Preface

The development, advancement, and implementation of Information Communication Technologies (ICT) within today's ever-changing society profoundly impacts the way we lead our lives. With its rapid growth and continual evolution, this field has provided the impetus for economic innovation, cultural revolution, and social reform. Consequently, the effects of these pervasive technologies present both a challenge and an opportunity for researchers, educators, and students worldwide.

As applications of ICT have grown in both number and popularity, researchers and educators have devised a variety of techniques, methodologies, and measurement tools to develop, deliver, and, at the same time, evaluate the effectiveness of their use. The explosion of these methodologies in this new field of ICT study has created an abundance of new, state-of-the-art literature related to all aspects of this expanding discipline. This body of work allows researchers to learn about the fundamental theories, latest discoveries, and forthcoming trends in the field of ICT.

Constant technological innovation challenges researchers in ICT to stay abreast of and continue to develop and deliver methodologies and techniques utilizing the latest advancements in ICT. In order to provide the most comprehensive, in-depth, and current coverage of all topics related to ICT and its application, as well as to offer a single reference source on all conceptual, methodological, technical, and managerial issues, *Information Science Reference* is pleased to offer a six-volume reference collection on this rapidly growing discipline. This collection aims to empower researchers, students, and practitioners by facilitating their comprehensive understanding of the most critical areas within this field of study.

This collection, entitled *Information Communication Technologies: Concepts, Methodologies, Tools, and Applications* is organized in eight distinct sections, which are as follows: (1) Fundamental Concepts and Theories; (2) Development and Design Methodologies; (3) Tools and Technologies; (4) Utilization and Application; (5) Organizational and Social Implications; (6) Managerial Impact; (7) Critical Issues; and (8) Emerging Trends. The following paragraphs provide a summary of what is covered in each section of this multi-volume reference collection.

Section One, *Fundamental Concepts and Theories*, serves as a foundation for this exhaustive reference tool by addressing crucial theories essential to the understanding of ICT. Chapters such as "An Overview on Strategic ICT Implementations Toward Developing Knowledge Societies" by Hakikur Rahman and "ICT and Business in the New Economy: Globalization and Attitudes Towards eCommerce" by John Sagi, Elias Carayannis, and Subhashish Dasgupta, provide an excellent framework for discussing the fundamental relationship between ICT and societal growth. Sadayoshi Takaya's, "The Evolution of ICT, Economic Development, and the Digitally-Divided Society" offers insight into some of the critical issues resulting from ICT development, which include the emergence of a digital divide and the social, political, and economic impact this may have. Another chapter, "Between Tradition and Innovation in ICT and Teaching" by Antonio Cartelli, addresses how ICT has changed the face of modern education. The contributions within this foundational section enable readers to learn from expert research on the elemental theories underscoring the discipline of ICT.

Section Two, ***Development and Design Methodologies***, contains in-depth coverage of conceptual architectures and frameworks, providing the reader with a comprehensive understanding of emerging technological developments within the field of ICT. "Connecting the First Mile: A Best Practice Framework for ICT-Based Knowledge Sharing Initiatives" by Surmaya Talyarkhan, David J. Grimshaw, and Lucky Lowe offers a method for introducing knowledge sharing in developing countries through ICT. Rosa Borge's contribution, "An Explanatory Approach to the Political Uses of ICT Initiatives for Participation," demonstrates that ICT also extends into the political sphere, since politicians use ICT to bridge the gap between themselves and the voting public. From basic designs to abstract development, chapters such as *"Developing Regional Tourism Using Information Communications Technology"* by Dean Carson and "Peering into the Black Box: A Holistic Framework for Innovating at the Intersection of ICT & Health*"* by Ben Bellow, Aman Bhandar, and Mahad Ibrahim serve to expand the reaches of development and design technologies within the field of ICT.

Section Three, ***Tools and Technologies,*** presents extensive coverage of various tools and technologies available in the field of ICT that researchers, educators, and professionals alike use to streamline and enhance their daily tasks. Chapters such as "Internet: A Right to Use and Access Information, or a Utopia?" by Inban Naicker and "Radio for Social Development" by Patrick Craddock and Peggy Duncan emphasize the widespread impact that particular technologies have upon entire communities. Similarly, contributions such as "Innovations in Wireless Technologies" by Diego Ragazzi and "Satellite Technology in Schools" by Anneleen Cosemans provide overviews of revolutions in ICT while also discussing the potential effects of these technologies. These rigorously researched chapters provide insight into the tools and technologies that ICT has spawned and how these tools and technologies are incorporated into education, business, and society at large.

Section Four, ***Utilization and Application***, providers an in-depth investigation into the ways in which ICT has been adopted and implemented in society. This section includes contributions such as "Formation of a Knowledge-Based Society through Utilization of Information Networking" by Hakikur Rahman, which explains how ICT can empower and enable developing communities. Conversely, Kennedy D. Gunawardana's "Potential Challenges of ICT Implementations in Sri Lanka" reveals possible barriers to ICT utilization and application. ICT's application to other diverse fields is mentioned in chapters such as "Implementation of a Health Information Systems Programme" by Zubeeda Banu Quraishy and "Virtual Reality Applications in Tourism" by Călin Gurău. Research in this section provides excellent coverage of today's global community and demonstrates how ICT impacts the social, economic, and political fabric of our present-day global village.

Section Five, ***Organizational and Social Implications***, includes a wide range of research pertaining to the cultural and organizational impact of ICT around the world. Introducing this section is Matthew Mitchell's "Convergence of ICT and Culture," which analyzes the impact that ICT utilization and development has upon culture. Additional chapters included in this section, such as "Mind the Gap!: New 'Literacies' Create New Divides" by Andrew D. Madden, J. Miguel Baptista Nunes, and M. A. McPherson, emphasize one of the most contested issues regarding access to technology—the digital divide. This unique problem, in which a veritable wall between the technology "haves" and "have nots" is constructed, is also examined in "Digital Opportunities, Equity, and Poverty in Latin America" by Simone Cecchini, as well as in Pattarasinee Bhattarakosol's contribution, "Interactions among Thai Culture, ICT, and IT Ethics." The discussions presented in this section offer insight into the integration of technology in society regardless of socioeconomic status—arguably the most important social and organizational barrier that this field of study has yet to overcome.

Section Six, ***Managerial Impact***, presents contemporary coverage of the social implications of ICT, which are, more specifically, related to the corporate and managerial utilization of ICT within organiza-

tions. Core ideas such as integration, training, and potential strategies for increasing the effectiveness of modern organizations are discussed in this collection. "A Framework for Business Performance Management," by Marco van der Kooij emphasizes ICT's role in fostering successful predictions about the future of a business. Equally essential to this examination of managerial impact is evaluating the effectiveness of already-implemented ICT programs, which is examined at length in chapters such as "The Use of IT in Small Business: Efficiency and Effectiveness in South Africa" by Sam Lubbe. A contribution by Indrawat Nataatmadja and Laurel Evelyn Dyson, "The Role of Information and Communication Technology in Managing Cultural Diversity in the Modern Workforce: Challenges and Issues" explores how managers can make the utilization of ICT in a culturally diverse workplace more successful. As a result of their research, the authors of this chapter conclude that since no individual ICT application works best in existing social and cultural contexts, managers must provide flexibility in their ICT integration.

Section Seven, *Critical Issues*, presents readers with an in-depth analysis of the most current and relevant issues within this growing field of study by addressing topics such as the existence of a gender barrier, social justice, and the relationship between technology and humanity. Sirkku Kristina Hellsten's "From Information Society to Global Village of Wisdom? The Role of ICT in Realizing Social Justice in the Developing World" advocates the theory that ICT can, potentially, allow us to enhance our well-being, realize our capabilities, and, ultimately, promote better standards of living and social justice. Other chapters discuss the role of gender in ICT from a number of distinct angles. Within Taralynn Hartsell's "Who's Talking Online? A Descriptive Analysis of Gender & Online Communication" and the successive publication "Who's Talking Online II: Revisiting Gender and Online Communications," the difference between men and women's online communication styles is illustrated and analyzed, while in "Cultivating Greater Acceptance of Women in Technology: A Pilot Study," author Mara H. Wasburn attempts to account for the shortage of women pursuing careers in ICT, as well as devise strategies for attracting more women to the field.

The concluding section of this authoritative reference tool, **Emerging Trends**, highlights research potential within the field of ICT while exploring uncharted areas of study for the advancement of the discipline. New trends in ICT implementation discussed in this section include virtual religion, which is defined in "Believe It or Not: Virtual Religion in the 21st Century by Susan E. George, the use of RFID technology, which is considered in "RFID: New Technology on the Horizon for its Majors" by Eric Puffenbarger, Faye P. Teer, and S. E. Kruck and the use of ICT in managing and preventing conflict, which is examined in "New ICTs for Conflict Prevention and Management" by Ángela-Jo Medina. Other topics, such as ICT's future role in education, are envisioned in selections such as Gale Parchoma's "Visualizing ICT Change in the Academy" and "Perspectives on 21st Century E-Learning in Higher Education" by Lalita Rajasingham. The future trends and research examined in this final section demonstrate that the always-changing field of ICT promises to transform every aspect of our technological lives.

Although the contents of this multi-volume book are organized within the preceding eight sections, which offer a progression of coverage of the important concepts, methodologies, technologies, applications, social issues, and emerging trends, the reader can also identify specific contents by utilizing the extensive indexing system listed at the end of each volume. Furthermore, to ensure that the scholar, researcher, and educator have access to the entire contents of this multi-volume set, as well as additional coverage that could not be included in the print version of this publication, the publisher will provide unlimited, multi-user electronic access to the online aggregated database of this collection for the life of the edition, free of charge when a library purchases a print copy. In addition to providing content not included within the print version, this aggregated database is also continually updated to ensure that the most current research is available to those interested in ICT.

The diverse and comprehensive coverage of ICT in this six-volume, authoritative publication will contribute to a better understanding of all topics, research, and discoveries in this developing, significant field of study. Furthermore, the contributions included in this multi-volume collection series will be instrumental in the expansion of the body of knowledge in this enormous field, resulting in a greater understanding of the fundamentals while also fueling the research initiatives in emerging fields. We at *Information Science Reference*, along with the editor of this collection, hope that this multi-volume collection will become instrumental in the expansion of the discipline and will promote the continued growth of ICT.