

E-Adoption and Socio-Economic Impacts: Emerging Infrastructural Effects

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Information and communication technologies (ICT) have made enormous impact on social and economic performance and competitiveness in general, and on productivity, efficiency, and innovation in particular. The literature suggests that ICT has contributed greatly to productivity growth and competitiveness in the developed as well as developing countries in the last decade. This study aims to advance understanding of the social and economic impact of e-adoption. It provides an in-depth understanding through extensive literature survey and analysis of a various success stories. The generalization and conclusions are drawn from documented studies.

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Internet Banking Cases

Chapter 1

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This study is the first empirical research that compares three well known technology adoption models in the in the field of e-banking. It aims to determine the dominant factor(s) which influence the user intention to use Internet banking. Three models (TAM, TPB, and TRA) were used to test the impact of five factors (perceived ease of use, perceived usefulness, attitude, subjective norms, and perceived behavioral control) on intention to adopt e-banking by 239 individual bank customers in Malaysia. Survey questions from prior studies were adopted and customized. Partial least Square (PLS) SmartPLS M2

Version 2.0 was used for data analysis. Results reveal that the five factors have a direct positive effect on behavioral intention to use Internet banking. However, attitude toward behavior has the highest beta, followed by perceived usefulness, and subjective norm, while perceived behavioral control exerts the weakest effect. In testing the explanatory power of the different models, results found TAM model has the best explanatory power, followed by TPB and TRA models. Findings of the study should benefit banks in improving their use of e-banking technologies as a strategic weapon, and can be used to target more potential customers.

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A growing phenomenon in the Internet is the rising exploitation of sophisticated security means (e.g. cryptography, digital signatures etc.) toward the development of novel commerce services for providing electronic transactions, collaborating with business partners or serving customers, regardless of geographical and time limitations. This paper discusses, presents and elaborates on the various factors that affect the adaption of Internet banking services in Greece. In particular, it deals with the factors that have been developed within the framework of providing e-banking services over an insecure shared medium like the Internet and affect the Internet Banking customer acceptance. A factor analysis is performed based on the gathered results provided by customer-questionnaires of ALPHA Bank branch in Greece in order to quantify the various parameters that affect the use of an Internet Banking System. The findings of the analysis show that despite the fact that Internet Banking in Greece is steadily increasing its penetration, factors like security, ease of use and perceived usefulness of a system play a major role on the final decision of the customer to adopt an Internet Banking System.

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This study is aimed at analyzing adoption and usage behavior within the context of Internet banking services in South Korea. In a country where the penetration rate of the Internet is very high, it seems that the self-efficacy would play a crucial role in affecting the Internet banking adoption. To pursue this research question, this study adopts TAM and incorporates the self-efficacy into TAM as one of antecedent variables such as risk, Internet experience, facilitating conditions. The proposed research model is tested empirically with 185 usable questionnaires and partial least square (PLS) method. Experimental results showed that the self-efficacy plays a prominent role in influencing the Internet banking usage compared to other factors.

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The attention of software vendors has moved recently to Small to Medium-sized Enterprises (SMEs) offering them a vast range of Information Systems' (IS) innovations including enterprise systems (ES), which were formerly adopted by large firms only. Although the number of SMEs adopting new IS innovations has increased over time, strong empirical evidence is still lacking. This paper aims to fill this gap by reporting the findings of a survey on SMEs located in the Northwest of England. The survey results reveal that even more complex IS innovations are increasingly adopted by SMEs. Also, nearly half of the surveyed SMEs are willing to adopt ES in the next three years. These findings suggest that there is a considerable opportunity and a need for further research in the adoption and diffusion of new IS innovations among SMEs.

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With a major proportion of research on Electronic Commerce (EC) undertaken on large corporations, and focused primarily on developed countries, little is known about the determinants of EC in Small and Medium-sized Enterprises (SMEs) of developing nations. This chapter explores the extent of EC use by SMEs, and provides some empirical evidence of how internal factors of firm and owner are influencing EC adoption among smaller businesses in Malaysia. The methodology and results of this study may be applicable to other developing countries. Findings confirm the low level of participation in EC by SMEs. The age of enterprise, as well as the owner's gender and education were found to be significant in determining the level of EC adoption. Though some of the results contradict those of previous studies, they may have a greater implication for government authorities in drawing up guidelines, approaches, and formulating more effective frameworks to promote EC use among SMEs in developing countries.

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Small and medium enterprises (SMEs) have been adopting the internet at a feverish pace. Recent studies have shown that up to 85% of SMEs in industrialized countries have web sites, yet less than half are utilizing these web sites to securely transact with their customers. Consumer media consumption is moving away from traditional media, like newspapers, to the internet. These revelations coupled with the

growth of tools and techniques available to support online marketing, make it a perfect time for SMEs to market their web sites and ultimately succeed online. In this chapter we will present and support the hypothesis that SMEs should stop investing in their web site's design and functionality and start investing in efforts to market their web sites online, no matter how *lousy* their web site may be in comparison to today's standards. With the support of two case studies, illustrating the successful utilization of internet marketing by two very different SMEs, we will relate how a SME can effectively market their web site online. We will also discuss the tools and techniques available to help an SME successfully begin a journey of internet marketing.

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The potential of the Internet to both geographically expand customer bases and provide a source of sales growth has led to a rapid embracement of the Internet by a majority of small businesses in the United Kingdom. However, many studies suggest that much of this adoption takes the form of simple Web sites representing little more than an electronic brochure. Although theories and models have been proposed suggesting adoption and development of e-commerce takes a staged process, with firms moving to more complex e-commerce processes after first mastering simpler forms of Web site, studies have found mixed evidence with regard to this. This chapter investigates the level of Small and Medium Enterprise (SME) Web site adoption and functionality and how this relates to growth aspirations, specifically the geographical expansion of customer bases. One potential explanation for this slow uptake of true e-commerce is a lack of employees with basic and advanced IT skills. The possibility that Information Technology (IT) skills shortages could explain the gap between the Internet's potential and the extent of involvement by a vast majority of UK SMEs is explored. Discussion within the chapter is complemented with analysis of data from a large survey of SMEs.

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The potential of the Internet to transform marketing practice is well-documented (Hoffman & Novac, 1997; Zineldin, 2000). It is argued that the exploitation of the Internet's interactive and relationship-building properties contribute to customer satisfaction and loyalty and hence, marketing success (Arnott & Bridgewater, 2002). Evidence suggests, however, that small to medium sized enterprises (SMEs) have failed to capitalize on the Internet to facilitate the management of customer relations (e-CRM) and the creation of competitive advantage (Chen & Popovich, 2003; Geiger & Martin, 1999; McGowan et al., 2001; O'Toole, 2001). This is attributed to a lack of influence, time, finance, and specialised knowledge, (Carson & Gilmore, 2003) coupled with the reality that most Information Systems and Technology models and tools have been developed from the perspective of the large firm (Maguire et al., 2007; Poon & Swatman, 1999).

Despite such constraints, it is posited that by exploring the components of e-CRM in the unique context of SME business and marketing practice that a natural synergy exists between e-CRM and SME marketing in the creation of value propositions. Specifically this is addressed through the two contributing constructs of SME marketing; namely entrepreneurial marketing and network marketing (Carson & Gilmore, 2000).

Section 3 **E-Commerce and E-Business**

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A small but growing body of evidence (SBS, 2004; Beckinsale & Ram, 2006) has indicated that Ethnic Minority Businesses (EMBs) have not adopted Information Communication Technology (ICT) at comparable rates to their non-EMB counterparts, predominantly Small and Medium Sized Enterprises (SMEs). With EMBs accounting for almost 10% of businesses in the UK, the economic impact as ICT adoption continues to further develop across mainstream markets could be highly significant. Existing UK ICT policies also failed to engage with EMBs until the NW ICT Adoption Pilot in 2004. The current, limited body of research is fragmented, provides limited understanding and coherence on reasons of low ICT adoption, and lacks exemplars upon which policy considerations may be made. Firstly, the chapter will examine and review the existing body of literature. Secondly, EMB cases that have developed ICT to a degree where they are engaging in e-business activity are statically and dynamically analysed and discussed. The findings provide a number of options and guidance for EMB owners. Finally, the recommendations point to the need for improved ICT awareness, better business support provision nationally, and the importance of generation and education as key drivers.

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This research reviews studies using the Technology Acceptance Model (TAM) to create a modified model and instrument to study the acceptance of Internet technology by consumers. We developed a modified TAM for the acceptance of Internet-based technologies by consumers. We retained the original constructs from the TAM and included additional constructs from previous literature including gender, experience, complexity, and voluntariness. We developed a survey instrument using existing scales from prior TAM instruments and modified them where appropriate. The instrument yielded respectable reliability and construct validity. The findings suggest that the modified TAM is a good predictor of consumer behavior in using the Internet. We found that attitude toward using the Internet acts as a strong predictor of behavioral intention to use, and actual usage of Internet technologies. Future researchers can use the resultant instrument to test how consumers adopt and accept Internet-based applications.

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Consumer e-commerce extends the marketplace of traditional business and brings in business opportunities in online retailing and service. As a consequence of intensive competition among online vendors, the need to capture customers has become a top priority. Thanks to the wide penetration of Internet, the online consumer group now consists of individuals with diverse cultural values and backgrounds. In the context of ethnic culture, we explore the ways a Web site may attract and accommodate ethnic consumers. Drawing upon existing literature in culture and Web Information System success, we develop a Web-based intercultural accommodation model. This model offers a theoretical explanation of online ethnic consumers' behavioral intention to use e-commerce Web site. The conceptual model recognizes the potential roles of ethnicity attributes of individual consumers as well as the use of ethnic pertaining Web site designs in accommodating ethnic consumers. Future study that validates the theoretical model is discussed as well.

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The e-commerce industry has experienced spectacular growth, change and development. This situation has initiated an enormous business revolution that has affected the process of globalization tremendously. The goal of this study was to analyze the Web sites of localization companies that provide localization and translation services to other companies and see if they themselves are practicing what they are preaching. The results suggest that localization companies are indeed not practicing what they are preaching. Analysis shows that localization company Web sites are less localized than the Web sites of their clients, the multinational companies. The findings provide some implications to domestic and international marketers who currently operate in or are planning to enter into the global markets in the near future.

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Traditional cash has long been envisioned to be replaced with 'virtual' or electronic cash. Electronic money and electronic payment systems for retail transactions are commanding widespread attention. Undeniably, electronic payment cites advantages such as efficiency and convenience to the consumers.

However, with the rapid change and advances in technology, has posed significant risks, related to ensuring security and integrity of electronic payment systems in today's cyber world. Therefore, this study attempts to understand the role of electronic payments for consumers, and to identify the problems and solutions in the emergence of electronic payments. This study also explores the challenges of electronic payments from a security perspective, in particular, and provides preliminary security countermeasures for each of the issues discussed. Beside that, the study also discusses further on the prospects of electronic payment systems. It is essential to put in place an integrated, overall risk-management approach to security, including independent security assessments as one of the components in the use of electronic payment products.

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The purpose of this study is to assess and test the factors that influence user adoption of e-Government services: the Electronic Approval System (EAS). This study uses the Technology Acceptance Model (TAM), the extended TAM (TAM2), the Diffusion of Innovation (DOI), and trust to build a parsimonious yet comprehensive model of factors that influence user acceptance of the EAS. We collected data from a total of 112 public officers in 12 ministries in Cambodia. We assessed the model with regression analyses. The findings in this article show that the determinants of the model (perceived usefulness, relative advantage, and trust) explain 30.5% of the variance in user acceptance of the EAS. At the same time, image, output quality, and perceived ease of use explain 38.4% of the variance in user perception of the usefulness of the EAS. In this article, we discuss our findings, implications, and suggestions for future research.

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With the advent and evolution of information and communication technologies (ICTs) in general, the Internet, in particular, throughout the world, new terms such as "information society," "digital divide," and "e-readiness" were added to terminologies. Due to the rapid diffusion of the Internet in different aspects of human life, these concepts have attracted many scholars, practitioners, and policy-makers. In addition to much academic research done in these fields, nearly all countries have assessed their e-readiness and compared their digital divide with that of other countries, at least once. Consequently, there have been numerous e-readiness and digital divide models oriented towards certain objectives in recent years. The findings show (1) tremendous importance of the digital divide and e-readiness and (2) their complex and multi-faceted natures. Thus, effective examination and development of digital divide and e-readiness research requires a foundation in several rich literatures. Examining the e-readiness and digital divide literature in terms of their definitions and methodologies, in the current chapter, their strengths and weaknesses were recognized. Moreover, after an extensive literature survey, an integrated model was proposed for assessing e-readiness of small and medium-sized enterprises (SMEs) that can

be used as the basis and standard for developing comprehensive models and frameworks in these enterprises. Finally, this chapter contributes to scarce literature on e-readiness/digital divide at micro level and creates additional pool of resources that practitioners and theorists could use to further enrich and extend their analysis of this construct.

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This article proposes a hypothetical model for determining rate of diffusion of an innovation in a system. The model modifies Everett Rogers’ S-curve using an index created from Gartner’s hype cycle phases. Rogers’ model for technology innovation adoption demonstrates that cumulative technology diffusion in a system from zero through the late majority adopters’ phase forms a curve resembling the letter “S”. Hype cycles analyze the five emotional stages technology adopters go through from over-enthusiasm (hype) through disappointment until it plateaus (beginning of mainstream adoption). When numbers assigned to the phases of adoption from the hype cycle are used as multipliers and applied to the cumulative adoption data of an innovation (Rogers’ S-curve), the “S” becomes a “J”. With the J-curve you can determine the rate of innovation diffusion in an organization.

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In recent years, e-learning technology has been widely used in the academic institutes for supporting the effectiveness and efficiency of the students’ learning and the educators’ teaching, as a favored approach. However, regarding the student community, the extent to which e-learning technology is used, types of e-learning methods are being mainly used, as well as the barriers for enjoying the advantages of e-technology, remain interesting topics for the educators to explore. This chapter focuses on these issues through an investigation among the students within a higher education institute. The findings give an understanding regarding the usage of e-learning methods and the factors hindering the efficacy of their usage among the students. Also, a primary analysis on the usage difference between undergraduate and postgraduate students is presented.

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Costs of E-Learning Support: A Hong Kong Study of Costs for Supplemental E-Learning
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Understanding e-learning costs informs decision making on support for the development and implementation of teaching and learning technologies in higher education. This chapter describes costs and

processes in a central e-learning support service that is especially applicable to face-to-face universities that use e-learning in a blended or supplemental mode. We differentiate three types of costs: infrastructure costs that are less sensitive to variation in the complexity of e-learning strategies, and e-development and e-delivery costs that are directly related to the nature of the strategies used. Using actual data from a three-year e-learning support project (e3Learning) with 139 sub-projects, the chapter illustrates how the calculations promoted an understanding of e-learning in the following four aspects: 1) total cost of running an e-learning support service, 2) individual costs attributable to each of the sub-projects, 3) ‘price-tags’ of e-learning strategies, and 4) initial exploration of the cost-effectiveness issue. Institutional decisions made as a consequence of this study are described.

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This study is an exploratory investigation of the enabling roles of knowledge management for integrated circuit (IC) Designers, Distributors, and Manufacturers. This study explores the different enabling roles in terms of knowledge creation, storage/retrieval, transfer and application when businesses implement knowledge management in upstream, midstream, and downstream firms in the IC industry. Three cases, Winbond, Worldpeace, and Taiwan Semiconductor Manufacturing Company (TSMC) were studied and analyzed systemically to illustrate the findings and insights in this study. The findings in this study point out that IC designers may focus more on knowledge storage, while IC distributors pay more attention to knowledge application and IC Manufacturers emphasize knowledge creation. The necessity to implement knowledge management in the distribution industry is also emphasized in this study. Moreover, the reasons for the different enabling roles are presented in the ‘Insights from Case Studies’ section of the paper.

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