

# Preface

## **BACKGROUND TO E-BUSINESS APPLICATIONS AND THEIR IMPACT ON PUBLIC AND PRIVATE ORGANIZATIONS**

Defining the impact of e-business applications in a multi-disciplinary field with cross industry contexts has its own challenges. In this book, our attempts to compile a book started from the diversity on the use of e-business applications. In our own research on the use of technology in higher education and the automotive industry, we have seen that the impact of e-business applications may vary between industries and sometimes in organizations within the same industry in which it has taken place. In our literature review about the impact of e-business technologies on organizations, we have observed that there were accounts of e-business applications, useful cases indicating why e-business application implementations fail or succeed, but the absence of cases compiled under one roof prompted us to write this book. As editors, we have not sought to predefine the contextual setting or the area of impact, nor provide a certain definition or area of interest; the only boundaries we set forth were the assessment of e-business applications and the impact on organizations.

The purpose of this book initially was twofold: to assess the impact of e-business, and to provide two distinctive angles between private and public organizations. However, having looked at our contributors coming from 10 different countries with a wide array of e-business applications and implications on diverse organizations, we decided to group them into industries, and within them provided a public and private division. We believe that the changes reflected in the edited book provided a more richer picture and a chest of resources with concepts which may have already been published in various journals, but many of the perspectives are new, which makes this book both suitable for practitioners and academics at the same time. Twenty-four authors have contributed to this book, which are operating as either practitioners or academics in the fields, who are involved with various aspects of the impacts of e-business applications and strategies.

### **E-Business Applications and Impact Studies**

E-business applications are defined with a wide array of tools, and a variety of definitions, in this book, similar to Pant (2003) we consider e-business applications (based on various trading partners) to include the following classifications: business-to-consumers (B2C), business-to-business (B2B), consumer-to-business (C2B), consumer-to-consumer (C2C) and intra-business (organization unit to organization unit) Intranet, Extranet and other contexts. The impact is not new as previous literature reviews in the 1990s have centered around the debate on the impact of IT<sup>1</sup> (Vollman, 1996), where others have focused on

efforts to define the impact of e-business applications, implementation projects, and still in the academic research agenda, there are debates on the impact of e-business. The “Electronic Markets” journal in 2002 dedicated a special issue solely to the debate on “B2B E-Commerce Revisited: Revolution or Evolution?” In an ongoing effort to translate the impact of e-business applications on particular sectors, “On the Horizon” (2008) included a special issue on the “Library and the Internet: introduction to the special issue”. The themes within these special issues ranged from the content to the applications used and its challenges. Another platform that we have witnessed the debate was on the political agenda, wherein Laratta (2010) discussed the use of e-business applications in political agenda, and to what level it impacted the content and context of non-profit organizations (NPOs) which provides services for social improvement, that have utilized electronic techniques for advocacy purposes, ranging from application to the impact of e-business applications and its content. These discussions and ongoing debate is not exclusive to the above mentioned authors and journals; however, conclusions from these sources show a variance and underline the different angles to e-business applications impact. Similarly, the diversity of our cases in this book indicates also diversity in the contextual settings ranging from the impact of e-learning platforms on education, to health record database systems, to the agri-food industry, which enables the reader to gain a richer picture of the impact of e-business technologies from the user interface to security. Hence the structure for the edited book has been divided into three main areas:

1. E-business Applications and its use in Higher Education
2. E-business Impact on Public and Private Organizations
3. E-Business Impact Definitions and Conceptual Discussions

Although we have categorized the chapters in three distinctive sections, each section in itself contains synergies that can be cross-linked across the book, which shows the synergies that can be gained through having a broader picture of implementation stories to conceptual discussions.

## **E-Business Applications and Its Use In Higher Education**

The first section involves a wide array of e-business applications, and although discussed within the higher education setting, it is interesting to see that there are similarities as well as differences in the impact of e-business applications and how far the descriptive accounts of implementation cases differ within the same region. E-business no longer just applies to conducting business online. Higher education has recognized the role that technology can play in re-shaping the entire teaching and learning process.

The first chapter introduced by Debbie Holley and Dr. Martin Oliver, investigates the UK’s promise to make equality a priority in respect to student access to electronic curriculum resources (i.e. e-resources). Their investigation at a London-based Business School uncovered key points that need to be considered when designing curricula for a diverse group of students, in which a “three stage model“ emerges. The model introduces the three stages of high, medium, and low risk in terms of students’ retention of learning materials when dealing with their own expectations, use of space and control. The debate of the research introduces the reader to ways of designing more inclusive business schools curricula for students who face different challenges according to their personal, social, or economic situation. The development of e-resources is a central e-business strategy to add value at this institution.

From this discussion of the inclusiveness aspect of electronic curriculum development in UK, the second chapter introduces us to the context of Higher Education at Spanish universities, which has been

researched by Drs. Ana Jimenez-Zarco, María Pilar Martínez-Ruiz, Virginia Barba-Sánchez and Alicia Izquierdo-Yusta. Their research indicated that the e-business applications in two distinctive universities have been used in a different manner, showing that the contextual setting, even though present in the same industry, can show different pictures. Their chapter investigates the impact of e-technologies based on the standard model for generic use of ICT in higher education versus advanced or radical models, and it proposes as an intensive use of ICT to assess the impact on teaching-learning process.

In their chapter, Dr. Petros Ieronmachou and Nola Stair investigate the effective use of e-learning technologies in Web-based course delivery and the inter-related impact on academic and administrative processes at a London-based Business School in the United Kingdom. The resulting case study identifies the importance of holistic implementation strategies and uses a LOGIC evaluation model to identify key inputs and outputs for future research. While much has been written about Web-based delivery of courses in countries such as the UK and United States of America (USA), this chapter contributes to the growing need to plan and manage the institutional challenges of e-business strategies.

Following with a chapter assessing the color impact on e-learning platforms to encourage memorization of content and trust, Drs. Pelet and Pappandolou investigate several e-learning platforms and assess the role color and display have on trust and memorization, especially whether or not the impact of color in an e-learning platform increased the likelihood of readability and suitability. In addition, Pelet and Pappandolou challenged the role of color on the online interface in e-learning platform and the notion of whether color can enhance student trust. This study has been evaluated under the framework of Knowledge Management and content management research agenda.

## **E-Business Impact On Public and Private Organizations**

From Higher Education, the next section moves to the diverse industries starting with the banking industry. Chapter six, introduced by Dr. Rachel Johns, explores the use of self-service technologies in-depth with a small sample of Australian business bank customers. The exploratory nature of this research bases its premises on assessing the underlying impact on the banking organization in case of self-service technologies enabled by e-applications. The research gives a self-service technology introduction and investigates the relationship to relationship marketing and service dominant logic with two dimensional reasons for introductions (cost saving, relationship, convenience and switching cost) and reasons for use (co-creation and collaboration, value, resource focus, relationship requirements).

The next chapter is introduced by Dr. Raechel Johns, who investigated the impact of e-business technologies in the realm of an Australia e-banking initiatives and the impact on their business customers. The exploratory research explores how utilising an e-banking context impacts relationships between the bank and its business customer, and challenges the notion the use of self service e-technologies have on relationships within a business to business context. This chapter evaluates three main areas of e-banking in B2B (Business-to-Business): (1) relationship marketing in the context of self-service technologies, (2) face-to-face contact versus online contact and its impact on B2B relationship, and (3) the use of technology and its impact on trust and relationship commitment in B2B.

Dr. Jiaqin Yang, in his chapter, investigates the realm of the banking industry, in which he explores e-banking within the context of development issues, focusing on small to medium sized banks in remote rural areas, and the impact of cultural, economic, and political factors on e-banking systems in different nations. The comparison is based on results of an exploratory study that has taken place in the US and China. This chapter underlines the challenges of small and community banks located in rural areas and

their attempt to catch up their counterparts in larger cities in terms of the application of e-banking. In this study, Dr. Jiaqin Yang focuses on emerging issues and challenges, such as Internet accessibility, culture, and tradition playing a vital role in the development of e-banking industry among different nations.

Chapter 7 investigates microfinance and the impact of information and communication technologies (ICTs) on social inclusion. Having examined the literature and secondary sources, Dr. Ana Marr and Dr. Lin Yan create a framework for ICT and its impact on microfinance in developing countries. The framework highlights how the capability generation is interlinked with social inclusion, microfinance, and the use of ICT. They categorize this framework in an effort to contribute to the existing body of work, as “people’s capability building at the heart of the impact chain” for microfinance in developing countries.

Gary Stair, in his chapter, explores a pharmaceutical company that successfully implements an Enterprise Risk Management (ERM) program to assess the inherent risks, in order to provide guidance to executive management and governance entities on critical aspects of organizational governance, business ethics, internal control, fraud, and financial reporting. This chapter also discusses an approach to build an ERM implementation plan within a company by outlining the pharmaceutical industry and its key informants (sales forces, middle-management, senior leadership). In assessing the ERM, the author also investigates also the potential use of e-media and virtual sales representatives in the context of pharmaceutical industry.

In the following chapter, Georg Juelke discusses the staffing industry and underlines the need of business intelligence to optimize process, reduce costs and develop new services. Juelke identifies the root causes that hinder the staffing industry’s ability to develop analytics, reflecting upon the market conditions to the design of IT systems, and discusses the need to generate a common nomenclature to classify job categories to enable data integration in a global world, where the staff mobility currently is rather dispersed. This chapter argues the need to deploy common job classifications across IT staffing systems with real-life examples.

Dr. Brian Gugerty and Dr. Michael J. Maranda introduce the reader to the impact of e-technologies on healthcare from the perspective of practitioners, while exploring the application of Information Technology with the introduction of electronic health records (EHR) and their impact to healthcare in the context of the United States. Their research investigated four main areas of implications, namely: surveillance allowing systematic monitoring, implications for reporting, verification of implications of patients’ data, and response to the potential challenges stemming from the EHRs. Finally, but not lastly, they explore the use of personal patient records on social, legal, technical/ administrative, digital indifference and consumer indifference factors and suggest possible solutions for improvement from the patients’ perspective.

The next chapter in this section, by Dr. Chad Lin, introduces us to e-business in healthcare, which can potentially improve the operations of health service providers and the quality of the delivery of the internal process flows. Dr. Chad Lin explores the benefits and assesses the challenges of the e-business applications in healthcare. The findings underline that in order to realize the e-business benefits, four main building blocks are needed: (1) IT investment evaluation methodology (IEM) which enables the selection and monitoring of e-business investments, (2) an IT benefits realization methodology (BRM) which evaluates the process needs and the project life cycle, (3) IT Maturity which provides crucial information about the organization’s ability to effectively utilize IT, and (4) company policies, business objectives, and/or strategies that would provide a sound basis for building and improving healthcare organizations’ level of organizational IT maturity.

Chapter 12, by Dr. Kim Bryceson, underlines the e-landscape of the agri-food industry and asserts in the food for thought section that there are five key drivers: (1) the dynamics of sustainable production, (2) the presence of integrated food supply systems, (3) globalised markets, (4) key players in the agri-food industry and (5) food security. Although these key drivers are all important in the e-landscape of agri-food business, Dr. Kim Bryceson also assesses that e-readiness and knowledge management are the other roadblocks to establishment of a global e-landscape for agrifood business.

## **E-Business Impact Definitions and Conceptual Discussions**

Chapter 13, by Dr. Lan Yi, investigates Information and Communication Technologies (ICT) in organizations and the impact to the carbon emission. In his research agenda, Dr. Yi introduces the Internet's lifecycle starting from manufacturing of Internet equipment/hardware to its usage and final disposal. This chapter highlights the importance of the environmental factors and the decisions made by organizations when implementing e-business applications.

In the next chapter, Dr. Sharon Nachtigal explores in a more overarching manner the concept of e-business, its development, implications on organizations, and its barriers. She also discusses the general principles on how organizations overcome such barriers. The chapter first discusses e-business and its impact on the modern business and social environments involving practitioners (i.e. executives, developers and users). This is followed by descriptions of changes in the business world, based on the premises that integration of information systems (IS) into the business environment is crucial, involving examples of variety of e-business models the e-business characteristics.

Next, the chapter by Dr. David Anyiwo and Dr. Sumana Sharma introduces the readers to a large scale deployment of Web services and e-business technologies in general, and discusses the decision making processes of e-solutions impacted by security standards, business continuity planning, and cyber legislation. Their research indicates that eight measures needs to be embedded, which are: employee training, introduction of innovative approaches, incorporation of user feedback, implementation of "the triad" (confidentiality, integrity and authentication), high quality data encryption techniques, maintenance, and implementation of a security culture.

Following, in Chapter 16, Dr. Sharon Nachtigal explores e-business security tools including software landscapes and organizational tools, describing the need for more e-business functionality integrated to the organizational processes. She challenges the traditional notion of relying on software rather than organizational decision making. In this chapter the discussion revolves around academic research papers and cases from real-life e-business security flows. Furthermore, this chapter discusses the major e-business security challenges, evaluates the current e-business security requirements for organizations, challenges this notion driven towards a process-based security, and presents alternative approaches to e-business security.

The final chapter is introduced by Dr. Wilhelmina Djoletto with four cases in the USA where the application of e-business etiquette is analyzed as part of decision-making procedure and assesses the success of organizations and institutions as e-societal members with the use of e-business tools. Her research addresses that evaluations of e-etiquette must be conducted to inform decision makers on the enhancement, which will impact the application of e-business solutions. The cases include two private and public institutions.

## FUTURE DEVELOPMENTS

Trying to forecast what future developments hold for e-business applications is, like any area, a risky business; rather than forecasting, based on the contributing authors work, we have seen that there are learning opportunities from e-business applications and their impact on diverse public and private organizations. We tried to combine our learning into three distinctive areas;

- Divergence of contextual settings: although in the same industry, the higher education and e-business technologies applied within the education sector indicate a divergence. In which, the applications have been used as standalone tools to gather information and data, to an interactive learning platform. Although there are curriculum development platforms such as those based on UK Higher Education, a further research agenda might be to explore to what extent these networks or EU-wide teaching platforms have an impact in creating a coherent basis for the use of e-technologies in higher education.
- Need for integration of platforms in a regional global context: the research on agri-food business and health providers indicates that the e-business tools have a rather limited impact if used as standalone system, and not integrated, neither regionally, nor globally. A further research agenda might be necessary for the evolution of such networks and their benefits to each industry.
- Increasing the inclusiveness of service providers: the chapter on banking, microfinance and e-etiquette indicates that the societal aspects of e-business applications allow a more inclusive distribution of information and resources capability. It would be interesting to see whether the models generated in this chapters could be replicated in other areas in testing the inclusiveness of the research agenda.

The above mentioned further developmental areas are just of some of the issues, which were inter-linked in the edited book, but are not limited to other subject areas. This was also one of are main goal to create a cross-disciplinary book with academic and practitioner contributors, to provide case studies on e-business applications impact. Our hope is that this edited book can partially open the doors for further research areas and generate new inquiries.

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## ENDNOTE

- <sup>1</sup> The transformation study is a result of “Manufacturing 2000,” which is a collaborative project between leading multinational companies (including automotive companies such as Volkswagen/Audi) and the International Institute of Management Development (IMD) in Switzerland. The results have been published in “The Transformation Imperative” 1996 by Harvard Business Press.