

## Preface

At an international level, the use of information and communications technologies (ICT) is seen as critical in relation both to capabilities within firms and to the innovative role that small businesses are expected to play in the emerging knowledge economy (EC, 2005; BERR, 2008). In addition, it is argued that the effective use of ICT is often considered to be a prerequisite for small business survival (Packham, 2002; Packham et al., 2005). There are few signs however that Europe, and the UK in particular, have caught up let alone overtaken the US in reaping the productivity gains from the effective production, implementation and optimisation of ICT applications (Vaitilingam, 2004; Timmer & van Ark, 2005; Havik et al., 2008).

The importance of the small business sector to economic growth has long been recognised. For example, the Ministerial Declaration at the OECD Conference held in Istanbul, 2004, attended by representatives from all major EU, US, Asian and South American trading block partners, reaffirmed the need for international focus on small business access to international markets; information and communication technologies (ICT); and e-commerce expertise.

The Declaration stated within this context that small business assistance and development programmes should be based on sound research, empirical evidence, public/private dialogue and partnerships, and evaluated regularly for effectiveness and efficiency; and, be able to enhance small business ability to take full advantage of information and communication technologies

The significant opportunities offered to small businesses through ICT adoption, plus an awareness of the barriers to the implementation of ICT applications, have led researchers to concentrate on the factors that determine adoption (Poon & Swatman, 1999; Parasuraman, 2000; Raymond, 2001; Houghton & Winklehofer, 2002; Pfughoeft et al., 2003; Jones et al., 2003; Fillis et al., 2003; Fillis & Wagner, 2005; Bengtsson et al., 2007; Simmons et al., 2007, 2008). However, apart from in specialised R&D-intense sectors, there has been little success in linking the determinants of ICT adoption in small businesses with expected outcomes – such as innovation, productivity-improvements, competitiveness, business-model transformation and the ultimate commercial success of adoption. Various studies have focused on these issues introducing stage models that often focus on ICT-adoption issues rather than business transformation effects (Earl, 2000; Rayport & Jaworski, 2002; Rao et al., 2003; Gray, 2006a). Others, viewing these as inadequate, have proposed broader multi-dimensional frameworks to take account of varying business operating contexts (Tagliavani et al., 2001; Levy & Powell, 2003; Mendo & Fitzgerald, 2005). Despite some value, however, these concepts do not present a specific means of ascertaining the optimisation of ICT implementation in small businesses. Indeed, with the near universal adoption of computers and the Internet by all but the smallest businesses, research interest has shifted from adoption issues and a focus on e-commerce (Internet-mediated trading) and a wider and more advanced use

of ICT applications in business processes and business growth (e-business). Optimisation introduces a new concept into small business ICT adoption research, providing opportunities for research to be more focused on specific tools/applications that make the most of small business ICT adoption in value chains and markets.

It is clear from official statistics and many academic studies that only an active, motivated and capable minority of small businesses have sufficient resources, knowledge and strategic intention to contribute significantly to the optimised ICT adoption in small businesses that will renovate economies and transform society (FSB, 2006; FSB 2008; Wiseman et al., 2006; Gray, 2006a). It is these small businesses with their above average *absorptive capacity* - the experience, knowledge and skills base plus the knowledge creation and sharing processes in a firm (Cohen & Levinthal, 1990; Zahra & George, 2002; Gray, 2006b) - plus their effective use of networking and more optimised use of ICT applications that are the focus of this book. Previous studies suggest that small businesses that are early adopters of more advanced ICT applications and first movers in transforming their firms into e-businesses tend to be (1) early-adopters in previous and subsequent ICT applications; (2) more entrepreneurial in their growth strategies; and (3) core opinion-formers in their networks (Gray, 2006b). In addition, it is likely that they conduct more R&D or adaptation of ICT applications to their own requirements than other small businesses. It is hoped that this book will provide greater understanding of these propositions.

The 2007 Quarterly Survey of Small Business in Britain confirmed, despite almost universal use of personal computers and rapidly increased use of the internet and websites by small businesses there have been few improvements in the participation rates of these businesses in the 'digital economy'. The 2006 Federation of Small Business (FSB) survey of its members revealed that only one third of respondents engaged in any form of e-commerce – ranging from 37% in London to 25% in Northern Ireland. This was mainly generating sales from their own website. Of those who did trade on the Internet, their e-commerce represented less than 10% of overall sales turnover. The main reasons cited for not engaging in e-commerce were lack of relevance (37%), costs of developing and maintaining a website (24%), risk of fraud (19%) and lack of relevant ICT skills inside the firm (18%), which was a particular problem in Wales, Scotland and Northern Ireland (FSB, 2006).

More recently, the FSB (2008) survey identified that nearly 28% of businesses did not have a website and for owner-only businesses this increased to over 35%. Within these businesses however, only 36% used the web for advertising and 14% sold products and services online. In fact, the FSB (2008) survey revealed that only a minority of small firms (less than 2%) actually utilised e-commerce to link to suppliers.

The research also highlights that firms employing 5 or more people are more likely to have developed websites for advertising and facilitating online sales. Unsurprisingly, businesses with higher turnover were also more likely to (1) have a website presence and (2) utilise the website to advertise and sell products online. Similarly businesses that had seen an increase in turnover were more likely to utilise their websites to advertise and/or sell online. (43%) when compared with businesses that had experienced a decline in turnover (34%).

Across the UK, there were considerable variances in the number of businesses with websites with London the highest (78%) and Northern Ireland having the lowest (68%). Website use in Wales (69%) and Scotland (70%) were also below the UK average of 72%. In terms of differences across different business sectors, industries reporting the highest use of websites to advertise and sell online were wholesale and retail (23%) and hotel and restaurant businesses (16%). In contrast the lowest users were found in the mining and construction (35%) and motor vehicle sales and repair (5%) sectors.

Surveys conducted for *e-skills UK* (the ICT industry sector skills training board) reveal that there is still a huge need to upgrade small business knowledge of existing ICT applications (e-Skills, 2008). In addition, there is a need to develop this knowledge base in order to benefit from future ICT applications and for small businesses to play a full role in the creation and sustaining of Britain's knowledge economy. At the organisational level, this increases pressures on entrepreneurial firms to have the right capabilities and effective linkages with other firms and stakeholders.

The e-commerce focus of small businesses is likely to be on applications that deliver cost savings or access to new markets. Appropriate ICT applications increase the internal capacity to outsource efficiently (Tapscott, 2002), connect and communicate more effectively (Merisavo & Raulas, 2004; Andrews & Boyle, 2008), acquire and manage knowledge and achieve productivity gains (Phippen, 2004, Evans & Mathur, 2005; Harrigan et al. 2008) which is also helped by decreases in sourcing, production and delivery costs and lead times (Graham & Hardaker, 2000; Porter, 2001). However, e-commerce has to be managed effectively in a customer-oriented way and it is not a time for experimentation. At the managerial level, there is a need to improve the effective use of resources and capabilities of small firm, linkages with other firms and organisations (networks) and penetration of wider markets: regional, European and global (Simmons et al., 2008). In fact, it is contended that for a firm to achieve a business platform from which it can secure survival and the potential for growth it must accumulate the necessary resources and develop the ability to manage and allocate resources effectively (Packham, 2002). The acquisition and creation of knowledge in organisations is essentially a social process and one that needs to span the traditional boundaries of firms, big and small. In difficult times, effective networking offers small businesses a way of overcoming their capacity and knowledge constraints by providing opportunities of scope in sharing some of their resources, capabilities and information while also offering opportunities of scale through collaborative work – with e-commerce adoption a critical potential facilitator (Jones et al., 2003).

Small businesses are represented in all different communities on the global stage. While the self-employed and micro firms (<10 employees) often provide the best employment opportunities for marginalised groups, it is the small firms (in EU and UK definitions, 10-50 employees) that offer the best scope for innovation, effective use of ICT and consequent productivity gains. Even so, the 2006 FSB survey concluded 'closer inspection of the statistics reveals the existence of a small number of genuine 'new economy' businesses, predominantly micro businesses that derive most, if not all, of their sales over the Internet and in many cases are trading internationally. This is an interesting group of businesses for further analysis.' (FSB, 2006, p 60). Furthermore, the latest FSB (2008) survey confirms that small firms employing 5 or more people are more likely to utilise the internet to advertise and sell products and services online.

The EU Research Advisory Board has produced a useful typology (EURAB, 2004). There are four basic categories based on the level of use and the amount of related R&D conducted: (1) *basic* – the 70% or so of all small businesses that undertake no or little R&D and under-utilise the potential of ICT applications; (2) *technology adopting* – around 20% that adapt existing technologies and are low innovative businesses; (3) *leading technology users* – less than 10% that develop or combine existing technologies on an innovative level and optimise their use of ICT applications; and (4) *technology pioneers* – less than 3% that conduct high level research activities. The shift from basic into technology adoption mode is a well researched field while the technology pioneers are an interesting but rather specialised niche. Research is primarily interested in the shift from category 2 into category 3 and the characteristics of category 3 small businesses (especially those with potential and inclination to shift into category 4). There

is also the need to identify the pathways into and the distinctive characteristics of leading technology users (optimised adoption) as they survive and maintain their critical market edge.

## ORGANIZATION OF THE BOOK

The book contains fifteen chapters grouped into six sections based upon the themes of each chapter. Section I consists of two chapters relating to e-commerce trading and small business. This section presents factors facilitating e-commerce adoption and trading patterns.

**Chapter 1** introduces the finding that international trade conducted electronically is seen as a major driver of globalisation. It is argued that the development of international electronic trade might grow faster if adequate governmental regulations support it. Based on a literature review and EU/OECD reports, the chapter demonstrates how legislation is important for the success of international e-commerce. In particular, there is focus on EU e-customs regulations and related IT systems. It is shown how e-customs systems might be used as a tool for e-commerce adoption facilitation.

**Chapter 2** profiles an empirical study of E-Commerce trading patterns of SMEs. It is noted that academic debate continues to espouse the importance of the SME community in engendering economic prosperity and enhanced economic development although the sector also remains categorised by high failure rates. The strategic adoption of information technology offers the opportunity for increased competitiveness and enhanced profitability. Evidence suggests, however, that SMEs, particularly the smaller SME classifications, are not effectively exploiting E-business, with limited recorded examples of successful adoption.

**Section 2** comprises three chapters relating to e-commerce and small business in different countries and regions. This includes e-security and non-compliance with government regulations on IT and the determinants of e-commerce among small and medium-sized enterprises.

**Chapter 3** reports that while many strategies for improving e-commerce have been suggested, the focus has mainly been on economic and technological factors and less on human and social aspects such as compliance behaviours. This has resulted in the development of e-commerce systems that do not incorporate regulatory requirements. Consequently, the level of exposure to cyber-risks and legal liabilities has increased and market competitiveness compromised. This chapter examines the factors influencing compliance with IT regulations and e-security and how these impact on e-commerce optimization in South African SMEs. It also provides some useful frameworks and checklists SME managers can use to evaluate their compliance behaviours and security practices in order to make improvement to their e-commerce activities.

**Chapter 4** relates that small and medium-sized enterprises (SMEs) in Malaysia have been slow in the uptake of e-commerce. This chapter explores the extent of e-commerce use by SMEs, and provides some empirical evidence of how internal factors of firm and owner are influencing e-commerce adoption among smaller businesses in Malaysia. The methodology and results of this study may be applicable to other developing countries. Findings confirm the low level of participation in e-commerce by SMEs. The age of enterprise, as well as the owner's gender and education were found to be significant in determining the level of e-commerce adoption.

**Chapter 5** recounts that one region where e-commerce will have a particular impact for SMEs over the next few years is South East Wales (SEW). In response to this a survey was undertaken to assess the e-commerce activity of firms within the SEW area. Results from the survey demonstrated that nearly

all firms used some form of ICT. The results also highlighted that a significant proportion of the sample (77%) were currently using a Web site to increase trade or improve opportunities for e-commerce. Furthermore, it was observed that firms in the personal services, distribution and transport industries were less likely to utilise a Web site than firms in the manufacturing, business services and hospitality industries. Despite the large proportion of firms that had a Web site, only 11% of businesses reported that their site enabled customers to order and pay for products online although 42% of respondents considered e-commerce to be important for their business' future.

**Section 3** focuses on internet marketing and small business. How effective internet portals are for rural business owners and internet marketing by SMEs are considered.

**Chapter 6** explores the uses and effectiveness of private and public/charity managed and funded internet portals on rural SMEs e-commerce activities. Specifically, the study investigated whether there were differences in how rural SMEs used and perceived the effectiveness of each type of internet portal. Hypotheses were drawn from qualitative results carried out. Ninety-six rural SMEs spread across the two types of rural internet portals were interviewed via telephone to gain their perceptions. Cross-tabulations using chi square testing discovered that in the main there were no perceived differences between the uses and effectiveness of private and public/charity funded internet portals on rural SMEs e-commerce activities. However, testing did discover that rural SME users of public/charity funded internet portals were more likely to be charged a fee for membership. The main preoccupation of rural SMEs was representation on an internet portal to help facilitate their e-commerce activities, not how it was owned or operated.

**Chapter 7** presents and supports the hypothesis that SMEs should stop investing in their web site's design and functionality and start investing in efforts to market their web sites online, no matter how *lousy* their web site may be in comparison to today's standards. With the support of two case studies, illustrating the successful utilization of internet marketing by two very different SMEs, the chapter relates how a SME can effectively market their web site online. Tools and techniques available to help an SME successfully begin a journey of internet marketing are discussed.

**Section 4** tackles the international dimension of ICT, web sites and e-commerce for small business. Small business sales growth and internationalisation links to website functions and ICT opportunities are investigated.

**Chapter 8** investigates the level of SME website adoption and functionality and how this relates to growth aspirations, specifically the geographical expansion of customer bases. One potential explanation for this slow uptake of true e-commerce is a lack of employees with basic and advanced IT skills. The possibility that IT skills shortages could explain the gap between the Internet's potential and the extent of involvement by a vast majority of UK SMEs is explored. Discussion within the chapter is complemented with analysis of data from a large survey of SMEs.

**Chapter 9** looks into the process by which an opportunity scenario unfolds in the context of global start-ups and links theoretical insights on opportunity recognition to theoretical insights on international entrepreneurship and of ICT-supported communication. Insights are utilised from cases previously published in the global start-up literature to illustrate and conceptualize how entrepreneurs virtually embed themselves and use IT to interact with international contacts throughout this process.

**Section 5** discusses e-business and e-marketing among small business enterprises. E-business among ethnic minority businesses, the 'knock-on' effect of e-business upon graphic design SMEs, electronic customer management and SME marketing practice and understanding the factors affecting the adoption of e-marketing by small business enterprises are explored.



**Chapter 10** examines and reviews the existing body of literature on Ethnic Minority Businesses (EMBs) and ICT. Secondly, EMB cases that have developed ICT to a degree where they are engaging in e-business activity are analysed and discussed. The findings provide a number of options and guidance for EMB owners. Finally, the recommendations point to the need for improved ICT awareness, better business support provision nationally and the importance of generation and education as key drivers.

**Chapter 11** depicts the current findings of an ongoing longitudinal study pertaining to e-business and the graphic design industry. The research problem can be described as being: to identify the extent of engagement by graphic designers with e-business. The location of the study is Industrial South Wales: Cardiff, Newport, Swansea and the South Wales Valleys with the particular focus being Small and Medium Size Enterprises (SMEs). For the purpose of the study, the European Commission definitions relating to SMEs have been utilised (last revised 2005).

**Chapter 12** posits that by exploring the components of e-customer relations management (e-CRM) in the unique context of SME business and marketing practice that a natural synergy exists between e-CRM and SME marketing in the creation of value propositions. Specifically this is addressed through the two contributing constructs of SME marketing; namely entrepreneurial marketing and network marketing.

**Chapter 13** builds on the current body of knowledge in the field of e-marketing through a survey and systematic review of the published work related to the Technology Acceptance Model (TAM), Innovation Diffusion Theory (IDT) and E-Marketing adoption by small business enterprises. Furthermore, the chapter illustrates that although many e-marketing adoption factors are driven from the literature of e-marketing, as well as the technology adoption theories like TAM and IDT, only some of these factors are found to significantly affect the adoption of e-marketing by small business enterprises.

**Section 6** examines small business and electronic retailing. This includes multi channel integration for small and medium retailers and e-fulfilment and offshore centres involving economic policy implications for small business.

**Chapter 14** studies the multi channel integration strategies for small and medium retailers, formulating a multi channel integration codification scheme and explaining the barriers and related solutions under these strategic decisions.

**Chapter 15**, the last chapter of the book, introduces the importance of the e-fulfilment industry for offshore centres and in particular the small business and economic policy implications. The extant concepts, research, and experiences the chapter builds on is the literature concerning the e-fulfilment industry. It argues that the key results, evidence, and experience, from the models that have been developed and the specific model formulated for this work, indicate reasons for the development of e-fulfilment in offshore centres.

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