

Contents

Artificial Intelligence: Management Challenges and Responsibility	1
Reinhard Altenburger	
1 Challenges and Prospects of Artificial Intelligence	2
2 The Impact on Managerial Decision-Making	3
3 Impact of AI on Corporate Strategy and Organization	4
4 Management Responsibility and Ethical Implications	6
References	7
Artificial Intelligence: Companion to a New Human “Measure”?	9
René Schmidpeter and Christophe Funk	
1 Artificial Intelligence Changes Our Society and Economy	9
2 Critical Discussions Require New Perspectives	10
3 Opportunities of Artificial Intelligence in a Sustainable Transformation	11
4 Further Development of Corporate Social Responsibility	12
5 Visionary Entrepreneurs Rely on AI Business Models with Positive Impact	13
References	14
AI Governance for a Prosperous Future	17
Alexander Vocolka	
1 Introduction	18
2 Artificial Intelligence Is the Quintessence of the Fourth Industrial Revolution	20
2.1 From Intelligence to Productivity	20
2.2 The Value of AI	24
2.3 AI Working for Us	24
3 Utopia or Dystopia: Where There Is Light, There Is also Shadow	25
3.1 How to Guide the Emergence of AI	28
3.2 CSR as Beneficial AI Facilitator	29

4	All AI Is Not the Same	30
4.1	From Edge AI to General AI	30
4.2	The AI Productivity vs. Complexity Paradox	34
5	Application and CSR Challenges of AI in Companies	35
5.1	AI Paralysis	36
5.2	AI Action	37
5.3	Corporate AI Hierarchies	38
5.4	AI Roles in the Organization	39
5.5	From Worker to Trainer and Coach	41
5.6	AI Collaboration	42
5.7	Cyber Risks for Cyber Organisms	45
6	Expanding the CSR Model	45
6.1	Classic Pyramidal CSR Models	45
6.2	Expanding the CSR Model	46
6.3	A Systemic CSR Model	47
6.4	Cultural Flavours of CSR	48
6.5	Global Differences in AI Perception	50
6.6	No Unified Global CSR	52
7	The Digital Governance Framework	53
8	Embedding AI Governance in the CSR Model	55
8.1	Digital and AI Governance: Structure and Transparency	56
8.2	Data Governance: For Good AI	56
8.3	Trusted AI: Through Transparency	57
8.4	Ethical AIs: Lie to Be Loved	59
9	AI Governance	64
9.1	AI Lifetime Care	64
9.2	AI Decision Governance	67
9.3	AI Risk Control	68
9.4	Dealing with Corrupted AI	72
9.5	Asimov's Laws Revisited	73
9.6	Controlling AIs Through Software Rules	74
9.7	AI Cybersecurity	75
10	Artificial Intelligence in the Legal Context	76
10.1	Ownership Obliges	77
10.2	Introduction of an 'Electronic Person' as an Opportunity	78
10.3	Accountability of Electronic Persons: Death and Taxes	79
10.4	Limits to AI Liability	80
11	CSR as AI Change Enabler	81
11.1	Cycle of AI Acceptance	82
12	Outlook	85
12.1	The Great Resignation	85
12.2	AI to the Fore	86
12.3	AI as a Companion	86
12.4	Closer to AI	87
12.5	CSR's Role with AI	88

Governance of Collaborative AI Development Strategies 91

Sabine Wiesmüller and Mathias Bauer

- 1 Introduction to Collaborative AI Development 91
 - 1.1 Relevance of AI Adoption for Companies 91
 - 1.2 Theoretical Background: Strategic Forms of AI Adoption 92
 - 1.3 Research Gap for Collaborative AI Development 93
 - 1.4 Governance of Collaborative AI Development 94
 - 1.5 Collaboration Opportunities in the AI Development Process 95
- 2 Collaboration Opportunities in AI Development 97
 - 2.1 Opportunities in the Data Preparation Phase 97
 - 2.2 Opportunities in AI Model Development 99
 - 2.3 Opportunities in Model Evaluation and Deployment 102
- 3 Governance of Risks in Collaborative AI Development 103
- 4 Implications, Discussion, and Outlook 105
 - 4.1 Implications for Practice 105
 - 4.2 Limitations and Further Research 105
 - 4.3 Conclusion and Outlook 106
- References 106

Responsible AI Adoption Through Private-Sector Governance 111

Sabine Wiesmüller, Nele Fischer, Wenzel Mehnert, and Sabine Ammon

- 1 Relevance and Research Gap 111
- 2 A Model for Responsible AI Adoption from a Private-Sector Governance Perspective 114
 - 2.1 AI Adoption as Part of an Organisation’s Innovation Process 116
 - 2.2 Specifying the Innovation Process Model for AI Adoption 118
 - 2.3 Integrating Ethics with a Governance Model for Responsible AI Adoption 120
- 3 Insights into the Operationalisation of Responsible AI Adoption 124
 - 3.1 Action Point 1: Creating Ethical Visions 124
 - 3.2 Action Point 2: Use Case Testing for Long-Term Societal Implications 125
 - 3.3 Action Point 3: Iteratively Integrating Societal Perspectives 126
- 4 Implications, Discussion, and Further Research 127
- References 128

Mastering Trustful Artificial Intelligence 133

Helmut Leopold

- 1 Artificial Intelligence: An Introduction 133
 - 1.1 Development of AI Research 133
 - 1.2 AI Made in Austria 135
 - 1.3 Artificial Intelligence Needs Powerful Hardware 137
 - 1.4 Forms of Artificial Intelligence: From Rule-Based Systems to Neural Networks 138
 - 1.5 Machine Learning 138

- 2 Five AI Challenges 140
 - 2.1 Modelability 141
 - 2.2 Verifiability 143
 - 2.3 Explainability 144
 - 2.4 Ethics and Moral 145
 - 2.5 Responsibility 147
- 3 Social Threat Potential from AI 148
 - 3.1 Democratization of Technology 148
 - 3.2 Manipulation of Media 148
- 4 Limits of AI and Diversity of Life 150
 - 4.1 Singularity: Can AI Surpass Humanity? 150
 - 4.2 AI Needs a Lot More Intelligence 150
 - 4.3 Life Is Nonlinear 151
 - 4.4 Life Is Not Just About Solving Problems 151
 - 4.5 The Data World of AI Is Not Life 152
 - 4.6 AI and Morals 152
- 5 Conclusions 153
 - 5.1 Education and Emotional Intelligence to Master the
Technology 153
 - 5.2 Responsibility for the Development of Technology 153
 - 5.3 AI Needs Standardization 154
 - 5.4 A Broader Approach to AI Research 154
- References 155

Technology Serves People: Democratising Analytics and AI in the BMW Production System 159

Matthias Schindler and Frederik Schmihing

- 1 Digitalisation and Production: A Complex and Dynamic Environment 159
- 2 Status Quo 161
 - 2.1 Quality Work in Production: A Critical Review 161
 - 2.2 Quality Work: Quo Vadis? 163
- 3 CSR in Visual Analytics and Artificial Intelligence 166
 - 3.1 How Does the Use of Data Analytics and AI Change Corporate Responsibility? 166
 - 3.2 How Does the BMW Group Deal with the Consequences and Possibilities of AI? How Are the Potential Risks Dealt with, and What Are the Possible Solutions? 169
 - 3.3 What Does AI Mean for the Company’s (Global) Value Creation and Strategy and How Does It Change the Company’s Social Responsibility? 171
 - 3.4 Which Cooperation Is Required and How Are the Different Approaches to Responsibility and Sustainability Dealt with? 172
 - 3.5 What Challenges Do Data Analytics and Artificial Intelligence Pose for Managers at All Levels in Production? 174

4	Conclusion	176
	References	179
	Sustainability and Artificial Intelligence in the Context of a Corporate Startup Program	183
	Frank Barz, Hans Elstner, and Benedict Ilg	
1	TechBoost, a Startup Program Designed to Drive Sustainability Through Innovation in an B2B Environment	183
2	Flip App: Sustainability in Collaboration Using a Messenger App	184
2.1	How Can the Flip App Drive Sustainability with Digitization and Artificial Intelligence	186
2.2	What Kind of Ethical Principles Has Flip Adapted into Their Software Development	187
2.3	How Does the Partnership with a Corporate Supports the Sustainability Strategy of Flip	188
2.4	Future Developments at Flip App	188
3	room.com: How the Metaverse Is Driving Sustainability with Digitization and AI	190
3.1	How the room Software Supports Sustainable Principles	191
3.2	Sustainability and Responsibility in the Metaverse	192
3.3	Virtual Events in the Metaverse	193
4	Outlook	194
	Exploring AI with Purpose	197
	Benno Blumoser	
	Developing Responsible AI Business Model	205
	Sundaraparipurnan Narayanan	
1	Setting the Context	205
2	Understanding the Current Ecosystem of Responsible AI	206
2.1	Regulatory Ecosystem	206
2.2	Research Ecosystem	207
2.3	Business Ecosystem	209
3	Stages of Responsible AI Maturity	209
4	Responsible AI Business Model	211
4.1	Principles	211
4.2	Pillars	212
4.3	Business Model	212
4.4	Steps Toward Responsible AI Business	215
5	Convergence of Social Responsibility	217
	ESG Fingerprint: How Big Data and Artificial Intelligence Can Support Investors, Companies, and Stakeholders?	219
	Pajam Hassan, Frank Passing, and Jorge Marx Gómez	
1	Status Quo	220
2	Introduction ESG Risk Management and Information Systems	221

- 3 Concept for the Development of a Taxonomy for the Classification of ESG-Relevant Opportunities and Risks 224
 - 3.1 Structure of the Case Base (Empirical Data Basis) 225
 - 3.2 Analysis and Evaluation 226
 - 3.3 Iteration 1: Conceptual Development (from Concept to Empiricism) 226
 - 3.4 Iteration 2: Empirical Development (from Empiricism to Concept) 228
 - 3.5 Iteration 3: Empirical Evaluation (from Empirical to Conceptual) 228
- 4 Application of the Concept to Develop an ESG Fingerprint for AI-Based Information Systems 229
 - 4.1 Case Study 1: Air and Water Pollution (E) 229
 - 4.2 Case Study 2: Child Labor in the Supply Chain (S) 229
 - 4.3 Case Study 3: Corruption (C) 230
 - 4.4 Application of the Taxonomy to Case Studies for ESG Fingerprint Development 231
 - 4.5 Potentials for the Use of Big Data and Artificial Intelligence 231
- 5 Summary and Outlook 233
- It’s Only a Bot! How Adversarial Chatbots can be a Vehicle to Teach Responsible AI 235**
 - Astrid Weiss, Rafael Vrekar, Joanna Zamiechowska, and Peter Purgathofer
 - 1 Introduction 235
 - 2 Background 236
 - 2.1 Exposing CS Students to AI Ethics and Responsible Innovation 237
 - 2.2 Teaching Resources for Responsible AI 238
 - 3 Exploring Disruptive Technologies Course 238
 - 3.1 Pedagogical Goals 239
 - 3.2 Course Format 240
 - 3.3 Inputs and Assignments 240
 - 3.4 Student Project 242
 - 4 Outcome 243
 - 4.1 Student Projects 243
 - 4.2 Guidelines 244
 - 5 Reflection 245
 - 5.1 Student Perspective 246
 - 5.2 Teacher Perspective 247
 - 6 Conclusion 248
 - References 248

Concerted Actions to Integrate Corporate Social Responsibility with AI in Business: Two Recommendations on Leadership and Public Policy	251
Francesca Mazzi	
1 Introduction	251
2 Setting the Scene: CSR, Ethics and SDGs	254
3 A Recommendation on Business Leadership: Adopting a Three-Level Mindset Framework	255
3.1 Contextualising the Framework: A Case Study of Four AI4SDGs Projects in Latin America	256
3.2 The Application of the Three-Level Mindset Framework in Different Sectors and Its Limitations	258
4 A Recommendation on Public Policy: AI Regulation and Policy Harmonisation	259
4.1 The Experience of Four AI4SDGs Projects in Latin America: Regional Fragmentation of AI Policies and Regulations	260
4.2 Identification of a Forum for Policy Harmonisation and Limitations	262
5 Conclusion	263
References	264
AI and Leadership: Automation and the Change of Management Tasks and Processes	267
Isabell Claus and Matthias Szupories	
1 The Combination of Artificial and Human Intelligence	267
2 Leadership with AI: Why There Is No Alternative	268
3 The Optimum and Pace of Development	270
4 Leadership Encompasses Implementation Strength	271
4.1 Recognising AI Potential and Finding Solutions	271
4.2 Success Factors for the Implementation of AI Systems	272
4.3 Institutionalising and Holisting Implementation	273
5 Case Study: AI for Continuous Monitoring of a Company's Business Environment	274
6 Conclusion	276
Achieving CSR with Artificially Intelligent Nudging	279
Dirk Nicolas Wagner	
1 Introduction	279
2 The Emergence of Human-Agent Collectives	280
3 Homo Economicus and Machina Economica	282
4 A Different Way of Thinking Complements	283
5 Augmented Human-Centered Management	284
6 Augmentation with Digital Nudging	286
7 Nudges for CSR	287
8 Conclusion	291
References	291