

Contents

Part I Trends in Manufacturing

1	Taking Control of the Company’s Destiny Through Knowledge	3
1.1	We are Sure about Some Things	3
1.2	We Expect Some Things	4
1.3	How Do We Deal with an Uncertain Future?	5
1.4	Paradigms and Capabilities	6
1.5	Developing Capabilities Through Knowledge	7
1.6	The Knowledge Dimension of Manufacturing Outsourcing	8
2	Drivers for Change in Manufacturing	11
2.1	Globalization, Extended Enterprise, Digital Business, Innovation	11
2.2	New Versus Old Economy	13
2.3	Sustainability: On Top of the Manufacturing Agenda	15
2.4	Quality and Productivity	15
	References	16
3	Manufacturing in a Strategic Context	19
3.1	What is Manufacturing Strategy	19
3.2	Generic Versus Specific Strategies	22
3.3	Developing Capabilities	24
	References	25
4	Evolving Paradigms in Manufacturing	27
4.1	From Craft to Adaptive Manufacturing	27
4.2	The Lean Paradigm	29
4.3	Sustainable Manufacturing	30
	References	33

5	The Knowledge Dimension	35
5.1	Capabilities Developed Through Knowledge	35
5.2	Knowledge, the Basis for Innovations and Improvements	36
	References	39

Part II The Engine Driving Industrial Change

6	Industrial Outlook	43
6.1	Manufacturing in Turbulent Periods	43
6.2	Technology Outlook	44
6.3	Industrial Production: Who Takes the Lead?	45
6.4	What Defines the Winners?	46
	References	51
7	Indicators and Initiatives for Industrial Renewal	53
7.1	Education for Growth and Industrial Renewal	53
7.2	The Lisbon Agenda	55
7.3	Innovation Driving Industrial Change	57
7.4	The Learning Economy	58
7.5	Social and Environmental Renewal	59
	References	61
8	Research Roadmaps in Manufacturing	63
8.1	Research Resources in Manufacturing	63
8.2	Shift in the Manufacturing Research Agenda	64
8.3	The IMS2020 Roadmap	65
	References	68
9	How Well Are We Doing?	69
9.1	Measuring Performance in Companies	69
9.2	Measuring Performance According to Strategy	72
9.3	Frameworks for Strategic Performance Measurement	74
9.4	Decomposition, the Logic Behind the Strategy	77
9.5	Performance Measurement Implementation	78
9.6	Performance in Supply Chains and Among Partners	82
	References	83

Part III Outsourcing: Strategic Opportunities

10	Manufacturing Strategies, Created Through Decisions	87
10.1	Structure and Infrastructure, Hard and Soft Elements of the Strategy	87

10.2	Structure, The Physical Manifestation of a Strategy	88
10.3	The Structural Prerequisites for How to Deal with Knowledge	89
10.4	Infrastructure, Exploiting the Structure	91
10.5	Structure and Infrastructure, a Complex Interplay of Decisions.	92
	References	93
11	Make or Buy?	95
11.1	What is Outsourcing?	95
11.2	Why Outsource	97
11.3	Off-Shoring	98
11.4	The Decision Process	99
	References	100
12	The Geographical Footprint	101
12.1	Location of Facilities	101
12.2	Approaches to Location and Outsourcing Decisions	102
12.3	Focus on Process or Product	103
12.4	Where to Do What	104
	References	107
13	Approaching the Partner Selection and Location Decision	109
13.1	Manufacturing Paradigm as Premise for Outsourcing Decisions	109
13.2	Location Decisions and Partner Selection	110
13.3	Strategic Criteria in Location and Outsourcing Decisions: An Example.	113
13.4	Location Criteria and Sustainable Manufacturing	116
	References	116
14	Dealing with Complexity: Infrastructure Decisions	119
14.1	Outsourcing Need to be Accompanied by Coordination Mechanisms	119
14.2	Agency Theory	120
14.3	Mechanisms for Coordination	120
14.4	Coordination of Innovations and Knowledge Creation.	121
14.5	Implementing Outsourcing: Global Projects	123
	References	125

Part IV Innovation and Knowledge Transfer

15	The Innovation Process.	129
15.1	What is an Innovation.	129
15.2	Innovation Processes.	132
15.3	Innovation and Centralized Versus Decentralized Knowledge Creation	134
15.4	Coordinating Innovation Processes: Project Models	134
15.5	Managing Innovation	136
15.6	Innovation and R&D Models	139
15.7	PDCA in Incremental and Radical Innovation	141
15.8	Manufacturing Paradigms and Innovation	143
	References	144
16	What is Knowledge?	145
16.1	Rationalism and Empiricism	145
16.2	Pragmatic and Combined Views on Knowledge	146
16.3	Knowledge and Information.	146
16.4	Terms Related to Knowledge.	147
16.5	Basic Dimensions of Knowledge	148
16.6	Tacit and Explicit Knowledge	149
16.7	Knowledge Bases and Innovation	150
	References	153
17	Knowledge Creation	157
17.1	Putting Bits and Pieces Together	157
17.2	The Trade-Off Barrier.	158
17.3	Conflicts of Interests.	159
17.4	Knowledge Conversion	159
17.5	How to Integrate Knowledge Creation into the Development Model	160
17.6	Process Improvement and Knowledge.	164
	References	165
18	Knowledge Transfer and Distance.	167
18.1	What is Distance	167
18.2	The Cultural Challenge	168
18.3	The Spatial Challenge of the Portfolio of Innovations.	168
18.4	ICT Reduces Distance.	170
	References	171
19	Knowledge Transfer and Manufacturing.	173
19.1	A Model	173
19.2	Paradigms and Knowledge.	175

19.3	The Knowledge Dimension of Sustainable Manufacturing	177
	References	180
20	Outsourcing and Sustainability	181
20.1	Energy Consumption on the Strategic Agenda	181
20.2	Energy Consumption: Process Technology	182
20.3	Outsourcing and Supply Chain Aspects	186
20.4	Improvement in Energy Consumption	188
20.5	Organizational: and Cross Organizational Learning	190
20.6	Sustainability at the Strategy Agenda	191
	References	192
 Part V Cases		
21	Supply Chain Integration and Knowledge Transfer—A Case from the Automotive Industry (Case 1)	197
21.1	The Strategic Context	197
21.2	Business Systems and Types of Supply Chain Relations	199
21.3	Integration in the Truck Supply Chain	200
21.4	Fact Based Knowledge Transfer in the Supply Chain	202
	References	202
22	Quality Improvement in Craft Manufacturing—A Case from Leisure Boat Manufacturing (Case 2)	205
22.1	The Strategic Context	205
22.2	Quality Improvement as an Integrated Part of Craft Manufacturing	207
22.3	Integrating Suppliers into Quality Improvement	208
22.4	Infrastructure for Knowledge Transfer	209
	References	210
23	Adaptive Manufacturing and Real Time Knowledge—A Case from Furniture Manufacturing (Case 3)	211
23.1	The Strategic Context	211
23.2	The Three Elements of Adaptive Manufacturing	213
23.3	Automatic Data Collection for Creating Knowledge	215
	References	216
24	Sustainable Manufacturing in SMEs—A Case from Sportswear Manufacturing (Case 4)	217
24.1	The Strategic Context	217
24.2	Competitive and Stable Workforce Through Inclusion	219

24.3 Manufacturing Units in China Included
in the Sustainability Strategy 220

24.4 The Knowledge Dimension of the Sustainability Strategy 222

About the Authors. 225

Index 227



<http://www.springer.com/978-1-4471-2953-0>

Manufacturing Outsourcing

A Knowledge Perspective

Rolstadås, A.; Henriksen, B.; O'Sullivan, D.

2012, XVI, 232 p., Hardcover

ISBN: 978-1-4471-2953-0