
Contents

Preface	ix
Chapter 1. Knowledge Transfer and Knowledge Sharing	1
1.1. Articulation of Chapter 1	1
1.2. Introduction to knowledge transfer and sharing	1
1.2.1. Introduction	2
1.2.2. Factors influencing knowledge transfer	3
1.2.3. Knowledge transfer methods	10
1.2.4. Codification by knowledge engineering methods and knowledge transfer.	12
1.2.5. Methodology for effective knowledge transfer	15
1.3. The case of a banking company	19
1.3.1. Introduction	19
1.3.2. Project context	20
1.3.3. Objectives and methodology	21
1.3.4. Knowledge management analyses and actions.	22
1.3.5. Work organization and knowledge transfer	27
1.3.6. Conclusion.	30
1.4. The Sonatrach case	31
1.4.1. Introduction	32
1.4.2. Design of transfer devices.	33
1.4.3. IMS Learning Design	35
1.4.4. From the knowledge book to educational engineering	36
1.4.5. Methodology for exploiting the results of knowledge engineering in an educational engineering process	41
1.4.6. Quizzes to evaluate	43
1.4.7. Conclusion.	45

1.5. The CEFRIO intergenerational knowledge transfer project and the case of Hydro-Québec	45
1.5.1. Project context	45
1.5.2. Methodological approach	46
1.5.3. The intergenerational aspect of the CEFRIO research project in the context of Hydro-Québec	48
1.5.4. Main work carried out	50
1.5.5. Conclusion and outlook	51
1.6. Case study on choosing a knowledge transfer method	51
1.6.1. Knowledge transfer methods	51
1.6.2. Evaluation criteria and their ranges of variation	53
1.6.3. Example of evaluation (classroom training)	55
1.6.4. The case study	56
1.7. Case study in agroecology	60
1.7.1. Introduction	60
1.7.2. Communities of practice	62
1.7.3. Dynamics of exchange between the actors of the “agricultural knowledge system”	64
1.7.4. Role of actors in the knowledge management tool	65
1.7.5. Critical knowledge capital	66
1.7.6. Models to represent knowledge	67
1.7.7. KOFIS tool (Knowledge for Organic Farming and Its Innovation System)	70
1.7.8. Conclusion	75
1.8. Lessons learned from the case studies	77
Chapter 2. Innovation from the Knowledge Base	79
2.1. Articulation of Chapter 2	79
2.2. Introduction to knowledge-based innovation	80
2.2.1. Knowledge evolution and innovation	80
2.2.2. Two tools to implement the evolutionary hypothesis	81
2.2.3. Knowledge-based innovation	83
2.3. The case of ONERA	90
2.3.1. Description of the system under study	90
2.3.2. Models	91
2.3.3. Interpretation of models: research of laws and factors of evolution	93
2.3.4. Assessment and outlook	95
2.4. The case of an automotive company, PSA Peugeot Citroën	95
2.4.1. Context of the study	95
2.4.2. Knowledge associated with the industrial object	96
2.4.3. The axes of the evolution’s analysis	97

2.4.4. Diachronic representation of knowledge: historical models	99
2.4.5. Synchronic representation of knowledge: antagonism models	102
2.4.6. Method of integrating knowledge capitalization into innovation approaches	103
2.4.7. Conclusion	105
2.5. The case of a defense company	105
2.5.1. Introduction	105
2.5.2. Creativity processes	106
2.5.3. The step of building cognitive stimulus by analyzing the inventive intellectual corpus	108
2.5.4. The step of individual stimulation of creativity	110
2.5.5. The stage of collective co-constructing foresight	113
2.5.6. Conclusion	114
2.6. Introduction to knowledge-based surveillance	114
2.6.1. Knowledge management and environment surveillance	115
2.6.2. The process of interaction between an organization's knowledge capital and its environment	116
2.7. An example for environmental monitoring	118
2.7.1. Phase 1: the projection	119
2.7.2. Phase 2: the distortion	119
2.7.3. Phase 3: identification	120
2.7.4. Phase 4: feedback	121
2.7.5. Phase 5: representation	121
2.7.6. Phase 6: knowledge creation	122
2.7.7. Conclusion	123
2.8. A case of CEA monitoring in the nuclear field	123
2.8.1. Context	123
2.8.2. Interest of the case	123
2.8.3. The classic approach	124
2.8.4. The MASK approach	124
2.8.5. Outcome	126
2.9. The case of a Renault monitoring unit	127
2.9.1. Methodology	127
2.9.2. Example of Renault's surveillance cell activity	133
2.9.3. Conclusion	139
2.10. A methodology for capitalizing on reasoning	140
2.10.1. Background	140
2.10.2. Introduction to the methodology	140
2.10.3. Illustration of the methodology by an example	141
2.10.4. Description of the approach	143
2.10.5. Conclusion	145
2.11. Lessons learned from the case studies	145

Chapter 3. Case Study of a Global KM Project	147
3.1. Articulation of Chapter 3	147
3.2. Introduction.	148
3.3. From awareness to the launch of an ambitious professional activity project	150
3.3.1. The global awareness and birth certificate of the KM project.	150
3.3.2. A first approach to the project: mastering the process of building collective knowledge around the knowledge chain.	152
3.3.3. Choice of method	153
3.4. Operational deployment of the project	157
3.4.1. The approach adopted for deployment	157
3.4.2. Project management	157
3.5. The implementation of the KM plan	164
3.5.1. Strategic analysis of knowledge capital	164
3.5.2. Analysis of the reference system	169
3.5.3. Knowledge capitalization	172
3.5.4. Knowledge transfer and sharing	176
3.5.5. Application to innovation	182
3.6. Conclusion – key success factors and perspectives	183
References	187
Index	195