Preface

OVERVIEW

In order to foster successful usage of information systems, it is important that systems design should focus on user work practices. As a result, traditional requirement gathering and evaluation methodologies fall short as they mainly rely on “official” viewpoint rather than actual practices. As a result, notions of “Participatory Design” and “User Centric Design” have emerged in information system domain. These concepts focus on empowering the user in design process as well so that users have more control on design processes which will lead to more successful usage of information systems. Technology appropriation is a complex task and in order to design appropriate technological systems there is a strong emphasis on involving users in system design process. As a result, the information systems and work practices of users are aligned together which increases the probability of technology adoption by end users. The goal of this book is to provide state of the art research and best practices.

This book, Design Solutions for User-Centric Information Systems, is a reference text. It is a collection of 18 chapters, authored by 36 academics and practitioners from around the world. The contributions in this book aim to enrich the information system discipline by providing latest research and case studies from around the world.

OBJECTIVE

The aim of Design Solutions for User-Centric Information Systems, is to publish high quality original research contributions on the specialized theme of user centric information system design processes. The content reports theoretical foundations and empirical studies to highlight the good practices for user centric information system development.

TARGET AUDIENCE

The contents of this volume contribute to Information system, Human computer interaction and Computer supported cooperative work disciplines. So this can serve as a reference text for the following audiences:

- Practitioners interested in user centric information processes
- Project managers interested in user involvement in the information system design processes
Students and researchers interested in furthering their understanding of the subject.

BOOK ORGANIZATION

There are 18 chapters in this text. These are organised in three Sections as follows:

- **Introduction:** This section consists of seven chapters. The first chapter highlights how the user centric technologies are having an impact on the digital retailing, whereas the second chapter discusses the experiences of digitalizing the death certification process in Slovenia. The third contribution in this section is about the role of e-government in combating corruption in Nigeria and the next chapter advocates for employing entropy techniques to optimize logistics. The last three chapters of this section focus on the Saudi Arabian higher education sector to explore the application of recommender systems and technological outsourcing.

- **User-Centred Design:** This section comprises 7 chapters. The first chapter, which is chapter 8 in the book, discusses practical inquiry approach to model user behaviour, while the next chapter focuses on the ethical guidelines for ICT development in indigenous communities. The next contribution advocates for user interface isolation from underlying application while the chapter 11 proposed to use web caching to enhance the performance of information retrieval systems. The fifth contribution in this section discusses user performance testing indicator to measure the user performance whereas the sixth chapter discusses the development of ambient assisted living products and services. The last chapter in this section discusses the experience of Bangladesh in modelling cybercrime protection behaviour among computer users.

- **Usability Engineering:** This part of the book has four contributions. The first chapter provides a review of the methods for web usability evaluation and the next chapter focuses on usability evaluation of Saudi Arabian e-government websites. The next chapter presents a case study of designing a mobile system for managing personal finances. The final contribution of this section, which is the last chapter in the book, presents a study of providing autonomy to visually impaired citizens in the context of smart cities.

BRIEF DESCRIPTIONS OF THE CHAPTERS

Chapter 1 is titled ‘Digital Retail: How Customer-Centric Technology is Reshaping the Industry – IT-Enabled Digital Disruption’ and is authored by Pablo Penas Franco. This chapter explains the digital disruption that has occurred in the retail industry. It explains the relative positions of the world’s leading retailers and the business models of the two top online competitors. It focuses on the impact of SMAC (Social, Mobile, Analytics and Cloud) technologies and new retail trends enabled or boosted by technology fulfillment and delivery. It deepens into IT and business model customer-centric design, the role of the customer and the store in the new digital retail and finishes with an assessment of return on investment in retail digitization.

Chapter 2 is ‘Digitalization of Death Certification Model: Transformation Issues and Implementation Concerns’. Authored by Dalibor Stanimirovic, this chapter explores the current situation concerning the death certification in Slovenia. Based on the findings, the chapter outlines a construction of
Preface

ICT-based model of death certification and provides applicable guidelines for its implementation at the national level.

Chapter 3, ‘E-Government Adoption in Nigeria: The Journey So Far’, is authored by Sola Oni. This chapter examines contributions from e-government as a means of providing solutions to developmental challenges that have been linked to corruption and a lack of transparency. A framework for the evaluation of current e-government provision with a view to combating corruption is proposed.

Chapter 4 authored by Mohammad Anwar Rahman titled ‘Freight Transport and Logistics Evaluation Using Entropy Technique Integrated to TOPSIS Algorithm’ integrates the entropy technique on TOPSIS platform to improve the freight selection decision.

Chapter 5 titled ‘A Multifactorial Analysis of the Acceptance of Recommender System for Saudi Universities’ by Hadeel Alharbi and Kamaljeet Sandhu provides a critical review of current literature on recommender systems adoption in Saudi universities. They identify and discuss the basic determinants influencing the acceptance, and the continued usage intention, of Recommender Systems as an e-learning personalization tool.

Chapter 6 titled ‘A Proposed Framework: Factors of the Acceptance of Recommender Systems in E-Learning for Saudi Universities’ is also authored by Hadeel Alharbi and Kamaljeet Sandhu. In this chapter based on the findings of previous chapter they propose a framework for the acceptance and adoption of recommender systems in e-learning for Saudi universities.

Chapter 7 titled ‘Outsourcing to Cloud-Based Computing Services in Higher Education in Saudi Arabia’ by Athary Alwasel, Ben Clegg and Andreas Schroeder describes the information systems outsourcing trend towards cloud based solutions in the Saudi Arabian higher education sector and discusses the implications of this trend.

Chapter 8 authored by Mariam Ahmed Elhussein is titled ‘Design Solutions Guided by User Behavior: A Practical Inquiry Approach’. This chapter uses practical inquiry methodology to generate a general framework that can be applied to analyze tagging systems. It proceeds to suggest a design process that can be followed to create new tagging systems.

Chapter 9 titled ‘Mitigating Ethno-Cultural Differences: Ethical Guidelines for ICT Development in an Indigenous Community’ by Hasnain Falak and Tariq Zaman presents guidelines for ICT Development in an Indigenous Community. The guidelines are based on their empirical work on indigenous Penan community of Long Lamai in Malaysian Borneo. This is important because community engagement is necessary for the success and sustainability of Information and Communication Technologies for Development (ICT4D) projects.

Chapter 10 titled ‘User Interface Design in Isolation from Underlying Code and Environment’ by Izzat Alsmadi discusses the isolation of user interface design from the underlying code.


Chapter 12 ‘User Performance Testing Indicator: User Performance Indicator Tool’ by Imuetinyan Bernadette Iyawe, investigates the challenges of user performance and the user performance indicators in haptic-based tests. The chapter proposes a User Performance Indicator Tool (UPIT) as test validation tool to aid designers/testers in enhancing their user performance test and test evaluation outcomes.

Chapter 13 titled ‘Development of Ambient Assisted Living Products and Services: The Role of International Classification of Functioning, Disability and Health’ by Ana Isabel Martins, Alexandra Queirós and Nelson Pacheco Rocha, discusses the use the conceptual framework of the International
Classification of Functioning, Disability and Health (ICF) to conceptualize instruments for the different phases of the Ambient Assisted Living (AAL) development processes.

Chapter 14 titled ‘Modelling Cyber-Crime Protection Behavior among Computer Users in the Context of Bangladesh’ is authored by Imran Mahmud, T. Ramayah, Md. Mahedi Hasan Nayeem, S.M. Muzahidul Islam and Pei Leng Gan. This chapter highlights the impact of security champion and security training on protection behavior in the context of IT service oriented SMEs in Bangladesh. It examines the influence of security training on threat and coping appraisal which leads to protection behavior via protection motivation.

Chapter 15 titled ‘The State of Art in Website Usability Evaluation Methods’ by Renuka Nagpal, Deepti Mehrotra and Pradeep Kumar Bhatia summarizes different approaches used to measure the usability of websites. Approaches are classified in six board category and a comparison between them is also discussed.


Chapter 17 titled ‘A Mobile System for Managing Personal Finances Synchronously’ by Jabulani Sifiso Dlamini and Paul Okuthe Kogeda discusses the experience of designing and implementing a software application to address financial management challenges faced by many Small Micro-Medium Enterprises (SMMEs) in South Africa.

Chapter 18 titled ‘Towards Visually Impaired Autonomy in Smart Cities: The Electronic Long Cane Project’ is authored by Alejandro Rafael Garcia Ramirez, Israel Gonzalez-Carrasco, Gustavo Henrique Jasper, Amarilys Lima Lopez, Renato Fonseca Livramento da Silva and Angel Garcia Crespo. The chapter describes electronic long cane project, that was designed to include new features based on the Internet of Things. As a result, new evidences of User-Centric Design have emerged, increasing the probability of success of this technology in Smart Cities.