Virtual Enterprise Integration: Technological and Organizational Perspectives

Table of Contents

Preface ................................................................. vii

Section I: Introduction – Towards a New Virtual Enterprise Integration Paradigm

Chapter I
Virtual Enterprise Integration: Challenges of a New Paradigm ................. 1
Goran D. Putnik, University of Minho, Portugal
Maria Manuela Cunha, Polytechnic Institute of Câvado and Ave, Portugal
Rui Sousa, University of Minho, Portugal
Paulo Ávila, Polytechnic Institute of Porto, Portugal

Section II: Societal and Organizational Requirements

Chapter II
Virtuality and the Future of Organizations .............................................. 32
Erastos Filos, European Commission, Information Society
Directorate-General, Belgium

Chapter III
Collaborative Networked Organizations for Eco-Consistent Supply Chains .......... 47
Rinaldo C. Michelini, Università di Genova, Italy
Roberto P. Razzoli, Università di Genova, Italy

Chapter IV
Business Alignment Requirements and Dynamic Organizations .................. 78
Maria Manuela Cunha, Polytechnic Institute of Câvado and Ave,
Portugal
Goran D. Putnik, University of Minho, Portugal
Chapter V
Collaborative Network Models: Overview and Functional Requirements .......... 102
Sonja Ellmann, Universität Bremen, Germany
Jens Eschenbaecher, Universität Bremen, Germany

Chapter VI
BM_Virtual Enterprise: A Model for Dynamics and Virtuality ...................... 124
Goran D. Putnik, University of Minho, Portugal
Maria Manuela Cunha, Polytechnic Institute of Câvado and Ave, Portugal
Rui Sousa, University of Minho, Portugal
Paulo Ávila, Polytechnic Institute of Porto, Portugal

Section III: Generative Integration

Chapter VII
Market of Resources as a Virtual Enterprise Integration Enabler .................. 145
Maria Manuela Cunha, Polytechnic Institute of Câvado and Ave, Portugal
Goran D. Putnik, University of Minho, Portugal
Angappa Gunasekaran, University of Massachusetts - Dartmouth, USA
Paulo Ávila, Polytechnic Institute of Porto, Portugal

Chapter VIII
Broker Performance for Agile/Virtual Enterprise Integration ....................... 166
Paulo Ávila, Polytechnic Institute of Porto, Portugal
Goran D. Putnik, University of Minho, Portugal
Maria Manuela Cunha, Polytechnic Institute of Câvado and Ave, Portugal

Chapter IX
Integration in Cooperative Distributed Systems: Privacy-Based Brokering
Architecture for Virtual Enterprises ....................................................... 186
Abdulmutalib Masaud-Wahaishi, University of Western Ontario, Canada
Hamada Ghenniwa, University of Western Ontario, Canada
Weiming Shen, University of Western Ontario and National Research Council Canada, Canada

Chapter X
Dynamic Contract Generation for Dynamic Business Relationships ............. 207
Simon Field, Matching Systems, UK
Yigal Hoffner, IBM Research Laboratory GmbH, Switzerland
Chapter XI
Contributions to an Electronic Institution Supporting Virtual Enterprises’ Life Cycle ................................................................. 229
Ana Paula Rocha, University of Porto, Portugal
Henrique Lopes Cardoso, University of Porto, Portugal
Eugénio Oliveira, University of Porto, Portugal

Chapter XII
Use of Situation Room Analysis to Enhance Business Integration Aspects of a Virtual Enterprise .................................................................................................................. 247
Bob Roberts, Kingston University, UK
Adamantios Koumpis, ALTEC S.A., Greece

Chapter XIII
Virtual Enterprise Coalition Strategy with Game Theoretic Multiagent Paradigm ............................................................................................. 263
Toshiya Kaihara, Kobe University, Japan
Susumu Fujii, Kobe University, Japan

Section IV: Technologies for Integration

Chapter XIV
Semantic Distance, the Next Step? .............................................................. 283
Ted Goranson, Sirius-Beta and Old Dominion University, USA

Chapter XV
IT Infrastructures and Standards for VE Integration Development .............. 297
Nicolaos Protogeros, University of Macedonia, Greece

Chapter XVI
Interactive Models for Virtual Enterprises ................................................. 316
Håvard D. Jorgensen, Computas, Norway
John Krogstie, SINTEF and NTNU, Norway

Chapter XVII
Machine Learning Techniques for Wrapper Maintenance ............................... 334
Kristina Lerman, University of Southern California, USA
Steven N. Minton, Fetch Technologies Inc., USA
Craig A. Knoblock, Fetch Technologies Inc. and University of Southern California, USA

Chapter XVIII
Information Technology Infrastructure and Solutions ................................. 351
Maria Manuela Cunha, Polytechnic Institute of Cávado and Ave, Portugal
Goran D. Putnik, University of Minho, Portugal
Joaquim Silva, Polytechnic Institute of Cávado and Ave, Portugal
Chapter XIX
Consortium Agreement Template for Virtual Enterprises ............................................. 366
José Dinis Carvalho, University of Minho, Portugal
Nuno Afonso Moreira, University of Trás-os-Montes e Alto Douro, Portugal
Luís Carlos Pires, Polytechnic Institute of Bragança, Portugal

Section V: Projects and Case Studies

Chapter XX
Virtual Enterprises and the Case of BIDSAVER .......................................................... 382
Nicolaos Protogeros, University of Macedonia, Greece

Chapter XXI
Implementation Options for Virtual Organizations: A Peer-to-Peer (P2P) Approach ................................................................. 400
Bob Roberts, Kingston University, UK
Adomas Svirskas, Kingston University, UK
Jonathan Ward, Kingston University, UK

Chapter XXII
Collaborative Industrial Automation: Toward the Integration of a Dynamic Reconfigurable Shop Floor into a Virtual Factory ........................................ 417
Armando Walter Colombo, Schneider Electric P&T HUB, Germany
Ronald Schoop, Schneider Electric P&T HUB, Germany

Appendix ................................................................................................................... 436

About the Authors ..................................................................................................... 440

Index ........................................................................................................................ 448