Preface

While buying and selling goods and services once necessitated a face-to-face transaction, much of the commerce we now undertake is completely electronic. Recent advances in electronic and mobile commerce, precipitated by innovations in technology and user acceptance, have led to subsequent changes in individual and organizational behavior. *E-Commerce Trends for Organizational Advancement: New Applications and Methods* gathers essential research on the changing face of commerce, investigating the development, delivery, and perception of e- and m- commerce systems and tools.

Chapter 1, “Developing Mobile Commerce Applications” by P. Benou and V. Bitos discusses the fact that the recent advances in wireless and mobile communication technologies enable users to conduct commercial activities anywhere and at any time. In this new environment, the designing of appropriate applications constitutes both a necessity and a challenge at the same time in order to support effectively the movable user. This chapter investigates the environment in which these applications operate, identifies possible categories of them and proposes guidelines for their development process.

Chapter 2, “A Technological Perspective of Mobile and Electronic Commerce Systems” by Wen-Chen Hu, Yanjun Zuo, Naima Kaabouch, and Lei Chen divides the process of understanding or constructing a mobile or an electronic commerce system into six components: (i) applications, (ii) client devices or computers, (iii) mobile middleware, (iv) wireless networks, (v) wired networks, and (vi) host computers. Elements in these components specifically related to the subject are described in detail and lists of current technologies for component construction are discussed.

Chapter 3, “A Component-Based Software Architecture for Delivering Location Based Services” by Ioannis Prigouris, Dimitris Spanoudakis, Manos Spanoudakis, and Stathes Hadjiefthymiades, presents a generic framework for delivering Location Based Services (LBS). The framework is capable of providing the full functionality required for delivering LBS, starting from the specification of the service, covering issues like its deployment and maintenance of services, the service invocation and the final delivery of the produced results to the calling user. The main focus of the chapter is on the technical specification, the design and the functionality of the framework. However, with the purpose of assessing the proposed architecture, a prototype implementation based on the discussed specifications was built and its performance was evaluated using a series of pilot services.

Chapter 4, “Context-Aware Query Processing in Ad-Hoc Environments of Peers” by Nikolaos Foli- nas, Panos Vassiliadis, Evaggelia Pitoura, Evangelos Papapetrou, and Apostolos Zarras, explores with context-aware query processing in ad-hoc peer-to-peer networks. Each peer in such an environment has a database over which users execute queries. This database involves (a) relations which are locally stored and (b) virtual relations, all the tuples of which are collected from peers that are present in the network at the time when a query is posed. The objective of this work is to perform query processing in such an environment and, to this end, the authors start with a formal definition of the system model. Next, they formally define SQLP, an extension of SQL that covers the termination of queries, the fail-
ure of individual peers and the semantic characteristics of the peers of such a network. Moreover, they present a query execution algorithm as well as the formal definition of all the operators that take place in a query execution plan.

Chapter 5, “The Role of Digital Service Encounters on Customers’ Perceptions of Companies” by Kristina Heinonen investigates the role of digital service encounters on customer perceptions of companies. Digital service encounters in this chapter denote remote customer-company interactions via the Internet or e-mail. The focus is on active customers initiating interactions and on customer perceptions of company responses to these interactions. A conceptual framework that captures customer perceived service encounter value on two dimensions (responsiveness and personalization) is proposed. An empirical study exploring the value of company responses to digital contacts indicated that many contacts are responded to promptly and satisfyingly. However, there are also significant differences in the value of the service encounter. Some service encounters are perceived as unpersonalized, and some are even left without response.

Chapter 6, “Contract Negotiation in E-Marketplaces: A Model Based on Dependency Relations” by Larbi Esmahi, presents an overview of protocols commonly used to implement negotiation in e-markets. An analysis of the interaction process within e-markets according to different situation of individual and joint profit/cost is presented. The authors also present a case study of a marketplace for e-services using dependency relations within the negotiation process. The experimental results of this negotiation model show that a combination of utility functions and dependency relations increase the number of contacts and reduce the differences between agents’ individual profit. Finally, this chapter concludes with the introduction of some potential research problems related to e-markets, which will be explored within future extensions of this work.

Chapter 7, “Designing Reputation and Trust Management Systems” by Roman Beck and Jochen Franke analyzes the handling of customer complaints after shipping ordered goods by applying automated reputation and trust accounts as decision support. Customer complaints are cost intensive and difficult to standardize. A game theory based analysis of the process yields insights into unfavorable interactions between both business partners. Trust and reputation mechanisms have been found useful in addressing these types of interactions. A reputation and trust management system (RTMS) is proposed based on design theory guidelines as an IS artifact to prevent customers from issuing false complaints. A generic simulation setting for analysis of the mechanism is presented to evaluate the applicability of the RTMS. The findings suggest that the RTMS performs best in market environments where transaction frequency is high, individual complaint-handling costs are high compared to product revenues, and the market has a high fraction of potentially cheating customers.

Chapter 8, “An Empirical Study on the Integrated Framework of e-CRM in Online Shopping: Evaluating the Relationships Among Perceived Value, Satisfaction, and Trust Based on Customers’ Perspectives” by Changsu Kim, Weihong Zhao, and Kyung Hoon Yang develops a conceptual framework for e-CRM to explain the psychological process that customers maintain a long-term exchange relationship with specific online retailer. The conceptual framework proposes a series of causal linkages among the key variables affecting customer commitment to specific online retailer, such as perceived value (as cognitive belief), satisfaction (as affective experience) and trust (as conative relationship intention). Three key exogenous variables affecting Internet online shopping experiences, such as perceived service quality, perceived product quality, and perceived price fairness, are integrated into the framework. This study empirically tested and supported a large part of the proposed framework and the causal linkages within it. The empirical results highlight some managerial implications for successfully developing and implementing a strategy for e-CRM.
Chapter 9, “Improving M-Commerce Services Effectiveness with the Use of User-Centric Content Delivery” by Panagiotis Germanakos, Nikos Tsianos, Zacharias Lekkas, Constantinos Mourlas, and George Samaras, examines the interaction requirements regarding a friendlier, personalized and more effective multi-channel services environment. It presents the mobility challenges and constraints implemented into the business sector, investigating the current m-commerce situation and the extended user characteristics presenting a high level user-centric m-commerce architecture.

Chapter 10, “The Evolution of Online Relationships in Business to Consumer E-Commerce” by Pauline Ratnasingam, aims to examine the evolution and impact of online relationships in B2C firms. Drawing upon the theories of customer relationship management, e-commerce, trust and loyalty, the author develops an integrated model to illustrate the stages customers go through when shopping online and its impact on trust, hard and soft factors that reflect the level of transactional and relational components of communication thereby impacting the customers shopping time lifecycle experiences. This chapter develops a number of hypotheses to facilitate testing of the model. The author then provides a discussion of the model leading to the theoretical and practical implications of this study and directions for future research.

Chapter 11, “Business Models for M-Services: Exploring the E-Newspaper Case from a Consumer View” by Carina Ihlström Eriksson, Thomas Kalling, Maria Åkesson, and Tobias Fredberg, presents the consumer view of an innovative m-service, that is, the e-newspaper, which is published for a mobile reading device equipped with an e-paper display. The research question of this chapter is: What are the implications of the consumer view of future m-service innovation on business models? In this chapter, the authors present empirical results from an online survey with 3,626 respondents representing the consumer view. The factor analysis revealed three aspects of consumer preferences, that is, Ubiquitous access, Prestige of news source and Local anchorage and advertising. These were then correlated with media behavior and e-newspaper preferences to indicate three possible market segments. The authors then discuss the implications that these consumer views could have on developing new business models, followed by a comparison to earlier research. Finally, they propose an integrated e-newspaper business model framework consisting of three models, ubiquitous, local, and prestige.

Chapter 12, “The Evolving Portfolio of Business-to-Business E-Services: Service and Channel Innovation” by Christine Legner, studies e-services in the business-to-business domain. More specifically, it explores how the preferences for e-services and electronic channels change over time as a result of developing technology and evolving customer requirements. Based on the case study of ETA SA, a Swiss manufacturer of watch movements and components, three stages of increasing electronic interaction with customers have been identified. The company pioneered online ordering of watch spare parts based on a first generation e-commerce solution and subsequently introduced a comprehensive customer service portal. This research suggests that moving from the e-commerce solution to the customer process portal involved a significant extension of the e-service portfolio (service innovation), whereas the subsequent stage introduced an additional electronic channel (channel innovation). Every stage in this evolution path forces companies to substantially re-architect their interorganizational process and system linkages. From the experiences of ETA SA, we conclude that a well-designed B2B architecture is required to cope with the growing number of e-services and the complexity of serving multiple electronic channels.

Chapter 13, “Conceptualizing Competences in E-Services Adoption and Assimilation in SMEs” by Ada Scupola, investigates the competences deemed necessary both at top managerial and individual levels for the successful adoption and assimilation of business-to-business e-services in small and medium size enterprises. To this end, an in-depth case study of a business-to-business e-service system, a Web-based travel reservation system, was conducted. The results show that three main competences, namely vision, value and control, are important at top management level for the primary adoption of
e-services. For secondary adoption and assimilation, three categories of competences were identified as being important either to have or to develop at the individual level, namely technical, interpersonal and conceptual skills.

Chapter 14, “Adding Value to SMEs in the Courier Industry by Adopting a Web-Based Service Delivery Model” by Paul Darbyshire designs a framework for a Web system that is intended for linking small and medium transport companies with their customers. The unique aspects of the framework are two-fold. The framework utilizes Web services, which means that it can be applied to existing software and hardware environments. This reduces the need for specialized integration and development, the cost of which becomes a further barrier to SMEs in adding value to customers through existing systems. The framework is additionally designed to link both communities of SMEs and customers in a fledgling digital ecosystem arrangement. Such arrangements offer inherent added value to both types of participants.

Chapter 15, “Factors Relating to the Adoption of Internet Technology by the Omani Banking Industry” by Salim Al-Hajri and Arthur Tatnall addresses the question: What are the enablers and the inhibitors of Internet technology adoption in the Omani banking industry compared with those in the Australian banking industry? The chapter does not attempt a direct comparison of the banking industries in these two very different countries, but rather presents a discussion of Internet technology adoption in Oman, informed by the more mature Australian experience.

Chapter 16, “E-Government Service Delivery Performance: An Adaptation of the Balanced Scorecard to the Public Sector” by Assion Lawson-Body, Jared Keengwe, Laurence Mukankusi, Abdou Illia, and Glenn Miller, examines the effectiveness of Web site-supported Balanced Scorecard’s four dimensions (innovation and learning, internal process, veteran value proposition, and financial) in improving e-government service delivery performance. The study used content analysis to analyze the data obtained from a sample of 19 county veteran service officers (CVSOs) to test the hypotheses. CVSOs use Web sites to serve veterans on a Government-to-Citizen (G2C) basis.

Chapter 17, “Development and Testing of an E-Commerce Web Site Evaluation Model” by Luiz Antonio Joia and Luiz Cláudio Barbosa de Oliveira, develops and tests a model for evaluating B2C e-commerce Web sites. Consequently, this study seeks to investigate the relationship between the Web site interface of B2C e-commerce and virtual customer behavior, concentrating on purchasing attitude and intention. The objective of this chapter is, therefore, to research which features of a virtual store effectively influence the user purchasing process via the Internet. In order to achieve this aim, the technology acceptance model was adapted for pertinent theoretical references about consumer behavior on the Web. The model developed was then tested and validated through a structural equation modeling approach. An empirical analysis of the CD e-retailing industry in Brazil was then conducted. The study concludes that, for the electronic commerce of CDs, ease of use, trust, pleasure, and attractiveness as perceived by visitors to CD e-retailing Web sites are key issues for understanding customer attitude and purchasing intention.

E-Commerce Trends for Organizational Advancement: New Applications and Methods provides current coverage of e-commerce issues, trends, and methodologies with a focus on how organizations can adapt to and benefit from new systems and tools in the field. Through discussions of specific cases and projects, this collection aims to inform researchers, practitioners, and individual users of the latest advancements and challenges in the continual evolution of modern-day commerce.