

CONTENTS

INTRODUCTION.....	7
Chapter One. ESSENCE OF SUPPLY CHAINS AND THEIR MANAGEMENT	9
1.1. Essence of the supply chain	9
1.2. Supply chain structure and participants	11
1.3. Supply chain management	15
1.4. Business processes in the supply chain.....	19
1.5. Sources of competitiveness in supply chains	22
1.5.1. Quality.....	22
1.5.2. Costs	24
1.5.3. Service	25
1.5.4. Innovation.....	26
1.6. Core competencies and outsourcing in the supply chain.....	27
CASE STUDY: Cadbury's global chocolate supply chain	32
CASE STUDY: The milk supply chain.....	34
CASE STUDY: Coral Princess.....	36
Chapter Two. STRATEGIC SUPPLY CHAIN MANAGEMENT	39
2.1. Essence of strategic supply chain management.....	39
2.2. Analysis of the internal environment	40
2.3. Analysis of the external environment – the EPIC framework	41
2.4. Formulation of vision, mission and strategic goals	44
2.5. Formulation of a supply chain strategy	44
2.5.1. Efficient and responsive supply chains	46
2.5.2. Strategies based on push and pull methods.....	48
2.5.3. Lean and agile supply chains	50
2.5.4. Sustainable supply chains	55
2.6. Implementation of the supply chain strategy and evaluation of the results.....	58
2.7. Risk in supply chains and its management	59
2.7.1. Essence and classification of risks in supply chains	59
2.7.2. Risk management in the supply chain	60
2.7.3. Risk mitigation strategies in the supply chain	62
CASE STUDY: The three factors for Zara's success – speed, speed and speed.....	64
CASE STUDY: Coca-Cola and water conservation.....	66
CASE STUDY: Toyota – supply chain disruption management	68
APPENDIX. Principles of lean thinking.....	70

Chapter Three. RELATIONSHIPS WITH SUPPLIERS AND CUSTOMERS IN THE SUPPLY CHAINS	75
3.1. Collaboration in supply chains	75
3.1.1. The collaboration spectrum	76
3.1.2. Prerequisites for the success of the collaboration.....	79
3.2. Supplier relationship management in the supply chain.....	82
3.2.1. Building and developing relationships.....	83
3.2.2. Evaluation of suppliers.....	86
3.2.3. Supplier development.....	87
3.3. Customer relationship management in the supply chain	88
CASE STUDY: Intel's EPIC Supplier Program Award	93
CASE STUDY: PepsiCo – responsible and sustainable	95
CASE STUDY: M2 PROM and relationships with suppliers and customers	96
Chapter Four. PROCUREMENT.....	101
4.1. Importance of procurement for supply chains.....	101
4.2. The choice between in-house production of components and outsourcing of production.....	102
4.3. Supplier selection.....	104
4.4. Purchasing organization and purchasing process	108
4.5. Global sourcing.....	112
4.6. E-procurement	113
CASE STUDY: Boeing 787 Dreamliner and its global supply chain.....	115
CASE STUDY: China and India are major rivals in the global supply game.....	119
Chapter Five. PRODUCTION.....	121
5.1. Design of new products	121
5.1.1. Design process	121
5.1.2. Design through the prism of the supply chain	126
5.1.3. Service design.....	127
5.2. Design of a network of production facilities.....	128
5.2.1. Role of the facility	128
5.2.2. Location of the facility	131
5.2.3. Allocation of the market and suppliers to the respective facilities	134
5.3. Strategic capacity planning.....	134
5.4. Production strategies and processes	137
5.5. Design of production facilities	140
5.6. Quality Management – Six Sigma	144
CASE STUDY: IKEA – design and pricing.....	148

CASE STUDY: In the world of product design the voice of the customer is already heard	153
CASE STUDY: Bavarian Motor Works (BMW)	154
CASE STUDY: The Swiss army knife – „Our best tool for protection is quality“	156
Chapter Six. DISTRIBUTION, TRANSPORTATION, REVERSE SUPPLY CHAIN.....	159
6.1. Importance of distribution for supply chains	159
6.2. Distribution network models in the supply chain.....	160
6.2.1. Direct delivery from the manufacturer to the end customer.....	162
6.2.2. Delivery from the manufacturer to the end customer through transit consolidation	164
6.2.3. Delivery from manufacturer to wholesaler and/or retailer	165
6.2.4. Cross-docking system	166
6.3. Warehousing.....	168
6.4. Transportation.....	171
6.4.1. Factors for choosing the mode of transport.....	172
6.4.2. Characteristics of the modes of international transport.....	176
6.5. Outsourcing of logistics activities in supply chains	181
6.6. Reverse supply chain	186
CASE STUDY: Seven-Eleven Japan.....	193
CASE STUDY: Transportation of shoes from China to Austria via Hamburg.....	195
CASE STUDY: Maersk and the global container business	197
Chapter Seven. SALES AND OPERATIONS PLANNING.....	199
7.1. Demand forecasting	199
7.1.1. Bullwhip effect	200
7.1.2. Elements of the demand forecast.....	203
7.1.3. Characteristics of demand forecasts.....	204
7.1.4. Classification of demand forecasting methods	206
7.1.5. Qualitative methods.....	207
7.1.6. Time series.....	210
7.2. Inventory management.....	210
7.2.1. Types of stocks (inventory)	211
7.2.2. Inventory management costs	213
7.2.3. Inventory management in supply chains	215
7.2.4. ABC analysis of stocks.....	216
7.2.5. New concepts in inventory management in supply chains	217
7.3. Sales and Operations Planning (S&OP).....	221
7.3.1. Process steps.....	221
7.3.2. Aggregate plan	223

7.3.3. Supply and demand management	224
7.4. Material requirements planning (MRP)	226
7.5. Enterprise resource planning (ERP)	231
CASE STUDY: The magic numbers of Walt Disney	235
CASE STUDY: Forecasting trends in denim fashion.....	237
CASE STUDY: Inventory management at Dell	238
Chapter Eight. INDUSTRY 4.0 AND DIGITAL SUPPLY CHAINS	241
8.1. The four industrial revolutions	241
8.2. The nine technologies in Industry 4.0	243
8.2.1. Big data and analytics	243
8.2.2. Autonomous robots	245
8.2.3. Simulation	246
8.2.4. Horizontal and vertical system integration.....	247
8.2.5. Industrial Internet of Things.....	249
8.2.6. Cybersecurity.....	251
8.2.7. Cloud.....	252
8.2.8. Additive manufacturing	253
8.2.9. Augmented reality	254
8.3. Digital supply chains	254
CASE STUDY: Amazon robots.....	256
CASE STUDY: Durability, not revolution – how 3D printing will change global supply chains	257
CASE STUDY: AirSupply.....	260
INTEGRATIVE CASE STUDIES	263
CASE STUDY: Fast fashion supply chains	263
CASE STUDY: Nike.....	268
CASE STUDY: Starbucks Corporation	270
CONCLUSION	273
LITERATURE	275