# Table of Contents

**Preface** ................................................................................................................................................ xv

**Acknowledgment** ................................................................................................................................ xix

## Section 1

### Theory and Model

**Chapter 1**

Systems Approach to Knowledge Synthesis .......................................................................................... 1

*Yoshiteru Nakamori, Japan Advanced Institute of Science and Technology, Japan*

*Andrzej P. Wierzbicki, National Institute of Telecommunications, Poland*

**Chapter 2**

Evolution of IC Science and Beyond ................................................................................................... 15

*Leif Edvinsson, Lund University, Sweden & The Hong Kong Polytechnic University, Hong Kong*

**Chapter 3**

A Theory of Learning for the Creation and Management of Knowledge in Learning Communities and Organizations ........................................................................................................ 28

*Ton Jörg, University of Utrecht, The Netherlands*

**Chapter 4**

Towards The New Episteme: Philosophy, Knowledge Science, Knowledge and Tacit Knowledge.... 45

*Zbigniew Król, Japan Advanced Institute of Science and Technology, Japan & Institute of Philosophy and Sociology of The Polish Academy of Sciences, Poland*

## Section 2

### Knowledge Management

**Chapter 5**

Are We Stuck With Knowledge Management? A Case for Strategic Knowledge Resource Development ............................................................................................................................... 61

*David Griffiths, University of Edinburgh, UK*

*Serge Koukpal, University of Edinburgh, UK*
Chapter 6
The Knowledge CORE: A New Model to Challenge the Knowledge Management Field.................. 83
   David A. Griffiths, University of Edinburgh, Scotland
   Serge Koukpaki, University of Edinburgh, Scotland
   Brian Martin, University of Edinburgh, Scotland

Chapter 7
Knowledge Crash and Knowledge Management .............................................................. 99
   Jean-Louis Ermine, TELECOM Business School, France

Chapter 8
A Conceptual Framework for Effective Knowledge Management Using Information and
Communication Technologies ...................................................................................... 117
   Hepu Deng, RMIT University, Australia

Section 3
Knowledge Technology

Chapter 9
Meta-Synthesis Knowledge System: Basics and Practice ............................................... 132
   Gu Jifa, Academy of Mathematics and Systems Sciences, CAS, China

Chapter 10
Ontology Alignment: State of the Art, Main Trends and Open Issues................................. 147
   Tatyana Ivanova, Technical University of Sofia, Bulgaria

Chapter 11
SEMCL: A Cross-Language Semantic Model for Knowledge Sharing................................. 168
   Weisen Guo, University of Tokyo, Japan
   Steven B. Kraines, University of Tokyo, Japan

Chapter 12
A Collective-Intelligence View on the Linux Kernel Developer Community ....................... 188
   Haoxiang Xia, Dalian University of Technology, China

Chapter 13
Exploration and Exploitation in Parallel Problem Solving: Effect of Imitation
Strategy and Network Structure.................................................................................. 201
   Hua Zhang, Xi’an Jiaotong University, China
   Youmin Xi, Xi’an Jiaotong-Liverpool University, China
Chapter 14
Exploring the Enterprise Value of Wikis through Media Choice Theories ........................................ 216

Christian Wagner, City University of Hong Kong, China
Andreas Schroeder, Open University, UK
Wing Yan Wong, City University of Hong Kong, China
Anna Shum, City University of Hong Kong, China

Chapter 15
Enhancing On-Line Conferencing Ba with Human-Machine Interaction CorMap Analysis .......... 228

Bin Luo, Chinese Academy of Sciences, China
Xijin Tang, Chinese Academy of Sciences, China

Section 4
Applications

Chapter 16
Expert Mining and Traditional Chinese Medicine Knowledge ......................................................... 239

Gu Jifa, Chinese Academy of Sciences, China
Song Wuqi, Dalian University of Technology, China
Zhu Zhengxiang, Dalian University of Technology, China
Gao Rui, China Academy of Chinese Medical Sciences, China
Liu Yijun, Chinese Academy of Sciences, China

Chapter 17
Semantic Interoperability for Enhancing Sharing and Learning through E-Government Knowledge-Intensive Portal Services .................................................. 252

Ching-Chieh Kiu, Multimedia University, Malaysia
Lai-Yung Yuen, The Hong Kong Polytechnic University, China
Eric Tsui, The Hong Kong Polytechnic University, China

Chapter 18
A Formalised Approach to the Management of Risk: A Conceptual Framework and Ontology..... 263

Mike Brownsword, Atego, UK
Rossitza Setchi, Cardiff University, UK

Chapter 19
VPRS-Based Group Decision-Making for Risk Response in Petroleum Investment ..................... 286

Gang Xie, Chinese Academy of Sciences, China
Wuyi Yue, Konan University, Japan
Shouyang Wang, Chinese Academy of Sciences, China
Chapter 20
A Rough-Sets Approach to Kansei Evaluation Modeling and Design Support ........................................... 296
Hongli Ju, Japan Advanced Institute of Science and Technology, Japan
Yoshiteru Nakamori, Japan Advanced Institute of Science and Technology, Japan

Chapter 21
A Knowledge-Based System for Sharing and Reusing Tacit Knowledge in Robotic Manufacturing ......................................................... 308
Lei Wang, Kyoto University, Japan
Yajie Tian, Kyoto University, Japan
Tetsuo Sawaragi, Kyoto University, Japan
Yukio Horiguchi, Kyoto University, Japan

Compilation of References ................................................................................................................................. 327

About the Editor .................................................................................................................................................. 362

Index................................................................................................................................................................. 363