Preface

Recent advancements of information technology and systems are altering both the economy and society in a rapid and unforeseen way. The exponential technological evolution of past, and the structural change in Information Technology/Information Systems, products and services, have led to a fundamental change of market structure. Free distribution of information, Internet convenience, and market choices boost business to invest in information systems and Internet applications.

Information consists of an interesting economic good that is produced, stored, distributed, traded, etc. It can be produced and consumed at almost no cost. Those certain characteristics distinguish it from other economic products and services. Information has now become a commodity that has resulted to value information as important. In order to be capable of measuring the importance of IT/IS, we need to study and predict their values. The key question is not why information (systems/technology) management is important, but why is and what makes information management valuable. Consideration of information based on financial (economic) data analyzes the economic extension and effect of information. Information creates economic value in firms along with operational and strategic advantages. Thus, exploring the value of information and its management is crucial to the success of firms. The process of making economically rational decisions was always a difficult task and in current days is becoming both more important and more difficult. Information has fundamentally altered the economics and business practices.

This book is a compilation of 22 chapters – contributions discussing the approaches and processes for managing the economics of information systems. These 22 chapters are written by 40 authors from all over the world, including many internationally renowned and experienced researchers and specialists in several disciplines and integrate contributions from academe, research institutions, and industry.

The book is structured into five (5) sections:

- **Section 1**: Economics of Information and Systems (including chapters 1-3.)
- **Section 2**: Business Value of IT/IS (including chapters 4-8.)
- **Section 3**: Information Security Economics and Consulting (including chapters 9-14.)
- **Section 4**: Strategic Information Systems (including chapters 15-18.)
- **Section 5**: Information Systems Change Management and Public Policy (including chapters 19-22.)

Chapter 1, “Information as Economic Good: Its Origins, Characteristics, Pricing, and Associated Legal and Ethical Issues,” by Shana Ponelis, introduces the book with an overview of the origins of the information economy, information as an economic good and the characteristics that distinguish it from other economic goods, the impact of these characteristics on the pricing and packaging of information goods, as well as some of the legal and ethical issues that pertain to information systems are highlighted.
Chapter 2, “Costs of Information Services and Information Systems: Their Implications for Investments, Pricing, and Market-Based Business Decisions,” by Steve G. Parsons, deals with the confusion in cost analysis due to the large number of cost terms in use regarding information services and indicates that this confusion can be resolved by focusing on decisions rather than on products and cost terms. This decision focus is consistent with the proper application of total cost of ownership approaches and the real options perspective for evaluating managerial flexibility. Author, also consider implications of big data for information services.

Chapter 3, “Measuring and Managing the Economics of Information Storage,” by Jakub Swacha, offers a discussion to the problem of measuring and managing the economics of information storage. Effective information storage management requires technical measures that can tell if a storage system uses the full potential of its technological capabilities. This chapter proposes a novel model of information storage system and a set of measures that can help aspects of information storage to be improved and to find out how much it is reasonable to spend on their improvement.

Chapter 4, “Improving the Business Value of IS,” by Sunghun Chung, gives insights of the growth in research of IS and it reflects the increased economic importance of the business value of information system. The chapter cover topics such as theoretical and empirical evidence on the business value of IS, the productivity using information technology (IT), the firm value with IT, IT and firm boundaries, IT outsourcing, and supply chain with IT.

Chapter 5, “Business Value of Information Technology: Measuring Performance and Sources of Profitability,” by Jorge Romero, continues the discussion of the business value of information technology, and then goes on to discuss productivity paradox studies and the different types of benefits of information technology including operational, tactical, and strategic. It also discusses when to intensify competition, or leverage advantages in a timely manner.

Chapter 6, “ICT Investments and Management for Organizations,” by Georgios N. Angelou and Anastasios A. Economides, aims to define the strategy for ICT investments, analyze, and evaluate it in a multiattribute perspective and find the business deployment that achieves a balance, for organizations, between risk control, investment’s flexibility exploitations and performance maximization. This chapter introduces the Balance Scorecard (BS) decision analysis framework and combines it with Real Options (ROs) analysis, in a qualitative and quantitative perspective, for modeling the business flexibility as well as for evaluating and controlling the ICT investments strategy.

Chapter 7, “Valuation of Technology-Based Companies: The case of Activision Blizzard,” by João Zambujal-Oliveira and César Serradas, presents the issue of valuation of a particular Technology-Based Company (TBC). Valuation is essential for justifying future investments in the company. This chapter assesses the corporate value of a technology-based company. By gathering information from historical cash flows and using Monte-Carlo simulations, the chapter generates future returns paths and primarily uses them for valuations by discounted cash flow methods. The methods provide investors with means to value technology companies that act in unstable markets and have volatile revenues.

Chapter 8, “The Role of Value Networks in the Design of Mobile Platforms: The Case of Apple iPhone,” by Mutaz M. Al-Debei, Anas Aloudat, Enas Al-Lozi, and Mohammad Mourhaf Al Asswad, exploits that the effective and powerful value networks are the key enablers of innovations in the mobile telecommunications industry. This chapter demonstrates, through the case of iPhone, how a powerful and well-designed value network is a critical enabler of innovations in the mobile telecommunications industry. Further, the chapter argues that cohesion, fitting network-mode, uniqueness, and dynamicity are four key value drivers of powerful value networks.
Chapter 9, “Knowledge-Based Economic Growth from the Social Context of Information Technology,” by Wolter Pieters, Christian W. Probst, Zofia Lukszo, and Lorena Montoya, comes to the issue of that if we understand well how to evaluate the effectiveness of security measures. And that is because attacks do happen, and decision makers face the problem of how to respond. Risk concepts are known in principle, but estimating the effectiveness of countermeasure proves to be difficult and cannot be achieved by qualitative approaches only. This chapter investigates which investment (or combination of investments) would be the most cost-effective one.

Chapter 10, “Identifying the Business Value of Information Security,” by Lucas Cardholm, follows the management process of information security. The chapter is aimed at providing information security professionals with a brief introduction to performing cost benefit analyses of information security investments and presenting them to management in order to bridge the gap between security professionals and business leaders.

Chapter 11, “Unethical Information Security Behavior and Organizational Commitment,” by Toshihiko Takemura, investigates that if there is a method that not only improves productivity of employees’ original dairy-tasks, but also improve their security awareness, the method would be ideal for the organization. As one of the methods heightening employees’ Organizational Commitment (OC). It investigates the relationships between unethical behaviors from the viewpoint of information security and OC by analyzing micro data collected from a survey for Japanese workers that the author conducted in March 2012.

Chapter 12, “Understanding Outsourcing of Information Systems,” by Luca Giustiniano, Lucia Marchegiani, Enzo Peruffo, and Luca Pirolo, proposes a new conceptual model able to explain the dynamics of outsourcing implementation. It analyses the extant literature that is beneficial for the greater management field, and not only for the Management of Information Systems (MIS). In addition, this chapter answers two main questions, relevant to researchers and practitioners: 1) What are the main findings so far in outsourcing literature? 2) What do we still need to learn?

Chapter 13, “Are IT Outsource Engagements Offering the Expected Values and Benefits? Can It be Delivered More Productively and Cost Effectively?,” by Dimitris Folinas and Jan Smit, discusses also the operational aspects within the Information Technology (IT) infrastructure outsourcing arena within the South African market segment. The study of this chapter was conducted through a narrative approach in the form of a structured in-depth interview process with 10 top executives in some of the largest organizations within South Africa. The results of research has shown that although these benefits are considered as values that outsourcing offers, organizations within the South African market do not feel that this is the case, especially when considering costs and skilled resources.

Chapter 14, “The Information Technology Audit,” by David Reavis, presents the information technology audit process and its components, the history of Information Technology (IT) auditing and outlines the qualifications needed for IT audit personnel. It is provided that as technology costs and functionality rise, many organizations risk losing the perspective needed to ensure that their investment in technology is appropriate and well spent. This chapter discusses some auditing techniques that may help any organization to test their IT functions to make sure that the outcomes are appropriate, given the costs of technology.

Chapter 15, “Accelerating Knowledge Adoption: Information Systems Change Management – A Perspective of Social Network Structure,” by Lawrenzo Hung-Chun Huang, Frederick Leslie Davy, Hsin-Yu Shih, and Chwei-Jen Fan, uses social network perspective to explore the knowledge behaviors of computer software developer. Because the knowledge behaviors is causal ambiguity, uniqueness, and imperfectly imitable, this study explores the team of computer software developer to exam the influence
of team structure in learning new technology. The finding of this study shows that controlling network redundancy can enhance knowledge diffusion efficiency and moreover if team fails to manage knowledge diffusion, they will offset the timing of competitive advantage in technological upgrade.

Chapter 16, “Performance Implications and Fit of Knowledge Management Strategy and Strategic Information Technology Management,” by Ray Yue-Yang Chen. The issue of fit is one of the top concerns of executives. Although fit between business strategy and IT strategy is a critical issue in organizational research, few studies address the issue of fit in KM field cause of the contingency researchers discovered that business performance involved something more complex components than isolated specific strategy factors that a more “holistic” configuration perspective needed to be concerned. Fit issues in the Information System (IS) field become a justifiable area. Thus, this chapter empirically examines the KM performance implications of fit between KM strategy with its Strategic IT Management (SITM).

Chapter 17, “Assessment of Strategic Information Systems Planning (SISP) Techniques from Requirement View,” by Abdullah Basahel, reviews Strategic Information Systems Planning (SISP) literature with a focus on the global dimension. In this chapter the author evaluates SISP techniques against Information System (IS) strategic requirements due to the fact that these techniques can be vital contributors in the IS Strategy (ISS) design process. The result of this research is the taxonomy of SISP techniques with a case study for X airlines. This classification can benefit the evaluation of ISS planning processes to support decision makers through the planning process.

Chapter 18, “Information Quality on Yahoo! Answers,” by Pnina Fichman, tries to uncover the process by which crowdsourcing question answering can improve information quality and examine changes in answer quality as the number of answers increases. Findings of the chapter illustrate a process of answer quality improvement through crowdsourcing questions. Improvement is achieved by having multiple answers to any given question instead of a single answer, and through a mechanism of answer evaluation, by which users rank the best answer to any given question.

Chapter 19, “Economic Growth from the Social Context of Information Systems,” by Benjamin Yeo, explores the social context that influences economic growth. Moreover, in today’s knowledge-driven economy that information technology is applicable to many industries, the ability to use these technologies to facilitate economic growth goes beyond the technologies per se. And so, in this chapter, the author argues that the social context influences a region’s ability to create technology-based economic growth.

Chapter 20, “An Empirical Analysis of Innovation Success Factors Due to ICT Use in Japanese Firms,” by Hiroki Idota, Teruyuki Bunno, and Masatsugu Tsuji, attempts to examine the following: (1) which type of ICT use, that is, inside or outside the firm, can promote innovation; (2) how ICT use is related to managerial behavior and organizational capability; (3) who the partners of open innovation are; and (4) what kind of information is exchanged between the firm and those partners. This chapter clarifies the factors required for ICT to further enhance innovation.

Chapter 21, “E-Banking in India: Risk Management in Payments and Settlement System,” by Rituparna Das, deals with the evolving process of electronic banking in India focusing on the risks facing different payment and settlement systems participated by the same. It draws a comparative picture of how the banks are managing risks in payments and settlements systems as per regulatory guidelines in India vis-à-vis other countries.

Chapter 22, “Innovation in Business Models of Banks in Europe: Towards a Methodological Approach,” by Constantinos Liakeas and Anastasia Constantelou, attempts to explore the validity of hypothesis that banks opted to push their existing business models to the extreme than to investigate the opportunities offered in the provision of higher value products and services. In order to accomplish that, it develops
an analytical framework that allows for an in-depth investigation into the evolution of business models surrounding the operation of commercial banks in Europe over the last decade. It argues that the degree to which financial institutions have actually infused innovation into their traditional business model has been negligible and aims to set out a scene for the study of the evolution of strategy and business models of banks in the Internet era.

Throughout these 22 chapters, the reader of this book is confronted with the economics of information systems, the players and the market in information systems, and the global information infrastructure. It presents the various aspects of both theoretical and empirical approaches in economic of information systems, the management of information systems, and digital business/markets.

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