Preface

The data collected by organizations is growing in volume and complexity. As such, businesses are abandoning traditional methods and relying more heavily on enterprise information systems to aid in the analysis and utilization of time-sensitive data and organizational knowledge. Enterprise information systems have gained in popularity and even SMEs, recognizing the competitive advantage afforded by real-time decision support, have begun to adopt the technologies.

The growth in enterprise information system adoption makes it challenging for experts and practitioners to stay informed of the field’s most up-to-date research. That is why Business Science Reference is pleased to offer this three-volume reference collection that will empower students, researchers, and academicians with a strong understanding of critical issues within enterprise information systems by providing both broad and detailed perspectives on cutting-edge theories and developments. This reference is designed to act as a single reference source on conceptual, methodological, technical, and managerial issues, as well as provide insight into emerging trends and future opportunities within the discipline.

Enterprise Information Systems: Concepts, Methodologies, Tools and Applications is organized into eight distinct sections that provide comprehensive coverage of important topics. The sections are: (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 to expect from this invaluable reference tool.

Section 1, Fundamental Concepts and Theories, serves as a foundation for this extensive reference tool by addressing crucial theories essential to the understanding of enterprise information systems. Chapters such as Exploring Enterprise Information Systems by Malihe Tabatabaie, Richard Paige, and Chris Kimble, and Enterprise Systems in Small and Medium-Sized Enterprises by Sanjay Mathrani, Mohammad Rashid, and Dennis Viehland give an introduction and overview of enterprise information systems in a contemporary business environment. Free and Open Source Enterprise Resource Planning by Rogerio de Carvalho adds an important dimension to the under-researched subject of free/open source enterprise resource planning systems by comparing it to proprietary systems and highlighting its innovative potential. Additional selections, including Location-Based Service (LBS) System Analysis and Design by Yuni Xia, Jonathan Munson, and David Wood, and An Overview of Executive Information Systems by Gary Moynihan focus on providing backgrounds and introductions to specific concepts within enterprise information systems. These and several other foundational chapters provide a wealth of expert research on the elemental concepts and ideas surrounding enterprise information systems.

Section 2, Development and Design Methodologies, presents in-depth coverage of the conceptual design and architecture of enterprise information systems, focusing on aspects including enterprise resource planning, service-oriented architecture, and decision support systems. Designing and implementing effective processes and strategies are the focus of such chapters as Development and Design Methodologies in DWM by James Yao, John Wang, Qiyang Chen, and June Lu, and Enterprise Model-
An ERP Adoption Model for Midsize Businesses by Fahd Alizai and Stephen Burgess offers a model that contains implementation processes, stages, factors, and issues associated with ERP adoption in midsize businesses. Youcef Aklouf and Habiba Drias’s An Adaptive E-Commerce Architecture for Enterprise Information Exchange presents architecture that allows partners to exchange information with other organizations without modifying their own systems. With contributions from leading international researchers, this section offers copious developmental approaches and design methodologies for enterprise information systems.

Section 3, **Tools and Technologies**, presents extensive coverage of the various tools and technologies used in the development and implementation of enterprise information systems. This comprehensive section includes such chapters as *Real Time Decision Making and Mobile Technologies*, by Keith Sherringham and Bhuvan Unhelkar, and *Mobile Technologies Extending ERP Systems* by Dirk Werth and Paul Makuch, which describe various techniques and models for using mobile technology to support enterprise information systems. *Extending Enterprise Application Integration (EAI) with Mobile and Web Services Technologies* by Abbas Ghanbari and Bhuvan Unhelkar demonstrates how the technologies of web services open up the doors to collaborative enterprise architecture integration and service oriented architecture resulting in business integration. Finally, chapters such as *Data Warehouse Maintenance, Evolution and Versioning* by Johann Eder and Karl Wiggisser, and *Hybrid Data Mining for Medical Applications* by Syed Hassan and Brijesh Verma present tools to adapt to the challenges of various data warehousing mechanisms. In all, this section provides coverage of a variety of tools and technologies that inform and enhance modern enterprise information systems.

Section 4, **Utilization and Application**, describes how enterprise information systems have been utilized and offers insight on important lessons for their continued use and evolution. Including chapters such as *A Decision Support System for Selecting Secure Web Services* by Khaled Khan, and *EIS Systems and Quality Management* by Bart Gerritsen, this section investigates numerous methodologies that have been proposed and enacted in enterprise information systems, as well as their results. As this section continues, a number of case studies in the use of enterprise information systems are presented such as *Enterprise System in the German Manufacturing Mittelstand* by Tobias Schoenherr, Ditmar Hilpert, Ashok Soni, M.A. Venkataramanan, and Vincent Mabert, and *Size Matters! Enterprise System Success in Medium and Large Organizations* by Darshana Sedera. Contributions found in this section provide comprehensive coverage of the practicality and current use of enterprise information systems.

Section 5, **Organizational and Social Implications**, includes chapters discussing the organizational and social impact of enterprise information systems. *People-Oriented Enterprise Information Systems* by Giorgio Bruno proposes a notation system called People-Oriented Business Process Notation to solve the problem of effectively integrating conversation and business processes. *Experiences of Cultures in Global ERP Implementation* by Esther Brainin examines how cultural differences in global enterprises effect the implementation of enterprise resource planning systems. *The Impact of Enterprise Systems on Business Value* by Sanjay Mathrani, Mohammad Rashid, and Dennis Viehland explores two case studies that illustrate how enterprise information systems implementation can impact organizational functions. This section continues with *Authority and Its Implementation in Enterprise Information Systems* by Alexei Sharpanskykh, which discusses how power dynamics effect enterprise information systems integration and proposes a logic-based specification language for representing power relations. Overall, these chapters present a detailed investigation of the complex relationship between individuals, organizations and enterprise information systems.

Section 6, **Managerial Impact**, presents focused coverage of enterprise information systems as it relates to improvements and considerations in the workplace. *Managing Temporal Data* by Abdullah Tansel addresses modeling and design issues related to temporal databases. Other chapters, such as
Integrative Information Systems Architecture by Len Asprey, discuss management considerations, document and web content management, and the technical infrastructure supporting these systems. In all, the chapters in this section offer specific perspectives on how managerial perspectives and developments in enterprise information systems inform each other to create more meaningful user experiences.

Section 7, Critical Issues, addresses vital issues related to enterprise information systems, which include customer relationship management, critical success factors and the business strategies. Chapters such as The Feral Systems and Other Factors Influencing the Success of Global ERP Implementations by Don Kerr, and Challenges in Enterprise Information Systems Implementations by Ashim Singla discuss the success of enterprise information systems implementation based on technology, people, and processes. Additional selections, such as An Extended Model of Decision Making by David Sammon, Integrating Enterprise Systems by Mark Hwang, and Preparedness of Small and Medium-Sized Enterprises to Use Information and Communication Technology as a Strategic Tool by Klara Antlova address critical success factors in the deployment of enterprise information systems.

Section 8, Emerging Trends, highlights areas for future research within the field of enterprise information systems, while exploring new avenues for the advancement of the discipline. Beginning this section is ERP Trends, Opportunities, and Challenges by Maha Shakir. This selection provides a richer understanding of key ERP issues through by discussing emerging industry trends. The evolution of enterprise resource planning is discussed in The Future of ERP and Enterprise Resource Management Systems by Carlos Ferran and Ricardo Salim, and Engineering the Coordination Requirements in Cross-organizational ERP Projects by Maya Daneva explores the complexity of cross-organizational enterprise resource planning implementation. These and several other emerging trends and suggestions for future research can be found within the final section of this exhaustive multi-volume set.

Although the primary organization of the contents in this multi-volume work is based on its eight sections, offering 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. This aggregated database provides far more contents than what can be included in the print version in addition to continual updates. This unlimited access, coupled with the continuous updates to the database ensures that the most current research is accessible to knowledge seekers.

As a comprehensive collection of research on the latest findings related to using technology to providing various services, Enterprise Information Systems: Concepts, Methodologies, Tools and Applications, provides researchers, administrators and all audiences with a complete understanding of the development of applications and concepts in enterprise information systems. Given the vast number of issues concerning usage, failure, success, policies, strategies, and applications of enterprise information systems in organizations, Enterprise Information Systems: Concepts, Methodologies, Tools and Applications addresses the demand for a resource that encompasses the most pertinent research in enterprise information systems development, deployment, and impact.