2007).

Research also suggests that the motivation to utilise external knowledge decreases with firm size because larger firms become more inward-looking and ignorant of external knowledge (Levinthal and March 1993). However, smaller firms are typically more dependent on external resources and for this reason are also more open to receiving and developing information, knowledge and experiences via alliance cooperation. Having such a proactive approach also stimulates innovation processes in this category of firm (Damanpour, 1992).

By their very nature, small firms are assumed to have access to fewer resources than larger firms in the industry or market (Street and Cameron, 2007; Raju, 2011). These resources are not only financial or physical, but also human and organisational. Small firms may also lack the expertise to make a particular decision. Being resource-constrained may have implications for how small firms evaluate the relative advantages of a particular course of action; a prerequisite that has implications for the understanding of innovative behaviour. Due to their properties, smaller firms cannot be expected to make decisions along the lines of classical rational search logic (March, 1991) of identifying alternatives, estimating risks and cash flow over time and choosing the optimal option. Small firms are generally dependent on the entrepreneur;
the firm’s decision set is limited due to the scarcity of information sources and an inability to process this information. The owners or managers of small firms may prefer to maintain the status quo rather than attempt to increase the company’s profits (Davidsson 1991). From this perspective, understanding small firms’ planning behaviour is essential.

The pattern of planning and implementation procedures has been found to be less formalised and more ad-hoc in small firms than in larger organisations. An early study conducted by Bohman and Boter (1984) identified distinct patterns of behaviour in small firms with regard to planning styles, where the formal and systematic planning style was rather rare. Other planning styles were either triggered by informal and spontaneous problems, or showed little formality and regularity. However, the study also suggested that the firm’s environmental situation, its organisational characteristics and its planning style were generally in agreement. A similar pattern was also found in a narrower scope of marketing planning and implementation. An extensive inquiry by Sashittal and Jassawalla (2001) suggested that day-to-day improvisations and adaptations of strategy content and the organisation of marketing activities are typical, and that planning and implementation processes interact strongly in SMEs. As such, the strategic direction of the firm is a cumulative effect of these improvisations rather than a result of a clearly laid out plan.

**Innovative behaviour: online channels and internationalisation**

Even though the decisions to invest in the Internet and begin export operations are conceptually and empirically distinct, both can “give rise to changes in the activities of organization with respect to current practices [...] pose new questions, develop new technical or commercial skills, and new ways of resolving problems” (Camison-Zornoza et al., 2004). In the literature it is not uncommon to approach e-business adoption (e.g. Höst et al., 2001; Srinivasan et al., 2002) and exporting (e.g. Samiee et al., 1993; Jeen-Su et al., 1991) as manifestations of innovative behaviour. Since the emergence of academic interest in international business almost 50 years ago, exporting has been regarded as “innovative, opportunity-seeking, risk-taking behaviour” (McNaughton and Bell, 2009). The decision to internationalise is also considered as an innovation from the small firm’s perspective (Andersen, 1993) and is conceptualised as export adoption process (Jeen-Su et al., 1991). The use of online channels has been conceptualised as the adoption of innovation influenced by internal and external determinants (Höst et al., 2001; Srinivasan et al., 2002; Jeyaraj et al., 2006).
As such, the studies of small firms’ use of online channels and internationalisation can be broadly classified along the lines of the innovation studies presented in Table 2.2, which parallel general organisational innovativeness and innovation process approaches. As the types of innovative behaviour under consideration are known, general innovation can be replaced by online channels and internationalisation. The questions that need to be answered in order to understand these types are the same: establishing the determinants of the propensity to adopt, and understanding the processes involved in the specific types of innovative behaviour under investigation.

<table>
<thead>
<tr>
<th>Innovativeness associated with Internet and online channels</th>
<th>Srinivasan et al. (2002); Grandon and Pearson (2004); Bengtsson et al. (2007); Vanyushyn (2008 a, b)</th>
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<tr>
<td>What determines organisational propensity to adopt online channels?</td>
<td>Daniel et al. (2002); Winklhofer et al. (2007); Vanyushyn (2011)</td>
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<tr>
<td>What are the processes that organisations go through when implementing online channels?</td>
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<tr>
<th>Innovativeness associated with internationalisation</th>
<th>Czinkota, (1982); Czinkota and Tesar (1982); Pope (2002); Vanyushyn et al. (2009)</th>
</tr>
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<tr>
<td>What determines organisational propensity to internationalise?</td>
<td>Bilkey and Tesar (1977); Jones and Coviello (2005); Leonidou and Katsikeas (1996); Holmlund et al. (2007)</td>
</tr>
<tr>
<td>What are the processes that organizations go through when internationalising?</td>
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**Table 2.2.** Approaches to studying internationalisation and online channel use; the studies in italic are included in this thesis

In the internationalisation and export literature, the organisational innovativeness approach is reflected in the framework of motivational factors originally devised by Czinkota and colleagues (Czinkota, 1982; Czinkota and Tesar, 1982) and later revised and augmented (Pope, 2002; Holmlund et al., 2007). This approach seeks to identify a range of motives that can contribute to a firm’s decision to export. A variety of different categorisations have been proposed based on, e.g. whether export incentives attract companies to go abroad or push them to do so, i.e. push and pull or proactive and reactive factors (Bilkey, 1978; Hollensen, 1999), and whether the factors are internal or external to the
firm (e.g. Katsikeas and Piercy, 1993). Stewart and McAuley (1999) suggest that export triggering factors are first categorised as internal or external and then separated into proactive and reactive. In general, export motives range from profit maximisation to the relative contribution of factors like management interest, inquiries from buyers, tax benefits, or idle production capacity. While internal company stimuli like excess capacity and external company stimuli such as foreign enquiries are considered significant, they are not in themselves sufficient conditions for exporting.

The processes of investing in the equipment necessary to utilise the potential of the Internet as a business instrument and develop skills and routines for ‘Internet management’ are often presented in the literature as processes that develop successively in sequential steps over time. From the first early steps of basic e-commerce activities the firm learns, gains experience and continues with the next stages of development. Through this process firms gradually increase their use of Internet applications in business and reach more advanced levels (Daniel et al., 2002; Jones et al., 2003). This stage model is also found to be relevant in the internationalisation processes of export involvement (Bilkey and Tesar, 1977) and the Uppsala internationalisation model (Johanson and Wiedersheim-Paul, 1975; Johanson and Vahlne, 1977). These models are based on different steps that describe the firm’s gradually increasing level of export involvement or internationalisation. A basic assumption in all these models is that one cycle of events constitutes the input of the next, meaning that the present state of Internet use or internationalisation is an important factor in explaining the direction of further development. Nevertheless, an alternative approach is also viable and is capable of explaining certain adoption or internationalisation patterns that stage models cannot fully address. Studies of internationalisation processes in small high-tech firms suggest that these firms exhibit rapid or even instant development processes, moving from local to extensive international activities (Boter and Holmquist, 1996). Similarly, shifting from a basic use of the Internet, such as sending emails, to more advanced levels of online interaction may represent a major shift in a firm’s operations that in turn require the presence of a set of internal and external factors, or antecedents, that are not fully captured by the stage models.

**Positioning the studies**

The above discussion makes it possible to position the specific studies appended to this thesis by relating them to general innovation research and specific studies on small firms’ adoption of online channels and internationalisation. In line with the conceptual framework outlined in
Figure 2.2, the essays examine the organisational and environmental determinants of innovativeness as well as the process of innovation. The black rectangles correspond to the primary focus of each given essay.

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<tr>
<th>Study</th>
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<th>Environmental determinants</th>
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*Figure 2.2. The primary, secondary and tertiary objectives of the studies. Note: Pure black indicates the primary focus of the study, dark grey the secondary focus and light grey the tertiary focus. White suggests that the process aspects have not been explicitly considered.*

In much of the academic work conducted in the late 1990s the Internet was seen as a technological discontinuity, in that it had the capacity to destroy the competence of firms. Implicit or explicit commonality between the Internet and innovation has not only been discussed in the small business context, but also at the marketing theory level: “e-business [is] a radical technology that has been transforming business models and processes, resulting in disruption of old industries and the creation of new ones” (Srinivasan *et al.* 2002, p. 47). Thus, study 1 focuses on the innovative nature of the Internet and utilises the concept of willingness to cannibalise (Chandy and Tellis, 1998) in order to explain a small firm’s adoption decision. The findings in study 1 suggest that the multi-faceted nature of using the Internet as a customer-facing solution required complementing the innovation focus with insights gained from the literature relating to the information systems used and the coherence between the Internet and a firm’s competitive strategy. That realisation led to study 3, which also primarily relies on organisational determinants. In other words, studies 1 and 3 primarily make use of...
organisational determinants to examine a small firm’s propensity to adopt online channels. The specific purposes of these studies are as follows:

**Study 1:** Given the breakthrough-like nature of the Internet and with input from the literature on innovation adoption, to examine the influence of external and internal factors that explain SMEs decisions to adopt and use the Internet for marketing and sales.

**Study 3:** Given the complexity of the Internet technology, its innovative nature and its potential marketing applications, to identify and examine antecedents of digitisation of marketing and sales in a small firm setting by integrating three perspectives: innovation adoption, technology acceptance and competitive strategy.

The findings reported in study 1 suggest that resellers play an important role in balancing the pros and cons of using the Internet as a means of connecting to the market. In the domain of retailing or serving end customers, the expectations of reseller alienation and subsequent channel cannibalisation can thwart the adoption of the Internet. On the other hand, electronic business adoption by the resellers can exert a positive influence on manufacturers adopting electronic business in terms of the buyer-seller interaction in the supply chain. Thus, study 2 examines the role of resellers in explaining SMEs propensity to use online channels. At the same time, work on the internationalisation aspects of SMEs also shows that the extent to which companies deal with and benefit from horizontal collaboration, i.e. from cooperation with competitors, has only been marginally recognised in the literature, and suggests the need to scrutinise the role that such cooperation with competitors plays in export behaviour and internationalisation. In general, studies 2 and 6 primarily focus on environmental determinants. The objectives of these two studies are as follows:

**Study 2:** Given the importance of SMEs relationships with resellers and distribution channel partners, to examine the effects that resellers have on e-business adoption by smaller manufacturing firms.

**Study 6:** To evaluate the influence of cooperation with competitors on exporting decisions and to examine how different export motives can be used as predictors of an interest in such collaboration.

The aforementioned studies, conducted by the author’s colleagues and the author himself (Bengtsson *et al*., 2007; Vanyushyn, 2008a; Vanyushyn, 2008b; Vanyushyn *et al*., 2009), reflected the organisational innovativeness focus. This research effort resulted in a line of theoretical arguments and empirical evidence that established the relationship
between a range of organisational and environmental determinants and the decisions to use the Internet or to internationalise.

It terms of the methodology, studies 1, 2, 3 and 6 rely on a cross-section survey research and focus on a split adoption/non-adoption. The reality is more complex than a binary split, however. Furthermore, the implementation of a relatively complex IT system takes time; an aspect that is hard to capture in a cross-section study (Bharadwaj and Soni, 2007). For example, Winklhofer et al. (2007, p. 35) points out that “the literature is prone to discuss website establishment and development simultaneously, splitting firms into adopters and non-adopters, yet websites may be established and then neglected, or be continually developed.” The need to examine the process aspects of online channel implementation and use motivated the fourth study.

A review of the literature on small business exporting and internationalisation showed that several aspects of the internationalisation process were only weakly addressed. While there is a plethora of studies on factors associated with export performance and success, hardly any of them examined the effects that previous importing experience had on how, why, where and with what success firms export. This gap is addressed in the fifth study, which focuses on the role and contribution of past importing experiences on subsequent exporting operations.

Thus, studies 4 and 5 investigate the process aspects of SMEs online channel adoption and use and their internationalisation. The purposes of studies 4 and 5 are as follows:

**Study 4:** Given the rapid development of the Internet, to investigate the patterns of change between 2002 and 2008 in how SMEs use the Internet for marketing and sales and the make-up of factors that explain such use.

**Study 5:** To examine the role of importing in the internationalisation process, more specifically whether and how importing contributes to subsequent exporting in small and medium-sized firms.
III. Method

The research approach

Few would dispute that the researcher’s stand on what is called metatheoretical foundations influences the research process and frames the range of a study’s applicability. Moreover, “the virtues of techniques and methods cannot be determined and categorized in the abstract, because their precise nature and significance is shaped within the context of the assumptions” regarding ontology, human nature and epistemology (Morgan and Smircich, 1980).

Although the confined space of a journal article limits the opportunity to present, let alone reflect on these issues, this section provides ample opportunity to do both. The philosophical perspective held by the author can be classified as scientific realism (Hunt, 2002). The key postulates of the perspective are that the world exists independently of its being perceived and that all knowledge claims must be critically evaluated and tested in order to determine correspondence with the world. In this light, the objective of a scientific inquiry is to develop knowledge about the world, even though such knowledge will never be known with certainty. Such philosophical orientation bears a close resemblance to positivism, and, as such, to what is called the mainstream of business research.

In this context, the choice of research strategy - inductive-deductive and qualitative-quantitative – was made along the following lines. In general, the appropriateness of a qualitative inquiry is negatively associated with the general level of understanding of the phenomenon and is positively associated with the context dependency of the studied phenomenon (Yin, 2003). If the existing knowledge relevant to the phenomenon is limited, then qualitative inquiry is necessary in order to gain a deeper understanding of the phenomenon. Similarly, if the impact of the context on a studied phenomenon is significant, then a quantitative approach becomes either excessively complicated (as a problem cannot be formalised and reduced to the determined set of variables with hypothesised interdependencies) or useless (as the cost of quantification and subsequent analysis might outweigh the benefits offered by such an analysis). While such treatment is rather limited and does not do justice to the richness and sophistication of the philosophical and methodological debate in the field of social sciences, these are the key arguments that inform the choice of the research strategy.

The quantitative approach was chosen in preference to qualitative inquiry for several reasons. The work presented here is based on the literature on innovation, electronic business and internationalisation - areas that have been extensively investigated. Reviewing and
synthesising the academic literature in the areas of general innovation, IT adoption and internationalisation suggested a wide range of hypothesised antecedents of innovative behaviour drivers, approaches to measuring the drivers and the inter-relationships between them. Similarly, while the decision to adopt e-business or begin export operations depends on a wide range of factors, some of which may be idiosyncratic to a firm and its environment, such idiosyncrasies do not inhibit the quantitative investigation. Finally, the research objectives pursued in this work explicitly call for quantitative investigation, especially as quantitative empirical investigation has been pointed out as a direction for future research in order to complement the conceptual and explorative insights gained. All these factors suggested that a deductive approach would test the hypothesised relationships derived from the use of existing theories.

The empirical data for this dissertation was collected via three postal questionnaires. Table 3.1 provides an overview of the survey and indicates when the actual survey administration took place, the sample, the sampling method used, the response rate and the organisational position of the respondent. Given that the unit of observation in all the studies is a small firm, a survey mode of data collection can lead to what might be referred to as an “anthropomorphising” of the organisational features (Yin, 1978, cited in Wolfe, 1994); an undesirable effect that has been shown to negatively affect inquiries into innovative behaviour (Wolfe, 1994). With the possible exception of sole entrepreneurs, organisations are collectives of individuals. This requires that those responding to the survey are knowledgeable about the operations being addressed in the questionnaire. Thus, great care was taken to ensure that in surveys one and two the individual respondents were either chief executive officers (CEOs) or chief marketing officers (CMOs), and in survey three had a CEO position or were specifically responsible for international operations.

<table>
<thead>
<tr>
<th>Essays</th>
<th>Time</th>
<th>Sample</th>
<th>Response Rate, No/%</th>
<th>Respondent</th>
<th>Sampling method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3</td>
<td>Dec. 01-</td>
<td>1037</td>
<td>379 / 36%</td>
<td>CEO, CMO</td>
<td>Stratified, 4 size groups in 4 regions</td>
</tr>
<tr>
<td></td>
<td>Mar. 02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Jan. –</td>
<td>366</td>
<td>124/ 33.8%</td>
<td>CEO, CMO</td>
<td>Census in the context of a follow-up study</td>
</tr>
<tr>
<td></td>
<td>Mar. 08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5, 6</td>
<td>Apr.-</td>
<td>576</td>
<td>178/ 30.9%</td>
<td>CEO, responsible for international operations</td>
<td>Stratified, 1 geographical region, all firms in the region</td>
</tr>
<tr>
<td></td>
<td>Jun. 04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3.1. The data sources used in this thesis.
The following section describes the data collection process in greater detail and also provides the reader with a sense of chronology and context of the survey development and administration.

**Data sources and collection**

**First survey**

The data for the first three papers was collected by sampling Swedish manufacturing firms in four different regions. The data relating to the Swedish firms was part of a larger Nordic research project conducted as a cooperative effort between researchers from Denmark (University of Aarhus), Finland (Hanken School of Economics in Vaasa) and Sweden (Umeå School of Business). In the context of this project a database has been developed with observations from companies in the three Nordic countries. The first three papers are based on the data from the Swedish study only.

The development of the survey instrument took place in the early 2000s. Studies conducted in the same period concluded that Internet and e-commerce research was at the embryonic stage (BarNir *et al.*, 2003) and pointed to the lack of integrative frameworks (Jeyaraj *et al.*, 2006; Kim and Malhotra, 2005) and reliable measures (Wu *et al.*, 2003). There was also a recognised need for empirical research focusing on e-business adoption in general, given that many managerial decisions rely on empirically untested assumptions (Deleersnyder *et al.*, 2002) and on e-business adoption by SMEs (Fills and Wagner, 2004). The anticipated impact that the Internet and e-business would have on the industry was also high. The extent of these expectations is succinctly summarised by Srinivasan *et al.* as follows (2002, p. 47): “e-business [is] a radical technology that has been transforming business models and processes, resulting in disruption of old industries and the creation of new ones.”

These expectations and the available literature at the time informed the development of the questionnaire, the structure of which reflected the stream of research on organisation and radical innovation, with a particular focus on inter- and intra-organisational determinants. The questionnaire thus focused on the following aspects: the presence of entrepreneurial individuals who champion certain causes and entrepreneurial drivers (Winistorfer, 1996; Mehrtens *et al.*, 2001), top management’s interest in and support for innovative initiatives - top management support (Damanpour, 1991; Wu *et al.*, 2003), a firm’s willingness to forgo the value of investments in older routines and processes and a willingness to cannibalise (Schumpeter, 1942; Chandy and Tellis, 1998), the size of the firm, the multidimensional factor and the possession of a complex set of intertwined organisational attributes.
such as structure, culture, incentive system, formalisation and resource base (Damanpour, 1991; Camison-Zornoza et al., 2004), external pressure as manifested in existing or anticipated customer demands, competitors’ actions and the actions of other market participants (Abrahamson and Rosenkompf, 1993; Håkansson, 1987).

The survey was sent to a sample of firms stratified by region and firm size bracket. The different types of industrial context represent a metropolitan area and three provincial regions in the south, north and middle parts of Sweden. The firms were active in six traditional industrial sectors – timber, publishing/printing, chemicals, metal, machinery and electrical equipment. The initial purpose was to examine 100 randomly selected manufacturing firms within 4 size groups in these 4 regions. However, only 8 of these 16 strata contain the required minimum of 100 firms. When the total number of firms of a given size class in a specific region was less than 100, all the existing firms were chosen. After merging the 2 middle groups, the final analysis was conducted on the basis of three size groups: small with 1–19 employees, medium with 20–199 employees and large with more than 200 employees. The questionnaire, together with an explanation of the study, was sent to a total of 1,037 firms. The covering letter underlined that it was important for the questions to be answered by the person responsible for marketing or the marketing manager in the respective firms. The number of questionnaires returned, after two follow-up mailings, amounted to 479, of which 379 were usable (36% of the total mailing). Not unexpectedly, the smallest firms had the lowest response rate of 34%, compared with 45% and 40% respectively for medium-sized and large firms. An extensive analysis of differences between size classes and industry affiliation shows the non-response biases to be insignificant. In total, 95 responses were received from small firms, 237 responses from medium-sized firms and 47 responses from large firms.

This dataset formed the empirical sections for the first three essays relating to digital marketing adoption by SMEs, the impact of resellers on such adoption and the way that firms integrate the Internet into their marketing operations.

Second survey
The development and administration of the second survey was motivated by changes in the academic literature and in the industrial context. The speed with which the Internet has spread all over the world is viewed by many as unprecedented. Between 2000, the year the development of the first survey began, and 2009, the Internet penetration rate worldwide had increased by 362 percent. This growth ranges from 133 percent in North America, 283 percent in Europe and 1360 percent in Africa (IWS,
When it comes to Internet usage, Sweden is one of the leading countries in Europe (ranked as no. 7), with an estimated penetration rate of 81 percent in 2009 (IWS, 2009). The speed with which the Internet has been adopted by the general public in Sweden is either consistent with or exceeds the world average. Eighty six percent of all Swedes had access to a computer in their home in 2009, compared with 25 percent in 2003. Figure 3.1 illustrates the pattern of Internet usage among the Swedish population. The reader is particularly asked to note the rapid growth of access to broadband between 2002, the year the first survey was developed and administered, and 2008.

In the industrial context, the development followed a similar pattern. A report from the Swedish Statistical Bureau (SCB, 2005) showed that 82 percent of all companies in Sweden used high speed Internet connections in 2005, which was almost a doubling since 2001 when the proportion was 44 percent. This data is particularly interesting in the light of the

![Figure 3.1](image)

**Figure 3.1.** Proportion of Swedish population aged 16 and over with access to computers, the Internet and broadband in their home from 1995-2009. Source: WII (2009)

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This can be compared with the European average of 50 percent and world average of 27 percent. Sweden is very well placed when compared with the Group of Eight (G8), in descending order: United Kingdom (80%), Japan (74%), United States (74%), Canada (72%), France (68%), Germany (67%), Italy (56%) and finally Russia (27%).
findings of Arbore and Ordanini (2006), who argue that the adoption of broadband technology is a main prerequisite for enjoying the benefits of information and communication technologies.

The rapid spread of the Internet and growth of the infrastructure was paralleled by the growth of the academic literature that examined the use of the Internet and the emergence of convergent results. A review of 51 studies of general organisational IT adoption undertaken by Jeyaraj et al. (2006) found that top management support, external pressure and organisation size were the best predictors of adoption – the three drivers that formed the core of the first survey. This was followed by the recognition that the implementation of a relatively complex IT system takes time; an aspect that is difficult to capture in a cross-section study and with the need to shift towards a more sophisticated level of study than adoption or non-adoption (Winklhofer et al., 2007).

Thus, changes in the academic literature and the industrial context called for process insights and the examination of post-adoption use – an objective of the fourth study. The fourth paper, the purpose of which is to investigate the changing patterns in the use of the Internet, uses the survey data described above and is based on the survey data collected during the early spring of 2008. In 2008, the original responding firms were traced by means of their unique organisation registration numbers (organisationsnummer in Swedish) as search criteria. Out of the original 479 responding firms, 366 were active at the end of 2007. A revised version of the survey was sent to the 366 firms that were still active. After two reminders, 124 usable surveys, i.e. with no missing values and full responses from 2002, were returned.

This two-wave dataset formed the empirical section of the fourth essay, which investigated the changing patterns of how SMEs used the Internet between 2002 and 2008 for marketing and sales and the make-up of factors explaining such use.

**Third survey**

The data for essays five and six, with a focus on the internationalisation of SMEs, was also collected via a postal questionnaire. The sampling frame included SMEs in the Vaasa Province on the west coast of central Finland. All the firms in the region fell within the limits of small and medium-sized firms according to European Community standards. The local export association’s database was used in order to make contact with the firms. Nearly all the small and medium-sized exporting firms in the region were included in that database, and contact information for 576 firms was obtained. Thus, the sample more or less corresponds with
the total number of target firms in the region. The respondents were the firms’ contact people with the export association - a CEO or someone in charge of internationalisation. As in many smaller sized firms, this person was often the founder of the firm and either made the decisions or played a key role in importing and exporting decisions. In order to correspond with the respondents’ language in this bi-lingual region, both the questionnaire and the covering letter were in Finnish and Swedish. One week later a follow-up letter with a second questionnaire and a pre-paid return envelope were sent to the firms. In total, 178 respondents completed and returned the questionnaires (out of a total of 576), which corresponds to a response rate of 30.9%. Some of the returned questionnaires contained non-systematic missing values for some of the attitudinal variables. These questionnaires were only used when relevant, i.e. when the analysis did not involve these variables.

The third dataset used in the essays five and six contributes to the understanding of how past experience of importing can contribute to subsequent exporting and how cooperation with competitors can contribute to firms’ internationalisation.

**Analysis**

The choice of analytical techniques was guided by the objectives of the studies. The techniques used to evaluate the differences, relationships and dependencies were OLS regression, logistic regression, discriminant analysis, general loglinear analysis and several other parametric and non-parametric techniques. Measurement-wise, confirmatory factor analysis was used to establish convergent and discriminant validity of the Likert scales. Cronbach’s alpha and confidence intervals for Cronbach’s alpha were used to evaluate the internal consistency of the scales.

Methodologically, the first three essays contain two distinct components: measurement (the essays use multiple questions to measure a single construct) and structural (examining the relationships between the constructs). Essay one reports the reliabilities (Cronbach’s alphas) of the scales used and provides intuitive arguments for how the adopter/non-adopter split was developed. Essays two and three approach the measurement in a more rigorous way. In the second essay, confirmatory factor analysis was used to assess the discriminant and convergent validity of the proposed measures (Lattin et al., 2003). Essay three also reports the confidence interval for Cronbach’s alpha according to the procedure outlined in Duhachek et al. (2005).

Once the constructs are developed the hypothesised structural relationship between them can be tested. Essays one to three split all the firms into two groups: adopters and non-adopters of e-business. Dependence techniques were then used to determine which antecedents
discriminate between adopters and non-adopters. Essay one relies on canonical discriminant analysis to analyse which of the factors presented in the model predict the group membership of a particular firm. Essays two and three use logistic regression for essentially the same purpose. Discriminant analysis could not be used, as some of the independent variables were nominal.

The research design of essay 4 allows for the examination of changes in the adoption level of a particular Internet feature, since the adoption levels for each individual firm are known for both periods. Therefore, models for matched pairs, or paired data, can be applied. General loglinear analysis was used to determine whether or not there was a statistically significant change in the adoption level between the two periods.

Essays five and six rely on commonly used techniques (independent and paired samples t-test, cross-tabs) and do not test for complex relationships. However, it is important to note that the coding scheme used in the survey produced a skewed response pattern that only marginally met the assumption of normality required by some of the tests. Even though this is not reported in the essays, all the tests were replicated using non-parametric techniques that had no distribution assumptions.
IV. Presentation of the Studies

Study 1. Integrating the Internet and Marketing Operations: A Study of Antecedents in Firms of Different Size

Although adopting the Internet for basic purposes does not require major investment or organisational change, adopting advanced Internet operations as a market channel might require the firm to change its established channels of distribution and routines, sustain short-term losses and acquire significant skills and financial resources. Using the Internet for marketing operations may reshape the ways that firms interact with their customers, invest in existing market channels, decide on sales force operations and deal with suppliers and customers. Viewed from this perspective, integrating the Internet into a firm’s marketing operations is akin to radical innovation. This essay seeks to find out what differentiates adopters of advanced Internet-based operations from non-adopters in firms of different sizes.

This study draws on the following factors gleaned from the innovation-related literature: (1) firm size as a determining factor that captures many

![Diagram](Image)

**Figure 4.1** Internal and external conditions discriminating between adopters and non-adopters of advanced Internet-based marketing operations among firms of different sizes. Source: Bengtsson *et al.* (2007, p. 30)
of the differences in firms' innovation-related activities, and (2) specific factors explaining innovative behaviour: entrepreneurial drivers, willingness to cannibalise, management support and market pressure. The conceptual framework for the study is presented in Figure 4.1. In the first layer, size serves as a grouping variable to form three categories of firms: small, medium and large. In the second layer, the factors that contribute to the adoption decision in each group size are examined.

The data for this study was collected by sampling a number of Swedish firms located in four different regions. In total, 95 responses from small firms, 237 responses from medium-sized firms and 47 responses from large firms were obtained. In order to determine whether adoption rate depended on a firm’s size, the variables “Adoption” and “Size” were cross-tabulated and the chi-square statistic was computed. Canonical discriminant analysis was then used to analyse which of the factors in the model predicted the group membership of a particular firm.

To summarise, the results supported Schumpeter’s hypothesis of a positive relationship between rational innovation and size when considering advanced use of the Internet. The implementation of an advanced Internet application requires a systemic innovation, and the results suggest that size is important for this kind of innovation. The study also shows that “Entrepreneurial drivers” are of strategic importance in the development of new processes in small and medium-sized firms, but are irrelevant for large firms. It was also established that various combinations of Internet champions, entrepreneurs and managers create this type of innovative driving force. The willingness of a firm to accept the reduced value of its previous investments when replacing and complementing existing channels with Internet-enabled distribution is a central issue for medium-sized firms, and is also important for large firms. For the latter group, external market pressure exerts the strongest influence on this development direction.

**Study 2. The Dual Effect of Resellers on Electronic Business Adoption by SMEs**

Resellers play an important role in balancing the pros and cons of using the Internet as a means of connecting to a market. In the domain of retailing or serving end customers, the expectations of reseller alienation and subsequent channel cannibalisation can thwart e-business adoption. On the other hand, electronic business adoption by resellers can exert a positive influence on electronic business adoption by manufacturers due to the buyer-seller interaction in the supply chain. Thus, the purpose of
this study is to empirically examine the effects that resellers have on smaller manufacturing firms’ adoption of e-business. 

The results of the study suggest that when it comes to e-business adoption, smaller manufacturing firms can be influenced by resellers in two ways. Expectations that e-business adoption may alienate resellers can prevent a firm from adopting. On the other hand, a firm is more likely to invest in e-business if it believes that its resellers will do the same. Small firms with less than 50 employees have most to gain or lose from both effects. The estimated effects of alienation and action on the probability of online channel adoption are represented in Figure 4.2.

![Figure 4.2](image_url)

**Figure 4.2.** The estimated effects of alienation and action on different sized firms. Source: Vanyushyn (2008b)

As small firms are very responsive to the pull force of resellers, a policy maker can focus on promoting the use of the Internet by large retailers and wholesalers and expect that small firms will follow suit. The results of this study also provide a tentative explanation for why small firms implement online channel tools to a lesser degree than was originally expected. The reseller alienation effect is so pronounced in smaller firms that it effectively works as a deterrent to adoption. However, there is a significant difference between the expectation of alienation and the expectation of decreased sales in that these two expectations are only imperfectly related. Thus, it appears that small business over-estimate the reseller alienation effect that e-business adoption can lead to and thereby make a decision that is not consistent with a loss of sales expressed in monetary units. A small business manager, therefore, should attempt to lessen his or her reliance on traditional resellers if s/he wants to benefit from the opportunities offered by e-business. He or she should also be more realistic and not assume that channel conflict will necessarily lead to financial or sales losses.
Study 3. Innovation at the Intersection of Market Strategy and Technology: a Study of Digital Marketing Adoption among SMEs

The growing importance of and academic interest in digital business has led to a plethora of literature on the subject. However, many researchers conclude that Internet and e-commerce research is at the embryonic stage and point to the lack of integrative frameworks and reliable measures. In the small firm setting, many of the studies undertaken are conceptual, normative or qualitative, which means that there is a recognised need for empirical research on e-business adoption by smaller firms. Against this background, this study aims to identify and examine antecedents of the digitisation of marketing and sales by smaller manufacturing firms. Three overlapping, but nonetheless conceptually and empirically distinct groups of studies provide a theoretical foundation. The first group of studies, common in mainstream management and marketing journals, approaches digitisation from the innovation perspective. The second group, represented mostly by information and management science publications, is based on technology acceptance models that evaluate the perceived usefulness and ease of use of the information system. The third approach examines digitisation from the product-market strategy perspective. Figure 4.3 sketches the conceptual framework of the study.

<table>
<thead>
<tr>
<th>DEM as innovation. Whether a firm adopts DEM depends on the management attitudes, market conditions, and the extent to which a firm is prepared to reduce the actual or potential value of its earlier investments.</th>
<th>DEM as a controllable marketing tool. Adoption of DEM depends on whether a firm pursues strategy of differentiation, cost leadership or a mix of both.</th>
<th>DEM as an information system. Whether a firm adopts DEM depends on the perceived usefulness of the system, its perceived ease of use and on past experience with a similar system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm size</td>
<td>Adoption or non-adoption of Digitally Enabled Marketing</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4.3.** Determinants of Digitally Enabled Marketing (DEM) adoption. Source: Vanyushyn (2008a)
In this context, the more specific objectives of this study were: (1) to operationalise the digitisation of marketing and sales, (2) to identify predictors that can explain a firm’s propensity to digitise marketing and sales, (3) empirically test alternative models incorporating various combinations of these predictors and (4) suggest an integrative model. Confirmatory factor analysis was used to assess the discriminant and convergent validity of the proposed measures. After developing the constructs, their hypothesised structural relationships were tested using logistic regression.

The first notable finding is that Digitally Enabled Marketing (DEM) contains innovation features, is a general information system and a controllable marketing tool. Intermediate models that enter the predictors from each area separately produce a statistically significant increase in predictive accuracy. The optimal model of DEM adoption includes predictors from all three approaches. Top management support, previous use of the Internet and perceived relevance are the three top predictors that differentiate adopters from non-adopters of DEM. The measurement model suggests that all the factors considered in this study are empirically distinct. Thus, there might be situations in which DEM is perceived as relevant and easy to use, and yet the top management does not support the use of the Internet for marketing and sales. The opposite is also true. Per se, size is positively associated with adoption, and the direction of the relationship is one-way: the bigger the firm the more likely it is to adopt. When other control variables enter the equation, the effect of size reduces to no effect in large or medium-sized forms and some effect in smaller firms.

**Study 4. A Two-wave Study of SME’s Use of the Internet for Marketing and Sales**

This paper examines the patterns of changes between 2002 and 2008 in how small and medium-sized enterprises use the Internet for marketing and sales and the make-up of factors that explain such use. The empirical section of the paper is based on a two-wave survey of 124 Swedish SMEs in 2002 and 2008. Models for matched pairs, confirmatory factor analysis and regression are used in the analysis. The value of this study lies in its two-wave design that allows integrating innovation adoption and cost-benefit frameworks to explain the changes in the use of the Internet that occurred between 2002 and 2008.

A comparison of the different features of online channel use revealed that although the proportion of firms implementing online features increased overall, some firms that had implemented these features in the past stopped using them.
Moreover, the results suggest that no particular transition between adoption stages has occurred. A firm that in 2002 stated that it was planning to invest in digital distribution is no more likely to have this feature up and running than a firm with no such intentions. Moreover, firms that implemented a certain feature in 2002 may have changed direction in 2008. What this suggests is that there is no clear pattern, in contrast to the sequential adoption suggested by some models.

One explanation for the observed changes could be is that decisions made in 2002 were exploratory and thus resulted in opportunistic adoption, failure to deliver and subsequent withdrawal. On the other hand, firms that were unwilling to commit resources in 2002 did so in 2008 after deciding that the benefits outweighed the costs. Such an explanation is consistent with the investigation of factors driving a firm’s implementation of more advanced online features.

Another implication of this study is that the make-up of factors explaining the decision to adopt, implement and use the Internet for marketing and sales has changed. The results of the studies based on the 2002 survey showed that the adoption of the Internet for marketing and sales can be likened to the adoption of a radical innovation, and that such adoption is affected by a firm’s innovativeness, perception of the information technology and its competitive strategy. The 2008 results, on the other hand, suggest that the degree of implementation of a particular Internet feature is more closely linked to the conventional cost-benefit analysis. Factors highlighted by the literature on innovation and found significant in the early 2000s have lost their explanatory power, albeit not entirely. The most notable change is that a firm’s willingness to lose the value of its past investments was significant in 2002; a finding that is consistent with the views expressed during that time. However, in 2008 this factor had more or less lost its explanatory power.

Study 5. Small and Medium-sized Enterprises’ Internationalization and the Influence of Importing on Exporting
Relative to the volume of research into internationalisation, inward operations, or importing, has received much less attention than outward operations, or exporting. This study focuses on whether importing experience makes a difference and how importing influences subsequent exporting. Issues that are empirically investigated in this study are: (1) the proportion of imports and how importing started relative to exporting, (2) what kind of incentives there are to exporting, and whether pure exporters rate these differently than exporters with importing experience, and (3) the import-related factors that influence exporting.
The data for the study was collected via a postal questionnaire sent to SMEs in the Vaasa Province on the west coast of central Finland. A total of 178 respondents completed and returned the questionnaire.

The comparison of pure exporters and importing-experienced exporters reveals a significant finding, namely that import-experienced firms assign higher values to nearly all the export incentives included in the survey. Statistically significant differences between the two groups are found on the proactive factors of managerial motivation, unique products, economies of scale and profit motives. An additional interesting result is that pure-exporters consider themselves to be more dependent on governmental- and/or association support.

The results of the study thus suggest that import-related factors do have an effect, albeit relatively minor, on exporting. The companies report that some exporting benefits arise from the reduction of cultural barriers, not having to start from scratch and the use of knowledge gained from importing.

These results suggest (given that the current study design cannot rule out alternative explanations) that earlier importing experience has both a direct and indirect effect on exporting – a pattern that is represented in Figure 4.4. The direct effect is depicted as link A, and shows the relative importance of import-related factors to exporting for firms with importing experience. However, when pure exporters enter the picture the indirect effect emerges, which is that import-experienced firms assign higher values to proactive factors. This effect is represented by link B. The results thus tentatively support the proposition that inward-activities should be recognised as significant for international companies in the SME setting.
Study 6. Cooperation with Competitors and Internationalization: Evidence from the West Coast of Finland

The idea that competitors can sometimes cooperate and benefit from such cooperation entered the world of academia in the mid 1990s. This simultaneous process of cooperation and competition acquired the name of “coopetition”. Despite this, very little is known about the phenomenon. What is it that motivates firms to cooperate with their competitors? Do the motives form a pattern or hierarchy? How does cooperation with competitors contribute to international operations? These are the key questions addressed in this study.

Like study 5, this study also departs from the motivational factors framework. This framework seeks to identify a range of motives or objectives that can contribute to a firm’s decision to internationalise or cooperate with a competitor. After reviewing the literature on the internationalisation of SMEs, previous research results on the role of networks and cooperative arrangements and case studies, the authors formulated 16 motives that could influence export and 16 objectives for possible cooperation with competitors.

The data for this study was collected via a postal questionnaire. The answers received from 143 small and medium-sized firms located in the Vaasa Province, on the west coast of central Finland, provided the empirical base for the analysis. All the responding firms had been involved in overseas sales. Fifty five firms, or over 38 percent, reported that they actively cooperated with competitors, while eighty eight firms, or over 60 percent, reported that they did not have any such relationships with their competitors. These two groups of firms did not differ in aspects related to age, size and sales.

All the responding firms agreed that the most influential motives for exporting were, in order of decreasing importance: management interest, a small domestic market, inquiries from buyers and idle production capacity. Cooperating firms, however, assigned higher ratings to technical advantages, demands from a partner, inquiries from buyers and cooperation itself. The top four objectives for getting involved in cooperation with competitors were: finding new customers, decreasing marketing costs, increasing productivity and acquiring new knowledge. The results of the study also suggest the presence of strong relationships between cooperation objectives and export motives.

This study sheds light on the topic of competition in a SME internationalisation setting. In addition to its empirical contribution to a better understanding of the role of cooperation with competitors, which to date is an under researched area, the study also sheds light on SME internationalisation from a network perspective.
V. Concluding Discussion and Suggestions for Future Research

This section of the dissertation seeks to elevate the individual findings of the studies and relate them to the general questions raised in the introductory part. Doing so will inevitably highlight limitations of the individual studies and suggest directions for future research – aspects that are also addressed in this section.

The six studies

Table 5.1 presents the key insights from the six studies (which were also summarised in the previous section) and highlights the elements integral to each study, namely the role and contribution of processes and organisational and environmental determinants. Here the individual essays are grouped chronologically and whether they focused on the Internet or internationalisation.

The first three studies seek to explain a firm’s propensity to adopt online channels. Such adoption is treated as innovative behaviour. Firm size and a firm’s willingness to cannibalise, i.e. a firm’s readiness to reduce the actual or potential value of its earlier investments, differentiate between adopters and non-adopters. The willingness to cannibalise is closely related to a firm’s existing relationships with its resellers. Expectations of alienating resellers through e-business adoption may prevent a firm from adopting. On the other hand, a firm is more likely to invest in e-business if it believes that its resellers will do the same. Customers’ pull and competitors’ push turned out to be strong drivers of Internet use. The role of past experience and process aspects were only briefly touched on in the first essays. It also turned out that previous use of the Internet increased a firm’s chances of subsequently using more advanced features.

The fourth essay employs a two-wave research design and highlights that changes that occur in the technological and economic environment in which firms operate can, over time, change a firm’s pattern of decision-making. The key finding is that the make-up of factors that explain the decision to adopt, implement and use the Internet for marketing and sales purposes changed over a period of six years. Another finding is that the key determinant at the core of the first three essays – willingness to cannibalise – almost lost its explanatory power, which suggests that firms no longer treat e-business investment as innovation in Schumpeterian sense, and that such an investment no longer lead to changes in existing organisational resources or routines. In line with the
first three essays, customer pull and competitor push still determine whether or not a firm will implement a particular innovative solution.

Essays five and six focus on the internationalisation of small firms. In particular, essay five focuses on the process aspects of internationalisation and suggests that early importing has a modest, yet significant, direct influence on exporting, and that early importing activity indirectly enhances a firm’s international experience and capabilities. Essay six investigates how competitive interactions affect internationalisation and suggests that cooperation with competitors, or coopetition, as a noteworthy internationalisation motive. Both these essays conclude that customers’ pull, staying on a par with competitors and meeting the demands of a partner are noteworthy export motives. Finally, and in line with previous research on internationalisation and innovation, owner/manager interest is the most influential export motive.

**Overall conclusions**

The overall aim of this dissertation has been to increase the understanding of SMEs innovative behaviour. This purpose has been translated into six separate studies, unified by the unit of observation and general unit of analysis. The studies focused on one or more aspects essential for arriving at the desired increased understanding of small firms’ practices. Overall, several general conclusions have emerged. These are summarised in the last two rows of Table 5.1, below.

Understanding a firm’s past experience with the same or similar technology, activity or marketing practice is important in order to understand a firm’s behaviour. However, past experience can influence a firm’s behaviour in multiple rather than uni-directional ways. Unsuccessful opportunistic investments in the past can prevent a firm from using a particular technology or practice. A gradual build-up of knowledge can, on the other hand, have an immediate positive effect, as well as result in an increase of a firm’s proactiveness in its search for new opportunities. These conclusions suggest that a firm’s previous experience has to be incorporated into the research design of future studies.

External relationships are essential in the formation of a small firm’s decisions and actions. Expectations of external parties’ negative reactions to a particular initiative can hamper a firm’s initiative, even though the initiative itself might be profitable. There is thus a need to reconsider the role of competitors in small firm research. In addition to their traditional role, they can assume the role of collaborators, which can lead to a firm entering new markets or adopting new practices. The phenomenon of
<table>
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<th>Essay</th>
<th>Process aspects</th>
<th>Environmental determinants</th>
<th>Organisational determinants</th>
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<tr>
<td>Integrating the Internet and Marketing Operations: A Study of Antecedents in Firms of Different Size</td>
<td>Not considered</td>
<td>Customers’ pull and competitors’ push are strong drivers of Internet use</td>
<td>A firm’s size and its willingness to cannibalise, i.e. a firm’s readiness to reduce the actual or potential value of their earlier investments, differs between adopters and non-adopters</td>
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<tr>
<td>The Dual Effect of Resellers on Electronic Business Adoption by SMEs</td>
<td>Not considered</td>
<td>Firms can be influenced by resellers in two ways. Expectations of alienating resellers through e-business adoption may very well prevent a firm from adopting. On the other hand, a firm is more likely to invest in e-business if it believes that its resellers will do the same.</td>
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<tr>
<td>Innovation at the Intersection of Market Strategy and Technology: a Study of Digital Marketing Adoption among SMEs</td>
<td>Previous use of the Internet increased firm’s chances to subsequently use more advanced features</td>
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<tr>
<td>A Two-wave Study of SME’s Use of the Internet for Marketing and Sales</td>
<td>The factors that explain the decision to adopt, implement and use the Internet for marketing and sales have changed from the exploration-exploitation pattern proposed by March (1991).</td>
<td>Customer’s pull and competitor’s push are strong drivers of Internet use</td>
<td>Factors that have been drawn from the literature on innovation and found significant in the early 2000s have lost their explanatory power, albeit not entirely.</td>
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<tr>
<td>Essay</td>
<td>Process aspects</td>
<td>Environmental determinants</td>
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<td>Small and Medium-sized Enterprises' Internationalization and the Influence of Importing on Exporting</td>
<td>Early importing has a modest, yet significant, direct influence on exporting; prior importing activities indirectly enhance a firm's international experience and capabilities.</td>
<td>Customers' pull, staying on a par with competitors and meeting a partner's demands are noteworthy export motives.</td>
<td>In line with the results consistently obtained from the mid 1960s, owner/manager interest is the most influential export motive.</td>
</tr>
<tr>
<td>Cooperation with Competitors and Internationalization: Evidence from the West Coast of Finland</td>
<td>Not considered</td>
<td>The results show that firms regard cooperation with competitors, or coopetition, as a noteworthy internationalisation motive.</td>
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<tr>
<td><strong>Overall contribution</strong></td>
<td>Understanding a firm’s past experience with the same or similar technology, activity, or marketing practice is important in order to understand firm’s behaviour. However, past experience can influence a firm’s behaviour in multiple ways and not always uni-directionally. Unsuccessful opportunistic investments in the past can deter a firm from using a particular technology or practice. A gradual build-up of knowledge can, on the other hand, have an immediate positive effect, as well as increase a firm’s proactiveness in its search for new opportunities.</td>
<td>External relationships are essential in the formation of a small firm’s decisions and actions. Expectations of external parties’ negative reaction to a particular initiative can hamper such initiative, even though the initiative itself might be profitable. There is a need to reconsider the role of competitors in small firm research, as aside from their traditional role, they can play the role of cooperators; cooperation can lead to firm entering new markets or adopting new practices.</td>
<td>A measure of a firm’s willingness to deviate from established practices can explain its innovative behaviour. From a firm’s point of view, activities that are considered well-researched and relatively mundane by the academic community, still pose a challenge, resolving which might require a set of antecedents to innovativeness. The exploration-exploitation framework of March (1991) can offer new insights into the actions of smaller firms.</td>
</tr>
<tr>
<td>Direction for future research</td>
<td>A firm's previous experience has to be incorporated into the research design of future studies.</td>
<td>The phenomenon of coopetition, of simultaneous cooperation and competition can offer new insights into a firm’s practices.</td>
<td>Long- and short-term financial and organisational outcomes of the firm's decisions need to be considered.</td>
</tr>
</tbody>
</table>
coopetition, or simultaneous cooperation and competition, can offer new insights into firms’ practices.

The very nature of innovation implies changes to a firm’s routines and processes of resource utilisation. A firm’s willingness to deviate from established practices can explain its innovative behaviour. From a firm’s point of view, activities that are considered well-researched and relatively mundane by the academic community may still pose a challenge that requires extra effort and commitment.

**Contributions**

This dissertation contributes to the literature on innovation, internationalisation, electronic marketing and small business management and demonstrates that the dynamic forces associated with innovative behaviour affect SMEs adoption of e-business solutions and how they work with customers and suppliers abroad.

The literature on e-business and electronic marketing will be enriched by this thesis’ examination of what drives a small firm’s use of online channels. This thesis has shown that for a small firm, the use of online channels is partly determined by a firm’s willingness to reduce the actual or potential value of its investments. Establishing online channels may result in the reduction of a firm’s previous investments – financial, relational or organisational (Porter, 2001; Deelersnyder *et al.*, 2002) – in existing channels as well as routines. The construct of willingness to cannibalise (Chandy and Tellis, 1998), drawn from the literature on radical product innovation, has been adapted to the context of e-business and offers new insights into the pattern of Internet use.

This thesis contributes to the literature on internationalisation by incorporating the previously under-researched phenomenon of coopetition (Padula and Dagnino, 2007; Bengtsson and Kock, 2000) into the explanatory framework of export motives (Pope, 2002) and empirically confirming that cooperation with competitors is relatively customary and, furthermore, can influence a small firm’s decision to internationalise.

Moreover, this thesis contributes to the internationalisation literature by examining the role of inward operations (Jones, 1999) in the internationalisation process. The existing literature shows a bias towards outward operations (Welch and Luostarinen, 1993) and implicitly equates internationalisation with exporting and outward activities. The thesis also shows that importing as an early international activity among SMEs is a noteworthy phenomenon, and that experiences gained through importing activities translate – directly or indirectly – into further exporting by altering a firm’s interest in and perception of the profitability of operating internationally.
Counter to the recommendation of avoiding applying individual level models to organisations common in innovation diffusion research (Wolfe 1994), the results of the studies suggest that individual-level models might be better suited to describing the innovation processes in the smallest firms than organisation-level ones. Such a finding further reinforces the findings reported in the entrepreneurship and small business management literature on the high importance of individual decision-makers.

Methodologically, this thesis contributes to the debate about the operationalisation of innovation and size. This thesis shows that capturing the level of adoption or implementation of a particular innovation is akin to shooting a moving target. Such a situation can be pinned down to two main reasons: that adopting a complex innovation takes time and that the nature and form of such innovation can change while it is still in the process of being adopted. In studies of IT implementation and digitisation, it is common to use multiple five to ten-point Likert items to assess the intensity of use of a particular application or tool. Provided that these measures exhibit sufficient convergent or discriminant validity, it is also common to create an additive scale and treat it as a continuous variable. However, high values of scale reliability may simply indicate that features of the measured construct are at the same stage of implementation. The transition between these stages can be affected by different factors, however, or correspond to significant shifts in underlying processes.

In order to counter this potentially adverse effect it may be helpful to downgrade the scale intentionally by splitting it in two or more artificial groups, such as adopter/non-adopter or low intensity/high intensity. If the scale is indeed continuous, doing this should not affect the signs and relative significance of the coefficients. The validity of the findings may be further increased by assigning a specific interpretation to each point on the scale.

Work on this dissertation has further reinforced the conclusion that firm size is a multidimensional factor that reflects a set of complicated inter-relationships (Camison-Zornoza et al., 2004). Therefore, including size as a regular continuous variable in regression or covariance structure models (e.g. Host et al., 2001), or excluding size and treating SMEs as a homogeneous group (e.g. Grandon and Pearson, 2004) may distort the results.

In the small business context the size of a firm can be approached in two ways. The first approach, as used in studies one to three, is to split the sample into different size groups and check how the hypothesised model behaves in each group. An alternative approach would be to generate size groups, code them as dummy variables and test for
interaction effects between size and other factors in the model. These approaches would explicitly acknowledge the multidimensional nature of the size construct, avoid the narrow focus on one of these dimensions and possibly bring to light patterns that are not immediately obvious.

**Limitations and future research**

**Limitations**

This thesis has a number of limitations that are openly acknowledged. All the studies are cross-sectional in nature. As cross-sectional research design is correlational and not causal in nature, the interpretation of findings is also correlational rather than causal. Even though great care was taken to ensure that the respondents to the survey were either key individuals in the firm or responsible for marketing or internationalisation aspects of the firm’s operations, some key insights might have been missed. Innovative behaviour as such is a complex issue, and in the thesis other employees’ experiences and opinions have been excluded.

The bulk of the essays make use of a somewhat one-dimensional adopter/non-adopter or exporter/non-exporter split. While this is not without merit, such an approach may obscure many of the subtler distinctions of a small firm’s innovative behaviour. Furthermore, this thesis has primarily relied on firm size to account for the heterogeneity of the SME population, and has not considered available financial resources. Finally, the thesis primarily investigated main-effects models and did not examine more complex mediating or moderating relationships.

Last but not least, the data for this thesis was collected in Sweden and Finland. Although both these countries are in the European Union, and despite the fact that many countries and regions also resemble those discussed in the thesis, the findings might be country or even region specific.

**Future research**

The work presented here is by no means complete or exhaustive, and further research will serve both to alleviate the limitations of the presented studies and to deepen and extend the conclusions drawn. The direction of future studies will reflect an expansion of the framework and an overcoming of the methodological limitations.

This dissertation opened with a famous quote from Peter F. Drucker, who suggested that a business enterprise has only two basic functions, innovation and marketing, everything else being cost. In line with that proposition, the studies focused on these two aspects – marketing and innovation. However, the outcome of any enterprise is still determined by profit, which is a desirable outcome. A small firm’s use of the Internet and its engagement in various forms of international activities can be conceptualised in terms of
antecedents, processes and outcomes. It is important to note that the studies reported in this dissertation focus primarily on antecedents and processes, and treat innovative behaviour as an outcome. No attempt has been made to relate innovative behaviour to outcomes such as financial or organisational performance. And yet, ‘over the long pull, there is one simple criterion for the survival of business enterprise: profits must be non-negative’ (Scherer, 1980, p. 38).

The outcomes can be extended to include performance implications. For example, a small firm’s willingness to cannibalise (an antecedent) is related to its adoption of Internet marketing practices (a process). The process of adoption may then translate into outcomes such as increased sales or increased costs. It is therefore of interest to investigate the relationship between use of the Internet and internationalisation and firm’s performance measures. A multitude of performance measures have been suggested in the literature, ranging from conventional and objective measures such as profit, share price or market share, to a more subjective assessment of whether a firm has achieved its goals or performs above or below management expectations. Internationalisation as such can be seen as an outcome of the use of a website. This dissertation treats both the use of the Internet and internationalisation separately, and does not investigate the relationship between Internet use and the speed of international involvement – both of which appear to be fruitful directions of investigation.

Conducting such investigations is important, since there is an implicit assumption behind some of the studies that use of the Internet and internationalisation are desirable and profitable in a discounted cash flow sense. Therefore, the majority of managerial and policy decisions are directed towards stimulating such behaviour. However, such an assumption has to be both empirically tested and consider the failure stories.

The unit of observation in all the studies is a small firm, which invariably leads to what can be named as an ‘anthropomorphising’ of the organisational features. It should be noted that, with the possible exception of sole entrepreneurs, organisations are collectives of individuals and, in this sense the characteristics of the individuals populating an organisation should be taken into account. This is particularly highlighted in essays one and three, which suggest that the smallest organisations differ from others in their motives to adopt and use the Internet for marketing and sales. Switching to a multilevel perspective that incorporates both individual and organisational level can increase the explanatory power of the models used and the conclusions reached.

Finally, alleviating the methodological limitations associated with the use of self-reported surveys is a further research direction in itself. All the studies rely on self-reported data. Using measures that are independent of
human judgment rather than self-reported measures, and checks on each individual website, could also prove fruitful.

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Paper 1

“Integrating the Internet and Marketing Operations: a Study of Antecedents in Firms of Different Size”

Maria Bengtsson
Håkan Boter
Vladimir Vanyushyn

First version presented at the 48th International Council for Small Business (ICSB) Conference, UK
Paper 2

“The Dual Effect of Resellers on Electronic Business Adoption by SMEs”

Vladimir Vanyushyn

First version presented at the 23rd SVU Congress, Czech Republic

Published in the *International Journal of Entrepreneurship and Innovation*, 2008, vol. 9, no. 1, pp. 43-49
Paper 3

“Innovation at the Intersection of Market Strategy and Technology: a Study of Digital Marketing Adoption among SMEs”

Vladimir Vanyushyn

First version presented at the 20th Research in Entrepreneurship and Small Business (RENT) Conference, Belgium

Paper 4

“A Two-wave Study of SME’s Use of the Internet for Marketing and Sales”

Vladimir Vanyushyn

First version presented at the 39th European Marketing Academy Conference (EMAC), Denmark

Under 2nd review with an academic journal
Paper 5

“Small and Medium-sized Enterprises’ Internationalization and the Influence of Importing on Exporting”

Maria Holmlund  
Sören Kock  
Vladimir Vanyushyn


Reprinted in Entrepreneurship and Globalization. 2009. Eds. McNaughton, R.B. and Bell, J.  
London, UK: SAGE Publications
Paper 6

“Cooperation with Competitors and Internationalization: Evidence from the West Coast of Finland”

Vladimir Vanyushyn
Maria Holmlund
Sören Kock

Published in the Journal of Euromarketing, 2009, vol. 18, no. 2, pp. 89–100
I skriftserien Studier i företagsekonomi Serie B utges löpande rapporter från den företagsekonomiska forskningsgruppens verksamhet vid Umeå universitet. Hittills föreligger följande skrifter:

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4. Bengt-Olov Byström, Bengt Johannisson och Christian Lindström

5. Bengt Johannisson

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