
Contents

Foreword	xv
Preface	xvii
Introduction	xxix
Chapter 1. Society 5.0, Its Logic and Its Construction	1
1.1. The origins of society 5.0	1
1.2. The ancient ages	6
1.3. Cybernetics or cyber-physical systems	7
1.4. The Council on Competitiveness-Nippon (COCN)	8
1.5. The lessons of history	8
1.6. The decision variables of society 5.0	9
1.6.1. Which role for information?	9
1.6.2. Which role for time?	11
1.6.3. Which role for nature?	11
1.6.4. Which role for distraction?	12
1.6.5. Which role for identity?	13
1.6.6. Which role for alienation?	16
1.6.7. Which role for action?	17
1.7. The contribution of the first revolution	18
1.8. Humanity 2.0 and society 5.0	18
1.9. The new role of society 5.0: a return to bio?	19
1.10. Growing sectors and lagging sectors	19
1.11. The elements of society 5.0	20

Chapter 2. From Society 5.0 to Its Associated Policies	23
2.1. The place of politics in organizations	23
2.1.1. The three levels: strategic, tactical, operational	23
2.1.2. Politics and ethics	24
2.1.3. The relationship between the strategic, tactical and operational levels, and the organization's functions and tasks	25
2.2. The implementation of national policies	25
2.3. The notion of walls	27
2.3.1. Different types of walls	27
2.3.2. The "NIMBY" wall	28
2.3.3. The wall between private individuals and professionals	29
2.4. New political attitudes	30
2.4.1. Vetocracy	30
2.4.2. Ultrademocracy	33
2.5. The role of governments	34
2.5.1. The protection of national industry	34
2.5.2. The limitations required by governments	35
2.5.3. The question of public orders	36
2.5.4. New cultural policies	36
Chapter 3. Industry 4.0 at the Core of Society 5.0	37
3.1. Business in society 5.0	38
3.1.1. The recent history of the decline of industry	38
3.1.2. The impact of political choices	39
3.1.3. Pierre Musso's perspective	40
3.2. The firm: a general theory	41
3.2.1. The management of a firm	41
3.2.2. The definition of a market	43
3.2.3. The concept of productive activity	43
3.2.4. The fundamental structures of the firm	44
3.2.5. The question of the appearance of improved structures	46
3.2.6. The usefulness of the concept of profit center	48
3.2.7. The difference between functions and structures	49
3.2.8. The relationship between environment, strategy and structure	49
3.3. The determinants of the factory of the future	50
3.3.1. The main determinants	50
3.3.2. The place of digital	52
3.3.3. Direct manufacturing	53

3.4. The different types of factories of the future	53
3.4.1. Factory 4.0: “integrated logistics chain”	54
3.4.2. The Key-Technology factory: “a highly differentiating process”	54
3.4.3. The Craft-Industrial factory: “tailor-made industrialized production”	54
3.4.4. The Client Drive factory: “the customer operates the process”	54
3.4.5. The Low Cost/factory: “in Open Source”	55
3.5. The regulatory determinants of the factory of the future	56
3.6. The main questions regarding the factory of the future	56
3.6.1. The location of the factory of the future	58
3.6.2. Production cycles	58
3.6.3. Finances in the factory of the future	59
3.6.4. The conditions of its emergence	60
3.7. Changes related to the factory of the future	60
3.7.1. Actions for favoring the advent of the factory of the future	61
3.7.2. The notion of industrial revolution.	61
3.8. Daily management.	62
3.9. Additive manufacturing technologies	62
3.9.1. CNC tools	62
3.9.2. The notion of CPPS	62
3.10. The example of the textile industry	63
Chapter 4. The City and Mobility 3.0	67
4.1. Research.	67
4.1.1. The city in motion	67
4.1.2. Transit-City program.	68
4.1.3. Research on smart vehicles	69
4.2. The link between smart vehicles and road infrastructure	70
4.2.1. Smart vehicles’ levels	71
4.2.2. Current examples of autonomous vehicles	73
4.2.3. The challenges of the road environment	73
4.2.4. The smart and mobile habitat	74
Chapter 5. Information Technology 2.0, the Foundation of Society 5.0	75
5.1. The reference to Jean-Paul Sartre	75
5.2. The “Sartrian” man in the digital world	77
5.3. Schemata	79

5.4. Data in their environment	79
5.4.1. The sources of data	79
5.4.2. Regulations on data use	80
5.5. The impact of the digital world	81
5.6. The digital shift of organizations	82
5.6.1. Organizations where the digital shift has been a failure	82
5.6.2. Organizations that made the digital shift early	82
5.6.3. Organizations blocked at ICT 1.0	83
5.7. ICT infrastructure	84
5.8. Primitive technologies	84
5.8.1. Text analysis	84
5.8.2. Voice recognition	85
5.8.3. The mobile phone as an inclusive technology	85
5.9. Recent technologies	86
5.9.1. Robotics and automation	86
5.9.2. Virtual reality	87
5.9.3. Computer-aided design	87
5.9.4. Artificial intelligence	89
Chapter 6. Society 5.0 and the Management of the Future	91
6.1. The firm from the managerial viewpoint	91
6.1.1. The definition of management	91
6.1.2. Management's contents	92
6.2. The definition of market	92
6.3. Marketing	93
6.3.1. Marketing is an approach which only makes sense in a certain context	93
6.3.2. The four historical periods of marketing	95
6.3.3. The features of the different phases	96
6.4. The logics: need, desire, expectation and demand	99
6.4.1. The Lacanian perspective applied to marketing	99
6.4.2. The place of marketing	100
6.5. New managerial skills	102
6.6. Boredom comes from repetition	103
6.7. Customer satisfaction	103
6.8. Resistance to consumption	104
6.9. Recovery, gleaning, etc.	105
6.10. Customer relationship management: an essential tool	105

6.11. The holistic approach to management	106
6.11.1. Sociocracy	106
6.11.2. Holacracy	107
6.12. The hacker's position	108
6.12.1. Corporate hacking	108
6.12.2. Managing a hacking session	111
6.12.3. Human resources management	112
6.13. Feeble signals for understanding evolution	114
6.14. The generations	115
6.14.1. The Beta generation	115
6.14.2. The more "ecological" consumption of new generations	115
6.14.3. The middle-class generation	116
6.15. Skills and generations	117
6.15.1. The distinctive skills of a firm	117
6.15.2. The history of Low and Less	117
6.15.3. The cashless/generation	117
6.15.4. Changes in commercialization and in business	118
6.15.5. Changes in the market	118
Chapter 7. The Consequences of the End of Major Innovations	121
7.1. The end of the major innovations: some observations	121
7.2. Marketing philosophy as a vehicle for enhancing technology	123
7.2.1. Why do we mention a marketing philosophy?	123
7.2.2. The example of Intel processors	124
7.2.3. Innovation balance	124
7.3. The new forms of innovation	125
7.4. The globalization of research	126
7.4.1. The globalization of science does not really exist	126
7.4.2. Scientific globalization is only real for mathematics, physics and health	127
7.4.3. The key point is European research	127
7.5. The globalization of scientific publications	128
7.5.1. Scientific communication: publish or perish	128
7.5.2. The solution, to expand the scope of "publications"	129
7.6. The role of bureaucracy in research	129
7.7. The role of China	130
7.8. The solution: to restore philosophy, poetry and morality to science and innovation	131
7.9. The new research in society 5.0	132

x Society 5.0

7.10. Innovation related to opportunities	132
7.11. The paradigm of innovation	134
7.12. Design thinking.	135
7.12.1. Stage 1: identifying a problem and understanding its environment, “observation phase”	135
7.12.2. Stage 2: finding the concept or idea that will make it possible to find a solution, “ideation” phase	136
7.12.3. Stage 3: designing.	136
7.12.4. Stage 4: building a model and a prototype	136
7.12.5. Stage 5: the assessment phase or “evaluation”	137
7.13. The risks of innovation	138
7.14. The lessons of Thomas Edison.	139
7.15. Methods for innovating	140
7.15.1. The preliminary questions related to the genesis of a product or a service	141
7.15.2. The choice on whether to innovate a product-service or to innovate a process	142
7.16. Man in innovation	142
7.16.1. The human resources of the innovative firm	142
7.16.2. The answer to the society of boredom	142
7.17. The different forms of boredom	143
7.18. The transgression phenomenon and the transcendence one.	144
7.19. Boredom comes from the ugly	145
7.19.1. The risk of uniformity	145
7.19.2. The search for harmony	146
7.20. The search for equilibrium	147
7.21. Design as a technical answer.	147
7.21.1. Industrial aesthetics and design laws.	147
7.21.2. The evolution of design needs.	149
7.21.3. The use of a former theoretical approach in design	150
7.21.4. The aesthetic components	152
7.21.5. The impact of the sociometrics and homology	154
7.22. The sources and forms of design	155
7.23. The other criteria for innovating a product or a service	156
Chapter 8. Innovation in Society 5.0	157
8.1. The innovative product service	157
8.1.1. Losses during the innovation process	158
8.1.2. The question on the validation of a new product or a service	159
8.1.3. Improving a product	160

8.2. The paradigm shift	160
8.3. Mash-up forms	162
8.4. “Co” society	163
8.5. The sharing of information.	163
8.6. Social networks, Internet and innovation	164
8.7. The collaborative forms	164
8.8. Innovation ecosystems	165
8.8.1. Resource centers	165
8.8.2. The concept of the Digital Innovation Hub.	166
8.9. The evolution of former innovation organizations	168
8.10. Innovation in human resources	168
Chapter 9. “Co” Society	171
9.1. “Co” society	171
9.2. The evolution from prosthetic man to the current man	171
9.2.1. Types of bored men	172
9.2.2. Prosthetic man.	172
9.2.3. Civilized man	173
9.2.4. Rational man.	173
9.2.5. Information society man.	174
9.2.6. Augmented or improved man.	174
9.3. The split between boredom and innovation	174
9.4. New innovative strategies	175
9.4.1. Innovation must be everywhere	175
9.4.2. The end of the dynamics of jealous marketing.	175
9.4.3. “Co” society as a means for understanding the consumer	176
9.5. Porter’s strategic model.	176
9.5.1. The notion of strategy and of strategic model	176
9.5.2. The concept of value chain	177
9.5.3. Porter’s three basic strategies	178
9.5.4. Cost strategic advantage	179
9.5.5. Differentiation advantage	179
9.5.6. Focus strategy	180
9.5.7. Development pathways	181
9.5.8. The origins of market massification	181
9.5.9. The vision through differentiation	182
9.6. Useful partnerships	183

9.7. Different types of alliances.	184
9.7.1. The conditions of alliances	184
9.7.2. Strategic alliance through fusion	185
9.7.3. Strategic alliances involved via the execution of an agreement.	185
9.7.4. Alliances through the integration of products	186
9.7.5. Determinants of an alliance	187
9.8. Typology of firms (according to Kotler)	188
9.8.1. The leader's strategy	188
9.8.2. The challenger's strategy	189
9.8.3. The follower's strategy	189
9.8.4. The specialist's strategy	190
Chapter 10. The Challenges of Localization, the Market, Skills and Knowledge	191
10.1. Localization is increasingly losing its interest.	191
10.2. New practices related to the lack of importance of localization	192
10.3. The importance of reconstruction	193
10.4. Changes in market shares: why and how?	193
10.5. The issue of skills and knowledge.	194
10.6. The notion of intellectual capital	194
10.7. Changes in operational marketing.	196
10.8. Intrusive marketing	197
10.9. The use of acquired knowledge	198
10.10. Identification of regulations in documents	199
10.11. Identification of forms of commitment	200
10.12. Implementation of normalization	200
10.13. Organizational consequences	201
10.13.1. The norm as an agent for contextual change	201
10.13.2. The norm and machines	202
10.14. The impact of change on data	203
10.15. Changes in programs and processes	203
10.16. Organizational evolution	204
10.17. The challenge of generating trust	206
10.17.1. Specialized marketplaces.	206
10.17.2. Rating, the representation of trust.	206
10.17.3. Commitment as an ingredient of trust	207
10.17.4. The necessary confidence for inviting financing	207

Chapter 11. On-Demand Society	209
11.1. Does boredom have any influence on need, desire, expectation and demand?	209
11.1.1. Collective neurosis and diverted uses	209
11.1.2. The theory of diverted uses and the role of boredom	210
11.1.3. Examples of diverted uses	211
11.2. “Servitization”, the products and services of revolution 5.0	212
11.3. The notion of “servitization”	213
11.4. The nature of “servitization”	213
11.4.1. Servicizing	214
11.4.2. The different forms of servicizing	214
11.4.3. “Servuction”	215
11.4.4. Competitive advantage	215
11.5. The paths toward “servitization”	216
11.5.1. The formation of value	217
11.5.2. “XaaS” logic	218
11.5.3. The “rental” rather than the “purchase” logic.	219
11.6. Enterprise manufacturing services	220
11.6.1. The fabless	220
11.6.2. Original design manufacturers	221
11.6.3. The example of the EMS of electronics	221
11.7. The key points of “servitization”: visualization and virtualization	222
11.8. Recent developments	223
11.8.1. Tokyo University of Technology	224
11.8.2. The SPREE project	224
11.8.3. The example of the firm Komatsu	224
Chapter 12. The Economy of Society 5.0	227
12.1. The new economies	228
12.2. The problems in the age of connectivity	230
12.3. Evolution of economy	230
12.3.1. Hunting and gathering economy	231
12.3.2. Bartering economy	231
12.3.3. Souk economy or the basis of market economy	232
12.3.4. Production economy	232
12.3.5. Mass distribution economy	233
12.3.6. Market economy	234
12.3.7. Environmental economy	234
12.3.8. Intangible economy	234

12.4. Economy related to digital tools	235
12.5. The power of platforms	237
12.5.1. The concept of platform	237
12.5.2. The role of trust in platforms	237
12.5.3. The different types of platforms	238
12.5.4. The State as platform	239
12.5.5. Platform as a service	242
12.5.6. Marketing platforms	243
12.6. The limits of platforms	243
12.7. Free economy	244
12.7.1. The characteristics of free economy	245
12.7.2. The example of the “free” newspaper market	245
12.8. The fight against large firms	245
12.9. The notion of data visualization	246
12.10. Technology creating new resources	247
Conclusion	249
Bibliography	251
Index	269