Contents

1 Traditional Business Process Management 1
1.1 Introduction 2
1.2 The Development of the Concept of Business Process Management 2
1.2.1 The First Wave of Process Management—"Industrial Engineering" 5
1.2.2 The Second Wave of Process Management—"Value Chain Management" 6
1.2.3 The Third Wave of Process Management—"Evolutionary Adaptation to the Needs of the Clients" 8
1.3 The Incompatibility of Traditional Process Management with the Requirements of Business 11
1.3.1 Lack of an Actual Process-Based Approach to Operations 12
1.3.2 Detaching the Decision on the Method of Performance from Performance Itself 13
1.3.3 The Overlong Process Improvement Loop 14
1.3.4 The Incapability of Process Individualization 15
1.3.5 Diffusion of Accountability for the Results of Process Execution 16
1.3.6 A Top-Down Approach to Implementing Changes 17
1.3.7 No Possibility of Widespread Limited Experimentation 18
1.3.8 The Inability to Keep Up with the Needs of the Clients and the Changing Environment 19
1.3.9 The Use of a Small Fraction of the Knowledge in the Organization 19
1.3.10 Insufficient Support for, or Even Conflict with the Concept of Knowledge Management 20

1.4 The Search for the Possibility of Adapting Traditional Business Process Management to the Requirements of the Knowledge Economy with the Support of IT Solutions 22
1.4.1 Pressure Resulting from the Development of ICT Technologies and Changes to Social Culture 23
1.4.2 Case Management—An Attempt at Surpassing the Limitations of Traditional Process Management 25
1.4.3 Process Mining 31
1.4.4 Robotic Process Automation 35
1.4.5 Machine Learning 39
1.4.6 Search for New Directions of the Development of Process Management by Systems Vendors 41
1.5 The 4th Wave of Process Management—"Business Process and Knowledge Management" 42
1.6 Conclusions 47
References 48

2 Dynamic Business Process Management 55
2.1 Introduction 55
2.2 The Definition of Dynamic Business Process Management 57
2.3 The Consequences of Dynamic Business Process Management 63
2.3.1 The Empowerment of Process Performers 63
2.3.2 The Radical Acceleration of Adapting to Requirements 64
2.3.3 A System of Constant Knowledge Creation and Verification 65
2.3.4 The Systemic Dissemination of Verified Knowledge 66
2.3.5 The Learning Organization 66
2.3.6 Changes to the BPM Lifecycle in the Organization 67
2.3.7 The Necessity of Supplementing Business Process Maturity Models 77
2.3.8 Change of the Goals of Implementing Process Management in Organizations 79
2.4 New Possibilities of Using ICT Technologies and Methodologies in Dynamic Business Process Management 80
2.4.1 ICT Technologies and Business Process Management 80
2.4.2 The Practical Reunification of Process Management with Case Management—An Attempt at Surpassing the Limitations of Traditional Business Process Management 81
2.4.3 New Database and Internet Technologies 84

2.5 Conclusions—The New Meaning of the Term "Business Process Management" 85
References 87

3 Process Execution in a Knowledge Management Environment 91
3.1 Introduction 92
3.2 Characteristics of Knowledge 92
3.2.1 Tacit and Explicit Knowledge 96
3.2.2 Processes Pertaining to the Creation and Management of Organizational Knowledge 100
3.2.3 The Most Common Problems Pertaining to Knowledge Management 106
3.3 Mutual Relations Between Knowledge Management and Dynamic Business Process Management 108
3.3.1 Managing Tacit Knowledge Within Dynamic Business Process Management 109
3.3.2 Proposal of Updating the Process-Oriented Model of Knowledge Management 117
3.3.3 Relations Between Nonaka's and Takeuchi's Knowledge Management Model and Dynamic Business Process Management 120
3.4 Process Execution as a Source of Knowledge 123
3.5 Execution of the Concept of a Learning Organization in Dynamic Business Process Management 127
3.5.1 The Concept of a Learning Organization 127
3.5.2 Practical Implementation of the Concept of a Learning Organization in Dynamic Business Process Management 130
3.6 Conclusions: The Integration of Process Management with Knowledge Management 132
References 133

4 The Implementation of Dynamic Business Process Management 137
4.1 Introduction 138
4.2 The Implementation of Traditional Process Management 139
4.2.1 Process Discovery and Rationalization 141
4.2.2 The Transfer of Knowledge Contained in Process Descriptions 146
4.2.3 The Automation of Process Execution 147
4.2.4 Traditional Business Process Management in the Organization 150
4.3 The Necessity of Changing the Goals and the Scope of Implementing Process Management 152

4.4 Changing the Method of Business Process Description 155
4.4.1 Traditional, Static Process Modeling 155
4.4.2 Risks Associated with the Static Modeling of Processes Which Are Dynamic in Nature 157
4.4.3 Dynamic Business Process Modeling 160
4.5 Simulations of and Optimization Research on Dynamic Processes 163
4.6 Different Forms of Process Descriptions in Different Stages of the Process Lifecycle Within the Organization 167
4.6.1 The Research Methodology 172
4.6.2 Results of the Study 173
4.6.3 Results and Discussion 175
4.7 The Implementation of Dynamic Business Process Management 178
4.7.1 The (re)Design Stage 185
4.7.2 The Communication and Cooperation Stage 187
4.7.3 The Implementation and Adjustment Stage 187
4.7.4 The Execution and Monitoring Stage 188
4.7.5 The Analysis and Diagnosis Stage 190
4.8 Conclusions 191
References 192

Conclusion 195

Glossary 203

References 211