

# CONTENTS

<b>PREFACE</b> .....	9
<b>CHAPTER 1 SOME CULTURAL ROOTS OF THE KNOWLEDGE SOCIETY</b> .....	15
1.1 The Present Situation .....	17
1.2 The Prehistory .....	18
1.3 Metamorphose of Robots .....	19
1.4 The Post-Modern Age .....	22
1.5 The Post-Modern Machine .....	23
1.6 The Age of Cyborgs .....	25
1.7 Towards the Post-Human .....	26
1.8 Some Concluding Remarks .....	29
<b>CHAPTER 2 ROOTS OF KNOWLEDGE AND ITS MANAGEMENT</b> .....	31
2.1 Introductory Notes .....	33
2.2 On Defining Knowledge .....	34
2.3 Understanding the Concept of Knowledge .....	36
2.4 Knowledge Society of the Future .....	40
2.5 Models of Knowledge Management .....	42
2.6 The Notion of Gods in the Discourse of Knowledge Management .....	46
2.7 Knowledge – Better to Mobilize than Manage? .....	47
2.8 Knowledge Management and the Need of Information Environment .....	52
2.9 Two Sides of the IT Debate .....	53
2.10 Practical Relevance of Knowledge Management Theory .....	55
2.11 Barriers to Knowledge Management .....	56
2.12 Some Conclusions .....	58
<b>CHAPTER 3 INFORMATION TECHNOLOGY AND ECONOMIC GROWTH – A CROSS-COUNTRY EMPIRICAL ANALYSIS</b> .....	61
3.1 Introductory Notes .....	63
3.2 Cross-country Differences in ICT and ICT Determinants .....	67
3.3 The Relationship between ICT and Economic Growth: A Panel Data analysis .....	69
3.4 Determinants of ICT: Empirical Investigation Based on Cross-section and Correlation Matrix .....	70
3.5 Brief Conclusion and some Policy Implications .....	73

<b>CHAPTER 4</b>	<b>ON THE DEVELOPMENT OF THE KNOWLEDGE AND INFORMATION TECHNOLOGY</b>	75
4.1	Towards Knowledge Managing Systems	77
4.2	More on Good Old Fashioned Artificial Intelligence	82
4.2.1	Basic Notions	82
4.2.2	Data, Information and Knowledge	83
4.3	Expert Systems and Knowledge Engineering	85
4.3.1	Architecture of an Expert System	86
4.3.2	Types of Expert Systems	88
4.3.3	Expert System Applications	90
4.3.4	Knowledge Engineering and Knowledge Modeling	91
4.4	Data Mining, Machine Learning and Knowledge Discovery from Databases	96
4.4.1	Knowledge Discovery Process and Tasks	96
4.4.2	Machine Learning	101
4.4.3	Some KDD examples	106
<b>CHAPTER 5</b>	<b>KNOWLEDGE TECHNOLOGY FOR PRODUCT MODELING</b>	113
5.1	Introduction	115
5.2	New Challenges and Possibilities in Virtual Product Engineering	116
5.3	Integrated Product Modeling for Lifecycle	116
5.4	Classical Product Modeling	121
5.5	Knowledge in Current Product Models	126
5.6	Information Content Based Product Modeling	130
5.7	Modeling Engineer's Intent as Knowledge	133
5.8	Conclusions	137
<b>CHAPTER 6</b>	<b>MANAGEMENT OF KNOWLEDGE WORKERS</b>	139
6.1	Knowledge Workers	141
6.2	Differences between Knowledge and Manual Workers	142
6.3	Concepts of Knowledge Workers	144
6.3.1	Classification of Knowledge Workers by T. Davenport (Davenport, 2005)	145
6.3.2	Classification of Knowledge Workers by CEMS Students (Reboul, 2006)	147
6.4	Three Pillars of Management of Knowledge Workers	150
6.5	Knowledge Workers and Work with Knowledge	151
6.6	Knowledge Workers and Work with Tacit Knowledge	153
6.7	Knowledge Workers and a Process of Learning	160
6.8	Knowledge Workers and Knowledge Strategy	161
6.9	Knowledge Workers and Organizational Structure	162
6.10	Performance of Knowledge Workers	164

6.11	Twelve factors and Management of Knowledge Workers .....	165
6.12	Twelve Factors and Maslow Hierarchy of Needs .....	167
6.13	Twelve Factors in Practice .....	168
6.14	Lesson Learned in History – the Nhunggabarra Story .....	170
6.15	Conclusions .....	172
<b>CHAPTER 7 KNOWLEDGE IN BUSINESS .....</b>		<b>173</b>
7.1	Introduction .....	175
7.2	KM Perspectives .....	176
7.3	Conceptual Perspectives .....	177
	7.3.1 KM Definitions .....	177
	7.3.2 KM Frameworks .....	178
7.4	Managerial Perspective .....	181
	7.4.1 Knowledge and Business Strategy .....	181
	7.4.2 KM Roles .....	185
7.5	Implementation Perspective .....	186
	7.5.1 Nanyang Methodology .....	189
	7.5.2 KM-Beat-It Methodology .....	191
7.6	Evaluation Perspective .....	194
	7.6.1 KM Benefits .....	195
	7.6.2 Metrics .....	197
7.7	Future Research and Challenges .....	202
<b>CHAPTER 8 KNOWLEDGE IN ACTION – AN EXPERIENCE FROM FINLAND ..</b>		<b>207</b>
8.1	Introduction .....	209
8.2	Prior Research .....	211
8.3	The CASE study .....	219
8.4	Conclusion .....	226
<b>CHAPTER 9 KNOWLEDGE MANAGEMENT IN SELECTED INDUSTRIES IN INDIA .....</b>		<b>229</b>
9.1	Introduction .....	231
9.2	Research Methodology .....	233
9.3	Data Analysis and Interpretation .....	235
9.4	Conclusion .....	244
	Appendix .....	246
<b>CHAPTER 10 INNOVATION AND KNOWLEDGE MANAGEMENT: BEING DUAL .....</b>		<b>249</b>
10.1	Introduction .....	251
10.2	State-of-the-art Literature .....	252

10.3	Exploitation	254
10.4	Exploration	255
10.5	The Equilibrium between Exploration and Exploitation	260
10.6	Research Question and Methodology	264
10.7	Results from Alfa Case Study	265
10.8	Discussion and Conclusions	269

**CHAPTER 11 LEARNING TO BECOME A LEARNING ORGANIZATION** ..... 273

11.1	Introduction	275
11.2	Former Research	276
11.3	Juxtaposing Universities and the Concept of Learning Organization	279
11.4	A Learning Approach to Strategy	279
11.5	Participative Policy Making	280
11.6	Informative and Collaborative	282
11.7	Formative Accounting and Control	283
11.8	Intensive Internal Exchange of Information and Knowledge	284
11.9	Reward Flexibility	284
11.10	Boundary Workers as Environmental Scanners	286
11.11	A Learning Climate	288
11.12	Self-learning Opportunities for All	288
11.13	Conclusion	289

**REFERENCES** ..... 291

**SUBJECT INDEX** ..... 315

**AUTHORS AND THEIR AFFILIATIONS** ..... 318