Handbook of Research on Business Process Modeling

Jorge Cardoso
SAP Research, Germany

Wil van der Aalst
Technische Universiteit Eindhoven, The Netherlands

Information Science REFERENCE

INFORMATION SCIENCE REFERENCE

Hershey · New York

Table of Contents

Preface xx

Section I
Advanced Modeling Methodologies

Chapter I
Business Process Modelling in the jABC: The One-Thing-Approach 1
Tiziana Margaria, Universität Potsdam, Germany
Bernhard Steffen, TU Dortmund, Germany

Chapter II
Modeling Process-Driven SOAs: A View-Based Approach 27
Huy Tran, Distributed Systems Group, Institute of Information Systems, Vienna University of Technology, Austria
Ta'id Holmes, Distributed Systems Group, Institute of Information Systems, Vienna University of Technology, Austria
Uwe Zdun, Distributed Systems Group, Institute of Information Systems, Vienna University of Technology, Austria
Schahram Dustdar, Distributed Systems Group, Institute of Information Systems, Vienna University of Technology, Austria

Chapter III
Process Modeling for Holistic Process Management 49
Stefan Jablonski, University of Bayreuth, Germany

Section II
Modern Business Process Languages

Chapter IV
The Dichotomy of Modeling and Execution: BPMN and WS-BPEL 70
Matthias Kloppmann, IBM Deutschland Research and Development GmbH, Germany
Dieter König, IBM Deutschland Research and Development GmbH, Germany
Simon Moser, IBM Deutschland Research and Development GmbH, Germany

Chapter V
Yet Another Workflow Language: Concepts, Tool Support, and Application 92
Chun Ouyang, Queensland University of Technology, Australia
Michael Adams, Queensland University of Technology, Australia
Arthur H.M. ter Hofstede, Queensland University of Technology, Australia

Chapter VI
Modeling Constructs 122
Ekkart Kindler, Denmark's Technical University, DTU Informatics, Denmark

Chapter VII
ICN-Based Workflow Model and its Advances 142
Kwanghoon Kim, Kyonggi University, South Korea
Clarence A. Ellis, University of Colorado at Boulder, USA

Section III
Process Models in Dynamic Environments

Chapter VIII
Enabling Adaptive Process-Aware Information Systems with ADEPT2 173
Manfred Reichert, University of Ulm, Germany
Peter Dadam, University of Ulm, Germany

Chapter IX
Modeling Business Process Variability for Design-Time Configuration 204
Marcello La Rosa, Queensland University of Technology, Australia
Marlon Dumas, Queensland University of Technology, Australia, & University of Tartu, Estonia
Arthur H.M. ter Hofstede, Queensland University of Technology, Australia

Chapter X
Design of Repairable Processes 229
Cinzia Cappiello, Politecnico di Milano – Dipartimento di Elettronica e Informazione, Italy
Barbara Pernici, Politecnico di Milano – Dipartimento di Elettronica e Informazione, Italy

Chapter XI
Web Process Adaptation 245
Kunal Verma, Accenture Technology Labs, USA

Section IV
Enriching Process Models and Enactment Architectures

Chapter XII
Temporalities for Workflow Management Systems 255
Carlo Combi, Università degli Studi di Verona, Italy
Giuseppe Pozzi, Politecnico Di Milano, Italy

Chapter XIII
The People Integration Challenge 274
Karsten Ploesser, SAP Research CEC, Australia
Nick Russell, Technische Universiteit Eindhoven, The Netherlands

Chapter XIV
Semantic Business Process Management: Applying Ontologies in BPM 299
Dimka Karastoyanova, University of Stuttgart, Germany
Tammo van Lessen, University of Stuttgart, Germany
Frank Leymann, University of Stuttgart, Germany
Zhilei Ma, University of Stuttgart, Germany
Jörg Nitzsche, University of Stuttgart, Germany
Branimir Wetzstein, University of Stuttgart, Germany

Chapter XV
Compiling Business Process Models into Executable Code 318
Cesare Pautasso, University of Lugano, Switzerland

Chapter XVI
Using WfMS to Support Unstructured Activities 338
Hernâni Mourão, Polytechnic Institute of Setúbal, Portugal
Pedro Antunes, University of Lisboa & LaSIGE - Large Scale Informatics Systems Laboratory, Portugal

Section V
Business Process Management in Organizations

Chapter XVII
Business Process Engineering 366
Guillermo Jimenez, Centro de Sistemas Inteligentes Tecnológico de Monterrey, Mexico

Chapter XVIII
B2B and EAI with Business Process Management 384
Christoph Bussler, Merced Systems, Inc., USA

Chapter XIX
Systems for Interorganizational Business Process Management 403
Paul Grefen, Eindhoven University of Technology, The Netherlands

Chapter XX
The Journey to Business Process Compliance 426
Guido Governatori, NICTA, Queensland Research Laboratory, Australia
Shazia Sadiq, University of Queensland, Australia

Section VI
Improving Business Processes

Chapter XXI
Business Process Intelligence 456
M. Castellanos, Hewlett-Packard Laboratories, USA
A. K. Alves de Medeiros, Eindhoven University of Technology, The Netherlands
J. Mendling, Queensland University of Technology, Australia
B. Weber, University of Innsbruck, Austria
A. J. M. M. Weijters, Eindhoven University of Technology, The Netherlands

Chapter XXII
Applied Sequence Clustering Techniques for Process Mining 481
Diogo R. Ferreira, IST – Technical University of Lisbon, Portugal

Chapter XXIII
A Data-Centric Design Methodology for Business Processes 503
Kamal Bhattacharya, IBM T.J. Watson Research Lab, USA
Richard Hull, IBM T.J. Watson Research Lab, USA
Jianwen Su, University of California at Santa Barbaara, USA

Chapter XXIV
Measurement and Maturity of Business Processes 532
Laura Sanchez, University of Castilla-La Mancha, Spain
Andrea Delgado, University of the Republica, Uruguay
Francisco Ruiz, University of Castilla-La Mancha, Spain
Félix García, University of Castilla-La Mancha, Spain
Mario Piattini, University of Castilla-La Mancha, Spain

Compilation of References 557

About the Contributors 588

Index 598