Preface

There have been significant changes in the field of the main topic of this volume during the recent decades. These changes triggered the emergence of a new type of economy—the digital economy—on the one hand, and on the other hand, worldwide scholarship has reflected these developments by increasingly publishing results of research on this issue.

Understanding digital economy in its totality is a difficult task, since there are so many facets to this phenomenon. The development and mastery of digital computing is most important for the new digital economy. Innovation is a broad concept. Innovation is not in contradiction with tradition. Any type of entrepreneur, even when working in traditional sectors or in businesses with strong traditions, such as family businesses, can be innovative with the product, the production process, or any aspect of doing business. Today, businesses operate in international markets while policy makers focus on a territory. Very often the effect of a policy is felt beyond the territory of the government. The specialists agree with the idea that the core changes caused by the digital economy consist in creating an environment that encourages and rewards innovation.

According Bayer and Gann or Chell and Baines, business innovation processes require access to new resources, including competence, which are frequently tapped from external sources. Many, therefore, consider better access to such external resources to be a vital policy instrument to support the innovative capacity of the business sector, especially for smaller enterprises. The term innovation system has often been used to describe the interaction between an individual firm, on the one hand, and firms and institutions that can provide such resources, on the other hand. Innovation systems have received attention from researchers as well as policy-makers as possible instruments for improving the innovation capacity of enterprises. It is imperative that innovation systems are developed with a thorough understanding of how enterprises utilize external resources in their innovation processes. Furthermore, the innovation is the ability of a country to create and absorb new technology and implement such technology into economic production: a crisis can also be viewed as an opportunity to promote long-term economic success by innovation processes.

A successful digital economy is essential for economic development and advancement and it offers new opportunities for businesses at a larger, potentially global level. At the same time, this type of economy can provide opportunities to reduce business costs, to engage more efficiently with suppliers, to expand and better serve the customer base. More and more businesses are using the Internet to open new electronic markets where prices are more transparent. The impact of the digital economy will also include new emerging uses of innovation technology. The scholars whom I present in the following pages agree that a world-class digital infrastructure is a key input for our future. However, its future cannot be predicted except to say welcome to new surprises!
As suggested by its title, the *Business Innovation, Development, and Advancement in the Digital Economy* volume displays various cross- and multi-disciplinary approaches. The volume is intended as a place for exchanging ideas and for substantial dialogue between specialists from various economic disciplines. Without attempting to be comprehensive in the following, a special consideration will be given to articles proving an in-depth understanding of the digital economy phenomena. Against the background of the complex landscape of issues in the field of digital economy, the volume explores several known or lesser known research directions while approaching topics on which much has been written, but never enough. Thus, the book provides specialists and the public in general with a valuable collection of theoretical reflections and practical implications on a highly debated issue under the economic, social, or psychological aspect.

Therefore, the 18 papers published in the second volume IJIDE invite any reader to explore the main factors that contributed to the configuration of the digital economy: emergence of new e-commerce business opportunities for mobile content, apps, software applications, location-based services, shopping on the fly, and mobile payment, continued explosive growth in Web 2.0 services and expansion of social marketing opportunities, rapid growth of the mobile digital platform, including smartphones, iPads, netbooks, and e-book readers, coupled with 4G cellular network expansion, Web 3.0 and the Semantic Web continuing to inspire technology firms and entrepreneurs, growing consumer resistance to behavioural targeting of ads as the practice expands across the Internet.

On the other hand, the content of the volume presents, due to the diversity and novelty of information, analyses, and conclusions, a different view on the subject when compared to previously published volumes. The readers are invited to share information about what the digital economy is in “the real world”: its concepts, characteristics, challenges, advantages, and disadvantages. This volume is not intended only as a source of documentation able to provide specialists with provocative ideas about the digital world, but also as a starting point for finding answers to demands posed by today’s world. Therefore, the volume *Business Innovation, Development, and Advancement in the Digital Economy* is designed to serve as a resource for all those interested in the digital economy: one should note that in this type of economy, consumers’ demands direct their attitudes, beliefs, and values. Therefore, innovation in business is the general opinion of the authors, a factor of economic development and progress, and a necessity that produces effects at all levels.

The papers included in this volume explore two core themes, which represent different dimensions and images of the digital economy. The first core theme is business innovation. Innovation can be defined as new or innovative solutions in international competition. It provides a small competitive advantage by offering, for a period of time, a monopoly to exploit a unique trait obtained as a result of innovation. Furthermore, systematic innovation is probably the only indispensable lever for sustainable competitive advantage, especially for small and medium enterprises. Business issues in the digital economy are circumscribed mainly within the confines of questions on the nature, existence, effectiveness, and coordination mechanisms of the firm. In addition to these questions, one deals with the concerns arising from the changes occurring in companies with regard to human resources, innovation, globalization, governance, and borders. The authors of the papers in this volume propose practical solutions to the need to implement new innovative technologies that help enterprises adapt to changes in the markets as well as to exploit digital market opportunities.

In the studies concerning the second core theme, namely the evolutionary perspectives on performance of business in the digital economy, one encounters explorations of the divergent developmental trajectories, variations in economic structure, and governance issues generated by the growth of the digital economy. Furthermore, different factors influencing development and advancement in the digital
economy are closely looked at: the use of IT and telecommunications technology within educational environments, using new technology effectively in organisations, the digital divide, and the effects of digitalization. Business network or networking consists of a set of firms legally independent, which develop between multiple, complex, and permanent human, informational, commercial, technical, and financial, etc. relationships, which enable them to achieve and commercialize jointly market products and services on a superior price/quality ratio, based on more efficient capitalization of knowledge and resources available to component organizations.

Moreover, the contributions in this volume argue also for the idea that the digital economy is an alternative able to provide better guidance to create a world meeting the requirements of the present generation. The various examples given in the course of the debated issues are characterized by practical relevance, often inviting the reader to reflect on possible future research.

Many papers included in this book were selected by Rauno Rusko, who was guest editor of the International Journal of Innovation in the Digital Economy for a special issue on Knowledge Intensive Business Services. One can read this book from beginning to the end or one can start with the section that has the most interest for one’s own concerns. Regardless of choice, I wish to provide the reader in the following with an overview on shared problems and concerns of Business Innovation, Development, and Advancement in the Digital Economy.

As I mentioned above, the first part of the book includes some papers on the core topic of joint business innovation. Today, as organizations become increasingly virtual and use a sophisticated array of multimedia meeting systems, what is missing to distributed requirements engineering? A virtual enterprise can be described as an opportunistic temporary alliance of several companies, pooling skills, competencies, and resources to better respond to business opportunities and whose cooperation is based on the use of computer networks. A virtual enterprise is intended to be an organizational form that gives the best by a combination of synergistic core competencies of individual partners to create a maximum degree of customer satisfaction for a specific project. Several manufacturing companies in the network appear to customers as a single entity. I believe that it is exactly what Vanita Yadav in “Research Review: Globally Distributed Requirements Engineering and Agility” addresses, namely the timely need of reviewing the literature on globally distributed requirements engineering. Starting with an in-depth literature review, the author discusses further emerging directions for future research according with the agile development approach. Moreover, Yadav explains that this method, unlike the traditional plan-based approaches, enables the investigation of factors that are likely to impact success in this area. The paper presents an innovative approach to globally distributed requirements by reviewing the literature on the applicability of the agile development approach in a globally distributed settings and surprises through the thoroughness with which the results support all hypotheses.

The key message of the paper “The Financial Related Analysis on Sales Management and Human Resources by Means of BI Type Solutions” is that Business Intelligence (BI) solutions have become indispensable tools in the management of any company. Particular attention is paid to the capacity of Business Intelligence to improve the organizational performance, offering valuable information to all the parties involved in the business. Luminița Serbănescu and Magdalena Rădulescu present a BI solution, implemented through QlikView Application, thanks to which it is possible to analyse the employee expenses and management sales. The paper focuses also on the “who” and “why” Business Intelligence is needed in the activity of a company. The authors have implemented their methodical framework as a computer-aided tool and provide an evaluation example. The results reveal that the Business Intelligence product offers informational support to the decision powers in the Human Resources and “Sales” departments.
The focus of the paper “The Development of ICT for Envisioning Cloud Computing and Innovation in South Asia” is on the fact that the deployment of ICT is greatly related to improvements in a country’s economic performance. The aim of the paper is to illustrate the implications of cloud computing in South Asia in relation to ICT deployment. The author, Sheikh Taher Abu, pursues the question of how ICT deployment helps South Asian countries to adopt cloud computing concepts and innovations, such as Web 2.0, Health 2.0, and Education 2.0. The paper makes an interesting contribution regarding increased capacity and adds capabilities based on mobile technology to adopt the concepts of Web 2.0, Health 2.0, and Education 2.0 throughout South Asia. After a critical analysis of techniques and models recognized in area of the chosen topic, the author extracts the economic substance, which he interprets in a personal manner. Based on a set of empirical data, the author concludes that ICT penetration differs from country to country in several respects, except with regard to mobile phones.

In recent years of digital economy businesses are conducted over the Internet and thereby information technology and information systems are used to gain competitive advantage. As such, it is critical to understand the role of information systems in the organization in order to develop appropriate strategies and plans for effective use of these technologies for business and management purposes. Because proper rationalization is a practical discipline, the paper “Information Systems Usage in Business and Management” offers many suggestions with practicality in the real world regarding the role of information systems technology in business activities and management functions. Dr. Mihane Berisha-Namani explains that using information is essential to make decisions, set priorities, and improve the quality of business and management processes. Thus, the paper emphasizes a practical component, which provides managers and researchers with a framework of effective use of information systems for business and management purposes and offers an alternative approach to investigate the impact of new technology in business and management of organisation.

Vincent Didiek Wiet Aryanto and Agnes Advensia Chrismastuti examine in the paper “Model for Digital Economy in Indonesia” the early development of digital economy in Indonesia. The authors explain why variables, such as e-distribution channels, online value creation, online products and services, and online infrastructure, were utilised to develop a model of digital economy in Indonesia. This paper is focused on the investigation of the business model of digital economy and its role in the economy of Indonesia. One can also find here a detailed model for the digital economy for Indonesia, which shows how this model has been analysed in regards to the presence of the Internet in business, the use of Internet-based marketing (e-marketing), e-banking, and e-commerce. Although they do not resort to an easy approach, the authors clarify why the study results indicated that the development of the digital economy in Indonesia is still in its early stages. The authors interpret the results of the two sides of the paper (theoretical and practical) and propose concrete solutions, founded by the used instrumentation.

Päivi Eriksson, Elina Henttonen, and Susan Meriläinen illustrate in the article “Managing Client Contacts of Small KIBS Companies: Turning Technology into Business” in a remarkable manner the main elements concerning the critical factors for the management of client contacts in small new-technology-based services (T-KIBS) companies. The points of departure for research are set by seeking answers to questions such as: how client contacts are managed and services co-produced with clients in four Finnish case companies, and how client-oriented multi-competence is a core asset in turning technology into business. The authors argue in an original manner that one critical factor for the management of client contacts in the case study companies is recruiting and partnering with people who are willing to make close contact with clients and open-mindedly listen to the ideas and needs of clients. Based on these results, the authors show that although every company has its unique way of managing its client contacts, they all use their client contacts as a vehicle in turning technology into business.
The paper “Operationalizing the Concept of Success in Software Engineering Projects” written by Marko Ikonen and Pekka Abrahamsson displays an innovative approach and the ability of the authors to investigate successful management of software development projects, a subject that is especially relevant for knowledge intensive business service companies acting as software suppliers. Moreover, the authors do not confine themselves to a strict presentation of the theoretical framework in the research field dealt with, but interpret the concepts and theories used in terms of their rationality and even supplement them. After reviewing the fragmented literature on project success in software engineering research, the authors construct a holistic project success model for software development projects and then evaluate it empirically in the context of a large multinational software corporation. This model was found with practicality for knowledge intensive business services organizations acting as software suppliers because the model provides a way to reveal and correct problems in software development projects. This in turn can then improve the project outcomes for customers and increase the organizations’ profits. As a result, the authors suggest that by providing a way to understand success in software development projects, the proposed model can help knowledge intensive business service organizations to improve their project practices and increase their capabilities in running successful projects.

The article “Tripartition of Knowledge in Knowledge-Intensive Services” reveals complex and relevant information to readers on a new conceptual classification of knowledge in the context of knowledge-intensive services. The authors Tytti Kurtti, Sampsa Määttä, Jukka Aaltonen, Annamari Turunen, and Sari Riipi advocate for classifying knowledge into three classes: explicit, implicit, and tacit. The paper is full of arguments aimed at showing that it is possible only to transform implicit knowledge into explicit knowledge. Tacit knowledge cannot be transformed into a visible form, nor can it have a material shape—it is permanently tacit. Therefore, knowledge tripartition offers clearer interfaces between different types of knowledge. Tytti Kurtti et al. argue that tacit knowledge always stays tacit, implicit knowledge should be written down in case it is really needed, and explicit knowledge should be accessible and properly stored. The article provides an important understanding about an issue underlying all knowledge-intensive business services, i.e. knowledge.

With a constant concern for details, Rauno Rusko presents, in the paper “Virtual Business Incubations: An Alternative Way to Develop and Service Peripheral Areas - Case Study of Tourism in Finnish Lapland,” virtual business incubations as an important but little studied type of knowledge-intensive business service. Departing from the viewpoint of the tourism service provider, the article takes a customer and societal perspective to knowledge intensive business services. Based on the notion that most services provided by traditional, location-based incubations can be provided virtually and that with virtual incubations it would also be possible to avoid the societal problems caused by traditional incubations, the author argues that virtual incubations would be better or even the only way to serve companies in peripheral areas. The Tourism branch in Finnish Lapland is used as a case example to illustrate the potential of virtual incubations for developing peripheral areas. It is important to notice that migration of firms and people from peripheries to economic centres will increase the inequality between geographic areas, decreasing business activities in peripheries and increasing them in economic centres. For development work of peripheries, this inequality is a very serious problem.

“Innovations in Mobile Broadband in Japan and its Implications to Developing Countries” is an article that discusses how mobile phones with IP functions offer diversified services, influence people’s daily lives by changing their ways of communication and interaction by adopting mobile broadband. Throughout this paper, Sheikh Taher Abu states that it is difficult to predict the functionality of the next generation mobile networks, but one thing is certain: that it is associated with IP data casting. It is widely accepted that the mobile broadband innovation bear witness to dramatic changes in telecommunication
technology and services, especially in 3G mobile phones. The empirical findings of the study are based on a survey of 288 observations comprised with three major mobile phone operators in Japan from 2000-2007 in the provision of both second (2G) and third generation (3G) mobile phone adoption. The article also emphasizes a practical component because it presents brief recommendations for India’s 3G mobile phone adoptions in terms of opportunities, challenges, and policies, which drive growth.

From a general perspective, companies have already created unconventional and new businesses models that can be directly attributed to Web 2.0. Starting from this reality, the paper “Web 2.0: How This is Shaping and Changing the Traditional Business Model” focuses specifically on the implications that Web 2.0 has on business and on the way business needs to embrace this new medium in order to both survive and succeed in today’s highly competitive marketplace. The readers can find discussions that cover issues like the importance for a business organisation to embrace this virtual paradigm shift, brought about through the emergence of Web 2.0. Examining the advantages and disadvantages of using Web 2.0 as the way companies conduct business, the authors Sumarie Roodt and Roberto Viola address the problem stated above by identifying the effects that Web 2.0 has on today’s business organisation and how it is shaping and changing the traditional business model into a more appropriate business model suited for the business organisation of tomorrow.

A paper included in the thematic area of innovation is “Technology-Push or Market-Pull? A Model for Managing the Innovation Process in Malawian Firms” written by Edwin Saidi. This paper investigates how Malawian firms manage the process of innovation in the development or introduction of Information Technology (IT) products and services and proposes suitable models, which firms can adopt in managing and strategizing around technological innovation in the Malawian environment. The findings of the author suggest that, while firms must adhere to specific models of innovation depending on the business sector in which the consumer of such products or services operate, it is generally useful to take full advantage of the linear market-pull model and the conceptual framework of innovation to understand the needs of the marketplace and combine those needs with the firm’s Research and Development (R&D) capabilities. The author considers that it may also be worthwhile for firms in Malawi to develop and adhere to hybrid models of innovation (technology-push, market-pull, or conceptual framework of innovation) that are contingent on their own specific situations.

According with Avimanyu Datta, the author of the paper “Information Technology and Firm Innovations: A Review and Extension Explicating the Role of Networks, Capabilities, and Commercialization of Innovation,” in order to extract strategic value from IT, firms have to apply IT capabilities to harness and exploit their knowledge capabilities to continually innovate their business products, services, and processes. Based on these considerations, the author launches the idea that innovation firms represent a combination of three constructs: networks, capabilities (absorption capacity), and Commercialization of Innovations (CI). Datta suggests that the knowledge-based integrative perspective used in this study is much needed in today’s environment where competition becomes a learning race while knowledge base is increasingly complex and wide-spanning across many organizations in the industry. Therefore, his paper argues that it is important to provide a framework comprising the research agenda explicating the relations between IT Capability and Firm Innovation. The paper contains a comprehensive documentary basis, a complex volume of information that is processed thoroughly, the author addressing in an integrative manner a rich and suggestive body of specialist literature. Data used are topical, refer to issues addressed in the paper, have representativeness and utility value for analytical approach.

The second part of the book addresses issues related to economic development. It is widely accepted that within the digital economy the use of information and communication technologies has become the primary driver of economic growth. The economic, social, and political landscape in which future
development will take place has therefore also changed. Training in university and investment in specialized information and communication technologies professionals is central to capture fully the benefits of the new economy.

In “Economic Growth, Technical Progress, and Labour Productivity: Knowledge Economics and New Forms of Technical Progress” by Alain Herscovici, the main concerns are differences in performance of new enterprises started by the problem of deindustrialization from the development of different forms of intangible capital. Herscovici specifically focuses on the analysis relationship between technical progress, gains in labour productivity, and economic growth, which most of the macroeconomic analyses posit. The study is based on two paradoxes: the paradox of Solow, which calls into question the relationship between information and communication technologies investment and productivity gains, and the paradox of Gordon, showing that productivity gains in the information and communication technologies sector do not propagate to all other sectors. One should note the commuting between theoretical and an empirical approach all through the paper and the manner of discussing the validity of the hypothesis regarding the crucial role of industry in the process of long-term growth. The dense content, the accuracy of formulated ideas, the creative use of statistical and econometric tools make the presented research work authentic and valuable. The authors’ conclusions from their analyses indicate that the discussions about the role of industry in the dynamics of economic growth must redefine the general problem of deindustrialization.

The aim of Ali Asghar Pourezzat, Ghazaleh Taheri Attar, and Sayed Mahdi Sharifmousavi in the paper “Application of Era-Based Cellular Planning for Development of E-Government in Developing Countries” is to demonstrate that in order to overcome the specific challenges of EG development in developing countries, one needs special policies. The authors argue that application of era-based cellular planning is one of the most efficient methods of planning for development and establishment of EG in developing countries and is less vulnerable compared to other strategic planning methods. However, although rules may be broken, at the same time these countries are faced with serious challenges in planning and directing project, determining specifications of system, supplying budgets and limitations of providing technology from other countries. In this contribution it seems that application of era-based cellular plans is one of the best ways of developing EG in developing countries. As it was emphasized by the authors, Era-Based Cellular Planning Systems (ECPS) provide the possibility for developing countries to follow EG development using non-linear processes to plan, establish, and implement it.

M.B.M. Sekhwela discusses, in “Research and Output Management in Digital Era: Emerging Challenges at UB,” the implementation by the University of Botswana of a strategy of development of research and output management infrastructure in order to promote digital scholarship. The author claims that the university plays a central role in the development of a policy framework, subsequent research, output management infrastructure, and associated processes. Sekhwela explains that using new technology effectively, like information and communication technologies, is essential to prepare students for its increasing demand. Therefore, the paper argues that emerging challenges at the University of Botswana (UB) require high resource for the strategy “Shape Our Future.” The results suggest that the University of Botswana found open source wares coupled with adequate human resource development for self-sustenance in information and communication technology.

“Creativity as a Predictor of Business Performance: Empirical Investigation of Selected Undergraduate Entrepreneurs in Nigerian Universities” by Olu Ojo has the aim of improving our understanding of whether there is a relationship between undergraduate entrepreneurs’ creativity and business performance. It was observed that there is a positive relationship between creativity and business performance as seen from the values obtained from the coefficient correlation analysis. The empirical part of the study tries to examine creativity as a predictor for business performance with a focus on selected university un-
dergraduate entrepreneurs in which questionnaires were administered to them to ascertain their various views with regards to creativity as it affects business performance. A significant outcome of this paper was undertaken by the author in order to make recommendations that would help to improve business activities and thereby reduce the unemployment problem in the country. Ojo concludes the paper with a reflection regarding the recommendation that universities should widen their curricula to include core courses that encourage creativity, lateral-thinking, brainstorming, and problem solving as well as entrepreneurship development.

As indicated in the title of the paper “Towards Reducing Common Ergonomic Hazards and Alleviating Techno-Stress Associated with the Adoption of Information and Communication Technology,” Ayodeji Akinlolu Agboola investigates a subject, which continues to generate intense debates among academic society. The paper examines how to alleviate ergonomic hazard and techno-stress associated with the adoption of Information and Communication Technology (ICT) from the University of Botswana. Agboola suggests that it is imperative for the university to adopt the provisions of occupational health and safety policy to harmonize the environment, tools, and workers to achieve maximum efficiency and optimal performance. Therefore, this study takes interest in understanding the importance of the organizations adopting technological innovations for competitiveness in the knowledge-based economy. The need to maintain an optimal balance between the utilization of the attractive features of ICT and ensuring human needs for safe and efficient working conditions have become a phenomenon in modern public and business organizations. Practical implications outlined include such issues as the need for the university to hire ergonomics consultants to provide the knowledge on ergonomic design solution. Finally, policy perspectives are discussed.

This overview of the content of this volume outlines that each contributed paper contains elements that have the potential to open doors for future research. Certainly, debates on digital economy are still going to be held by many scholars in the future, and some conclusions and assertions made by the authors of the papers in this volume are going to be completed, improved, or developed further. Still, the scientific project undertaken in Business Innovation, Development, and Advancement in the Digital Economy stands out due to the conceptual harmony, the highly important and intriguing addressed topic, and the intense dialogue of ideas on the complexity of the various dimensions of the new economy. Each of the chapters in this volume draws attention by the originality of the authors’ contributions, the fluency of ideas, the laborious way of structuring the content, clarity of language, and by presenting the arguments in a permanent dialogue with the already established opinions in this research field.

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