Preface

Information and Communication Technology (ICT) is essential to the national and international business sector to improve job performance and productivity. ICT is not limited to a specific software package or home. This tool aims to enrich and expand communication, collaboration, cooperation, and connection between employees and employers, employees and stakeholders, and enhance job productivity and user satisfaction.

Web use in the business sector improves data management, supports the availability of Internet mobility, stimulates creativity and innovation, encourages globalization, and enhances customer satisfaction via communication, collaboration, cooperation, and connection.

The Web is divided into three types: Web 1.0, Web 2.0, and Web 3.0. Web 1.0 refers to connecting information and shared read-write hypertext space, while Web 2.0 is known as the participative Web, as it allows users to connect via social networking with more interaction with less control. Web 3.0 refers to connecting intelligence and is known as Semantic Web; in other words, it identifies Web-based data so that searches can be more effective, and the information is part of the network. Web 3.0 is considering the future of every sector, including business.

This book covers many topics in relation to the journey of Web 1.0 to Web 3.0, particularly Web and business models, Web applications, social networking sites, the Web, technology, and social influence, and the Web and education.

This book presents a set of guidelines and principles of Web 1.0, Web 2.0, and Web 3.0 adoption in the business sector, since this tool aims to improve job performance, productivity, increase profile, and reduce cost. Furthermore, this book aims to support researchers and academics' work by sharing the latest technologies among their students nationally and internationally, especially in the higher-education sector.

SECTION 1: WEB AND BUSINESS MODELS

Chapter 1, "Are Signals a Solution to Perceived Risk and Opportunism in Mobile Shopping? Gender Differences and Similarities," written by San-Martín, explores the issue of information asymmetry in mobile shopping. In this chapter, a model with some cognitive and experiential quality signals from the vendor and the site that can decrease shopper perceived risk and fear of opportunism—vendor reputation, site design, personalized service, and personalized information—is presented. In this study, the author explores the concept of m-shopping, which has been less researched than electronic shopping. In this context, it analyzes signals as means to reduce perceived risk and opportunism in a m-shopping environment. In addition, a theoretical approach (signaling theory) is utilized to validate the author's

hypotheses. Empirically, this research considers vendor and site signals as possible solutions that can help to resolve user perception of risk and opportunism when making purchases with the mobile phone, which is a variable that has not been addressed in m-shopping.

Chapter 2, "Models and Approaches for Web Information Extraction and Web Page Understanding," by Fayzrakhmanov, discusses the major challenges addressed within the background of Web Information Extraction (WIE) and Web Page Understanding (WPU) and reflects on different Web page representations leveraged in Web Page Processing (WPP). The author introduces the expression Web Page Processing (WPP) and its connection with the context of WIE and WPU and accomplishes a comparative analysis of different approaches in terms of leveraged Web page models. In addition to the discussion of some aspects regarding the field of WIE and WPU, it presents a configurable Java-based framework (derived from the conducted analysis of different approaches and using Web page representations) for implementing effective and robust methods for WPP called WPPS.

SECTION 2: WEB APPLICATIONS

Chapter 3, "A Roadmap on Awareness of Others in Accessible Collaborative Rich Internet Applications," by Almeida and Baranauskas, focuses on the concept of Rich Internet Applications (RIAs). Therefore, the authors explore, by using a systematic literature review, studies approaching this concept in accessible collaborative RIAs. The proposed SLR (Systematic Literature Review) is based on four review questions: (a) disabilities being considered, and the geographical context of the authors, (b) awareness of others, (c) recommendations, guidelines, and design patterns (named RecGuidPat for simplification), and (d) involved technologies. Besides the presentation of the literature review, the authors categorize the technologies presented in the literature review and elucidate in terms of the state-of-the-art of the technologies. In addition, the chapter proposes some guidelines with the purpose to support the design of mechanisms for awareness of others in collaborative RIAs.

Chapter 4, "A Usability Evaluation of Facebook's Privacy Features Based on the Perspectives of Experts and Users," by Mantau, Kimura, Gasparini, Berkenbrock, and Kemczinski, presents a usability evaluation of the privacy features (privacy features available in May and June of 2012) of a well-know social network, Facebook. The authors performed an evaluation in three stages by using three approaches: the analysis and assessment of the system's features concerning privacy issues (from Web-based system and mobile-based system), a heuristic evaluation led by three experts, and a questionnaire with 605 users to measure the results between specialists and real users. This study presents the issues associated with the privacy settings and also wants to help improve the user interaction with this social network. After Facebook's privacy features had been updated, the authors re-evaluated the Web- and mobile-based environment to verify which of the initial problems encountered (mentioned in this study) in the first heuristic evaluation were solved and which of these continue.

In Chapter 5, "HTML Segmentation for Different Types of Web Pages," by Amorim, the author explores the idea that search engines deal with several types of challenges on a daily basis, such as locating relevant content in a Web page. The central goal of this chapter is to segment different kinds of Web pages. In this chapter, the author presents two strategies to segment different types of Web pages. Consequently, this study has the purpose to describe general methods for HTML segmentation and compare two general HTML segmentation methods, namely ETL HTML segmentation and the so-called TPS segmentation. Furthermore, it also examines some topical methods, the main results of HTML

segmentation algorithms, and issues to be explained in HTML segmentation. Finally, a new model to categorize segments in HTML documents is proposed by the author.

SECTION 3: SOCIAL NETWORKING SITES

Chapter 6, "Understanding Employee Attitudes to SNS Implementation in the Australian Banking Sector," by Sari, focuses on the usage of SNS (Social Networking Sites) by the Australian Banking Sector. The purpose is to analyze the opinion of the Australian Banking sector employees, in particular those who use SNS applications as their working tool. Therefore, the employees from Australian banks listed in the APRA (Australian Prudential Regulation Authority) list in March 2013 were encouraged by email to participate in an online survey to analyze the central question, What are the factors required that trigger SNS implementation in the Australian banking sector from the employee perspective? This survey gathered 130 responses with 87% completion rate and yielded 113 used cases. In addition, in this research, the Honeycomb framework jointly with 4C guidelines proved appropriate as the base theory when analysing SNS adoption in the Australian banking industry.

In Chapter 7, "Teacher-Student Relationship in the Facebook Era," by Forkosh-Baruch and Hershkovitz, students' and teachers' perceptions of student-teacher SNS-based relationships in the Facebook era are observed. The purpose of the authors is to aid in the implementation of SNS in the education segment with empirical evidence that sustain decision making. Here, the main objective is to present the emergence of Web 2.0 into educators' lives and its effect on teacher-student relationships and communication. The authors express this phenomenon through an exploratory study, examining students' and teachers' perceptions of student-teacher communication via SNS. This chapter explores two studies concerning lower and higher secondary school Israeli students and teachers. These studies analyze the relations between Facebook-based student-teacher communication and student-teacher relationships. In general, the results suggest that Facebook communication may be helpful, but they emphasize some conflicting issues.

Chapter 8, "Examining the Opportunities of Social Networking Adoption in the Health Care Systems," by Peldon, explores, in general, the opportunities of adopting Social Network Sites (SNSs) and, in particular, examines the opportunities of Social Networking (SN) in the healthcare systems. This chapter investigates the behaviors towards social networking implementation as one of the means to communicate with patients and among healthcare professionals themselves in Bhutan. The study was carried out by conducting a questionnaire (using the "Qualtrics" online survey software). The target was the healthcare professionals of Bhutan with a sample size of 154 participants including Bhutanese doctors, physicians, specialists, and nurses. From this research, three factors were generated regarding the aspect of opportunities, namely the 4Cs (Communication, Coordination, Collaboration, and Connection), green and sustainability, and exchange knowledge. The main purpose of this chapter was to establish whether the healthcare professionals in Bhutan are eager to adopt social networking as a model for communication with patients and among healthcare professionals themselves in the future. From the sample used in this research, the author concludes that 63% of healthcare professionals are keen to adopt social networking as a way of communication among themselves and with patients in the present and in the future.

SECTION 4: WEB, TECHNOLOGY, AND SOCIAL INFLUENCE

In Chapter 9, "We Have Good Information for You: Cognitive Authority and Information Retrieval on the Web," by Côgo and Pereira, it is argued how the concept of cognitive authority can be used to develop and improve the information retrieval on folksonomy-based systems. The authors propose a ranking scheme that considers the cognitive authority of the information sources, and doing so provides results of higher significance and quality to users. To validate this proposal, the *Folkauthority* approach was implemented, a ranking scheme named *AuthorityRank* was proposed, and an information retrieval system, called *AuthoritySearch*, was developed. In addition, a social network was used to reproduce the authority relationship among users, and the *AuthorityRank* scheme was compared with the *tf-idf* scheme using the NDCG metric. The authors state that by adopting *Folkauthority* approach, it is possible to improve the relevance and quality of the results of a query by giving more importance to certain sources of information when calculating the ranking of the retrieved information.

Chapter 10, "A Web-Based Method for Ontology Population," by Oliveira, Lima, Gomes, Freitas, Lins, Simske, and Riss, focuses on an unsupervised, domain-independent method for extracting instances of ontological classes from unstructured data sources available on the WWW/Internet. Here, the proposed method is capable of extracting occurrences of ontological classes from unstructured sources of information written in natural language available on the Web. The method is based on a Confidence-weighted Score function (ConfScore) that incorporates different measures and heuristics to rank candidate instances. According to the authors, the proposed method focuses on the task of Ontology Population (OP), which does not alter the structure of the ontology (i.e., no changes in the hierarchy of classes and/or relationships are performed). The updating task is restricted to the set of instances of concepts, relationships, and properties of an input ontology.

Chapter 11, "User Engagement in Feedback Sharing through Social Influence," by Stibe and Oinas-Kukkonen, emphasizes how social influence design principles can improve the effectiveness of socio-technical systems designed to modify human behavior with respect to sharing feedback. Within the context of social science theories, this chapter presents a research framework that identifies social impact design principles pertinent to influential systems that assist user engagement in feedback sharing. The design principles are then put into practice in an information system and their effects on feedback sharing are investigated in an experimental context. In order to identify the social impact design principles, the relevant background is defined and a review of the associated literature is given. The key aim of this review is to provide knowledge about the social influence principles that are significant in this context and to develop a theory-driven research framework. The major results of this study add valor to research connected to social influences on user behavior and to the practice of designing persuasive information systems.

SECTION 5: WEB AND EDUCATION

Chapter 12, "Creating a Community of Practice in Learning," by Uy and Yu, presents a study that has the purpose to answer the general question, How do online communities of practice engage students to learn and build new knowledge? In addition, the authors examine the emergence of online communities of practice in Facebook Groups that were created in the field of teaching and learning. Therefore, with this research, the authors propose a framework that will allow users to build their own online community

of practice in their own specific learning context. This study will facilitate the teaching and learning environment by creating a platform in which learners may successfully collaborate and learn from each other. In practice, the purpose of this research is to investigate the impact of online Communities of Practice in learning contexts. As a result, codes and common themes were identified and a model was created to describe the communities of practice and a framework was developed to guide educators in creating their own communities of practice using social media.

Chapter 13, "Influence of Perceived Quality of Official University Websites to Perceived Quality of University Education and Enrollment Intention," by Hidayanto, Rofalina, and Handayani, suggests a model to examine how the quality of a university official website operates as a signal of quality of university education as commercial service. This research examines whether the excellence of a university's website, which is evaluated based on reliability, responsiveness, functionality, accessibility, information quality, and interface, can be developed as an extrinsic quality to indicate the quality of university education. The authors focused on educational service, particularly in higher education. Through this study, the authors try to contribute to the use of signaling theory to foresee how the quality of a website influences the perceived quality of services in university education contexts.

Chapter 14, "Students as Customers: Participatory Design for Adaptive Web 3.0," by Shi, Cristea, and Stewart, focuses on the notion that the educational environment must follow the development of the Web and must adapt to the new context. The authors propose and explore applying participatory design methodologies in the early stages of the social adaptive educational hypermedia system design process, showing also its benefits for further design, implementation, and usage. In this chapter, it is demonstrated how students and other e-Learning users can be involved in the design process by applying a participatory design methodology in the early stage of the development of a social-AEHS. Consequently, the authors report their case study that imitated a large co-designer experiment in a small format and extracted an ordered list of initial application requirements. Therefore, the authors conclude that it is vital to get the students and the learners involved in the whole system design process.

Chapter 15, "The Open Innovation Paradigm: Can Digital Storytelling Generate Value for the Educational Field?" by Ganzerla, Colapinto, and Rocco, presents a new emerging educational and business paradigm: the open innovation paradigm. The authors explore an application of the Open Innovation Paradigm in the context of education: the Value-Generating Framework. In addition, empirical substantiation of the benefits of this paradigm is given through an in-depth analysis of the alliance between the Italian Zoo *Parco Natura Viva* and the Italian foundation *Radio Magica*. Based on the identification of four educational challenges, the authors describe the framework of intervention and analysis of the Value-Generating Framework, and they discuss the advantages of the application of the Open Innovation paradigm both in profit and non-profit contexts. The main purpose of this chapter is to create a connection between Media and Education.

Pedro Isaías
Universidade Aberta (Portuguese Open University), Portugal

Piet Kommers
University of Twente, The Netherlands

Tomayess Issa
Curtin University, Australia