

## Preface

Small and medium-sized enterprises (SMEs) play a critical role in rejuvenating and sustaining the modern economy. They generate substantial employment and serve as important innovation engines for the world economy. In the US, which is known for large multinational corporations (MNCs), SMEs are still considered indispensable. According to the Small Business Administration (SBA), they employ half of all private-sector employees, pay more than 45% of total US private payroll, have generated 60-80% of net new jobs annually over the last decade, and currently employ 40% of high-technology workers such as scientists, engineers, and computer workers. SMEs should be an important subject for IS academic researchers to study. Unfortunately, only a few papers on the subject have been published in the top IS journals worldwide. This book attempts to fill this void.

This book aims to spread research conducted on SMEs internationally and place it at the disposal of academics, practitioners, consultants, the vendor community, and policymakers. The goal of this book is to highlight the challenges faced by SMEs and how they are coping with the adverse environment through skillful use of IT and technologies such as Web 2.0, Enterprise Resource Planning (ERP), e-commerce, open source software, Business Process Digitization (BPD), and other emerging technologies. The book covers SME-relevant IS topics such as IT strategy, IT diffusion and implementation, business and IT alignment, leveraging of IT assets, knowledge networks, IT innovation, training and performance, and legitimacy building through IT. Each chapter comprises original and cutting-edge research, grounded in field studies by international researchers, with both theory and practice implications for SMEs. In total, the book has three sections and fifteen chapters.

The first section consists of chapters that focus on practical challenges faced by SMEs regarding analysis, implementation, and effective use of IT. The second section focuses on barriers to adoption of information technology innovations. The third section comprises chapters on strategy formulation, IT and business alignment, the dynamic capabilities of an SME, and SME innovation strategies.

### **SECTION ONE: PRACTICAL INFORMATION SYSTEM CHALLENGES**

Chapter One, by Efthymios Constantinides, presents the nature, effects, and position of social media or Web 2.0. This chapter identifies the main approaches corporations follow in engaging Web 2.0 applications in order to support, complement, or improve their traditional and online marketing activities. These approaches aim at using the social Internet as a source of marketing intelligence and for communicating with customers. The authors propose a classification of the main social media applications and identify the options for SMEs willing to utilize Web 2.0 technologies.

Chapter Two, by Arvind Karunakaran, Sandeep Puroo, and Brian Cameron, highlights the challenges faced by SMEs in legacy industrial era regions by focusing on the specific case of the I-99 corridor in

the state of Pennsylvania. It discusses a structured approach toward enabling the SMEs in this region to access extended and powerful knowledge networks through a joint effort working toward regional economic development. The chapter describes the LAIR (Leveraging Advanced IT Research) project, which is aimed at understanding the risks that SMEs in the I-99 corridor are likely to face as they grow, with a specific focus on risks associated with upgrading, implementing, and integrating their information systems.

Chapter Three, by Julie E. Kendall and Kenneth E. Kendall, uses the framework provided by the metaphor of the third space as proposed by Bhabha (1994 and 1996). It elaborates on the diffusion of Broadway production business practices to small and medium-sized nonprofit theaters. The authors discover that both groups possess unique cultural competencies that open the door to using Web 2.0 technologies for staging and promoting productions and building relationships with theater patrons. They also discuss other management issues where expertise can be mutually exchanged.

Chapter Four, by Andreja Pucihar, Gregor Lenart, and Frantisek Sudzina, presents the importance of ERP system selection criteria among SMEs in Slovenia. The investigated criteria were grouped into ERP benefits criteria, system quality criteria, vendor-related criteria, and ERP package criteria. System reliability, system functionality, vendor support, business process improvement, and improved service levels were perceived as the important ERP system selection criteria for small and medium-sized companies in Slovenia.

Chapter Five, by Susan Winter, Connie Gaglio, and Hari Rajagopalan, advises SMEs to create legitimacy by mimicking the cues that signal credibility to potential stakeholders interacting with the firm. The authors examine the role of information and communications technology (ICT) in legitimacy-building from the perspectives of SME founders and potential customers.

## **SECTION TWO: INNOVATION AND INFORMATION TECHNOLOGY ASSIMILATION**

Chapter Six, by Sandy Chong, examines the differences in electronic commerce (EC) implementation of SMEs in Australia and Singapore. The results show that respondents' perceptions of EC are predominantly positive. The analysis of Australian firms shows that five factors—observability, communication channel, customer pressure, supplier pressure, and perceived governmental support—make a significant contribution to the implementation of EC. In contrast, for firms in Singapore only three factors—firm size, perceived readiness, and observability—have significant impact. The author provides useful insights to adopters of EC initiatives in both countries.

Chapter Seven, by Ada Scupola, studies the factors affecting adoption of electronic commerce in small and medium enterprises in Australia. The author uses the Tornatsky and Fleischer (1990) model to investigate the impacts of environmental, organizational, and technological factors, and finds that the external environment has an influence mainly through customers' requirements and availability of IT services. The results of this study are contrary to other studies, which found that government and public administration play a significant role.

Chapter Eight, by Robert MacGregor, Deborah Bunker, and Mira Kartiwi, examines the barriers to e-commerce perceived by SME owners and managers in the developing country of Indonesia. It then compares these perceived barriers with those in two developed economies, Sweden and Australia. The study highlights the differences in barriers to e-commerce adoption among the three countries.

Chapter Nine, by Jaume Franquesa and Alan Brandyberry, investigates the impact of organizational slack in US small and medium-sized enterprises (SMEs) on the adoption of information technology (IT)

innovations. The authors find that the slack-innovation relationship, previously described for large firms, does not hold for SMEs. Their results show that potential slack is a strong predictor of technology adoption, whereas available slack is not a significant factor in SME innovation adoption. The authors argue that, in some cases, innovation adoption may represent a form of “bricolage” by resource-constrained SMEs.

### **SECTION THREE: STRATEGY AND INFORMATION SYSTEMS**

Chapter Ten, by Peter Marshall, Phyl Willson, Judy Young, and Kristy de Salas, presents a method of IS strategy formulation in SMEs. The method draws on the work of Levy and Powell (1999, 2000). A case study describes their experience with this method. The method is comprised of two complementary analyses: an externally focused strategic analysis and an internally focused business process analysis. The authors emphasize the importance of relevance and practicality in selecting the method in practice.

Chapter Eleven, by Pattama Kanavittaya, Jocelyn Armarego, and Paula Goulding, studies the challenge of aligning business strategy and information technology (IT) strategy. The authors examine the adoption of agile methods by SMEs in developing software products and suggest that agile methods may facilitate the alignment of business and IT strategy. Models of strategic alignment developed for large enterprises are also validated for SMEs.

Chapter Twelve, by Dag Olsen and Tom R. Eiebrokk, examines the relationship between training and performance in SMEs and discusses practical implications. They find a positive relationship between training, competence, and performance. The authors show that training explains variances in e-business competences and performance in terms of efficiency, complementarities, lock-in, and novelty. The study has practical implications for public policy makers, training suppliers, and SME managers.

Chapter Thirteen, by Frank Schlemmer and Brian Webb, investigates how a firm can use the Internet to leverage its strategic assets. They propose a theoretical framework with variables such as business resources, dynamic capabilities, and IT assets, and suggest that firm managers create competitive advantage by identifying strategic assets that complement the Internet. They also warn against the threat of overinvestment in IT assets at SMEs.

Chapter Fourteen, by Jun Li, Michael Merenda, and A.R. Venkatachalam, examines the relationship between the extensiveness of business process digitalization (BPD) and new product development (NPD). The authors find that NPD is positively related to the extensive use of BPD, and the relationship between NPD and the extensiveness of BPD is stronger in more mature firms than in younger firms. They conclude that SME innovation strategies are positively associated with the strategic use of BPD and span spatial, temporal, organizational, and industry boundaries, thus aiding SME global competitiveness.

Chapter Fifteen, by Sajda Qureshi, Mehruz Kamal, and Peter Wolcott, studies the challenges faced by micro-enterprises in implementing ICT technology. They find that very few micro-enterprise entrepreneurs possess the technical skills necessary to achieve the benefits that streamline their business operations and help them compete and expand into new markets. The authors employ a focus-dominance model to investigate trends in incorporating and adopting ICTs. They demonstrate how IS combined with context-sensitive IT assistance increases awareness of information systems and predicts future usage of IT.