Preface

Readers of this book should be advised from the beginning that the book in their hands is important for at least two reasons. The first is that it contains sixteen good chapters published in the first volume of the *International Journal of Innovation in the Digital Economy*, and this of course could be a very good and even scientific reason for any interested reader to get inside the content. The second, which is something that perhaps doesn’t belong here, is that this book is a complex of feelings, hopes, challenges and will power, all of these coming from the heart of a young and very determined team that worked hard, together with the editors of the journal, to promote ideas, beliefs, and principles; to raise questions and to give answers; to address problems and to promote solutions. This editorial preface is, above all, about people and then about information, as the scholars who contributed in the first instance to the *International Journal of Innovation in the Digital Economy* were specialists concerned with the impact of their findings, of their ideas, upon the worlds they were coming from.

As the title of this book suggests from the beginning, page after page the reader is invited to get into the meanings of the Digital Economy, with all its concepts, specificities, challenges, advantages, and problems. This is a book about how digital economists view the world, about how their eyes reflect today the new possibilities provided by technological changes and new communication opportunities. This is also a book about the rise, and sometimes the fall, of hope among people, and about how human living can be improved, or not, with every step into the new world of digitalization. The aim in this book is to help the readers, specialists and non specialists, to better understand the world we are living in today.

Perhaps my first initiative in writing this editorial preface should be to try explain why this book is worth being bought. But the first initiative should equally be to explain why the topics that the book addresses are important, not only as a specialist in Economics, but also as a human being, for family, for friends and for all of us who are living in the days of deep and rapid technological changes. Perhaps the preface should explain why to bother with the Digital Economy and why innovation in this context should be of interest in a world where what is needed can be bought at any time in terms of telephones, laptops, iPhones, and so on; when Google can address any subject at hand; when work can be done from anywhere. These are only a few of the advantages (or disadvantages?) that become an ordinary reality for most in the era of digitalization. Are the digital economists concerned with other issues than consumption and cheap production? Is the Digital Economy of any impact, in respect to broader perspectives, in social living? And is there any Digital Economics that should be considered that may differ from current Standard Economics in terms of new principles, new rules, new values, and attitudes?

All these questions, and many others, have been addressed in the chapters proposed as possible contributions during the years this preface author was editor in chief of the *International Journal of Innovation in the Digital Economy*. Perhaps this is the first time in the pretty long life of Economic Science when both the theoretical findings, as well as their practical implementations, are challenged by new
perspectives over resources, human needs, organizational aims, processes, and technologies. Also, they are challenged by deeper and more controversial goals that stress opposite aims—social versus economic, human versus monetary—and invite everyone to become aware of what is wanted today versus what is needed to have tomorrow.

Speaking about the Digital Economy is not an easy task, irrespective of the topic taken into consideration. Its complexity and its specificities justify the challenges that the researchers confront within their attempts to define, to characterize, or to measure it. Various aspects have to be taken into consideration if one wants to properly understand the concepts, the structure, and the mechanisms that drive this sort of economy in an ultimate goal to comprehend its meaning and impact at the social level. The specialists agree with a number of main areas that should be analyzed in order to provide a good understanding of the Digital Economy. Firstly, it is about some key components such as e-commerce, the introduction of computers and related technologies at the workplace, or other issues related to infrastructure. Secondly, as Haltiwanger and Jarmin (2002) speak in their chapter “Measuring the Digital Economy” published in the edited book “Understanding the Digital Economy: Data, Tools and Research,” it should be about “changes that occur in the structure and functioning of the markets, including changes in the distribution of the goods and services and changes in the nature of international and domestic competition.” Another issue that is of a great importance relates to the social and economic implications of the IT revolution. This is the point when it should be stated that, from a standard economic perspective, this aspect may be strictly related to what economists think as the production–consumption ratio, productivity, et cetera. There is a wide range of studies addressing this subject, and most of them are welcomed and relevant. Above all, there are concerns regarding less observable effects that are not as easy to be captured in models or in general theories. Subjects such as digital divide inclusion, acceptance of or resistance against new technologies, digital education, and psychological mechanisms that protect individuals against the rapid changes in social and economic environments are some of the topics that make the researchers less comfortable with the studies that should be conducted in order to provide a clear perspective of what the Digital Economy means and what effects it produces at various levels.

In dealing with the Digital Economy research, practitioners are accustomed to addressing issues such as its contribution to the GDP, ICT availability, the specific regulation, measures, and policies that aim at improving the infrastructure intended to support the development of this new type of economy, as well as its benefits over humanity. Additionally, there are voices and interdisciplinary approaches that invite awareness of the big pressure that this process of digitalization puts on our lives as well as on our physical resources. Specialists in Neuropsychology, and also researchers in Neuroeconomics, warn about the fact that our brains are designed to process less information than they are constrained to process today, and that the rapid changes faced every day result in a pressure that makes us less productive, less adapted, less able to deal with our own living environment. There are no doubts that the value of the new economy is well understood, the one that roots in information, in technology, and in communication. But researchers must also be aware of the interaction of the two dimensions referred to above and of their implications. There is an important body of literature discussing the psychology of the resistance against change and against innovation. Apart from the benefited, theoretically predicted, and practically obtained from the Digital Economy, a number of side effects must be considered that ultimately convert into social costs.

The book brings into discussion some of these challenging issues, and it addresses four dimensions. In the first section, some of the fundamentals of the Digital Economy are discussed in terms of concepts, mechanisms, and drivers. The education system and how it contributes in supporting and expanding
the digitalization and its usage is the main concern of the second section. The third address two very difficult and challenging problems: the digital divide and digital inclusion. Some concrete effects of the digitalization are analyzed in the fourth section of the book.

As mentioned above, the first part of the book includes some chapters that address subjects related to the overall structure and basic components of the Digital Economy. The first chapter illustrates in a remarkable manner the main elements regarding the process of digitalization, with its mechanisms and challenges, with old and new models of economic science approached in view of the fact that information, knowledge, and cognizance tend to become the main resource of this new economy. This chapter provides in an original and rather unusual manner some of the most important economic ideas put in a new light which emphasizes the particular personality and subtle analysis ability of Bhekuzulu Khumalo, the author.

The advantages of the information and communication technology, as a direct result of innovatively approaching the old management tools regarded in the context of the new economy, are emphasized by Rauno Rusko, the author of the second chapter. “Supply Chain Management” seems to be for the city of Olu, Finland, the starting point for the interdisciplinary and multilayered research regarding a community in which digital economy proves to be welcome as a direct participant to the economic and social development. The author’s seriousness and strictness, particular to the Northern countries, are the basis for a well structured chapter, the valences of which can be used in more ample and thorough researches.

Of a much more technical nature than the previous ones, the third chapter highlights more specialized aspects, directly connected with the legislative system and its amendment following the removal of physical barriers in the economy. Electronic commerce, an important source of profit for companies of all sizes and an irresistible temptation for entrepreneurs due to its undeniable advantages, calls for a new vision on tax issues. The author of this chapter, Subhajit Basu, provides complex and relevant information to the readers on the challenges faced by the tax system in connection with the electronic commerce activities, directly arising from the opportunities created by the digital economy by innovative approaches.

The second section of the book addresses issues related to education and the educational system. It is widely accepted that the use of IT and telecommunications technology within educational environments has increased dramatically over the last years and that it will keep increasing in the future. This is now an “open decade,” where open education is part of the benefits of the Digital Economy. Its importance is highly recognized, and its impact on living standards is the subject of a permanent research.

The first chapter of this second section begins by highlighting the basic element on which any economy, regardless of its nature, is built. In a society where information tends to become the main production factor, the role of education is increasingly more important as a social factor. The higher education system, with its organizational structure and its potential to train future participants on the labor market, as well as its limitations and challenges are described, with direct reference to the case of South Africa. The authors, Prof. Stephen Mutula, PhD, and Daisy Jacobs, PhD, both actively involved in the organization and development of the education processes by the academic and administrative positions they have in their respective universities, portray the realistic image of the positive changes that could arise from approaching university management in view of using knowledge as the grounds for strategic planning.

The second chapter of this section, entitled The Middle Out Approach, presents a method to introduce ICT education in developing countries. Theo van der Weide and Nicole Flippen explain that the basic idea is to start at the level of a Polytechnic University by introducing an ICT program and an Education program with an underlying educational philosophy of learning-by-building. They then describe in the
chapter how the students build, maintain, and explore ICT infrastructure both on a personal and material level. The chapter emphasizes a practical component, which results in market-oriented products, but the authors also implement a valuable theoretical component, having a constructive and entrepreneurial flavor.

“University Education and Intellectual Property in the Digital Era: Whither Botswana?” is the third chapter of this section. John Kiggundu discusses the case of the University of Botswana, in the context of developing initiatives to protect intellectual property law and policy. More exactly, the author claims that the university plays a central role in the development of intellectual property law and policy and in the protection of intellectual property at the university and the nation at large. The need for the university to articulate its position on intellectual property issues so as to influence national policy and legislation as well as international developments in intellectual property in the digital era is also an issue discussed. Starting from the problem of the copyright as one of the main problems the university confronts, the chapter focuses mainly on issues arising in copyright especially in the digital era and how they affect the university’s core business. More exactly, the readers can find discussions that cover issues such as the duration of copyright, licensing agreements, the cost of digital information, and the preservation of digital information, distance learning, the protection of indigenous knowledge systems, and the development of intellectual property education.

In the fourth chapter, P. Thomas discusses the “Opportunities and the Challenges of Emerging Technologies in Higher Education: Future Directions,” and he indicates possible future directions of the process. He starts with the idea that recent unprecedented advances in digital technologies and their concomitant affordances in education seem to be a great opportunity to adequately address burgeoning demand for high quality higher education (HE) and the changing educational preferences. Dr. Thomas explains that using new technology effectively in HE is essential to prepare students for its increasing demand. From a general perspective, he turns then to a more applied approach and discusses the particular case of the University of Botswana where e-learning is an integral component of teaching and learning culture. However, teachers who are from a traditional educational system are often ill-prepared to change their role and adopt new technologies. Therefore, his chapter argues that one of the ways to achieve substantial pedagogical innovations is to bring a significant change in the understanding of the processes of the scholarship of teaching and learning (SoTL). The chapter explores new directions for conducting scholarly activities at the University of Botswana (UB) to address the needs of today’s students.

The third section of the book refers to the Digital Divide. It includes seven chapters carefully selected by Subhajit Basu and Stephen Mutula, who were the guest editors of two special issues of the International Journal of Innovation in the Digital Economy. In what follows, the preface retains their description of the contents as well as their perspective over the phenomenon. Subhajit claims that “the term “digital divide” has been used for almost a decade and typically relates to socio-demographic differences in the use of information and communication technology. The Digital Divide has been described by the United Nations as a “factor of exclusion from global exchange processes, restricting the development of intellectual capital, slowing down economic growth, and dangerously increasing the lack of understanding between cultures and civilisations.” Stephen goes further by saying that governments the world over are increasingly preoccupied with bridging the digital divide because they believe there is a direct correlation between low digital gaps and economic development. He also explains that “the digital divide has evolved from being perceived merely as disparities among people to access and is now perceived in the context of quality of access (broadband and/or lack of it), usage of ICTs and the content they contain, digital natives (early adopters), digital immigrants (laggards), and digital gaps occasioned by web 2.0 technologies such as social networking sites, RSS feeds, mobile communications, cloud computing, and
more. The digital divide continues to generate intense and robust debates among government, development agencies, academia and civil society.” Based on these considerations, the chapters they selected were described by the two guest editors as follows.

Sumanjeet Singh, in *Digital Divide in India: Measurement, Determinants and Policy for Addressing the Challenges in Bridging the Digital Divide*, focuses on India and explores the problem of digital divide mainly in rural-urban in this country. In the context of the chapter, he identified digital divide with teledensity, mobile, and Internet divide between the rural and urban areas. The chapter argues that the government should put thrust towards connectivity provision, content creation, capacity augmentation, core technologies creation and exploitation, cost reduction, competence building, community participation, and show commitment to the deprived and disadvantaged in order to bridge digital divide. A new form of digital divide is emerging both within and between nations that is due to inequalities in broadband Internet access.

The chapter by Yates, Weiss, and Gulati, *Universal Broadband: An Analysis of Global Stakeholders and the Pursuit of the Common Good*, examines the new digital divide that is emerging both within and between nations that is due to inequalities in broadband Internet access. To bridge the global broadband divide, organizations and individuals must collaborate to provide broadband access to a converged high-speed Internet for both rich and poor citizens worldwide. David argues that addressing this global problem is an ethical imperative that requires bridging the perspectives of multiple stakeholders and applying their resources, power, and will. Open Source software presents an opportunity to reduce costs, demystify the technology, and understand the design so that all users can adapt technology to meet their own needs. It is widely seen as the key enabler for developing countries to achieve technological self-determination.

Markus Pscheidt, in *Bridging the Digital Divide by Open Source: A Theoretical Model of Best Practice*, examines how open source software can be used as an instrument to tackle certain issues of the digital divide. He discusses how open source systems in institutions of higher learning in developing countries can be successfully and sustainably developed and implemented. The study is motivated by the context encountered in a development project to develop and implement an academic registration and information system (ARIS) for Mozambican Universities.

The fourth chapter part of this section is by Burns and Hewitt-Dundas, *Implementation of Discrete and Integrated IT: The Role of Organisational Structure and Culture*. Integrated organizational IT systems, such as enterprise resource planning (ERP), supply chain management (SCM), and digital manufacturing (DM), have promised and delivered substantial performance benefits many adopting firms. The authors consider the distinction and comparison between integrated and discrete IT, which tends to be overlooked in the implementation literature. They carried out an in-depth comparative case study of two IT projects which were conducted within a major aerospace manufacturing company. Their findings show that certain organizational characteristics were perceived to be more or less important and beneficial for integrated than for discrete IT implementation. The goal of development should be as Sen puts it “promotion and expansion of valuable capabilities” (Sen, 2000). Whether the global digital divide will be eventually bridged will depend on the questions of how the international community resolves the political issues of who governs the internet and on what terms? The fight against exclusion requires energetic action.

The fifth chapter, *Next Generation Networks: A New Digital Divide?* by Rohan Kariyawasam argues that the ongoing efforts by the industrialised world to upgrade current telecommunication and internet networks to Next Generation Networks (NGNs) with far larger capacities capable of delivering more advanced digital services (similar to the advancement of 2G mobile networks to 3G and the delivery of real-time video applications to mobile telephones) will exacerbate the inequalities between those who
have access to advanced technologies and those who do not, sometimes known as the Digital Divide. The author further observes that there is no one overriding definition of the term, the International Digital Divide with economists, social scientists, and lawyers often defining the term in different ways, though they in principle agree on factors that might influence its definition (access to telecommunication lines, the ratio of internet hosts to GDP, the level of development of the human capital base, etc.). The lack of a clear definition, the author argues, will have knock-on effects in the loan documentation of aid agencies involved in infrastructure development and capacity building. The author therefore provides a brief overview on the rise and structure of the internet and evolution to Next Generation Networks. This is followed up by setting out some basic indicators of the Digital Divide (linkages) and clarifying the significance of these linkages. Finally, various definitions of the Digital Divide available in current literature are reviewed so as to arrive at one overriding new definition of this most elusive of terms.

The sixth chapter, For All of our Languages we are Not Natives Here: Challenging the Idea of the Digital Native, Rethinking the Digital Divide, by Martina Gillen, seeks to explore the concept of the digital divide by critiquing the notion of the digital native and its relationship to the legal conception of technology transfer and sited knowledge. Martina explains that technology transfer is key in developmental issues currently facing the international community in general, and is the first and paramount step in bridging the digital divide specifically. The sustainability of a technology transfer is characterised and discussed in detail by the author and finally, she tells us how if the concept of embedded knowledge is further applied to the idea of the digital divide, then it becomes apparent that there is a socially damaging and a potentially ecologically unsound digital divide at work, even among those who are resource rich.

The seventh and final chapter in this section of the book, Deconstructing the ‘Digital Divide’ in Africa, by Stephen Mutula, examines the debate about whether the digital divide between Africa and the developed world is narrowing or widening. The author points out that the school of thought that believes the digital is narrowing points to Africa’s leadership in mobile phone growth in the world. The opposing views argue that access to technology is positively correlated to economic development and wealth creation, and since the dawn of the last century, the gap between the rich and the poor within and between developed and developing countries has continued to grow. The author argues that the debate does not seem to appreciate the notion that the digital divide is not about a single technology, but rather about a number of technologies (PCs, mobile phones, Internet, etc.) driven by a complex set of factors that exist beyond wires. The author, therefore, makes attempts to deconstruct the concept of the digital divide beyond access to PCs, telephones, Internet, and cable TV, arguing that the digital divide phenomenon as currently conceived is misleading and flawed, and so are the indices for its measurement. The author suggests that a new model for mapping the phenomenon is necessary if efforts to bridge the divide between developed and developing countries.

The fourth section of the book includes two chapters, which are intended to present some aspects related to a practical perspective of using the Digital Economy tools in business environment. The first chapter, Ethnographic Approach to User – Centred Evaluation of Telecentres, by Bidit Lal Dey, D. R. Newman, and Renee Prendergast, was selected by Subhajit Basu and Stepheh Mutula. The two guest editors described how the chapter uses an ethnographic approach to examine the services offered by two telecentres in Bangladesh. An intervention was initiated that enabled groups of farmers to use mobile phones to access services. Based on farmers’ experiences and opinions, the chapter develops a framework which explicates the dynamic nature of use and appropriation of ICT services.
The last chapter of this fourth section, as well as of the book, was written by Vanita Yadav and B.A. Metri, and is entitled *Outsourcing Contract Success: A Quality Management Perspective*. The two authors explain that despite the phenomenal growth in outsourcing of various business functions like Enterprise Systems outsourcing, IT outsourcing, and Business Process outsourcing, there has been relatively less attention given to the high-risk area of outsourcing contracts in the sense that contract has been the conventional medium for governing outsourcing relationships. Their study aims at bringing forward the importance of quality in the entire contracting process, involving contract planning, pre-contract negotiation, contract formulation, and post-contract management. Specifically, the authors explain the objective of the chapter is to posit a quality framework for planning and analyzing outsourcing contracts that will in turn help in achieving outsourcing success.

This editorial preface has achieved its goal if after reading it, the audience becomes aware of the fact that over the last decades, many of the fundamental principles and views in standard economics fundamentally changed, and the way economists conceptualize the world changed as well. There are many reasons for which to think that today, previous frameworks must be extended, along with previous goals and priorities, if economists want to fully understand and benefit from both the opportunities and the challenges the Digital Economy has created. The chapters in this volume examine various dimensions of the new economy, the one based on information, communication and technology, with the aim at providing the readers with a better understanding of some of the revised models of economic thinking, economic reasoning, and individual and organizational economic behavior. The social impact of the current tendencies in economic development is obvious, and the authors of the chapters provide not only theoretical approaches, but also practical implementation of some of the opportunities that the new economic context offers.

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REFERENCES
