Small to medium-sized enterprise (SME) research can be traced as far back as the 1960s (Brigham & Smith, 1967). However, SMEs were largely ignored for a long time, until the emergence of several reports—including the Bolton Report (1971) in the UK and the Wiltshire Report (1971) in Australia—which focused on highlighting the significant contribution of SMEs in these countries. Since then, research in small business has grown steadily, examining different perspectives pertaining to SMEs and their environments. Over the past 24 years in particular, there has been a continual growth of different academic journals and conferences focusing on SMEs research (e.g., Journal of Small Business Management, The International Small Business Journal) (Hill & McGowan, 1999). However, information systems (IS) research in SMEs started to surface in the 1970s (Schollhammer & Kuriloff, 1979) and has since grown steadily.

A common theme in this research points to its fragmentation and its failure to provide conclusive evidence about IS penetration or success in SMEs. Another theme emerging from this research points to different deficiencies at the different contextual levels (technological, organizational including managerial, environmental, individual) and to the lateness of the SMEs in adopting IS. Electronic commerce (e-commerce) research did not differ a lot from the IS research, pointing to the laggardness of SMEs either in terms of adopting and utilizing e-commerce or to the same impeding contextual factors highlighted above. In addition, due to its novel nature (early 1990s), e-commerce introduces unique features of its own and affects organization in an unprecedented way. Thus, capturing its multifaceted perspectives has proven to be challenging. A common theme in the earlier e-commerce research in SMEs reports the scant adoption of e-commerce technology in general and of EDI technology specifically.

The next wave (in the late 1990s) of e-commerce research in SMEs benefited from this initial research and attempted to devise different measures and factors aiming at capturing e-commerce successes and failures in SMEs. What could be synthesized from this research is that e-commerce is characterized by multi-faceted perspectives and represents phenomena too large and complex to be encapsulated within one study, one discipline, or one methodology. Still, what makes SMEs decide to adopt e-commerce is not conclusive and remains the subject of considerable debate among researchers. However, in this era where the Internet and its underlying technological infrastructure is well established, economical, and reliable in most countries, there is a consensus among researchers about the large-scale
adoption and usage of e-mail as an efficient communication tool, Internet browsing as an information retrieval tool, and simple Web pages as a pointer to the physical location of a given SME company and its products. How significant is the actual use of these technologies and tools in business in SMEs? This leads naturally to the question of what makes SMEs adopt or reject e-commerce? And, further, how deep is the actual penetration of e-commerce in business? How to devise measures, which could capture these perspectives, is the challenge facing researchers.

At this stage of e-commerce maturity where technology, telecommunications, and applications are in a much better status than they were in the early 1990s and e-commerce researchers are aware of the complexities of the e-commerce field, this book emerges to introduce different strategies and topics in order to benefit those interested in researching e-commerce in SMEs. This edited book calls not only for more cooperation between the different disciplines to assess the significance of the variety of theories and methodologies for e-commerce research in SMEs, but also for the use of mixed approaches to unveil e-commerce perspectives. Above all, researchers should be aware of the complexity of the e-commerce field and the fact that unlike any other technological innovation, e-commerce impacts organizations immensely and holistically. This initial call, supported by the contributing chapters, attempts to shed some light onto this challenging research area, and to help pave the way for other researchers, policymakers, and professionals to adopt, adapt, and extend the different concepts, tools, and models highlighted in this book, and to examine their effects in their own countries.

Organization of the Book

The book consists of 20 chapters organized into nine sections addressing different research areas surrounding e-commerce adoption and usage in SMEs. The contributing authors came from different countries in Europe, Asia, the U.S., Australia, and New Zealand. Different theories and frameworks are introduced. The proposed methodologies ranged from interpretive (action research) to positivist research, dominated mostly by surveys, to hybrid approaches. The details of each of the different sections are explained next.

Section I: E-Commerce Research in SMEs

The first section addresses e-commerce research in SMEs, highlighting research procedures, theoretical frameworks, implications, and challenges. Based on e-commerce research, Chapters 1 and 2 attempt to provide a reflection on how SMEs behave in the e-commerce arena. Both chapters provide insightful coverage and critiques of different e-commerce issues in SMEs and address theoretical, methodological, and professional issues and implications.

Section II: Social and Cultural Impacts on E-Commerce Adoption in SMEs

One chapter represents the second section of this edited book. The author of Chapter 3 argues that, unlike the earlier e-commerce adoption research in SMEs, which has taken
place within a business discourse, considering the diverse rationalities on which many SMEs are based is extremely important. In comparison with large businesses, the author contends that SMEs’ business rationalities are more complex and are intertwined with the non-economic rationalities of social, community, and family life. It is by addressing this social formation, embedded in a wider social and cultural context, that reasons accounting for some of the otherwise inexplicable problems in establishing e-commerce relationships can be explained, along with the (apparently) irrational resistance of many SMEs to well-meaning advice and direction. Evidence in support of the author’s argument is drawn from five research studies in Australia.

**Section III: Factors Impacting E-Commerce Adoption and Use in SMEs**

The third section aims at addressing e-commerce adoption and use in SMEs. The emphasis in this section is to identify factors, drivers, impediments, and other issues affecting e-commerce success in SMEs. The investigative nature of the different chapters in this section attempts to unveil part of the complex reality that characterizes the e-commerce field in SMEs. Chapter 4 provides extensive background about the main issues pertaining to e-commerce adoption in SMEs and, accordingly, suggests four broad contexts against which e-commerce adoption can be measured. The chapter then investigates e-commerce adoption in SMEs in the UK and Denmark by undertaking large, random, multi-stage stratified survey research. The chapter reports interesting facts about factors and challenges affecting e-commerce strategy in SMEs. The authors provide some response to some of these challenges and suggest a future research agenda.

Chapter 5 examines the challenges and barriers that SMEs experienced in e-commerce adoption based on a nationwide survey conducted by KPMG–Norlan Norton Institute (NNI) in Australia and New Zealand. The chapter address important issues pertaining to the adoption behavior of SMEs, trust between organizations, and perceived impediments. The chapter then sums up the findings alongside four contexts: technological, organizational, environmental, and social issues.

**Section IV: E-Commerce in Developing Countries**

One chapter represents the fourth section in this edited book. Chapter 6 represents a unique contribution to the e-commerce research in SMEs, as it sheds some light into e-commerce adoption in the remote country of Samoa, a developing island country in the South Pacific with a poorly developed infrastructure. With the aim of increasing e-commerce adoption and diffusion in that country, the chapter addresses the issues faced by SMEs in Samoa, highlighting different accelerators and impediments.

**Section V: Adoption and Diffusion Patterns of E-Commerce in SMEs**

In a continuation of the investigative nature of the chapters in Sections 3 and 4, Section 5 aims at introducing new measures and concepts, which could further explain the adoption
behavior and patterns of e-commerce in SMEs. Chapter 7 examines the impact of seven factors (organizational, technological, and environmental contexts) that influence the variations of e-commerce adoption decisions of SMEs. Based on the e-commerce adoption decision, this chapter classifies firms into three main groups, namely adopters, prospectors, and laggards. The significance of the developed adoption model is investigated using one large survey research in Thailand.

Chapter 8 views the Internet as a cluster of three elements: e-mail systems, Internet browsers, and other, more advanced technologies. The chapter attempts to examine the level and nature of Internet usage alongside these clusters by undertaking a survey research in SMEs in Ireland. These categories proved useful in identifying the extent of e-commerce usage among the SMEs. According to the preliminary analysis and due to the importance of website technology to SMEs, the chapter focuses on identifying and categorizing the diffusion pattern of website development using the theory of mimetic IT adoption patterns. The chapter identifies two potential hybrid diffusion patterns and discusses their implications for policymakers and professionals.

Driven by the importance of strategic websites, Chapter 9 focuses on website implementation practices in SMEs in the UK. The chapter provides a comparison between the adoption practices of two groups of SMEs: SMEs that identified a need to adopt a Web presence, “Need Pull SMEs”; and SMEs that are pushed into adoption mainly due to the change agents efforts, “Technology Push SMEs.” Using an Internet-based survey and semi-structured interviews, the chapter reports interesting results about the effective adoption and implementation of websites by both groups.

Section VI: Successful SMEs in E-Commerce

The chapter in this section aims at targeting successful e-commerce stories in SMEs. By following such an approach, the chapter aspires to provide exemplar cases and frameworks to follow by low or non-adopters. Chapter 10 provides an empirical analysis of successful Irish SMEs engaging in e-commerce and draws out the most successful combinations of factors, which attribute to a successful SME e-commerce project. The chapter investigates the factors that influence the degree of success of such an SME e-commerce project, highlighting the implementation issues. The chapter surveys and interviews SMEs in Ireland that had been accredited for their business use of the Internet.

Section VII: E-Commerce in the Supply Chain in SMEs

Following the richness provided by the preceding sections about different issues surrounding the e-commerce adoption and usage criteria in SMEs, this section addresses e-commerce penetration in SMEs along the supply chain. Chapter 11 proposes an analytical framework that identifies the triggers for value chain transformation that could encourage SMEs to adopt e-commerce. The analytical framework is built on key concepts extended from the literature. The authors adopt the multiple case studies approach using semi-structured interviews with B2B SMEs from different countries in Europe. The chapter produces different insights into the objectives and practices of SMEs introducing e-commerce in different types of value chains.
One of the key success factors for mass customization is the adoption of an e-commerce strategy to create efficiency in the supply chain. However, the process is not straightforward, and Chapter 12 introduces the application of a product model and highlights how inter-organizational product models can be applied to support knowledge distribution within the supply chain, via very economical “configurator” software. The chapter depicts the procedure for building product models and the corresponding complete software development lifecycle of the product starting from the analysis phase and ending with the maintenance phase. The chapter shifts the focus from acquiring internal efficiency to efficiency of integration with suppliers in order to create competitive advantages.

Driven by the importance of helping SMEs to adopt and utilize e-commerce, Chapter 13 highlights the importance of establishing efficient links between industry and research institutions. It is by this tight coupling between researchers and SMEs that satisfactory results can be generated. The chapter investigates the dissimilarities that exist within the literature. The chapter’s findings of SME e-commerce utilization focus on case studies drawn from the automotive industry in Austria. Accordingly, the chapter proposes a framework where these dissimilarities could be bridged by connecting university research and regional SME networks in Austria. The chapter uses a multi-method approach for data collection combining grounded action research, surveys, semi-structured interviews, and document analysis to introduce interesting insights about e-commerce use in the value chain of the automotive industry.

Chapter 14 introduces the industrial district concept, a structure that can be used to manage relationships between SMEs. The authors contend that the introduction of e-commerce to these industrial districts could improve the collaboration among the SMEs and hence creates value along the entire supply chain. The chapter describes six models and highlights their strategic importance for the successful implementation of a usable and effective electronic solution for procurement in different industrial districts.

The authors of Chapter 15 contend that re-engineering among small firms has not yet occurred, and points to the importance of re-engineering internal processes for firms to benefit from e-commerce. Examining firms in the context of their Web-based business strategies, this chapter enumerates not only the factors that have been critical for successful re-engineering of core business processes in three SMEs in the U.S., but also the extent to which re-engineering plays a part in their competitiveness.

Stemming from the phases of the lifecycle of a virtual enterprise, Chapter 16 introduces a methodology for developing a new e-commerce tool for collaborative supply chain and development (CSCDD). The chapter provides an interesting comparison between some of the existing tools for CSCDD such as ERP and supply chain planning (SCP), and accordingly, proposes a method to model supply chain activities. This could help SMEs to design the strategic model of supply chains in which they are collaboratively involved. The realization of this tool is of significant importance to the literature in general, and to SMEs specifically.

Section VIII: New E-Commerce Avenues for SMEs

This section proposes new directions, which could guide SMEs in exploring new avenues pertaining to their e-commerce initiatives. The chapters in this section highlight hidden areas in the e-commerce field and provide solutions where the SMEs could increase their
adoption of e-commerce. Chapter 17 highlights the importance of the new information age (e-commerce) to SMEs and how, by focusing on knowledge-based products and services, SMEs could tap into unprecedented opportunities. To compete effectively in the marketplace, the authors contend that SMEs must integrate and leverage their existing knowledge (intellectual capital) and create new knowledge. However, not all SMEs are equipped to benefit from these opportunities. Accordingly, the authors investigate factors affecting SMEs’ participation and success in knowledge-based economies, and provide a set of guidelines for SMEs to exploit the opportunities provided by this knowledge-based economy. Chapter 18 introduces the concept of the use community and regional portals as an important part of the online strategy of SMEs. Portals generally represent an advanced stage of development of business websites. SMEs are more likely to use portals than develop them. A potential list of benefits that portals can provide to SMEs is provided, and two existing regional portals in Australia are contrasted against the generic e-mall to determine the benefits that portals are currently providing for SMEs.

Section IX: E-Commerce Outsourcing and the Impact of ASPs on E-Commerce Success in SMEs

Continuing the preceding section, and in accordance with the IS and e-commerce literature in SMEs, this section explores their e-commerce outsourcing patterns and points to the importance of the application service providers (ASP) model as one solution to acquire professional and economical e-commerce capabilities. Chapter 19 evaluates the ASP business model and identifies the potential risks that SMEs could face if they remotely outsource applications using the ASP model. The chapter reports the result of survey research and interviews with IT professionals in the UK. Fourteen key aspects of the ASP model are analyzed in the light of 11 potential risks of traditional IS/IT outsourcing research. Accordingly, the chapter shows many risks associated with the ASP model and portrays a future research path to further validate the research results. Chapter 20 highlights the impact of the ASP model on e-commerce success in SMEs and reports its advantages and the associated risks. The chapter investigates the process by which SMEs can establish cooperation with ASPs using a five-stage model. New concepts and ASP models are introduced. This book represents an initial step in this theoretical and professional direction by addressing an important entity in the economies of featured countries. It is hoped that the contributions herein will assist in providing insights into some of the vagueness that surrounds e-commerce adoption and penetration in SMEs. It is left to other researchers and professionals to further investigate and/or extend the issues highlighted in this book.

References


