Transforming E-Business Practices and Applications: Emerging Technologies and Concepts

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E-Consumer Behaviour: Past, Present and Future Trajectories of an Evolving Retail Revolution...... 1 M. Bourlakis, Brunel University, UK S. Papagiannidis, Newcastle University, UK Helen Fox, Newcastle University, UK

Shopping online has emerged as one of the most popular Internet applications, providing a plethora of purchasing opportunities for consumers and sales challenges for retailers. The aim of this chapter is to shed further light on the past and present status of the e-consumer phenomenon, by looking into online shopping behaviour and by examining the major reasons for being motivated or being de-motivated from buying online, focusing on the trust element. Building on that analysis, the possible future status of e-consumer behaviour is presented via an examination of ubiquitous retailing, which denotes the next stage of that retail revolution.

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Khalid Aldiri, University of Bradford, UK	
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Consumers' lack of trust is identified as one of the greatest barriers inhibiting business-to-consumer (B2C) e-commerce. This may be partly attributable to the lack of face-to-face interpersonal exchanges that support trust behavior in conventional commerce. It was proposed that initial trust may be built by simulating face-to-face interaction. To investigate this, an extensive laboratory-based experiment was conducted to assess the initial trust in consumers using four online vendors' websites with a variety of still and video images of sales personnel, both Western and Saudi Arabian. Initial trust was found to be enhanced for websites employing photographs and video clips compared to control websites lacking such images; also the effect of culture was stronger in the Saudi Arabian setting when using Saudi photos rather than Western photos.

The Driving Forces of Customer Loyalty: A Study of Internet Service Providers in Hong Kong 44 T.C.E. Cheng, The Hong Kong Polytechnic University, Hong Kong L.C.F. Lai, The Hong Kong Polytechnic University, Hong Kong A.C.L. Yeung, The Hong Kong Polytechnic University, Hong Kong

This study examines the driving forces of customer loyalty in the broadband market in Hong Kong. The authors developed and empirically tested a model to examine the antecedents of customer loyalty towards Internet service providers (ISPs) in Hong Kong. Structural equation modeling (SEM) was used to evaluate the proposed model. A total of 737 valid returns were obtained through a questionnaire survey. The results show that customer satisfaction, switching cost, and price perception are antecedents that lead directly to customer loyalty, with customer satisfaction exerting the greatest influence. Although research found that service quality significantly influences customer satisfaction, which in turn leads to customer loyalty, a direct relationship between service quality and customer loyalty was not found. Results also reveal that corporate image is not related to customer loyalty. This empirical investigation suggests that investing huge resources in building corporate image can indeed be a risky strategy for ISPs.

Chapter 4

E-Business Decision Making by Agreement	
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Mark J. Wierman, Creighton University, USA	

Gathering customer data over the Internet is largely limited to collecting the responses to a set of easily answerable questions, such as Yes/No questions and Likert scale questions. These data are then analyzed to identify customer trends or other items of interest to management. The data can be useful, but key to their usage is the application of suitable mathematical tools. Traditionally little more than standard statistics has been used in the analysis of ordinal, or category, data. This can be inaccurate and in some cases, misleading. This chapter introduces measures of agreement and dissent to the field of e-business analysis and shows how ordinal data can be analyzed in more meaningful ways.

Chapter 5

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To facilitate online consumer decision making, a number of e-commerce businesses are augmenting their Web site features. The Web-based decision support for consumers is often provided by eliciting consumer preferences directly or indirectly to generate a set of product recommendations. The software that captures consumer preferences and provides recommendations is called a Web-based decision support system (WebDSS). It is important for WebDSS to support consumers' decision strategies. These decision strategies could be compensatory or non-compensatory in nature. Based on a synthesis of previous research, the authors argue that compensatory based WebDSS are perceived by consumers to be better than non-compensatory WebDSS in terms of decision quality, satisfaction, effort, and confidence. This chapter presents a study that examined the level of online support provided to the consumers' execution of compensatory and non-compensatory strategies. The results based on investigating 375 e-commerce websites indicate that moderate levels of support exists for consumers to implement non-compensatory choice strategies, and virtually no support exists for executing multi-attribute based compensatory choice strategies. The results of this study suggest that there is an opportunity in waiting for e-commerce businesses to implement compensatory WebDSS to improve the decision making capabilities of their consumers.

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Many case examples in the mobile market have shown that the success of mobile services is difficult to predict. Different factors either boost or hinder the adoption of mobile services. The present chapter has covered earlier research on mobile service adoption and utilized a unique handset-based research platform in collecting data from 548 Finnish smartphone users in 2006. The main research goal is to understand the process of mobile service adoption by extracting new kinds of data straight from handsets. In addition to descriptive results, a path analysis model is developed that models the mobile service adoption process. The chapter finds that user intentions have a strong impact on consequent adoption of the service, expectedly. What is more, perceived hedonic benefits from the service are the strongest factor driving intentions to use the service. The perceived technical capability to use the service and the role of the surrounding social network do not drive the intentions of early-adopter users. Interestingly multimedia service adoption is driven by more capable (new) handsets, and mobile services. Calculated indices for a set of mobile services suggest that the studied mobile services are currently experiencing different phases in their life cycle.

Chapter 7

The increasing utilization of mobile commerce technologies in e-business raises the question of their use in supply chain integration and management. This chapter presents a multiple case study investigation of the adoption of mobile technology in the supply chain. A technology-organization-environment framework of the contextual influences on technological innovation adoption is used to inform an analysis of three companies' adoption and use of mobile data solutions for sales automation, freight tracking and service support. Analysis of the three case studies found that the relative advantage of the technological innovation and the information intensity of the company were the most important factors influencing adoption. Other factors that appeared to influence adoption included the compatibility of the technology with the company's business approach, the presence of top management support and the degree of organizational readiness. Environmental factors such as competition within the industry or business partner influence seemed less influential for these pioneers of mobile technology use in supply-side activities.

Exploring Decision Rules for Sellers in Business-to-Consumer (B2C) Internet Auctions 139 Jeff Baker, Texas Tech University, USA Jaeki Song, Texas Tech University, USA

The recent growth of business-to-consumer (B2C) Internet auctions challenges researchers to develop empirically-sound explanations of critical factors that allow merchants to earn price premiums in these auctions. The absence of a comprehensive model of Internet auctions led the authors of this chapter to conduct an exploratory study to elucidate and rank critical factors that lead to price premiums in Internet auctions. The authors employ Classification and Regression Trees (CART), a decision-tree induction technique, to analyze data collected in a field study of eBay auctions. Analysis yields decision trees that visually depict noteworthy factors that may lead to price premiums and that indicate the relative importance of these factorsShipping cost, reputation, initial bid price, and auction ending time were found to be the factors most predictive of price premiums in B2C Internet auctions.

Chapter 9

In recent years, there has been an increased interest in the types of online auction. Yet many auctions with fixed-end times are experiencing "sniping" or submission of bids in the final minute of an auction. Late bidding deprives rivals of the ability of seeing one's bid and undercutting it. Late bidding facilitates colludes or independent pricing well above that predicated by auction mechanism. This chapter aims to propose and implement a new type of online auction called Least and Unique Price (LUP). In the LUP auction, the winner will be the bidder who submits the least and unique price. Moreover, late bidding and specific closing time also be overcome by the LUP auction. In addition, this chapter presents the practical implementation of the proposed auction. In order to evaluate the proposed auction a comparative analysis of different auction types and the proposed one has been done.

Chapter 10

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Daniel Friesner, Gonzaga University, USA	
Carl S. Bozman, Gonzaga University, USA	
Matthew Q. McPherson, Gonzaga University, USA	

Internet auctions have gained widespread appeal as an efficient and effective means of buying and selling goods and services. This study examines buyer behavior on eBay, one of the most well-known Internet auction Web sites. eBay's auction format is similar to that of a second-price, hard-close auction, which gives a rational participant an incentive to submit a bid that is equal to his or her maximum willingness to pay. But while traditional second-price, hard-close auctions assume that participants have reliable information about their own and other bidders' reservation prices, eBay participants usually do not. This raises the possibility that eBay participants may adapt their bidding strategies and not actually bid

their reservation prices because of increased uncertainty. This chapter empirically examines the bidding patterns of online auction participants and compares the findings to the behavior of bidders in more conventional auction settings.

Chapter 11

Knowledge-Based Intermediaries	
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A new generation of intermediaries is predicted to flourish in the emerging electronic markets. They rely on new information technologies such as the semantic web, rule-based triggers, and knowledge-based constraint maintenance systems. These technologies do not automate or reduce intermediation, but inspire new types of intermediaries that rely on the technologies and complement them with human organizations. An inter-organizational architecture based on multiple levels of intermediation is described, and arguments are presented for its usefulness in emerging electronic markets.

Chapter 12

This chapter studies different levels of pricing strategies for an online knowledge market, where consumers ask and experts answer questions to make knowledge transactions. Consumers optimally price their questions to obtain answers and a firm manages the online knowledge market by determining the optimal price allocation to experts. This research identifies two types of consumers, spin-off and mainstream, depending on whether additional utilities will be derived from the market. In addition, the authors investigate how the firm can use minimal and maximal posting prices to regulate the knowledge market.

Chapter 13

Product Choice Strategy for Online Retailers	. 220
Ruiliang Yan, Virginia State University, USA	
Amit Bhatnagar, University of Wisconsin-Milwaukee, USA	

An important strategic issue for managers planning to set up online stores is the choice of product categories to retail. While the "right" product category would depend on a number of factors, this chapter on the following two factors: compatibility of the product with the online channel, and the competition between the traditional brick and mortar channel and the online channel. This is to acknowledge two well-known facts: Certain products are more suitable for selling through the Web than through other channels; and an online retailer competes with not only other online retailers, but also traditional brick and mortar retailers. To determine the right product category, the authors develop a game theoretical model that allows for competition between the retailers. Both Stackelberg and Bertrand competition models are studied, as these two models capture the essence of different types of competition on the Web. Based on their results, the authors propose that, under all types of competition, the optimal product is one that is only moderately compatible with the Internet.

Trust is a major issue in e-markets. It is an even more prominent issue when online shoppers trade with small, less-established e-vendors. Empirical studies on Web seals show that small e-vendors could promote consumers' trust and increase Web sales by displaying Web seals of approval. This chapter takes a theoretical approach to examine online trading when seals are used in e-markets. The authors establish an online shopper's decision-making model to reveal the online shopper's decision-making criteria. Criteria include when to trade with a well-established e-vendor and when to trade with a small, less-established e-vendor, with or without a Web seal. Based on an analysis of the research results, the authors reveal the price effect, the seal effect, the reputation effect, and their impact on a shopper's decision-making process. Meanwhile, a social welfare analysis is conducted to further demonstrate the positive impact of Web seals on small, less-established e-vendors.

Chapter 15

The objective of this work is to analyse the importance of firms' previous experience with different information technologies (Internet, EDI) in their implementation of e-CRM and B2B e-commerce. Moreover, this chapter also studies the role of e-CRM in B2B development. With this objective, the authors have analyzed 109 firms belonging to the IT sector. The results show that experience with IT such as EDI or the Internet has a direct influence on the use of e-CRM. There is also a direct and positive transmission of knowledge from e-CRM to B2B e-commerce, even though they have not yet been adopted intensively by firms. Firms need to be aware of the interrelations that exist between the different information technologies. The experience accumulated from using an IT can be considered an important aspect öf organisational knowledge, which allows firms to obtain a number of benefits as a result of applying other IT that are complementary.

Chapter 16

This research attempts to identify critical e-commerce success factors essential for building business value within e-commerce enabled organizations. It is important to identify the critical success factors that

organizations must pursue in order to facilitate a successful transformation from traditional brick-andmortar organizations to click-and-brick business models. Diffusion theory is used to demonstrate how these success factors create business value within an organization. The research model is fully grounded in information technology business value and productivity literature (e.g., Kauffman & Kriebel (1988), Mahmood, Gemoets, Hall, & Lopez (2008) Mahmood & Mann (1993), and Zhu (2004)). The manuscript utilizes an existing sample set consisting of a population of more than 550 company executives who are successfully implementing e-commerce strategies. The research examines constructs found in the literature and focuses on two importance dimensions of creating business value through e-commerce strategies: IT alignment to organizational strategies (ITOrS) and the quality and effectiveness of existing online systems (OnSQE). Critical success factors for e-commerce business success were found to include ITOrS (IT alignment to organizational strategies), IOrSA (Quality and effectiveness of online systems, OnSE (Online systems efficiency), and OnSQE (Online systems quality and effectiveness. The research produces empirical evidence that strategic decision making concerning implementation of e-commerce technologies and alignment with top management strategic planning is critical to the success of creating business value for e-commerce enabled organizations. The manuscript concludes with limitations of the research and implications for future research studies.

Chapter 17

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Businesses invest in developing information systems resources to gain competitive advantages. Literature has demonstrated the requirement of strategic alignment in converting these competitive advantages into sustained superior business performance. The knowledge of information systems strategic orientation and its impact on business performance will enable these businesses to fine tune their strategic information systems applications portfolio in achieving required strategic alignment. This chapter describes a research study that focuses on the information systems strategic orientation of small businesses and investigates its relationship with their perceived business performance. The organizational impact of adoption of the initial stages of electronic business development is also examined. The data were collected from small businesses on nine strategy areas, through mail survey. The result reveals three multifaceted dimensions of information systems strategic orientation. These dimensions of strategic orientation have significantly influenced their business performance. This phenomenon is explained with a model named Linear Strategic Alignment Model. For the adopters of Web presence, all these three dimensions remain significant in explaining their business performance.

Chapter 18

This research discusses Nigerian financial firms' perspectives on key determinants of e-business deployment. It explores possible differences that exist among financial firms using in-house e-business capabilities and those that outsource their e-business capabilities. This chapter contributes to the few pieces of literature on e-business experiences among firms operating in Africa, particularly Nigeria. The Technology-Organization-Environment (TOE) model underpins the conceptual framework for this chapter. The independent variables are the firm, technological and environmental factors while e-business use constitutes the dependent variable. The findings reveal that all the factors were significant, but that environmental factors were key determinants of e-business use among the firms. In addition, this study reveals practitioners' interests in Nigerian government agencies to maintain and enhance the existing e-business legal, regulatory and security frameworks in the country. By extension, this could enable greater e-business use in firms, which could improve the overall economy.

Chapter 19

Several measurement scales have been designed by both practitioners and researchers to evaluate perceptions of electronic service Quality. This chapter tests three of the main academically developed scales: Sitequal (Yoo & Donthu, 2001), Webqual 4 (Barnes & Vidgen, 2003) and EtailQ (Wolfinbarger & Gilly, 2003) and compares them against the scale ensuing from the authors' research: NetQual (Bressolles, 2006). Based on 204 evaluations of consumers that participated in a laboratory experiment involving two Canadian Websites in travel and online insurance, NetQual best fits the data and offers the highest explanatory power. Then the impact of nature of task and success or failure to complete the task on the evaluation process of electronic service quality and attitude toward the site is examined and discussed on over 700 respondents that navigated on six different Websites.

Chapter 20

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In the new era of e-commerce, small businesses have emerged as the driving force because these firms comprise a significant proportion of economic activity. The spending of small businesses on IT activities continues to grow as they rely more and more on the Internet to be competitive. All these indicate a potential lucrative market for Internet Service Providers (ISPs) to serve small businesses. But how to do so? This study attempts to identify Internet service features that are important to small businesses as a way for the ISPs to exploit this potential lucrative market. It explored how various features of the Internet service were associated with the "perceived necessity" of the internet and the "size" and "type" of small businesses. Understanding these associations might help the ISPs better package their service and more successfully serve their small business clients.

Towards a Contextual and Policy-Driven Method for Service Computing Design	
and Development	
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Youakim Badr, INSA de Lyon, France	

Today, Web services are of interest to both academia and industry. However, little has so far been accomplished in terms of design and development methods to assist those who are responsible for specifying and deploying applications based on Web services. For this purpose, the authors developed in this chapter a method based on Context and Policy for Web Services known as CP4WS. In this method, policies manage various aspects related to Web services such as participation in composition scenarios and adjustment in response to environmental changes, and context provides the necessary information that permits for instance to trigger the appropriate policies and to regulate the interactions between Web services with respect to the current state of the environment. CP4WS consists of several steps such as the identification of user needs and the behavioral specification of Web services. Each step has a specific graphical notation that facilitates the representation, description, and validation of the composition operations of Web services. A case study that illustrates and highlights the use and originality of CP4WS, respectively, is provided in this chapter.

Chapter 22

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Recent years have seen a dramatic increase in business processes and research in distributed computing environments. Applications today can be composed of very heterogeneous components: some involve having the user in the loop; some deal with streaming data; while some require high-performance resources for their execution. This chapter examines the performance of a series of process-based models for the development of e-Business using enterprise software applications. Merging management technology in workflow systems is a critical step to provide service-oriented architecture and on-demand business. The authors propose a value-oriented process technique as a strategic alignment to improve investment value. The framework focuses on the guidelines for traditional users to identify the structural conflicts in integrating web services. A comparative study of workflow models for intra-and inter-organizational process control is presented. This chapter identifies the current progress in the adaptability in the design of process models coupled with structural changes of workflow views. The study provides a resource list of successful implementations for practitioners in organizational management. The research highlights the motivation of market facilitation, expert sharing and collaboration that enable commercial applications to support complex heterogeneous, autonomous and distributed information systems.

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Brokering Web Services via a Hybrid Ontology Mediation Approach Using Multi Agent	
Systems (MAS)	
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This chapter introduces a hybrid ontology mediation approach for deploying Semantic Web Services (SWS) using Multi-agent systems (MAS). The methodology that the authors have applied combines both syntactic and semantic matching techniques for mapping ontological schemas so as to 1)eliminate heterogeneity; 2)provide higher precision and relevance in matched results; 3) produce better reliability and 4) achieve schema homogeneity. The authors introduce a hybrid matching algorithm i.e. SRS (Semantic Relatedness Score) which is a composite matcher that comprises thirteen well established semantic and syntactic algorithms which have been widely used in linguistic analysis. This chapter provides empirical evidence via several hypothesis tests for validating the authors' approach. A detailed mapping algorithm as well as a Multi-agent based system (MAS) prototype has been developed for brokering Web services as proof-of-concept and to further validate the presented approach. Agent systems today provide brokering services that heavily rely on matching algorithms that at present focus mainly only on syntactic matching techniques. The authors provide empirical evidence that their hybrid approach is a better solution to this problem.

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