
Contents

1 The Lean Enterprise	1
1.1 The Short Answer	1
1.2 A Comprehensive Answer	2
1.2.1 Focus: Creating Value and Eliminating Waste	2
1.2.2 Purpose: Displacement to a Lean State	4
1.2.3 Method: Lean Flow	6
1.2.4 Frame: Flow in Internal Logistics	9
1.3 Overview of the Book	9
References	10
Part I Rising of the Economy of One	
2 The Displacement of the Economy	13
2.1 A New Social System of Production	13
2.2 Organization in the Post-Mass Production Era	16
2.2.1 Open Innovation and Customer Created Value	17
2.2.2 Displacement to a New Topos	18
2.2.3 Tolerance to Mistakes	19
2.2.4 Dynamic Equilibrium	19
2.2.5 Emerging Characteristics	19
2.3 Review of Lean Thinking	19
References	21
3 The Post-Mass Production Factory	23
3.1 Introduction	23
3.2 New Way of Production	25
3.3 Value Adding Communities	28
References	29
4 Mass Customization	31
4.1 Introduction	31
4.2 Theory of Mass Customization	33
4.3 An Example from the Furniture Industry	35
References	40

Part II Lean Enterprise in Theory

5	Basic Principles of Lean Production	43
5.1	Introduction	43
5.2	The Road of Toyota to the West	44
5.2.1	Continuous Improvement	45
5.2.2	Respect for People	45
5.3	Old and New Perception on Waste	46
	References	47
6	Lean Enterprise: A Method	49
6.1	Introduction	49
6.2	Lean Flow Typology	50
6.3	Basic Pillars of Lean Flow	53
6.3.1	Working Capital	53
6.3.2	Cost of Production	55
6.3.3	Quality	57
6.4	Lean Flow in Production	57
6.5	Lean Work Flow	59
6.5.1	The Steps of the Method	61
6.5.2	Lean Flow in Machines Environment	82
6.5.3	Lean Flow in Spare Parts	84
6.6	Lean Material Flow	85
6.6.1	Design of the Pull Mechanism	86
6.6.2	Material Fitness for Pull Mechanism	108
6.7	Lean Logistics	110
6.7.1	Lean Flow in Internal Logistics	111
6.7.2	Lean Flow in External Logistics	113
6.7.3	Lean Logistics and Lean Value Stream	115
6.8	Lean Flow in Purchasing and Procurement	122
6.8.1	Materials Requirements Planning	123
6.8.2	Replenishment Strategy of Lean Inventory	124
6.8.3	Relations with Lean Suppliers	124
6.9	Integrated Demand and Supply Management	125
6.9.1	Demand Planning and Agility Borders	126
6.9.2	Planning of Lean Agility	131
6.9.3	Smoothing Daily Production in Mix and Volume	134
6.9.4	Production Linearity	136
6.10	Change of Engineering Specifications	138
6.11	Lean Flow in Cost Accounting	140
6.11.1	Economic Efficiency to Customer Demand	140
6.11.2	Product Cost and Lean Flow	143
6.11.3	Failures of the Non Lean Cost Accounting	144
	References	145

7	Successful Implementation	147
7.1	Features of a Successful Implementation	147
7.1.1	Product Synchronization Flows	147
7.1.2	Sequence of Events	148
7.1.3	Designed Capacity	148
7.1.4	Materials	148
7.1.5	Facilities	149
7.2	Results from a Successful Implementation	149
7.2.1	Measurements Suggested for Performance and Flow Improvement	150
7.3	ERP Systems and Lean Flow	151
7.4	Organization in a Lean Environment	153
	References	155

Part III Lean Enterprise in Practice

8	Lean Factory	159
8.1	Introduction	159
8.2	Lift Trucks	160
8.2.1	One Piece Flow From Painting to Final Assembly	161
8.2.2	One Piece Flow in Mast Assembly	167
8.2.3	Epilogue	177
8.3	Coffee Machines	178
8.3.1	Audit Report	179
8.3.2	Epilogue	185
8.4	Air Conditioning Units	186
8.4.1	Redesign and Resupply of Lean Flow Lines	187
8.4.2	The Secrets of Managing Demand and Supply	201
8.4.3	Constraints on the Full Exploitation of Lean Flow	211
8.4.4	How <i>Not</i> to Achieve Low Cost	212
8.4.5	Lessons Learned	212
8.5	Cooling Units	213
8.6	Furniture	223
8.6.1	Kanban Implementation	225
8.6.2	Layout Redesign	229
8.6.3	Epilogue	229
8.7	Elevators	230
8.7.1	Hydraulic Tank Subsystem	234
8.7.2	Piston Subsystem	241
8.7.3	Subsystems of Hydraulic and Mechanical Chassis	244
8.7.4	Cabin Subsystem	246
8.7.5	Electronics Subsystem	252
8.7.6	Epilogue	254
8.8	Electricity Supply	256
	References	259

9 The Situation in Europe	261
9.1 Introduction	261
9.2 Taboos and Prejudices	263
9.3 The Way Is Open and Certain	263
References	265
Index	267



<http://www.springer.com/978-3-642-29401-3>

The Lean Enterprise

From the Mass Economy to the Economy of One

Tsigkas, A.

2013, XIV, 269 p. 400 illus., 100 illus. in color.,

Hardcover

ISBN: 978-3-642-29401-3