Preface

Since its development just two decades ago, the World Wide Web has grown to become the infrastructure that supports innumerable applications essential to everyday life. It’s not an exaggeration to claim that if you can think it, you can create a Web page about it. We use Web sites and the information they contain to create and connect with a seemingly unlimited amount of information. As such, it is important to understand the tools and technologies that support the continued growth of the Web and contribute to its role as an increasingly-pervasive aspect of our lives.

With the constant changes in the landscape of Web technologies, it is a challenge for researchers and experts to take in the volume of innovative advances and up-to-the-moment research in this diverse field. Information Science Reference is pleased to offer a four-volume reference collection on this rapidly growing discipline, in order to empower students, researchers, academicians, and practitioners with a wide-ranging understanding of the most critical areas within this field of study. This collection provides the most comprehensive, in-depth, and recent coverage of all issues related to the development of cutting-edge Web technologies, as well as a single reference source on all conceptual, methodological, technical and managerial issues, and the opportunities, future challenges and emerging trends related to the development, application, and implications of Web technologies.

This collection entitled, “Web Technologies: Concepts, Methodologies, Tools, and Applications” is organized in eight (8) distinct sections, providing the most wide-ranging coverage of topics such as: 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 provides a summary of what is covered in each section of this multi-volume reference collection:

Section 1, **Fundamental Concepts and Theories**, serves as a foundation for this extensive reference tool by addressing crucial theories essential to the understanding of Web technologies. Chapters such as “Tips for Tracking Web Information Seeking Behavior” by Brian Detlor, Maureen Hupfer, and Umar Ruhi and “A Proposed Template for the Evaluation of Web Design Strategies” by Dimitrios Xanthidis, David Nicholas, and Paris Argyrides provide analyses of user behavior and Web design. “Mobile Social Web; Opportunities and Drawbacks,” by Thorsten Caus, Stefan Christmann, and Svenja Hagenhoff presents an overview of recent trends in mobile Web usage, which is becoming an increasingly important area of study as more and more people obtain Internet access for their wireless devices. Later selections, such as “Web 2.0 and E-Discovery” by Bryan Kimes and “The Power and Promise of Web 2.0 Tools” by G. Andrew Page and Radwan Ali explore the application of Web 2.0 as well as the issues companies must address as a result. These and several other foundational chapters provide a wealth of expert research on the elemental concepts and ideas which surround Web design and access.

Section 2, **Development and Design Methodologies**, presents in-depth coverage of the conceptual design and architecture of Web sites, services, and systems. “Paralingual Web Design and Trust in E-
Government,” by Roy H. Segovia, Murray E. Jennex, and James Beatty and “Designing Medical Research Web Sites” by Jonathan Grady, Michael B. Spring, and Armando J. Rotondi discuss context-specific Web design projects, highlighting the importance of recognizing the specific needs and requirements of different development initiatives. The latter half of this section introduces concepts that relate to the development of Semantic Web services. Chapters such as “A Semantic Web-Based Approach for Building Personalized News Services” by Flavius Frasincar, Jethro Borsje, and Leonard Levering and “Building Semantic Web Portals with a Model-Driven Design Approach” by Marco Brambilla and Federico M. Facca offer specific considerations for the creation of Semantic Web services, while later selections such as “Rule Markup Languages and Semantic Web Rule Languages” by Adrian Paschke and Harold Boley and “Semantic Web Rule Languages for Geospatial Ontologies” by Philip D. Smart, Alia I. Abdelmoty, Baher A. El-Geresy, and Christopher B. Jones present more technical considerations relating to the use and communication of rule languages in the Semantic Web. With 20 contributions from leading international researchers, this section offers copious developmental approaches and methodologies for Web services and technologies.

Section 3, **Tools and Technologies**, presents extensive coverage of the various tools and technologies used in the development and implementation of Web services and applications. This comprehensive section opens with the chapters “New Paradigms: A Collaborative Web Based Research Tool,” by Hamish Holewa, and “Adaptability and Adaptivity in The Generation of Web Applications,” by Raoudha Ben Djemaa, Ikram Amous, and Abdelmajid Ben Hamadou, which describe new tools that support the development of Web applications and the challenges faced in the management and creation of new technology. “Migrating Web Services in Mobile and Wireless Environments,” by Myung-Woo Park, Yeon-Seok Kim, and Kyong-Ho Lee revisits Web use on wireless devices, specifically exploring the mitigation and replication of Web services among mobile devices. Later selections such as “Web 2.0 Technologies: Social Software Applied to Higher Education and Adult Learning” by Teresa Torres-Coronas, M. Arántzazu Vidal-Blasco, Ricard Monclús-Guitart, M. José Simón-Olmos, and Araceli Rodríguez-Merayo and “Interactive Whiteboards in the Web 2.0 Classroom” by David Miller and Derek Glover provide insight into the use of specific Web tools (namely social software and interactive whiteboards) in educational settings. In all, this section provides coverage of a variety of Web tools and technologies under development and in use.

Section 4, **Utilization and Application**, describes the implementation and use of an assortment of Web technologies. Including chapters such as “Semantic Web Take-Off in a European Industry Perspective” by Alain Léger, Jean Charlet, Johannes Heinecke, Paola Hobson, Lyndon J.B. Nixon, François Goasdoué, and Pavel Shvaiko and “Semantic Web for Media Convergence: A Newspaper Case” by Ferran Perdrix, Juan Manuel Gimeno, Rosa Gil, Marta Oliva, and Roberto García provide specific insight into the application of Web tools and technologies in both the professional and private sector. “Mailing Lists and Social Semantic Web” by Sergio Fernández, Jose E. Labra, Diego Berrueta, Patricia Ordóñez de Pablos, and Lian Shi describes the use of mailing lists and presents a method for extracting data from these lists. Later selections, such as “A Context-Based Approach to Web 2.0 and Language Education” by Gary Motteram and Susan Brown and “Exploring the Effects of Web-Enabled Self-Regulated Learning and Online Class Frequency on Students’ Computing Skills in Blended Learning Courses” by Pei-Di Shen and Chia-Wen Tsai suggest approaches and consider the impact of Web-based learning on student performance. Contributions found in this section provide comprehensive coverage of the practicality and current use of Web technologies.

Section 5, **Organizational and Social Implications**, includes chapters discussing the impact of Web technology on social and organizational practices. Chapters such as “Building Trust in E-Commerce through Web Interface,” by Muneesh Kumar and Mamta Sareen and and “Swift Trust in Web Vendors:
The Role of Appearance and Functionality,” by Xin Li, Guang Rong, and Jason B. Thatcher discuss the growth and influence of e-commerce and the important role trust plays in impacting e-marketplaces. Specific Web implementation and resulting implications of such initiatives are explored in selections such as “Assessing the Performance of Airline Web Sites: The ARTFLY Case” by Elad Harison and Albert Boonstra and “Aviation-Related Expertise and Usability: Implications for the Design of an FAA E-Government Web Site” by Ferne Friedman-Berg, Kenneth Allendoerfer, and Shantanu Pai. This section continues with discussions of Web accessibility and customization, concluding with a discussion of educational implications of Web technology. Overall, these chapters present a detailed investigation of how Web technology is implemented and how this implementation impacts the individual and society as a whole.

Section 6, Managerial Impact, presents focused coverage of Web services and technology as it relates to improvements and considerations in the workplace. “Employee Life-Cycle Process Management Improvement with Web-Enabled Workflow Systems” by Leon Welicki, Javier Piqueres Juan, Fernando Llorente Martin, and Victor de Vega Hernandez presents a real-world case of constructing a Web-enabled workflow for managing employee-life cycle processes, which include hiring and dismissing of employees. “Web Engineering in Small Jordanian Web Development Firms: An XP Based Process Model” by Haroon Altarawneh and Asim El-Shiekh describes a model for small Web project development and explains, from a managerial perspective, how this differs from the more large-scale implementation projects adopted by larger firms. In all, the chapters in this section offer specific perspectives on how work and Web technologies interact and inform each other to create more meaningful user experiences.

Section 7, Critical Issues, addresses vital issues related to Web technology, which include privacy and quality, among other topics. Chapters such as “Privacy Concerns for Web Logging Data” by Kirstie Hawkey explore the issues that must be considered when collecting user data and offer recommendations for enhancing privacy. Later selections, such as “Search Engine-Based Web Information Extraction” by Gijs Geleijnse and Jan Korst, continue the discussion of information gathering and extraction which, in this chapter, is discussed in terms of approaches to expressing and sharing structured information in Semantic Web languages. This section continues by asking unique questions about information literacy, as well as presenting new solutions to questions about the social Web and Web services profiling.

The concluding section of this authoritative reference tool, Emerging Trends, highlights areas for future research within the field of Web technology, while exploring new avenues for the advancement of the discipline. Beginning this section is “The Social Semantic Desktop: A New Paradigm Towards Deploying the Semantic Web on the Desktop” by Ansgar Bernardi, Mehdi Jazayeri, Stefan Decker, Cédric Mesnage, Ludger van Elst, Knud Möller, Gunnar Aastrand Grimnes, Michael Sintek, Tudor Groza, Leo Sauermann, and Siegfried Handschuh. This selection presents the Social Semantic Desktop project, addressing design considerations of a project whose aim is to blur the lines between individual applications and users’ physical workspace. Trends in marketing are explored in “Social Media Marketing; Web X.0 of Opportunities” by Lemi Baruh with the aim of introducing new techniques for advertisers whose aim is to reach consumers through social media. 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.

The diverse and comprehensive coverage of Web technologies presented in this four-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 fundamental concepts and technologies while 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 all aspects of Web technology.