

Contents

| | | |
|----------|---|-----------|
| 1 | Introduction | 1 |
| | Literature. | 6 |
| 2 | Considerations Based on Behavioral Psychology and Cognitive Science | 7 |
| 2.1 | “Mind” and “Self” | 8 |
| 2.2 | Processes of Consciousness | 9 |
| 2.3 | Learning and How to Build a Mind | 9 |
| 2.4 | Decision-Making and Learning Processes. | 12 |
| 2.5 | The “Extended Mind Thesis” | 13 |
| 2.6 | Language and (Artificial) Intelligence. | 14 |
| 2.7 | “System 1” and “System 2”—Thinking Fast and Slow | 15 |
| 2.8 | Decision Making—Cognitive Typologies | 16 |
| 2.9 | Coping with Uncertainty. | 18 |
| 2.10 | Motivation | 19 |
| 2.11 | Intuition | 20 |
| 2.12 | Is There a Subconscious Mind of Organizations? | 23 |
| | Literature. | 24 |
| 3 | Elements of an Organization’s Infrastructure—Relevant Existing and Expectable Technologies | 25 |
| 3.1 | Infrastructures of Organizations | 26 |
| 3.1.1 | “Soft” Infrastructure | 26 |
| 3.1.2 | Technical Infrastructure | 28 |
| 3.1.3 | ICT Infrastructure | 29 |
| 3.2 | Relevant Technologies and Megatrends | 31 |
| 3.2.1 | Developments in Information and Communication Technologies (ICT) and Their Application | 32 |
| 3.2.2 | Network Technologies. | 35 |

| | | |
|----------|---|-----------|
| 3.2.3 | Internet of Things, Internet of Everything, Embedded Systems, Sensor Networks, Mechatronics | 37 |
| 3.2.4 | Mobile Devices | 39 |
| 3.2.5 | HCI Human Computer Interface, User Experience, Biofeedback. | 40 |
| 3.2.6 | Virtual Reality and Augmented Reality. | 41 |
| 3.2.7 | “Social Media” and “Social Business Collaboration” | 42 |
| 3.2.8 | Big Data—Smart Data—Reality Mining—Analytics | 45 |
| 3.2.9 | Simulation | 47 |
| 3.2.10 | Privacy and Data Security | 49 |
| 3.2.11 | E-Learning, Gamification. | 50 |
| 3.2.12 | Expert Systems, Decision Support Systems, Knowledge Management. | 50 |
| 3.2.13 | Automation, Robotics | 53 |
| 3.2.14 | The Real Time Enterprise | 55 |
| 3.2.15 | Artificial Intelligence | 56 |
| 3.2.16 | Megatrends, Predicted and Propagated by the Consulting Industry | 63 |
| | Literature. | 65 |
| 4 | A Model of an Organization—How Do the Subconscious Mind and the Conscious Mind of an Organization Work? | 67 |
| 4.1 | The Basic Element: The Individual Employee in the Organization. | 68 |
| 4.2 | The Central Component of the Organization: The Organizational Unit (OU) | 74 |
| 4.3 | Another Key Element of an Organization: The Working Group | 79 |
| 4.4 | The Organization as a Whole | 83 |
| 4.5 | Cascading of the Conscious Mind and the Subconscious Mind in an Organization. | 88 |
| 4.6 | The Environment of the Organization and How the Organization, the Organizational Units and Their Staff Are Embedded in It | 91 |
| 4.7 | The Infrastructure of an Organization | 95 |
| 4.8 | Complexity and Uncertainty | 101 |
| 4.9 | The Consideration of the Model as a Whole | 103 |
| | Literature. | 104 |

| | | |
|----------|---|------------|
| 5 | How to Form and Shape an Organization and Its Subconscious Mind | 105 |
| 5.1 | From Perception to Decision | 110 |
| 5.1.1 | Extended Perception | 110 |
| 5.1.2 | Knowledge, Memory and Recollection | 113 |
| 5.1.3 | Cognition, Decision and Action | 115 |
| 5.2 | Innovation | 121 |
| 5.2.1 | Innovation per se | 122 |
| 5.2.2 | Innovation by Forming Systems and Infrastructures | 126 |
| 5.2.3 | ICT Infrastructure | 127 |
| 5.2.4 | Social Media Integration | 133 |
| 5.2.5 | Context-Sensitive Presentation of Information, Visualization | 134 |
| 5.2.6 | Decision Support and Decision Automata | 139 |
| 5.2.7 | Simulation | 143 |
| 5.2.8 | e-Learning, Gamification and Microlearning | 145 |
| 5.2.9 | Learning Systems and Learning Organizations | 147 |
| 5.2.10 | Automation, Robotics, Product Innovation | 158 |
| 5.2.11 | Security | 163 |
| 5.2.12 | Artificial Intelligence | 165 |
| 5.3 | Thinking Organizations New | 168 |
| 5.3.1 | Collaboration and “Shareconomy” | 169 |
| 5.3.2 | Culture and the Conscious Mind of an Organization | 170 |
| 5.3.3 | Thinking Organizations New—Process Organization | 173 |
| 5.3.4 | Thinking Organizations New—Organizational Structure | 176 |
| 5.3.5 | Integrated Management System as a Framework and “Operating System” of an Organization | 181 |
| 5.3.6 | Culture of Excellence | 184 |
| 5.3.7 | Resilience | 185 |
| 5.3.8 | Managing Complexity and Embracing Uncertainty | 186 |
| 5.3.9 | Forming the Subconscious Mind of Organizations: How and How Quickly? | 188 |
| | Literature | 195 |
| 6 | Will Organizations Emerge as “Hybrid Intelligences” from the Digital Transformation? | 197 |
| 6.1 | How Is the Digital Transformation About to Disrupt the Way Organizations Work? | 198 |
| 6.1.1 | Business Model Innovation Is Key for Creating Value | 200 |

| | | |
|----------|--|------------|
| 6.1.2 | Culture as Prerequisite to Master the Digital Transformation | 201 |
| 6.1.3 | Narratives as Tool for Strategic Management in the Digital Transformation | 202 |
| 6.2 | Hybrid Intelligences—Man and Machine Collaborating in Organizations | 205 |
| 6.2.1 | Man—The Human Individual and His Informational Patterns of Behavior | 208 |
| 6.2.2 | Teaming of Human and AI | 211 |
| 6.2.3 | Will There Be Jobs Left in Self-tuning Organizations? | 211 |
| 6.2.4 | What Will Be the Impact on Management Structures? | 213 |
| 6.2.5 | Real Life (RL) Gaming Tears Down the Walls and Is Bringing the Stories Back | 214 |
| 6.2.6 | Blending Analytics with Intuition | 216 |
| 6.2.7 | How to Reorganize Around Decision Making—What Will Be the AI Part? | 217 |
| 6.2.8 | What Does Really Drive Business Performance? | 221 |
| 6.2.9 | Cross-Organizational Business Processes Incorporating Artificial and Hybrid Intelligences | 222 |
| 6.2.10 | What Are the Managerial Skills Required? | 223 |
| 6.2.11 | Conditions Are Decisive in Organizational Behavior | 224 |
| 6.2.12 | Conviviality and Empathy as Guiding Principles Creating Hybrid Intelligences | 226 |
| 6.2.13 | How Is Collaboration Between Man and Machine Expected to Develop? | 229 |
| 6.2.14 | Creating Sustainable and Equitable Futures in a World Increasingly Dominated by Technology | 232 |
| 6.2.15 | Will Deep Learning Enable AI'S to Have Emotions? | 236 |
| 6.3 | Rules and Ethics for Hybrid Intelligences and Digital Transformation | 238 |
| | Literature | 246 |
| 7 | Summary and Outlook | 249 |
| | Epilogue | 253 |

Digital Transformation Shaping the Subconscious Minds
of Organizations

Innovative Organizations and Hybrid Intelligences

Leodolter, W.

2017, XXI, 254 p. 20 illus., 5 illus. in color., Hardcover

ISBN: 978-3-319-53617-0