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## **A qualitative investigation of smaller firm e-business development**

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### **Keywords**

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### **Abstract**

A previous paper by the authors drew on existing research on e-business and the smaller firm, developed a conceptual model and a set of research propositions. This paper analyses a series of qualitative, in-depth interviews of owner/managers of smaller firms in central Scotland in order to test the research propositions. Results indicate that industry and sectoral factors play an important role in the level of e-business development achieved. In many cases the customer determines the need for e-business adoption, rather than any internally planned programme of adoption. Other important factors include the degree of entrepreneurial orientation of the key decision maker and the ability to exploit appropriate competencies. Recommendations for encouragement of e-business development are made and suggestions for future research are included.

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## **Introduction**

Within the UK, there are well over three million small businesses and yet understanding of their behaviour and owner/manager decision making is still limited (Hogarth-Scott *et al.*, 1996). Jutla *et al.* (2002) note that around 80 percent of economic growth is derived from small to medium-sized enterprises (SMEs) and that 99 percent of all businesses in North America and Europe are SMEs (Adam *et al.*, 1998). Understanding of specific issues such as e-business development is even more limited. In the smaller firm, the impact of the business founder's attitudes determine how the business develops. Widespread small business adoption of the Internet is needed in order to reach a state of critical mass for Internet commerce (Poon and Swatman, 1999). It is the longer-term expected benefits that drive e-business developments, rather than shorter-term gains. Despite having to operate with limited resources, the smaller firm is the mainstay of the majority of national economies. The rationale for investigating the smaller firm is strengthened further by Tse and Soufani (2003, p. 306):

Small firms might carry even more importance in the new economy . . . While the traditional economic structure favours size and physical matters, the new economy is carmarked by relationships, network, and information. It is in this light that it can be seen that small firms would become an ever more important engine in the new economy.

Embracing technology can result in competitive advantage in the marketplace (Levitt, 1983). Technology now offers opportunities for instant international market access, as well as improved domestic market performance for SMEs (Keogh *et al.*, 1998; Coviello and McAuley, 1999). Customer relationships can be re-engineered via the Internet, resulting in more cost efficient one-to-one relationships (Webb and Sayer, 1998). However, recent research has shown that, despite technology facilitating improved business practice (Whitely, 2000), a number of SMEs have not capitalised on this new mode of carrying out business. In fact, one survey found extremely low adoption rates of around ten percent in The Republic of Ireland and seven percent in Northern Ireland (Smyth and Ibbotson, 2001). Quayle (2002) found that leadership and waste management issues are ranked higher in importance than e-business issues by many SMEs, with little evidence of long-term e-business strategic development. This is in direct contrast with other findings which report on much higher adoption rates approaching 50 percent of SMEs in the UK (Daniel *et al.*, 2002). This disparity in findings suggests that an accurate national and



international picture is difficult to construct and that the truth is much more varied due to regional and cultural differences.

If e-business offers the opportunity to increase market share and longer-term profitability, as well as providing a fairer environment where businesses of all sizes can compete more equally in the marketplace, then the reasons behind why many smaller firms have yet to embrace both the technology and the new business practice must be better understood. Van Beveren and Thomson (2002) note that firm size and perceived importance of e-commerce are potential factors in shaping e-business development. The argument suggests that the larger firm will be more likely to embrace e-commerce due to the much larger resources at its disposal but the small born global or instant international can enter the global marketplace on inception of the business (Bell, 1995; Knight, 2001). This paper focuses on managerial attitudes, as well as product, business and industry level issues in order to reach an improved understanding of the reasons why some SMEs choose to develop e-business activities while others appear to resist the move. Success can be achieved by developing a set of e-business competencies relating to factors such as innovation, finance, productivity, human resource management and quality (Durkin and McGowan, 2001a, b). However, the typical smaller firm suffers from a range of resource limitations which can impact severely on business strategy development as well as perceptual and physical barriers to growth not necessarily experienced by their larger counterparts (Stokes, 2000a; O'Gorman, 2000; Fillis, 2002).

The authors define e-business as any business carried out over an electronic network (exchanging data files, having a Web site, using other companies' Web sites or buying and selling goods and services online). Normally it does not include sending and receiving text based e-mail messages (Watson *et al.*, 2000; Reedy *et al.*, 2000). However, it is expected that some firms will interpret e-business as involving e-mail and so defining the boundaries of investigation can become problematic. Also, this may indicate that existing academic definitions need to be re-worked in order to reflect the true nature of industry practice.

The literature review in the previous paper focused on implicit issues such as the possibility of building a new technology-based paradigm of marketing where embracing technology can result in competitive advantage (Liebermann and Stashevsky, 2002) and the continued belief by many researchers in the sole value of formalised, structured, prescriptive ways of conceptualising business behaviour despite the realities of non-

linear, sometimes chaotic actual behaviour (Watson *et al.*, 2000). There has been limited discussion of the growth of the smaller firm in the e-business marketplace and little awareness of the specific needs of such a firm. The best way to understanding smaller firm e-business development is through the uncovering of owner/manager factors such as attitudes, behaviour, competencies, culture and values. Very often there tend to be informal, intangible factors behind proactive and reactive mechanisms of adoption, as well as in making the decision not to adopt e-business. Those smaller firms which exhibit entrepreneurial characteristics such as opportunity recognition can very quickly achieve competitive advantage. Understanding the entrepreneurial factors which impinge on decision making have been identified as of prime importance (Walters and Samiee, 1990). Entrepreneurial marketing has been viewed as the way in which many smaller firms can successfully develop their business activities by combining the theorised linear rational conceptualisations of "doing business" on one level with the non-linear, sometimes chaotic methods of actual business behaviour (Carson *et al.*, 1995).

### Opportunities and barriers to smaller firm e-business development

Although limited resources are a distinguishing characteristic of SMEs and thus a barrier for them to compete in the global e-business sector, there are also many counter-balancing advantages as well. An obvious advantage is that small and medium sized companies are usually more entrepreneurial and willing to experiment and innovate in terms of business models and operations than larger organisations with established hierarchies (Jutla *et al.*, 2002, p. 140).

Much of the existing research to date on e-commerce has focused on the larger firm and the development of new business models, to the detriment of understanding smaller firm e-business development (Drew (2003)). In order to counter this, the previous paper by the authors examined, in part, barriers to e-business development in the smaller firm. Research tends to concentrate on mainly external constraints to doing business, while ignoring internal, company and owner/manager related barriers (Doole and Lowe, 1999; Cateora *et al.*, 2000; Fillis, 2002). Lawson *et al.* (2003) categorise barriers as either technical or social. The former relate to issues such as poor telecommunications infrastructure and security while the latter pertain to issues such as

trust, lack of knowledge and awareness. In the very small firm, or microenterprise that employs less than ten people, firm and managerial factors merge due to the high locus of control exerted by the key decision maker (Boone *et al.*, 2000). Therefore, owner/manager motivation is one of the key factors in shaping e-business development. Quayle (2002) found that even those SMEs which have embraced e-business have had no real strategy in place and are yet to experience meaningful returns on their investment. Understanding the motivations of the owner/manager of the smaller firm leads to understanding why some firms perceive certain barriers to embracing new technologies while others view this as an opportunity for business development. Owner/manager perceptions can vary from the highly positive entrepreneurial viewpoint to the much more conservative stance (Covin, 1991). Ramsey *et al.* (2003) investigate the e-opportunities of SMEs in the service sector and find that some of the key impediments to developing e-business includes being able to develop a strategic appreciation of the dynamics of the Web, in tandem with developing appropriate capabilities for managing the necessary information structures.

Technology heightens the ability of the smaller firm to communicate with customers, suppliers, business partners and competitors. Lawson *et al.* (2003) found that the majority of surveyed Australian SME manufacturing firms use e-mail but a much smaller percentage were actually embracing e-commerce activities due to worries about security and privacy, cost of advice and lack of technology competencies. Blackburn and Athayde (2000) note that awareness of the benefits of e-business, the sector under investigation and type of customer are some of the key factors which impact on adoption of information and communications technology (ICTs). They identify communications and searching for information as the most important uses of the Internet by small firms. There may be variations in usage of the Internet depending upon particular industry and product factors (Poon and Swatman, 1997). Firms in the information technology industry would be expected to have a high degree of uptake. Poon and Swatman (1999) develop a matrix of benefits of smaller firm e-business adoption: short-term benefits include direct savings in communications costs and generation of revenues as well as indirect benefits such as potential business opportunities and marketing. Long-term direct benefits include the ability to secure returning customers and developing business partnerships while long-term indirect benefits include the transformation of the way in which business is carried out and the

identification and implementation of new business initiatives.

## Competencies

Development of appropriate skills, investment in staff training and poor knowledge of the Internet start-up process have been identified as central barriers to e-business implementation and growth (Smyth and Ibbotson, 2001). The Internet is a technology which can facilitate relationships through its ability to transfer information between actors in a network Durkin and McGowan (2001a, b). By developing Internet based competencies, the firm can bypass traditional business barriers. Key competencies include having specific knowledge of the medium, having the vision to predict its usefulness in future business strategies, being able to translate this vision into proactive business practice, technological awareness of how Internet technology operates and being able to control future business growth by incorporating both existing and new technologies. Ihlstrom and Nilsson (2003) investigate e-business adoption by Swedish SMEs within a framework of networks. They view the process as a change from traditional (t-) businesses to e-businesses with accompanying sets of knowledge and competence. Employee training, skills, experiences shape competency development, supporting the findings of Durkin and McGowan (2001a, b).

## The microenterprise, e-business and globalisation

Ihlstrom and Nilsson (2003) focus on investigating the SME but neglect the microenterprise (business employing less than ten people) as a legitimate adopter of e-business. Most companies throughout the world are small, and most small firms are heavily biased towards the microenterprise in terms of size. This has even greater issues for e-business adoption as a determining factor in establishing competitive advantage in the domestic and international marketplace. Many small firms are now entering the global marketplace on a scale never experienced before (Knight, 2001) and e-business technology can help shape their instant internationalisation behaviour. Ihlstrom and Nilsson (2003, p. 213) note that:

It is important to appreciate the nature and context of small enterprises and not treat them as smaller versions of large corporations. SMEs have special prerequisites concerning human and technology resources. They will probably not invest in new

technology if they cannot see its immediate use. They also will not invest in education if it means that key employees will be missing from the operation for a considerable time period or the knowledge gained is not concrete enough to use in practice. Traditional time-consuming, theoretical, and lecture-oriented courses are not considered to be useful by small enterprises. Alternative educational opportunities are needed.

### Conceptualisations of smaller firm e-business behaviour

Ihlstrom and Nilsson (2003) develop a stage model of maturity in e-commerce where development of competencies is needed in order to progress to the next stage. However, smaller firm behaviour has been shown not to exhibit stage-like behaviour (refs). In Ihlstrom and Nilsson's (2003) model, overcoming the obstacles to e-business development occurs only at stage four, but perceptual and physical barriers occurs at every level of the process. So, e-business development should instead be viewed in an holistic sense. Criticisms of the linear, stage-like modelling of e-business maturity can be overcome by focusing instead on nonlinear interpretations of smaller firm behaviour. Jones *et al.* (2003) develop a conceptual model of Web-based commerce adoption that incorporates several features of the model developed by the authors. However, the main criticism with this stage model is that, like Daniel (2003), it does not reflect actual behaviour of the smaller firm. Linear, rational, stage-by-stage progression is often now the exception rather than the norm, given the increasing impact of globalisation and technology effects which serve to stimulate non-linear behaviour. Curiously, Jones *et al.* (2003) cite Wrenn (1997) who considers the merits of visualising a non-linear relationship between the customer, marketing and technologies; this relationship has not been incorporated into their framework of small firm Internet adoption. Tse and Soufani (2003) conceptualise business strategies for small firms in the new economy in terms of virtualisation, molecularisation and disintermediation. The potential benefits of virtualisation for consumers include lower search costs, ready comparisons among sellers and products and increased bargaining power. Firms can realise benefits by being able to reach out to customer groups in diverse geographical areas and distribute products and product information. Virtualisation, however, can result in easier market access for competitors. One consequence of the globalisation

phenomenon is that markets are simultaneously fragmenting and that, through the process of molecularisation:

... the economy is breaking up into very small units as a result of the dramatic improvements in access and in the quality of information brought by the Internet (Tse and Soufani, 2003, p. 310).

The small firm is capable of exploiting its network connections in order to develop and implement e-business activities and this is often driven by the ability to be flexible and quick to respond to the customer. Benefits of molecularisation include enabling outsourcing opportunities, promotion of business networks and continuous innovation relating to re-packaging of existing products and services. Specific problems relate to the creation of virtual communities of customers in that customer retention is difficult to attain in a virtual format alone. Tse and Soufani (2003) recommend that, in order to be successful, the smaller e-enabled firm must be prepared to strike a balance between developing new opportunities and facilitating improvements to existing offerings. As well as using the Internet to reach out to new customers, it can also be used to improve relationships with existing customers too (Steinfeld *et al.*, 2002). Disintermediation relates to how conventional intermediary businesses are now being by-passed while re-intermediation relates to the new ways in which buyers and sellers are now being connected in the marketplace, resulting in new value-added relationships through innovative service offerings and greater business efficiencies (Amit and Zott, 2001). Ramsey *et al.* (2003, p. 252) note that understanding non-linear actual business behaviour is a pre-requisite to reaching an understanding of e-business development:

For SMEs to get the full benefit of ... e-business, company and market structures may have to be reinvented incorporating a business model where innovation, change, ambiguity and uncertainty are the norms and equilibrium is the exception ... It is important to realise that although there may be different levels of maturity for Internet commerce use, the majority of SMEs may have very low-level requirements and/or follow a non-linear/discontinuous path. Consequently, SMEs are obliged to use models that ... have a weak theoretical underpinning that can, in SMEs, consume scarce resources. In addition, the omission of the "fully virtual" ... "born global" ... SMEs who may have a strategic "e" focus from conception, renders the stages approach a nonsense.

Hodson and Whitelock (2003, p. 1) adopt a sociological perspective in an investigation of adoption and early stages Internet implementation in SMEs. Rather than conceptualising e-business development as a stage-like progression, owner/manager identity is investigated within a

framework of aspirations and expectations of Internet development:

... attempts to begin to implement the Internet within SMEs are both shaped by such aspirations and expectations and the contexts within which they are set but also shape them. Aspirations, expectations and owner/manager identity are thus both informing of Internet development and informed by it in terms of the field of social relationships which condition such aspirations but also provide the context for their realisation ... creative and successful Internet development is related to clarity of aspirations and owner/manager engagement in trying to develop the necessary knowledge for implementation as part of a process of reflexive learning through unfolding, negotiated and uncertain social relations. Less successful Internet development needs to be seen not only in terms of lack of clarity in aspirations and expectations but also that subsequently there was little attempt to creatively, innovatively and reflexively develop the necessary knowledge for successful Internet development.

Hodson and Whitelock view the unfolding of the personal identity of the owner/manager as the key to understanding adoption and implementation of e-business in the smaller firm. This identity is shaped by the Web of relationships which are formed by the firm, as well as the owner/manager goals. Converse to entrepreneurial, proactive aspirations, conservative Internet adoption is related to unclear aspirations and limited knowledge regarding implementation issues. Hodson and Whitelock (2003, p. 2) identify several types of micro-business that have implications for owner/manager motivation, business growth generally and e-business adoption in particular:

... there are considerable differences between those (often micro) businesses which function as "lifestyle" businesses for their owner/managers and those that have been characterised as "entrepreneurial ventures" in pursuit of "enterprising activities" such as growth and innovation ...

The concept of habitus (Bourdieu, 2000) is used by Hodson and Whitelock to position the owner/manager of the smaller firm in a network of relationships, where decisions are not made in isolation but are ultimately connected to a field of positions, or social space in a social world. Therefore, the decision to adopt e-business cannot be seen in isolation or as part of a linear, stage-like phenomenon. Drew (2003) notes that sectoral differences may result in different needs for SMEs with respect to strategy development, training and support, while there may be major opportunities for entrepreneurial SMEs as e-commerce matures. Such firms are heterogeneous with respect to their activities and needs and, as such, have been difficult to analyse. Drew develops a number of

hypotheses, suggesting that high technology and knowledge intensive firms are more proactive in the use of e-commerce than other firm types. Also, the degree to which the owner/manager perceives the Internet as a threat or opportunity will be determined, in part, by market, industry structure and the macro-environment. The Internet can act to level the competitive playing field between small and large firms in terms of reducing transaction costs but it can also create problems in terms of the ability of larger firms to mimic the niche market strategies of the smaller firm (Kleindl, 2000).

### The entrepreneurial smaller firm and e-business development

Jones *et al.* (2003, p. 287) investigate how market orientation, entrepreneurial orientation and entrepreneurial marketing impact upon small firm Internet adoption:

The advent of the ubiquitous Internet has delivered a plethora of latent opportunities for small firms and/or entrepreneurs to creatively engage in new value creating activities.

Those small firms which exhibit core sets of entrepreneurial marketing competencies are best placed to achieved competitive advantage in the marketplace. Jones *et al.* (2003) identify a clear difference between adoption of the Internet and actual firm growth. There may be a high percentage of small firms with Internet-enabled computers, but the vast majority still tend to utilise only e-mail, rather than transaction based Web sites to help secure business (*Yellow Pages Business Index*, 2001). Jones *et al.* (2003) identify that, although there is now ample discussion of the potential benefits of e-commerce, there is little research focusing on e-business implementation issues. They draw on inspiration from the entrepreneurial marketing perspective in order to inform understanding of smaller firm Web-based strategy development:

... it is an entrepreneur's cognitive ability that allows situations to be framed in an opportunistic manner, leading to the subsequent co-ordination of other knowledge generating resources such as a firm's market orientation. Therefore it is posited that the combination of the two resources potentially leads to faster learning and superior returns from innovative products and processes.

Ramsey *et al.* (2003) note that Internet commerce diffusion and assimilation depend on factors such as industry characteristics, style of management, innovation ability and entrepreneurial behaviour. Prior research has shown that it is the perceived benefits of adopting the medium which serves as the main stimulus for its adoption but that true

diffusion of innovation requires much more than awareness of these benefits (Rogers, 1995). In fact, it may take several decades before a new technology is fully diffused throughout society (Forester, 1985). However, despite viewing the Internet as a vehicle for entrepreneurial endeavour many firms do not perceive it as a key marketing tool (Angelides, 1997).

### A new business paradigm?

Wymbs (2000) believes that e-business has resulted in the construction of a paradigm-shifting environment where customer expectations are heightened even more than before. However, it remains to be seen if e-business has indeed resulted in a new business philosophy or, rather, that it has merely joined the existing set of business tools available to the manager. Ramsey *et al.* (2003) believe that it has coerced firms into marketing in a different way to existing and potential customers. The Internetworked enterprise is able to respond in a flexible and dynamic way to marketplace opportunities as the result of moving from transaction-based to relationship marketing, from mass to one-to-one marketing, from acquiring customers to retaining them and from direct marketing activities to interactive marketing.

### The marketing/entrepreneurship interface as an aid to data interpretation

Application of the marketing/entrepreneurship interface paradigm of research (Carson *et al.*, 1995) can enhance understanding of the process of e-business development in the smaller firm. The link between marketing competencies, organisational performance and entrepreneurial orientation is positively linked (Smart and Conant, 1994). Many firms carry out business via highly informal, unstructured, reactive mechanisms while others develop, over time, a proactive and skilled approach where innovation and identification of opportunities give the firm a competitive edge. At the two ends of the continuum, formal marketing involves highly structured, sequential decision making while entrepreneurial decisions tend to be haphazard and opportunistic. The marketing/entrepreneurship interface deals with the areas of commonality, such as analytical skills, judgement, positive thinking, innovation and creativity. Given the increasing impact of globalisation (Levitt, 1983), and the accompanying increasing levels of uncertainty, there is more need than ever to consider creative responses to marketing

opportunities. Since many smaller entrepreneurial firms grow successfully under these conditions of unsureness, this growth must be facilitated by creative, managerial judgement. Tse and Soufani (2003) note that the advent of the new economy (Leadbeater, 2000) has created both opportunities and threats for the smaller firm in particular. The smaller firm is more flexible, closer to customers and more capable of adaptation and implementing creative change through exploitation of core competencies, than traditional marketing frameworks recognise (Hill, 2001). Gilmore *et al.* (2001) believe that the SME cannot follow formal marketing conventions because of the limited resources at its disposal, and because of the different way in which the SME manager thinks. The process is haphazard, chaotic and non-linear. Networking theory is offered as an alternative and more appropriate explanation of SME marketing, with networking viewed as a central competence and mode of behaviour that must be considered when formulating marketing plans and strategies. Conceptualisation of smaller firm e-business development may be better placed within an entrepreneurial marketing framework where networking and the impact of the social world impact in a non-linear fashion.

### Research propositions

The aim of the previous paper was to generate a series of exploratory research propositions relating to why some small firms develop e-business activities while others choose not to embrace the technology. The propositions generated follow, and a fuller explanation is obtained in the previous paper:

- P1. The degree of Internet connectivity will depend on the orientation of the firm.
- P2. E-business start-up costs will serve as a barrier to the risk averse firm.
- P3. Those firms with high degrees of entrepreneurial orientation are expected to exhibit high e-business adoption rates.
- P4. The propensity to develop e-business activities will vary by sector.
- P5. Those firms in hi-technology industries will exhibit higher e-business participation rates than firms from a lower technological base.
- P6. Non users of e-business technology will experience a decline in performance over time.
- P7. Improved business performance through adoption of e-business practices is linked to a core set of Internet competencies.

## Research methodology

As the research was exploratory in nature, a qualitative approach was deemed suitable (Bryman and Burgess, 1995). The target population for this study was drawn from a Local Enterprise Council database. Small and medium-sized businesses were extracted and every 20th company of the 2,400 firms were sampled and sent an introductory letter describing the project and requesting participation. Each letter contained a stamped addressed return envelope and returnable portion, which indicated whether the key decision maker would be available for interview. The letter sought to ascertain if the business currently used e-business, and if not, whether they intended to use it in the future. This information was used to fine-tune the interview questions for each company. Out of the 120 letters sent 49 were returned, 28 not being available for interview and 21 prepared to be interviewed. In total 18 face-to-face interviews were finally conducted, with the remainder by telephone. Interviewees were all at senior manager level, many of whom were owner/managers and interview duration was between one and two hours. Interviews were recorded and all transcriptions were analysed by the research team individually and collectively (Silverman, 1994; Bryman and Burgess, 1995).

## Discussion of results

### P1

The results uncovered a range of firm and owner/manager orientations, from the conservative respondents who either adopt a "wait and see" attitude or totally dismiss the notion of the Internet as a viable business option. An example of this is the lifestyle-driven organisation where profitability and longer-term growth are not seen as central to success:

... I'd heard of companies or individuals starting up and basically working seven days a week and night and I didn't want to do that because I had got so many other hobbies that I wanted to continue with ... so the theory was I would work ... three days a week ... and hopefully have a couple of spare days ... the idea was not to build up a significant business and to that end I haven't advertised until we got recently an indication from Yellow Pages that they were doing a free insert so I've just got myself into that ... (Self-employed planning consultant).

Further along the continuum, the proactive owner/manager is more likely to adopt, or at least being to think about utilising Internet technology:

... the signing industry has been changing from the actual manufacturing point of view so the idea was

that I would become computerised. Took me a long time to do that because of the financial commitments where I would buy in the product until I could afford to start buy the computers which was about 1993 ... and gradually I would buy more computers so that there is now four. The admin side, we went online about two years ago ... So I've just always been aware and go to seminars or read the odd bits to keep up with what was needed. I didn't have a big plan written down ... Yes, I believe where we are today and the kind of business that we are getting now we wouldn't have been getting if we hadn't moved on (Small sign making company).

This respondent indicates an awareness of the benefits of adoption, although the particular company has not yet been fully e-enabled. This can be compared with an entrepreneurial organisation involved in information technology training, where the owner/manager is already integrating e-commerce into future business strategy:

E-commerce is ... the fifth arm of marketing ... marketing is part of business strategy without a shadow of doubt. It's got to encompass business and it's got to have a bottom line proposition for the organisation to see it forward ... The key to any business is in exploiting the voids that are there ... We certainly saw a niche where we could exploit business expertise, business advice, business planning coupled with training that we've done before ... If you match the IT exposure with exploiting E-commerce, then you have the strand of that business (Software training company).

Internet connectivity is also driven by the type of product or service, as well as the wishes of the customer. In this case, customer wishes mean that the business has reverted back to more conventional business methods:

There is a facility at the back of the Web site ... we put it there for 4 customers to use an online buying basic facility. It's there but we've never really rolled it out to the customers ... They are not quite as forward thinking as we are. I think this is what you might find. Not everybody is up for this. If they haven't got access to the thing in the first place well ... A lot of companies in our industry are still old fashioned and very conservative and maybe view it in as much as they have a local network which just serves their own systems ... They aren't linked into the net, they don't have access to the net ... One of the companies we don't trade with anymore because they closed their operations in Scotland. The other one doesn't have access to the system anyway and doesn't bother. He just goes and looks in his rack and if he hasn't got any wood he just rings up and orders it. One is little Jimmy the joiner in Glasgow and doesn't even have a place (Customised timber manufacturer).

The exploratory evidence supports the notion that the degree of Internet connectivity depends on orientation of the firm and owner/manager

characteristics (Gripsurd, 1990; Covin, 1991; Katsikeas, 1996; Boone *et al.*, 2000).

### P2

One respondent indicated that, as well as the financial costs involved, there could be other costs relating to the sometimes unwanted additional business that e-commerce activity would promote:

... I have heard it said that if one gets into ... e-commerce there is a possibility that networking occurs between similar professions and organisations ... and I could foresee being inundated with requests for assistance and one thing I didn't want to do was to have to turn work down because once you start doing that word again soon gets round. So those are basically the two reasons why I don't feel it's right for me (Self-employed planning consultant).

There was also feeling that particular sectors were being favoured over others for start-up assistance from government agencies:

Funding is the main barrier. Banks are significant barriers to growth in this environment. Banks don't take risks. They won't lend against intangible assets. Banks are the biggest hurdles. They operate a Small Firms Loan Guarantee, but are reluctant to let businesses have this. Although the DTI is behind this, there is still too much risk for the bank. They don't want to push it, they will give any excuse under the sun (Strategic software company).

There were concerns about the costs of maintaining the Web site once it had been designed, alongside indications that attitudinal, cultural and workforce competency factors also served as barriers to implementation:

Oh well it always cost money and time and blips happen and things go down ... One of my members would like to be able to use the computer, his skills are such that I'm reticent to let him loose on the machines. He is keen but anyway he's learning. You have to balance people and their skills (Small sign making company).

This proposition was supported, with a range of different costs identified, from tangible financial factors to the more intangible competencies of the decision makers and other personnel (Doole and Lowe, 1999; Cateora *et al.*, 2000; Durkin and McGowan, 2001a, b).

### P3

Growth of the business through exploitation of entrepreneurial competencies was much in evidence, with use of e-business a natural extension to "doing business" generally. One company involved in processing oils and polymers offers a customised product, through the exploitation of a niche market. The extent of

e-business development is influenced by product and other technical issues:

We don't have many customers but the ones we do have are fairly high value. We are attempting to do some marketing just now ... Some of this has resulted in us setting up a Web site ... We are going to take enquiries from that Web site route it through to ... e-mail but we are not planning to sell anything over the Internet. Part of the reason for that is ... the highly technical nature of what we do. It generally has to be decided face to face with the customer or by talking to them about what it is they actually want. We don't make products to sit with the hope that someone is going to buy them ... We make them to order ... We have a niche area in various types of business ... (Polymer and oil processor).

This type of entrepreneurial behaviour varies from the more planned, and yet still risk-taking behaviour of an information technology training organisation with high levels of technical and business skills:

... we were looking just a few days ago ... at our original business plan and we have slightly beaten where we hoped to be by that time but we had a much slower start than we thought ... I think we're better now at running an established business even although we're still small ... you have to be quick on your feet. I mean if you're working in IT in particular you have to be quick to react but the business looks really substantially different from what we had initially thought ... I would love to say it was all pre-planned ... (IT training business).

The qualitative data collected support the notion that those organisations that exhibit entrepreneurial characteristics are more likely to adopt e-business, and are also more likely to adopt at a faster rate than those companies lacking in entrepreneurial competencies (Covin, 1991; Bridge *et al.*, 1998; Stokes, 2000a).

### P4

As well as being influenced by entrepreneurial tendencies, the degree to which a firm adopts e-business will also depend on the specific characteristics of individual industries and customer expectations. High growth sectors with ever shortening product life cycles and increasing levels of product innovations are expected to exhibit a higher degree of e-business uptake than those sectors exhibiting more traditional, conservative forms of behaviour at both the organisational and customer levels:

We do have computerised machinery but the actual assembly of the packages are mainly labour intensive ... We've actually been driven by our customers ... We didn't have e-mail when I first started whereas now e-mail comes back to all the desktops. We have an EDI link with one of our customers. I would say the introduction of e-mail has been a big, big influence. The amount of



e-mails that go through this company now we depend on it greatly ... between customers and suppliers ... The EDI link, we don't use a great deal, I must admit. We've had meetings with customers, with some with add on technology and they have intimated that they would like online access to our manufacturing module. But that hasn't come to fruition as yet. So we are really driven by our customers: if they say right, we want to link up next Wednesday, we will link up next Wednesday (Packaging company).

This compares with a design business that has adopted e-commerce to a degree but is reluctant to develop their activities further due to the expectations of customers, together with the belief that personal, face to face service is their primary business strength:

As far as e-commerce is concerned ... you need to understand the business to be able to design for them and so I do not think in the long run that e-commerce will do an awful lot for us. Obviously, it's quite useful to have ... adequate e-mails to and fro with changes but otherwise we have to ... have a rapport with people and you can't do that on e-mail ... we have had a Web presence and e-mail now for four and a half years ... it's just like our brochure on Web almost ... that's all that we have there for people to look up if they want to ... people will look it up once they've got to know us, to just see what we really have there ... We need the personal touch; we need to be able to understand a person's business, how they work ... (Graphic design company).

Examination of the qualitative data supports the belief that e-business activities and their development will vary depending on the particular industry sector (Bell, 1995; Poon and Swatman, 1997; Fillis, 2000, 2002).

#### P5

Several respondents were owner/managers of software training organisations. The product obviously lends well itself to e-business technologies but the firms themselves also exhibited strong growth ambitions using e-technologies to expand:

... there will always be a need ... for the traditional methods of stand up and deliver. But I think people are moving away from that concept as technology and software improve, particularly when communications improve ... (e-commerce) opens up different avenues of training, it widens the portfolio ... You've got to keep ahead. Software is always being developed, new technology is always being developed, you know. Yes, we have confidence in the whole lot, it's never ending (Software training company).

A small business involved in gas exploration utilises its internal business and technological competencies in order to grow. The business does not, however, utilise its Web site as a transaction-

based utility due to the specific nature of the industry and the value of the business secured through more traditional means:

We are all graduates, we all have two degrees ... Our engineers are pretty well tuned to e-commerce skills ... (e-commerce) is basically our way of communicating to the wider audience, ideas and information about our company as well as being able to communicate direct to the end user ... For our kind of products ... we don't intend to do transaction stuff ... It's really reaching the wider audience. We are really very much focused on oil and gas and that's where our contacts are. We have products now applicable to areas outside the oil and gas industries so being able to put up a bulletin board in cyber space means that we can tell people what we've got although we've no idea who or where they are. That basically greatly increases the reach that we have (Gas exploration support company).

A family-owned telecommunications company has developed both a Web site for its customers, together with an intranet application sight for internal use. The Web site does not offer transactional facilities but is used instead as an informational device, giving details of particular projects, products and services:

... we are like a sub-contractor, we provide ... engineering services ... We've got quite a wide area of things ... if you counted every customer individually, we've probably got about 6,000 customers UK wide ... we've got a top ten customer base, who will spend most of the money with us ... We've got a Web site... it's fairly large and it'll give up to date information on projects and it will give a profile of the company, products and services, we have an Intranet which is for internal use ... and it's linked to all offices ... and that's also linked to the ... office within the organisation because although we've got ... six or seven ... offices, the organisation itself has got something like 50 offices and all their offices are linked and we've got Intranet sites, which are internal ... we use e-mail on quite a high scale and we'll do things over the Intranet, ... any staff announcements will be posted on there, any internal job vacancies will be posted on there, any management information about ... people joining the company or ... new customers ... (Telecommunications company).

In many cases, those organisations with sets of both technological and business competencies are better prepared to exploit e-commerce opportunities. For many high technology firms, the decision to adopt e-business has come naturally and the key decision makers believe it to be a way of life (Klein and Quelch, 1997; Whitely, 2000; Gattiker *et al.*, 2000).

#### P6

Testing of this proposition requires more longitudinal data. Some respondents were in the early stages of thinking about using e-business or

believed that due to specific industry and customer factors, there was little or no call to adopt e-business. Several saw minimum value in developing technological capabilities beyond the use of e-mail. These respondents were yet to experience meaningful problems which may serve to inhibit behaviour and performance over time:

... certainly we use e-mail and we have that for all sorts of things including sales. Sometimes we speak to our customers and they will speak to us by e-mail ... at the moment this is the only machine in the place that's connected to the Internet. We have a network, but the e-mail only works on this machine ... At the moment if you want to send an e-mail it's from here, if I'm here ... One or two of our competitors have got Web sites. I occasionally look just to see if there's a problem ... I don't really know the extent to which they sell through the Internet but I suspect it's not a lot. It's more a publicity thing ... Some of them have dabbled, I know, with putting stock on the Web site ... To the best of my knowledge it has not taken off ... I suspect if that was happening a lot we would probably hear from our customers. Our customers are their customers too ... (Timber manufacturer).

As with *P1*, lifestyle beliefs, combined with the wishes to keep the business small, also contribute to the decision not to embrace e-business. Although there is an appreciation of the merits of adopting e-business, owner/managers of such firms feel strongly about the quality of life and acceptable level of business they wish to secure. The evidence indicates that despite apparently wide industry acceptance of the need for acquiring e-business competencies, there will always be subsets of firms and industry sectors where more traditional methods of "doing business" will dominate. In addition, growth ambitions must be examined carefully, since many firms expand to only a certain size due to the lifestyle wishes of the owner/manager (Reid, 1981; Bradley, 1984; Leonidou, 1995; Fillis, 2002).

#### P7

A company servicing the engineering industry demonstrates the balance needed, where proactive information seeking, networking, relationship building, closeness to the customer and communication are just as important as utilising Internet technology in order to secure business:

What we've done here is provide a need in the market place ... We will ... find from our databases a mechanical or electrical engineer and we pay the individual, manage the financial affairs of the individual ... As far as the development of technology, we started with very basic computers as they existed away back in the late 80s to what we have today as a fairly good state of the art stuff ... We are linked by e-mail to all our offices around the UK and we are in the process at the moment of building a major singular database to service all of

our offices ... The handiness of this office, you know, with people coming in here, it's a winner ... You form relationships ... and they are quite good ... you've got to remember that as far as a Web address or Internet advertising of whatever you are trying to do to get the name ... or even more specifically advertise for actual active jobs ... it's very dependent on your end users. How many people can access the Internet or do they know about your Web site ... We are doing a job at the moment for [company name deleted] in the USA and most of these responses are off ... either Internet advertising or from a Web site that we subscribe to ... We are very much customer driven ... (Engineering recruitment company).

A small company involved in servicing the oil exploration industry also utilises a combination of e-business, e-mail and face-to-face service in order to strengthen customer relationships through formal and informal means. Lacking many internal e-business competencies, the company makes use of a sister organisation in order to design and update their Web site:

I think any small company ... builds their relationship through a personal basis and ... personal track record with the client ... I would say the bulk of all correspondence with clientele is via e-mail with attachments. These could vary from invoices to drawings, schedules, etc. but ... the bulk of all our business is done electronically ... when it comes to e-mail, etc. ... e-mail has been on the go far longer than is known to the general public. I mean I was using e-mail eight years ago as a means of communication ... We have a Web page ... Our Web page is going to be updated within the next two or three months but again that will be done by [company name deleted] ... At the end of the day the only reason that we use them is they give us a very good service and they're very competitive because it's all one big happy family ... Yes, in many instances requests for quotations, quotations back from them are basically done by e-mail. It's the only way, it's cost effective and you get direct to the person you want to get to rather than being shall we say putting a fax up and being dependent on someone taking a fax to that person ... I think the big benefit e-mail has against conventional business is it's far more informal. You can send a letter, a formal letter to someone, you have to address it formally, you have to sign it formally. You send an e-mail, you can put his nickname and you can put your nickname (Oil exploration service company).

The data support this proposition, corroborating the findings of and Durkin and McGowan (2001a, b) regarding the need to develop and exploit Internet related skills. These will consist of technical and softer, entrepreneurial marketing competencies used jointly in order to grow the business. It is not sufficient to have high levels of technical Internet knowledge, without knowing how to integrate these into a longer-term business

plan and strategy, however informal this process may be.

### Discussion, recommendations and future research directions

The research has shown that it is important to realise that long-term gains should be considered rather than shorter-term benefits, especially since any diffusion of new technology can take a number of years to occur. The smaller firm typically has much fewer resources at its disposal compared to its larger counterpart and yet it has become a major contributor to the economies of countries throughout the world. The dominant form of smaller firm is the microenterprise, where the owner/manager exhibits a high degree of locus of control and, as such, owner/manager and firm level factors merge. This has direct consequences for e-business development since the owner/manager who is motivated to at least consider its benefits will be much more likely in the short to medium term to adopt the technology than the owner/manager who exhibits more conservative, risk-averse behaviour. Although the more entrepreneurially inclined smaller firms are embracing e-business, lifestyle-oriented firms will tend to either ignore it or be much slower to embrace it.

A qualitative approach to data collection was adopted since the state of knowledge of smaller firm e-business development is still limited and the research carried out here is essentially exploratory in nature. A qualitative approach allowed for in-depth probing of issues relating to owner/manager philosophy, motivation, values and beliefs. The initial spur to carrying out this investigation was in part derived from awareness that local e-business training needs were not being met by the providers (Blackburn and Athayde, 2000; Matlay, 1999). Lawson *et al.* (2003) note that despite Government programmes aimed at raising awareness of the merits of e-business, the rate of take-up by SMEs is much slower than their larger counterparts. One outcome from this research is that through the technology transfer process, the researchers can inform local training providers of specific e-business training needs while also informing local enterprises of key developments in the area. Each of the informants was also provided with a summary of key research findings after completion of the project.

This research has shown that smaller firm e-business development is affected by a range of product, managerial and firm level factors. Exploiting entrepreneurial marketing competencies linked directly to the use of the

Internet and other e-business applications is seen as central to growing the smaller firm (Durkin and McGowan, 2001a, b). The initial costs involved in setting up e-business activities must be viewed as part of a longer-term investment in developing an integrated set of business tools which feed directly into the overall future strategy of the organisation. Smaller firms grow successfully in both low and high technology sectors, despite sometimes severe resource constraints (Fillis, 2001). E-business can serve as a longer-term low cost growth catalyst, much in the same way that networking, word of mouth marketing and exploiting of relationships can help the smaller firm to develop (Shaw, 1998; Stokes, 2000b; Gilmore *et al.*, 2001). Those firms displaying high levels of entrepreneurial behaviour exhibit high levels of e-business adoption. For many experienced firms working in e-business media, it has become a "way of life" and appears to be a natural progression in the way in which business is carried out. Such successful smaller companies can be promoted as the future direction for those aspiring to adopt e-business, as long as this is the appropriate strategy to follow. The results have shown that for some, traditional methods of carrying out business will always be favoured and little can be done in terms of persuading such companies of its merits. Historically, there has been much evidence of e-business failure, but this is largely due to a lack of an integrated future business strategy where technology and owner/manager philosophy, characteristics and beliefs work together effectively (Carson *et al.*, 1995; MacDonald, 1999; Wensley, 1999).

The formal, linear conceptualisations of e-business development have been challenged by the adoption of the marketing/entrepreneurship interface paradigm where interacting formal and informal interpretations of smaller firm behaviour are constructed within a framework of networks, opportunity recognition and creativity. The nonlinear interpretation mirrors the nonlinear, sometimes chaotic pattern of actual smaller firm behaviour. Future research could continue to research within this framework, while at the same time embrace the philosophy of Hodson and Whitelock (2003) and their idea of habitus. Here, the owner/manager makes e-business decisions within a network of social factors. This research has also shown that, while exploratory qualitative techniques do uncover many relevant factors, there is also a need for a longer-term assessment of e-business development. Longitudinal data collection may uncover changing attitudes towards e-business.

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