

E-Commerce Trends for Organizational Advancement: New Applications and Methods

Mehdi Khosrow-Pour

Information Resources Management Association, USA



INFORMATION SCIENCE REFERENCE

Hershey • New York

Detailed Table of Contents

Preface XV

Chapter 1

Developing Mobile Commerce Applications..... 1

P. Benou, University of Peloponnese, Greece

V. Bitos, TIM HELLAS, Greece

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..... 16

Wen-Chen Hu, University of North Dakota, USA

Yanjun Zuo, University of North Dakota, USA

Naima Kaabouch, University of North Dakota, USA

Lei Chen, Sam Houston State University, USA

The emergence of wireless and mobile networks has made possible the introduction of electronic commerce to a new application and research subject: mobile commerce. Mobile commerce is a promising trend of commerce because Internet-enabled smartphones such as iPhones are becoming very popular these days. People use smartphones to perform daily tasks like browsing the mobile Internet and making phone calls anytime and anywhere. However, understanding or constructing a mobile or an electronic commerce system is not easy because the system involves a wide variety of disciplines and technologies and the technologies are constantly changed. To facilitate understanding and constructing such a system, this chapter divides the 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..... 36

Ioannis Priggouris, University of Athens, Greece

Dimitris Spanoudakis, University of Athens, Greece

Manos Spanoudakis, Credit Suisse, Switzerland

Stathes Hadjiefthymiades, University of Athens, Greece

The combination of position fixing mechanisms with location-dependent, geographical information, can offer truly customized personal communication services through the mobile phone or other type of devices. Prompted by the avalanche of technology advances in the aforementioned areas, this chapter 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..... 66

Nikolaos Folinis, University of Ioannina, Greece

Panos Vassiliadis, University of Ioannina, Greece

Evaggelia Pitoura, University of Ioannina, Greece

Evangelos Papapetrou, University of Ioannina, Greece

Apostolos Zarras, University of Ioannina, Greece

This chapter deals 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 failure 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 88

Kristina Heinonen, Hanken Swedish School of Economics and Business Administration, Finland

The service encounter occurs whenever a customer interacts with a company personally or through technology through, for example, the Internet, e-mail, or telephone. Nowadays, customers frequently initiate the encounter as, for example, inquiries, information searches, and complaints are conveniently performed online. This chapter explores 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..... 98
Larbi Esmahi, Athabasca University, Canada

E-transactions via shopping agents constitute a promising opportunity in the e-markets. This chapter discusses the problem of contract negotiation in e-marketplaces. The authors succinctly present 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 118
Roman Beck, Johann Wolfgang Goethe University, Germany
Jochen Franke, Johann Wolfgang Goethe University, Germany

This chapter 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..... 136

Changsu Kim, Yeongnam University, Korea

Weihong Zhao, Jiangxi Normal University, China

Kyung Hoon Yang, University of Wisconsin-La Crosse, USA

Based on customer cognitive, affective and conative experiences in Internet online shopping, this study, from customers' perspectives, 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 151

Panagiotis Germanakos, National & Kapodistrian University of Athens, Greece

Nikos Tsianos, National & Kapodistrian University of Athens, Greece

Zacharias Lekkas, National & Kapodistrian University of Athens, Greece

Constantinos Mourlas, National & Kapodistrian University of Athens, Greece

George Samaras, University of Cyprus, Cyprus

Advances in wireless communications and information technology have made the Mobile Web a reality. The Mobile Web is the response to the need for anytime, anywhere access to information and services. Many wireless applications have already been deployed and are available to customers via their mobile phones and wirelessly-connected PDAs. However, as communications and other IT usage becomes an integral part of many people's lives and the available products and services become more varied and capable, users expect to be able to personalize a service to meet their individual needs and preferences. The involved sectors have to meet these challenges by reengineering their front-end and back-end of office. This chapter 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 167

Pauline Ratnasingam, University of Central Missouri, USA

The growth of business-to-consumer (B2C) e-commerce has gained a lot of attention among SMEs. Most B2C firms are turning their attention on how to retain new customers and are left in a situation to compete with larger firms. This chapter 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 develop 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 177

Carina Ihlström Eriksson, Halmstad University, Sweden

Thomas Kalling, Lund University, Sweden

Maria Åkesson, Halmstad University, Sweden

Tobias Fredberg, Chalmers University of Technology, Sweden

This chapter 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 203

Christine Legner, European Business School (EBS), Germany

E-services have been recognized for their contribution to strengthening customer relationships and fostering customer loyalty. While prior research has focused on the role of e-services in business-to-consumer interactions, this chapter 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.....	225
<i>Ada Scupola, Roskilde University, Denmark</i>	

This chapter 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.....	239
<i>Paul Darbyshire, Victoria University, Australia</i>	

The aim of this research is to design 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	264
<i>Salim Al-Hajri, Higher College of Technology, Oman</i> <i>Arthur Tatnall, Victoria University, Australia</i>	

The banking industry in Oman is of major importance to Oman's economy, yet Omani banks continue to conduct most of their transactions using traditional methods. A strong banking industry significantly supports economic development through efficient financial services, and their role in trying to achieve the objectives outlined by the Sultan of Oman will depend heavily on the industry's capabilities. Omani banks will need to introduce change at both procedural and informational levels that includes moving from traditional distribution channel banking to electronic channel banking. This chapter 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	283
---	-----

Assion Lawson-Body, University of North Dakota, USA

Jared Keengwe, University of North Dakota, USA

Laurence Mukankusi, University of North Dakota, USA

Abdou Illia, Eastern Illinois University, USA

Glenn Miller, University of North Dakota, USA

E-government service delivery performance has been discussed in literature as a way governments use information technologies (IT) to deliver valuable services to their citizens at a lower cost. This chapter 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	301
--	-----

Luiz Antonio Joia, Brazilian School of Public and Business Administration

of Getulio Vargas Foundation and Rio de Janeiro State University, Brazil

Luiz Cláudio Barbosa de Oliveira, Brazilian School of Public

and Business Administration of Getulio Vargas Foundation, Brazil

The scope of this research is to develop and test 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.

Compilation of References	319
--	-----

About the Contributors	350
-------------------------------------	-----

Index	354
--------------------	-----