Preface

The constantly changing landscape of Open Source Technology challenges experts and practitioners to stay apprized of the field’s most up-to-date research. That is why Information Science Reference is pleased to offer this four-volume reference collection that will empower students, researchers, and academicians with a strong understanding of critical issues within Open Source Technology by providing both broad and detailed perspectives on cutting-edge theories and developments in the field. This collection is designed to act as a single reference source on conceptual, organizational, methodological, technical, and managerial issues, as well as provide insight into emerging trends and future opportunities within the discipline.

Open Source Technology: 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) Utilization and Application, (3) Organizational and Social Implications, (4) Development and Design Methodologies, (5) Critical Issues, (6) Tools and Technologies, (7) Managerial Impact, and (8) Emerging Trends. The following paragraphs provide a summary of what readers may expect from this invaluable reference tool.

Section 1, “Fundamental Concepts and Theories,” begins the discussion with information on copyright and licensing concerns, as well as some of the various uses of Open Source Technology. The first chapter, “Software Licenses, Open Source Components, and Open Architectures” by Thomas A. Alspaugh (University of California Irvine, USA), Hazeline U. Asuncion (University of Washington Bothell, USA), and Walt Scacchi (University of California Irvine, USA), investigates some of the legal issues surrounding open source systems, as well as how those systems fit into existing copyright law. Additional chapters in this section focus on other pertinent topics, such as “Open Source Approach to Contemporary Research” by Dimitris Kavroudakis (University of the Aegean, Greece) and “Open E-Resources in Libraries” by Vesna Injac-Malbaša (National Library of Serbia, Serbia), two chapters that explore in greater depth the plethora of uses for Open Source Technology. The section concludes with another common application in “The Promise of Open Source Systems/Software in Developing Requisite E-Government Solutions for the Developing Countries” by Adeyinka Tella (University of Ilorin, Nigeria) and Adetayo O. Tella (University of Ibadan, Nigeria), a discussion that helps to prepare readers for the chapters of the next section.

Section 2, “Utilization and Application,” builds on the concepts introduced in Section 1 to explore in greater depth the primary functions and uses of Open Source Technology. Some of these functions include electronic government—“Open Source Urban Governance” by Carlos Nunes Silva (University of Lisbon, Portugal)—library and information science—“The University Cloud Library Model and the Role of the Cloud Librarian” by Sangeeta N. Dhamdhere (Modern College of Arts, Science and Commerce, India) and Ramdas Lihitkar (Government College of Science, India)—and higher education—“Incorporating Free/Open-Source Data and Tools in Software Engineering Education” by Liguo Yu...
Section 3, “Organizational and Social Implications,” discusses the impact of Open Source Technology on human lives and livelihoods, including legal, social, and economic implications. The first chapter in this section, “Free Assistive Technology Software for Persons with Motor Disabilities” by Alexandros Pino (National and Kapodistrian University of Athens, Greece) considers how open source software can have a positive impact on the lives of many, while “Economic Impact of Information and Communication Technology in Higher Education” by Carol A. Brown (East Carolina University, USA) discusses how similar technology can cause challenges in other areas. This section continues with chapters on how users react to such revolutionary software, as in “User Resistance to Software Migration” by Hee-Woong Kim (Graduate School of Information, Yonsei University, Seoul, Korea), Hock Chuan Chan (Department of Information Systems, National University of Singapore, Singapore), and So-Hyun Lee (Graduate School of Information, Yonsei University, Seoul, Korea), as well as concerns over intellectual property and the rights of the creator in “Knowing Protection of Intellectual Contents in Digital Era” by Priyanka Vishwakarma (Banaras Hindu University, India) and Bhaskar Mukherjee (Guru Ghasidas University, India), one of the primary arguments against widespread implementation of open source repositories.

Section 4, “Development and Design Methodologies,” addresses the concerns raised in the previous sections with solutions enabled largely by Open Source Technology. The section begins with chapters on libraries and knowledge dissemination and management, such as “Internet Policy Issues and Digital Libraries’ Management of Intellectual Property” by Adeyinka Tella (University of Ilorin, Nigeria) and A. K. Afolabi (Federal University of Technology, Nigeria) and “Open Content” by Nilesh A. Shewale (Don Bosco Institute of Technology, India), Preedip Balaji B. (Preedip Balaji B. Indian Statistical Institute, India), and Madhukar Shewale (Yashwantrao Chavan Maharashtra Open University, India). Additional chapters, such as “Building Open-Source Resources for Online Learning in a Higher Education Environment” by Shalin Hai-Jew (Kansas State University, USA), discuss how to make use of open source systems, such as MOOCs, in education, and chapters such as “Open Source Software Development Process Model” by Keng Siau (Department of Business & Information Technology, Missouri University of Science and Technology, Rolla, MO, USA) and Yuhong Tian (Express Scripts Holding Company, St. Louis, MO, USA) directly explore the development of such software.

Section 5, “Critical Issues,” analyzes the benefits and drawbacks of Open Source Technology across a variety of disciplines to further explore the debate over these innovative technologies. The first chapter, “Critical Analysis on Open Source LMSs using FCA” by K. Sumangali (School of Information Technology & Engineering, Vellore Institute of Technology, Vellore, Tamil Nadu, India) and Ch. Aswani Kumar (School of Information Technology & Engineering, Vellore Institute of Technology, Vellore, Tamil Nadu, India), objectively evaluates the impact of open source systems in an educational context, while “Effects of Free Goods on Market Sustainability” by Steven Cavaleri (Central Connecticut State University, New Britain, CT, USA) and Sheldon Friedman (University of Saint Joseph, West Hartford,**Indiana University South Bend, USA**), David R. Surma (Indiana University South Bend, USA), and Hossein Hakimzadeh (Indiana University South Bend, USA)—among others. To transition smoothly into Section 3, this section concludes with chapters on healthcare management using open source systems, notably “A Preventive Action Management Platform in Healthcare Information Systems” by Hugo Peixoto (Sistemas de Informação, Unidade Padre Américo, Centro Hospitalar do Tâmega e Sousa, Penafiel, Portugal), António Abelha (Department of Informatics, University of Minho - Campus de Gualtar, Braga, Portugal), Manuel Santos (Department of Information Systems, University of Minho - Campus de Azúrem, Guimarães, Portugal), and José Machado (Department of Informatics, University of Minho - Campus de Gualtar, Braga, Portugal).
CT, USA) takes a similar tact toward economic concerns. Later chapters in this section, such as “On the Geographic Allocation of Open Source Software Activities” by Sebastian von Engelhardt (Department of Economics, Friedrich-Schiller-University Jena, Jena, Germany), Andreas Freytag (Department of Economics, Friedrich-Schiller-University Jena, Jena, Germany), and Christoph Schulz (Department of Business Service and Infrastructure, Carl Zeiss AG, Jena, Germany) and “Harnessing and Evaluating Open Sim for the Implementation of an Inquiry-Based Collaborative Learning (Ib[C]L) Script in Computer Science” by Nikolaos Pellas (Department of Product and Systems Design Engineering, University of the Aegean, Syros, Cyclades, Greece), further discuss open source software development, an effective transition into the contents of the next section.

Section 6, “Tools and Technologies,” focuses primarily on the hardware and software that make Open Source Technology possible. The majority of the chapters in this section discuss the implementation of open source software in a variety of disciplines, including “The Agile Hour in a Virtual World” by David Parsons (Massey University - Auckland, New Zealand) and Rosemary Stockdale (Swinburne University, Australia), “Translating Traditional Writing Process Tools to Digital Ones” by Keri R. Franklin (Missouri State University, USA) and Kathy Gibson (Greenwood Laboratory School, USA), and “Open Source and Free E-Learning Tools Useful in LIS Education” by Sarika Sawant (SHPT School of Library Science, SNDT Women’s University, Mumbai, Maharashtra, India), among others. The section then concludes with another important application in “Web and Cloud Management for Building Energy Reduction” by Patrizia Lombardi (Politecnico di Torino, Italy & Università di Torino, Italy), Andrea Acquaviva (Politecnico di Torino, Italy), Enrico Macii (Politecnico di Torino, Italy), Anna Osello (Politecnico di Torino, Italy), Edoardo Patti (Politecnico di Torino, Italy), and Giulia Sonetti (Politecnico di Torino, Italy & Università di Torino, Italy): the use of open source systems to build an environmentally friendly future.

Section 7, “Managerial Impact,” considers how the changing nature of business and society brought about by Open Source Technology affects leaders at all levels and industries. The section begins with “Advances in Technology Project Management” by Maurice Dawson (University of Missouri – St. Louis, USA), Brian Leonard (Alabama A&M University, USA), and Emad Rahim (Oklahoma State University, USA), a chapter that reviews some of the benefits and opportunities afforded by open source software systems. Several chapters in this section cover the topics of business and e-governance, including “Open Government Success Factors in Government Websites” by Rodrigo Sandoval-Almazán (Universidad Autónoma del Estado de México, México) and “Enterprise Resource Planning System (ERP) and Other Free Software for Accounting and Financial Management of Non-Profit Entities” by Teresa Montero-Romero (Universidad Loyola Andalucía, Spain) and Magdalena Cordobés-Madueño (Universidad Loyola Andalucía, Spain). The section concludes with “Managerial Perspective of E-Resources in Academic Libraries” by V. J. Suseela (University of Hyderabad, India), a chapter that explores how information resources, and primarily academic libraries, can be positively impacted by the open source paradigm.

Section 8, “Emerging Trends,” brings to light some of the most promising opportunities afforded by Open Source Technology and explores how those opportunities can be best made reality. The section begins with chapters on library management, including “Electronic Resources and Next-Generation Public Library Catalogs” by Tracy L. McPeck (Prince William Public Library System, USA), and continues with a focus on intellectual property—“Copyright Relevancy at Stake in Libraries of the Digital Era” by Manju Dubey (R. S. Mundle Dharampeth Arts & Commerce College, India) and Mangala Hirwade (Nagpur University, India)—educational systems—“Learning4Content” by Ramesh C. Sharma (Indira Gandhi National Open University, India)—and health and medicine—“Open Source Approach for Mitigating Misinformation Risk in Complementary and Alternative Medicine Practices” by Venugopal
Gopalakrishna-Remani (Department of Management and Marketing, The University of Texas at Tyler, Tyler, TX, USA) and Mary Helen Fagan (Department of Management and Marketing, The University of Texas at Tyler, Tyler, TX, USA)—among others. This comprehensive four-volume reference concludes with “Rethinking Expertise in the Web 2.0 Era” by Ilias Karasavvidis (Department of Preschool Education, University of Thessaly, Greece), a chapter that considers how knowledge and information management are changing in the world of Wikipedia and other Open Source Technologies.

As a comprehensive collection of research on current findings related to the development of interdisciplinary technologies, *Open Source Technology: Concepts, Methodologies, Tools, and Applications* provides researchers, administrators, and all audiences with a complete understanding of the latest advances, applications, and concepts in Open Source Technology. Although the primary organization of the contents in this multi-volume work is based on its eight sections, offering a progression of coverage on the important concepts, applications, social issues, methodologies, critical concerns, technologies, managerial considerations, and emerging trends, the reader can also identify specific content by utilizing the extensive indexing system found at the end of each volume. Given the vast number of issues concerning usage, successes and failures, policies, strategies, and applications of Open Source Technology in countries around the world, *Open Source Technology: Concepts, Methodologies, Tools, and Applications* addresses the demand for a resource that encompasses the most pertinent research on the technologies being employed to globally bolster the knowledge and implementation of Open Source Technology.