# Table of Contents

Preface .............................................................................................................................................. xxvii

## Volume I

### Section 1

**Fundamental Concepts and Theories**

This section serves as a foundation for this exhaustive reference tool by addressing underlying principles essential to the understanding of Web-Based Services. Chapters found within these pages provide an excellent framework in which to position Web-Based Services within the field of information science and technology. Insight regarding the critical incorporation of global measures into Web-Based Services is addressed, while crucial stumbling blocks of this field are explored. With 16 chapters comprising this foundational section, the reader can learn and choose from a compendium of expert research on the elemental theories underscoring the Web-Based Services discipline.

**Chapter 1**

Service-Driven Computing with APIs: Concepts, Frameworks, and Emerging Trends...................... 1

*Hiranya Jayathilaka, University of California – Santa Barbara, USA*

*Chandra Krintz, University of California – Santa Barbara, USA*

*Rich Wolski, University of California – Santa Barbara, USA*

**Chapter 2**

E-Learning and the Semantic Web: A Descriptive Literature Review .............................................. 24

*Raadila Bibi Mahmud Hajee Ahmud-Boodoo, Curtin University, Australia*

**Chapter 3**

Integrating Sustainability in Cloud Computing for Managing Sustainable Knowledge in Higher Education ................................................................. 56

*Ahmed Mehrez, Qatar University, Qatar*

*Ki-Hoon Lee, Griffith University, Australia*

*Fawzy Soliman, University of Technology, Australia*

**Chapter 4**

Genome Sequencing in the Cloud ................................................................................................................ 67

*Wei Chen, The University of Texas MD Anderson Cancer Center, USA*

*Yun Wan, University of Houston - Victoria, USA*

*Bo Peng, The University of Texas MD Anderson Cancer Center, USA*

*Christopher I Amos, Dartmouth College, USA*
Chapter 5
Cloud Computing Economics
Stamatia Bibi, Aristotle University of Thessaloniki, Greece
Dimitrios Katsaros, University of Thessaly, Greece
Panayiotis Bozanis, University of Thessaly, Greece

Chapter 6
Hard Clues in Soft Environments: The Cloud’s Influence on Digital Forensics
Andrea Atzeni, Politecnico di Torino, Italy
Paolo Smiraglia, Politecnico di Torino, Italy
Andrea Siringo, Former Student at Politecnico di Torino, Italy

Chapter 7
Governance and Risk Management in the Cloud with Cloud Controls Matrix V3 and ISO/IEC 38500:2008
Abhik Chaudhuri, Tata Consultancy Services, India

Chapter 8
Making Sense of the E-Service Quality Literature: Sampling, Undergraduates, and Replications
Sharron J. Lennon, Indiana University, USA
Jung-Hwan Kim, University of South Carolina, USA

Chapter 9
Planning and Implementation of Cloud Computing in NIT’s in India: Special Reference to VNIT
Ravikant M. Deshpande, Visvesvaraya National Institute of Technology, India
Bharati V. Patle, Visvesvaraya National Institute of Technology, India
Ranjana D. Bhoskar, Visvesvaraya National Institute of Technology, India

Chapter 10
Social Web Services Management
Zakaria Maammar, Zayed University, UAE
Noura Faci, Claude Bernard Lyon 1 University, France
Ejub Kajan, State University of Novi Pazar, Serbia
Emir Ugljanin, State University of Novi Pazar, Serbia

Chapter 11
Exploring Marketing Theories to Model Business Web Service Procurement Behavior
Kenneth David Strang, APPC Research, Australia & State University of New York, USA

Chapter 12
Measures for Cloud Computing Effectiveness Assessment
Serdar Yarlikas, Middle East Technical University, Turkey
Semih Bilgen, Middle East Technical University, Turkey
Chapter 13
The Ubiquitous Semantic Web: Promises, Progress and Challenges ............................................. 272
Yuan-Fang Li, Monash University, Australia
Jeff Z. Pan, University of Aberdeen, UK
Shonali Krishnaswamy, Institute for Infocomm Research (I2R), Singapore
Manfred Hauswirth, Technical University of Berlin, Germany & Fraunhofer FOKUS, Germany
Hai H. Nguyen, University of Aberdeen, UK

Chapter 14
Agent-Based Resource Management for Mobile Cloud ............................................................. 290
Zhili Sun, University of Surrey, UK
Yichao Yang, University of Surrey, UK
Yanbo Zhou, University of Surrey, UK
Haitham Cruickshank, University of Surrey, UK

Chapter 15
A Conceptual Model for Cloud Computing Adoption by SMEs in Australia ............................. 307
Ishan Senarathna, Deakin University, Australia
Matthew Warren, Deakin University, Australia
William Yeoh, Deakin University, Australia
Scott Salzman, Deakin University, Australia

Chapter 16
A Review on Semantic Text and Multimedia Retrieval and Recent Trends ............................... 335
Oğuzhan Menemencioğlu, Karabük University, Turkey
İlhami Muharrem Orak, Karabük University, Turkey

Section 2
Development and Design Methodologies

This section provides in-depth coverage of conceptual architecture frameworks to provide the reader with a comprehensive understanding of the emerging developments within the field of Web-Based Services. Research fundamentals imperative to the understanding of developmental processes within Web-Based Services are offered. From broad examinations to specific discussions on methodology, the research found within this section spans the discipline while offering detailed, specific discussions. From basic designs to abstract development, these chapters serve to expand the reaches of development and design technologies within the Web-Based Services community. This section includes 14 contributions from researchers throughout the world on the topic of Web-Based Services.

Chapter 17
A Resource Allocation Model for Desktop Clouds ................................................................. 356
Abdulelah Alwabel, University of Southampton, UK
Robert John Walters, University of Southampton, UK
Gary B. Wills, University of Southampton, UK
Chapter 18
Offline and Online Customer Satisfaction in B2C Markets: Towards an Overall Customer Satisfaction Framework
Barbara Aquilani, Tuscia University, Italy
Elsa Serpico, Tuscia University, Italy
Cecilia Silvestri, Tuscia University, Italy
Alessandro Ruggieri, Tuscia University, Italy

Chapter 19
Measuring the Service Quality of E-Commerce and Competitive Strategies
Shu-Fong Chang, Nankai University, China
Jen-Chi Chang, Nankai University, China
Kuo-Hua Lin, Nankai University, China
Bin Yu, Nankai University, China
Yu-Cheng Lee, Chung-Hua University, Taiwan
Sang-Bing Tsai, University of Electronic Science and Technology of China, China & Nankai University, China
Jie Zhou, Nankai University, China
Chao Wu, Nankai University, China
Zi-Chun Yan, Nankai University, China

Chapter 20
Strategies for Evaluating Cloud System Providers during the Transformation of Businesses
Mohamed Firdhous, University of Moratuwa, Sri Lanka

Chapter 21
A Formal Framework for Cloud Systems
Zakaria Benzadri, University of Constantine 2, Algeria
Chafia Bouanaka, University of Constantine 2, Algeria
Faïza Belala, University of Constantine 2, Algeria

Chapter 22
Cloud Computing for Rural ICT Implementations: Methods, Models, and Architectures
Mohamed Firdhous, University of Moratuwa, Sri Lanka

Chapter 23
Sabrina Leone, Università Politecnica delle Marche, Italy
Giovanni Biancofiore, giovannibancofiore.com, Italy

Chapter 24
Design Challenges of Cloud Computing
Mouna Jouini, Institut Supérieur de Gestion, Tunisia
Latifa Ben Arfa Rabai, Institut Supérieur de Gestion, Tunisia
Chapter 25
Improving Privacy and Security in Multicloud Architectures ........................................................ 585
   Piyush Kumar Shukla, University Institute of Technology RGPV, India
   Mahendra Kumar Ahirwar, University Institute of Technology-RGPV, India

Volume II

Chapter 26
Semantic Web Services-Based Knowledge Management Framework ............................................. 610
   Vili Podgorelec, University of Maribor, Slovenia
   Boštjan Grašič, University of Maribor, Slovenia

Chapter 27
Cloud Service Brokerage: A Conceptual Ontology-Based Service Description Framework .......... 620
   Frank Fowley, Dublin City University, Ireland
   Claus Pahl, Dublin City University, Ireland
   Li Zhang, Northeastern University at Shenyang, China

Chapter 28
Design of Web Services for Mobile Monitoring and Access to Measurements ............................. 646
   Evelina Pencheva, Technical University of Sofia, Bulgaria

Chapter 29
A Governance Based Architecture for Enterprise Cloud Computing Adoption ............................. 668
   Charafeddine El Houssaini, Mohammed V University, Morocco
   Mahmoud Nassar, Mohammed V University, Morocco
   Abdelaziz Kriouile, Mohammed V University, Morocco

Chapter 30
Cloud Computing and Frameworks for Organisational Cloud Adoption ..................................... 683
   Victor Chang, Leeds Beckett University, UK
   Robert John Walters, University of Southampton, UK
   Gary B. Wills, University of Southampton, UK

Section 3
Tools and Technologies

This section presents an extensive coverage of various tools and technologies available in the field of Web-Based Services that practitioners and academicians alike can utilize to develop different techniques. These chapters enlighten readers about fundamental research on the many tools facilitating the burgeoning field of Web-Based Services. It is through these rigorously researched chapters that the reader is provided with countless examples of the up-and-coming tools and technologies emerging from the field of Web-Based Services. With 16 chapters, this section offers a broad treatment of some of the many tools and technologies within the Web-Based Services field.
Chapter 31
Building Elastic Java Application Services Seamlessly in the Cloud: A Middleware Framework ................................................................. 709
Rostyslav Zabolotnyi, Vienna University of Technology, Austria
Philipp Leitner, University of Zurich, Switzerland
Schahram Dustdar, Vienna University of Technology, Austria

Chapter 32
Cloud Integration for Effective Delivery of IT Services................................................................. 733
Roma Puri, IILM, India

Chapter 33
Evaluation of Cloud System Success Factors in Supply-Demand Chains........................................... 745
Fawzy Soliman, University of Technology, Australia

Chapter 34
Heuristic Task Consolidation Techniques for Energy Efficient Cloud Computing ..................... 760
Dilip Kumar, National Institute of Technology, India
Bibhudatta Sahoo, National Institute of Technology, India
Tarni Mandal, National Institute of Technology, India

Chapter 35
Virtual Machine Placement Strategy for Cloud Data Center.......................................................... 783
Sourav Kanti Addya, National Institute of Technology, India
Bibhudatta Sahoo, National Institute of Technology, India
Ashok Kumar Turuk, National Institute of Technology, India

Chapter 36
Biometric Authentication for the Cloud Computing........................................................................... 809
Sumit Jaiswal, Indian Institute of Technology, India
Santosh Kumar, Indian Institute of Technology, India
Subhash Chandra Patel, Indian Institute of Technology, India
R. S. Singh, Indian Institute of Technology, India
Sanjay Kumar Singh, Indian Institute of Technology, India

Chapter 37
Cloud Security Using Ear Biometrics................................................................................................ 823
Santosh Kumar, Indian Institute of Technology, India
Ali Imam Abidi, Indian Institute of Technology, India
Sanjay Kumar Singh, Indian Institute of Technology, India

Chapter 38
Drivers of Cloud Computing Adoption for E-Government Services Implementation .................. 849
Fathey Mohammed, Universiti Teknologi Malaysia, Malaysia & Taiz University, Yemen
Othman Bin Ibrahim, Universiti Teknologi Malaysia, Malaysia
Chapter 39
Data Security for Software as a Service ................................................................. 864
Pradeep Kumar Tiwari, Manipal University, India
Sandeep Joshi, Manipal University, India

Chapter 40
A Hybrid Cloud Model for Cloud Adoption by Multinational Enterprises.................. 881
Wu He, Old Dominion University, USA
Feng-Kwei Wang, Chinese Culture University, Taiwan

Chapter 41
H.265 Video Streaming in Mobile Cloud Networks.................................................. 906
Qi Wang, University of the West of Scotland, UK
James Nightingale, University of the West of Scotland, UK
Jose M. Alcaraz-Calero, University of the West of Scotland, UK
Chunbo Luo, University of the West of Scotland, UK
Zeeshan Pervez, University of the West of Scotland, UK
Xinheng Wang, University of the West of Scotland, UK
Christos Grecos, University of the West of Scotland, UK

Chapter 42
Green Economic and Secure Libraries on Cloud..................................................... 945
Kalpana T.M., Shri AMM Murugappa Chettiar Research Centre, India
S. Gopalakrishnan, National Institute of Fashion Technology, India

Chapter 43
E-Government Services: Creating Value Through Services’ Quality.......................... 964
Rimantas Gatautis, Kaunas University of Technology, Lithuania
Elena Vitkauskaite, Kaunas University of Technology, Lithuania

Chapter 44
Model of E-Education Infrastructure based on Cloud Computing ............................. 982
Zorica Bogdanović, University of Belgrade, Serbia
Aleksandar Milić, University of Belgrade, Serbia
Aleksandra Labus, University of Belgrade, Serbia

Chapter 45
Mobile Learning Services on Cloud......................................................................... 1027
Dušan Barać, University of Belgrade, Serbia
Miloš Radenković, Union University, Serbia
Branislav Jovanić, University of Belgrade, Serbia

Chapter 46
Nitin Nagar, Devi Ahilya University, India
Ugrasen Suman, Devi Ahilya University, India
Section 4
Utilization and Application

This section discusses a variety of applications and opportunities available that can be considered by practitioners in developing viable and effective Web-Based Services programs and processes. This section includes 13 chapters that review topics from case studies to best practices and ongoing research. Further chapters discuss Web-Based Services in a variety of settings. Contributions included in this section provide excellent coverage of today’s IT community and how research into Web-Based Services is impacting the social fabric of our present-day global village.

Chapter 47
Analyzing French and Italian iPhone 4S Mobile Cloud Customer Satisfaction Presented by Organizational Sustainability Modeling ............................................................. 1068
Victor Chang, Leeds Beckett University, UK

Chapter 48
Antecedents to Individual Adoption of Cloud Computing .......................................................... 1088
Yuan Li, Columbia College, USA
Kuo-Chung Chang, Yuan Ze University, Taiwan

Chapter 49
Operational Cost of Running Real-Time Mobile Cloud Applications............................................. 1111
Ovunc Kocabas, University of Rochester, USA
Regina Gyampoh-Vidogah, Independent Researcher, UK
Tolga Soyata, University of Rochester, USA

Chapter 50
Personal Mobile Cloud Computing Affordances for Higher Education: One Example in South Africa ........................................................................................................ 1138
Chaka Chaka, Tshwane University of Technology, South Africa

Chapter 51
The Empirical Analysis of Cloud Computing Services among the Hungarian Enterprises .......... 1162
Peter Sasvari, University of Miskolc, Hungary
Zoltán Nagymate, University of Miskolc, Hungary

Chapter 52
Deployment and Adoption Strategy of Cloud Computing for Blended Learning in Higher Education Institutions in Sub-Saharan Africa .................................................. 1191
Joel S. Mtebe, University of Dar es Salaam, Tanzania
Mussa M. Kissaka, University of Dar es Salaam, Tanzania

Chapter 53
Multi-Cloud Data Management Using Shamir’s Secret Sharing and Quantum Byzantine Agreement Schemes ...................................................................................... 1205
Mohammed A. AlZain, Taif University, Saudi Arabia
Alice S. Li, La Trobe University, Australia
Ben Soh, La Trobe University, Australia
Eric Pardede, La Trobe University, Australia
Volume III

Chapter 54
Dimensions of Business-to-Consumer (B2C) Systems Success in Kuwait: Testing a Modified DeLone and McLean IS Success Model in an E-Commerce Context .......................................................... 1223
Kamel Rouibah, Kuwait University, Kuwait
Paul Benjamin Lowry, City University of Hong Kong, Hong Kong
Laila Almutairi, Central Bank of Kuwait, Kuwait

Chapter 55
Cloud Computing and Its Application to Information Centre .................................................. 1256
Nihal Alam, The Energy and Resources Institute (TERI), India
Ranjan Karmakar, The Energy and Resources Institute (TERI), India

Chapter 56
Application of Cloud Computing in Library Information Service Sector .................................. 1270
Ajay Rawat, University of Petroleum & Energy Studies, India
Praveen Kapoor, University of Petroleum & Energy Studies, India
Rama Sushil, DIT University, India

Chapter 57
Enterprise Cloud Adoption: A Quantitative Exploratory Research ....................................... 1283
Omondi John Opala, DeVry University, USA & Cisco Systems, USA
Shawon S. M. Rahman, University of Hawaii-Hilo, USA & King Saud University, Saudi Arabia
Abdulhameed A. Alelaiwi, King Saud University, Saudi Arabia

Chapter 58
Measuring Service Quality of Commercial Banks in an Underdeveloped Economy: A Study in Assam of North East India ................................................................. 1316
M. P. Bezbaruah, Gauhati University, India
Basanta Kalita, Tezpur College, India

Chapter 59
Exploring the Three-Path Mediation Model: A Study of Customer Perceived Value, Customer Satisfaction Service Quality and Behavioral Intention Relationship ............................................. 1328
Manish Kumar Yadav, Banaras Hindu University, India
Alok Kumar Rai, Banaras Hindu University, India
Medha Srivastava, Banaras Hindu University, India

Section 5
Organizational and Social Implications

This section includes a wide range of research pertaining to the social and behavioral impact of Web-Based Services around the world. Chapters introducing this section critically analyze and discuss trends in Web-Based Services. Also investigating a concern within the field of Web-Based Services is research which discusses the effect of user behavior on Web-Based Services. With 10 chapters, the discussions presented in this section offer research into the integration of global Web-Based Services as well as implementation of ethical and workflow considerations for all organizations.
Chapter 60
Analysis of Cloud Services on Business Processes in the Digitalization of the Consumer Product Industry ............................................................. 1351
   Ute Riemann, SAP Deutschland AG & Co. KG, Germany

Chapter 61
The Influence of National Culture on Customer Service Experience: Case of China .................. 1388
   Ying Ying Liao, Hamdan Bin Mohammed Smart University, UAE
   Ebrahim Soltani, Hamdan Bin Mohammed Smart University, UAE
   Wei-Yuan Wang, Shih-Chien University, Taiwan

Chapter 62
Investigating the Relationship between Educational Quality and Students' Satisfaction: A Post Graduate Student Perspective ......................................................... 1413
   Sally Kamel Ali Omran, Cairo University, Egypt

Chapter 63
Medical Tourism Service Quality: An Indian Perspective .......................................................... 1433
   Bikash Ranjan Debata, University of Macau, China
   S. S. Mahapatra, National Institute of Technology Rourkela, India
   Bhaswati Patnaik, National Institute of Technology Rourkela, India

Chapter 64
Relationships among Information Technology, Service Quality, and Overall Satisfaction of the Customers in Life Insurance Corporation of India ................................................. 1465
   Partha Sarathi Choudhuri, University of Burdwan, India

Chapter 65
Supporting Accessible User Interfaces Using Web Services....................................................... 1477
   Georgios Bouloukakis, Inria Paris-Rocquencourt, France
   Ioannis Basdekis, Institute of Computer Science – Foundation for Research and Technology – Hellas (ICS-FORTH), Greece
   Constantine Stephanidis, Institute of Computer Science – Foundation for Research and Technology – Hellas (ICS-FORTH), Greece & University of Crete, Greece

Chapter 66
Behavioral Intentions to Adopt Technological Innovations: The Role of Trust, Innovation and Performance ......................................................................................... 1496
   Vanessa Ratten, La Trobe University, Australia

Chapter 67
Investigating the Motives of Customers’ Continuance Intentions towards Online Reservation: The Role of E-Service Quality ................................................................. 1509
   Samar Mouakket, University of Sharjah, UAE
Chapter 68
The Effect of Trust on Customers’ Online Repurchase Intention in Consumer-to-Consumer Electronic Commerce................................................................. 1534
Lin Jia, Auburn University, USA
Casey Cegielski, Auburn University, USA
Qinsheng Zhang, Ocean University of China, China

Chapter 69
The Role of Cloud Computing in Global Supply Chain ................................................................. 1556
Kijpokin Kasemsap, Suan Sunandha Rajabhat University, Thailand

Section 6
Managerial Impact

The 12 chapters within this section present contemporary coverage of the social implications of Web-Based Services, more specifically related to the corporate and managerial utilization of information sharing technologies and applications, and how these technologies can be extrapolated to be used in Web-Based Services. Equally as crucial, chapters within this section discuss how leaders can utilize Web-Based Services applications to get the best outcomes from their governors and their citizens.

Chapter 70
Management of Privacy and Security in Cloud Computing: Contractual Controls in Service Agreements ............................................................................................................. 1585
Deniz Tuncalp, Istanbul Technical University, Turkey

Chapter 71
The Role of Cloud Computing Adoption in Global Business .......................................................... 1611
Kijpokin Kasemsap, Suan Sunandha Rajabhat University, Thailand

Chapter 72
Customer Relationship Management as an Imperative for Academic Libraries: A Conceptual Model-121 E-Agent Framework ................................................................. 1641
Amanda Xu, New York University, USA
Sharon Q. Yang, Rider University, USA

Chapter 73
Cloud Computing Implementation Level in Portuguese Companies .............................................. 1675
Osvaldo Ferreira, Universidade Portucalense, Portugal
Fernando Moreira, Universidade Portucalense, Portugal

Chapter 74
Efficiency and Risk Management Models for Cloud-Based Solutions in Supply Chain Management............................................................................................................. 1694
Dothang Truong, Embry-Riddle Aeronautical University, USA
Chapter 75
Customer Management Practices: Multiple Case Studies in Stock Broking Services

Gyaneshwar Singh Kushwaha, Maulana Azad National Institute of Technology (MANIT),
India
Shiv Ratan Agrawal, Maulana Azad National Institute of Technology (MANIT), India

Chapter 76
Cloud Computing for Secure Services in E-Government Architecture

Sajjad Hashemi, Islamic Azad University Miandoab Branch, Iran
Khalil Monfaredi, Islamic Azad University Miandoab Branch, Iran
Seyyed Yasser Hashemi, Islamic Azad University Miandoab Branch, Iran

Chapter 77
Mobile Cloud Resource Management

Konstantinos Katzis, European University Cyprus, Cyprus

Chapter 78
Measuring Service Quality Dimensions in Nationalized and Private Banks

Upendra Singh Panwar, SGSITS, India

Chapter 79
Customer Satisfaction and the Role of Demographic Characteristics in Online Banking

Luc Honore Petnji Yaya, Universitat Internacional de Catalunya, Spain
Frederic Marimon, Universitat Internacional de Catalunya, Spain
Marti Casadesus, Universitat Internacional de Catalunya, Spain

Chapter 80
Quality of Work/Life and Service Quality

Ritu Narang, University of Lucknow, India
Smita Singh, University of Lucknow, India

Volume IV

Chapter 81
Customer Satisfaction via Service Quality Dimensions: An Empirical Research on Stock Broking Services: CS VIA SQD

Gyaneshwar Singh Kushwaha, Maulana Azad National Institute of Technology (MANIT),
India
Shiv Ratan Agrawal, Maulana Azad National Institute of Technology (MANIT), India

Section 7
Critical Issues

This section contains 17 chapters, giving a wide variety of perspectives on Web-Based Services and its implications. Within the chapters, the reader is presented with an in-depth analysis of the most current and relevant issues within this growing field of study. Crucial questions are addressed and alternatives offered along with theoretical approaches discussed.
Chapter 82
Cloud Adoption in Enterprises: Security Issues and Strategies .......................................................... 1848
Ramanathan Venkatraman, National University of Singapore, Singapore
Sitalakshmi Venkatraman, NMIT, Australia

Chapter 83
An Approach for Assessment of the Success of Cloud Systems Usage in Innovation .................. 1873
Ziyuan Fan, University of Technology, Australia

Chapter 84
Impact of EU Data Protection Laws on Cloud Computing: Capturing Cloud-Computing
Challenges and Fault Lines ............................................................................................................. 1891
Morgan Eldred, University of Portsmouth, UK
Carl Adams, University of Portsmouth, UK
Alice Good, University of Portsmouth, UK

Chapter 85
Access Control in Cloud Computing ................................................................................................. 1914
Qianqian Zhao, Xidian University, China
Maode Ma, Nanyang Technological University, Singapore
Yuqing Zhang, Xidian University, China
Bingsheng He, Nanyang Technological University, Singapore

Chapter 86
On Controlling Elasticity of Cloud Applications in CELAR .......................................................... 1937
Georgiana Copil, Vienna University of Technology, Austria
Daniel Moldovan, Vienna University of Technology, Austria
Hung Duc Le, Vienna University of Technology, Austria
Hong-Linh Truong, Vienna University of Technology, Austria
Schaaram Dustdar, Vienna University of Technology, Austria
Chrystalla Sofokleous, University of Cyprus, Cyprus
Nicholas Loulloudes, University of Cyprus, Cyprus
Demetris Trihinas, University of Cyprus, Cyprus
George Pallis, University of Cyprus, Cyprus
Marios D. Dikaikos, University of Cyprus, Cyprus
Ioannis Giannakopoulos, National University of Athens, Greece
Nikolaos Papailiou, National University of Athens, Greece
Ioannis Konstantinou, National University of Athens, Greece
Craig Sheridan, FLEXIANT, UK
Christos K. K. Loverdos, Greek Research and Technology Network, Greece
Evangelos Floros, Greek Research and Technology Network, Greece
Kam Star, Playgen, UK
Wei Xing, CRUK Manchester Institute, UK
Chapter 87
Applying Kolb Learning Experiential Theory with Cloud Computing in Higher Education Institutions: Tanzania........................................................................................................................................ 1968
   Camilius Sanga, Sokoine University of Agriculture, Tanzania
   George Kibirige, Sokoine University of Agriculture, Tanzania

Chapter 88
Demystifying Big Data in the Cloud: Enhancing Privacy and Security Using Data Mining Techniques ........................................................................................................................................ 2001
   Gebeyehu Belay Gebremeskel, Chongqing University, China
   Yi Chai, Chongqing University, China
   Zhongshi He, Chongqing University, China

Chapter 89
Cloud State Surveillance: Dark Octopus Tentacle Clouds from the Atlantic .............................................. 2032
   Sylvia Kierkegaard, International Association of IT Lawyers, Denmark

Chapter 90
Cloud Security Using Face Recognition........................................................................................................... 2055
   Santosh Kumar, Indian Institute of Technology, India
   Debanjan Sadhya, Indian Institute of Technology, India
   Durgesh Singh, Indian Institute of Technology, India
   Sanjay Kumar Singh, Indian Institute of Technology, India

Chapter 91
Data Security Issues and Solutions in Cloud Computing.................................................................................... 2076
   Abhishek Majumder, Tripura University, India
   Sudipta Roy, Assam University, India
   Satarupa Biswas, Tripura University, India

Chapter 92
Benefits and Challenges for Business Process Management in the Cloud ...................................................... 2096
   Ute Riemann, SAP Deutschland AG & Co. KG, Germany

Chapter 93
Service Quality Dimensionality in Higher Education Institutions (HEIs): An Analytical Approach from Students’ Perspective........................................................................................................................................ 2122
   B. Shanmuga Priya, Kalasalingam University, India
   M. Jeyakumaran, Kalasalingam University, India

Chapter 94
Adaptive Web Service Composition: An Aspect-Oriented Approach............................................................ 2139
   Areeg Samir, Cairo University, Egypt
Chapter 95
Resource Provisioning in the Cloud: An Exploration of Challenges and Research Trends ........... 2159
  Ming Mao, University of Virginia, USA
  Marty Humphrey, University of Virginia, USA

Chapter 96
Toward Quality Measurement Approaches for Improving E-Government Services in Jordan ....... 2182
  Salah Alhyari, The World Islamic Sciences and Education University, Jordan
  Mohammad Alhyari, The World Islamic Sciences and Education University, Jordan

Chapter 97
Multi-Disciplinary Research Issues in Cloud Computing ......................................................... 2197
  Jitendra Singh, University of Delhi, India
  Vikas Kumar, Asia-Pacific Institute of Management, India

Chapter 98
QoS in the Mobile Cloud Computing Environment ................................................................. 2221
  Zhefu Shi, University of Missouri – Kansas City, USA
  Cory Beard, University of Missouri – Kansas City, USA

Section 8
Emerging Trend

This section highlights research potential within the field of Web-Based Services while exploring uncharted areas of study for the advancement of the discipline. Introducing this section are chapters that set the stage for future research directions and topical suggestions for continued debate, centering on the new venues and forums for discussion. A pair of chapters on space-time makes up the middle of the section of the final 9 chapters, and the book concludes with a look ahead into the future of the Web-Based Services field. In all, this text will serve as a vital resource to practitioners and academics interested in the best practices and applications of the burgeoning field of Web-Based Services.

Chapter 99
Towards Semantic Mashups: Tools, Methodologies, and State of the Art .................................. 2240
  Aikaterini K. Kalou, University of Patras, Greece
  Dimitrios A. Koutsomitropoulos, University of Patras, Greece

Chapter 100
Cloud Computing for Teaching Practice: A New Design? ...................................................... 2267
  Robab Saadatdoost, Universiti Teknologi Malaysia, Malaysia & Islamic Azad University of Parand, Iran
  Alex Tze Hiang Sim, Universiti Teknologi Malaysia, Malaysia
  Hosein Jafarkarimi, Universiti Teknologi Malaysia, Malaysia & Islamic Azad University of Damavand, Iran
  Jee Mei Hee, Universiti Teknologi Malaysia, Malaysia
  Leila Saadatdoost, Islamic Azad University of Sari, Iran
Chapter 101
Business Transformation though Cloud Computing in Sustainable Business................. 2285

K. S. Jasmine, Visvesvaraya Technological University, India
M. Sudha, RVVisvesvaraya Technological University, India

Chapter 102
Cloud-Based Healthcare Systems: Emerging Technologies and Open Research Issues .......... 2299

Ahmed Shawish, Ain Shams University, Egypt
Maria Salama, British University in Egypt, Egypt

Chapter 103
The State of the Art Forensic Techniques in Mobile Cloud Environment: A Survey, Challenges and Current Trends ................................................................. 2324

Muhammad Faheem, University College Dublin, Ireland
Tahar Kechadi, University College Dublin, Ireland
Nhien An Le-Khac, University College Dublin, Ireland

Chapter 104
Virtualization Evolution: From IT Infrastructure Abstraction of Cloud Computing to Virtualization of Network Functions ................................................................. 2345

Harilaos Koumaras, NCSR Demokritos, Greece
Christos Damaskos, NCSR Demokritos, Greece
George Diakoumakos, NCSR Demokritos, Greece
Michail-Alexandros Kourtis, NCSR Demokritos, Greece
George Xilouris, NCSR Demokritos, Greece
Georgios Gardikis, NCSR Demokritos, Greece
Vaios Koumaras, NCSR Demokritos, Greece
Thomas Siakoulis, NCSR Demokritos, Greece

Chapter 105
GPU Scaling: From Personal Supercomputing to the Cloud........................................... 2373

Yaser Jararweh, Jordan University of Science and Technology, Jordan
Moath Jarrah, Jordan University of Science and Technology, Jordan
Abdelkader Bousselham, Qatar Environment and Energy Research Institute, Qatar

Chapter 106
Accelerating Biomedical Research through Semantic Web Services............................. 2385

Artemis Chaleplioglou, Academy of Athens, Greece

Chapter 107
A New Approach in Cloud Computing User Authentication ........................................... 2402

Alaa Hussein Al-Hamami, Amman Arab University, Jordan
Rafal A Al-Khashab, Amman Arab University, Jordan

Index ................................................................................................................................. xxx