
Contents

Acknowledgements	vii
Foreword	ix
Introduction	xiii
Chapter 1. The Firm, Knowledge and Capital: Toward the Definition of Knowledge Capital	1
1.1. Innovation: definition, organization and measurement	1
1.1.1. “From vice to virtue”: the evolution of the definition for innovation	1
1.1.2. Typology of innovation: the contemporary definition	7
1.1.3. How are innovation activities organized? The innovation models	15
1.1.4. Measuring innovation	21
1.2. Knowledge capital: definition and roles	28
1.2.1. From scientific and technical knowledge to knowledge capital	28
1.2.2. The productive use of knowledge capital.	35
1.3. The theoretical origins of knowledge capital	41
1.3.1. Contemporary theories of the firm and of innovation	41
1.3.2. The contribution of pioneer economists in the definition of knowledge capital	52

Chapter 2. The Building of the Knowledge Capital	61
2.1. The first forms of knowledge capital and the formation of national innovation systems	61
2.1.1. The science–technology relationship: from opposition to integration	61
2.1.2. The role of the State in the appropriation of scientific and technical information and knowledge	64
2.2. Multi-partner innovation and formation of knowledge capital	87
2.2.1. Network firm and multi-partner innovation	87
2.2.2. The formation of knowledge capital and multi-partner relations: open innovation.	91
2.2.3. Public research in the service of knowledge capital.	112
 Chapter 3. The Knowledge Capital in Global Networks.	 123
3.1. The constitution of knowledge capital within global networks	123
3.1.1. From multinational to global production	125
3.1.2. Globalization of R&D and the broadening of the firm’s boundaries: the importance of networks	129
3.1.3. Opportunities and limits of the R&D globalization.	140
3.2. Intellectual property rights (IPR) and knowledge capital	142
3.2.1. The new roles of intellectual property rights: between incentives, coordination and offensive use	145
3.2.2. The expansion of intellectual property	159
 Conclusion.	 173
 Postface.	 177
 Bibliography.	 181
 Index.	 211