

Innovation and Technology

Business and economics approaches

Nikos Vernardakis

Contents

<i>Detailed contents</i>	xi
<i>List of tables</i>	xiii
<i>List of figures</i>	xv
<i>List of boxes</i>	xvii
<i>Preface</i>	xix
PART I	
Innovation and the world economy	1
1 Innovation and the reshaping of the world economy	3
PART II	
Theoretical background of innovation and diffusion	23
2 Innovation: relationships, characteristics, origins, drivers	25
3 Diffusion	62
PART III	
The impact of innovation on Economic Theory, the economy, the firm	89
4 Innovation and Economic Theory	91
5 Innovation and the economy: the impact of innovation at the level of the national economy and at the level of sectors	116
6 Innovation and the firm	139

PART IV

Innovation policy	177
--------------------------	-----

7 Innovation policy	179
---------------------	-----

8 Epilogue	235
------------	-----

<i>Index</i>	243
--------------	-----

Detailed contents

<i>List of tables</i>	xiii
<i>List of figures</i>	xv
<i>List of boxes</i>	xvii
<i>Preface</i>	xix

PART I

Innovation and the world economy 1

1	Innovation and the reshaping of the world economy	3
	1.1 <i>Introduction</i>	3
	1.2 <i>The importance of innovation: the reshaping of the world economy</i>	5
	1.3 <i>Innovation today</i>	13
	1.4 <i>Repercussions of innovation and future prospects of world innovation</i>	19

PART II

Theoretical background of innovation and diffusion 23

2	Innovation: relationships, characteristics, origins, drivers	25
	2.1 <i>Some basic relationships</i>	25
	2.2 <i>The nature of innovation</i>	34
	2.3 <i>Origins and evolution of technology</i>	40
	2.4 <i>Technological paradigms, trajectories, marginal and radical innovations</i>	44
	2.5 <i>Technological opportunities, incentives and inter-sectoral differences in innovation</i>	46
	2.6 <i>Innovation: location (sectoral), size of firms and market structure</i>	50
3	Diffusion	62
	3.1 <i>Diffusion: within sectors</i>	62
	3.2 <i>Diffusion: across sectors</i>	77
	3.3 <i>Technology transfer</i>	80
	3.4 <i>Diffusion of embodied technology</i>	86

PART III

The impact of innovation on Economic Theory, the economy, the firm 89

4 Innovation and Economic Theory 91

- 4.1 *Technological change in the history of economic thought* 92
- 4.2 *The rise of the economics of technology and its main tenets* 95
- 4.3 *Inherited wisdom and the economics of an imperfect world* 100
- 4.4 *Evolutionary economics and Economic Theory* 105
- 4.5 *Epilogue* 112

5 Innovation and the economy: the impact of innovation at the level of the national economy and at the level of sectors 116

- 5.1 *Technological change and long cycles* 116
- 5.2 *Innovation and economic sectors* 125

6 Innovation and the firm 139

- 6.1 *Innovation and the firm* 140
- 6.2 *The R&D process and the firm: structure, organization, functioning, strategy* 140
- 6.3 *The dictates of technological change and the firm* 151
- 6.4 *The firm faces up to innovation, evolves, adapts* 161
- 6.5 *High-tech firms: further requirements* 165
- 6.6 *Technological change and the evolution of an industry* 167

PART IV

Innovation Policy 177

7 Innovation Policy 179

- 7.1 *What is Innovation Policy and what are its objectives?* 180
- 7.2 *The building blocks of the innovation ecosystem* 187
- 7.3 *Some further prescriptions for the design and implementation of Innovation Policy* 212
- 7.4 *Salient features of Innovation Policy across countries* 214
- 7.5 *Current problems and future challenges for Innovation Policy* 220

8 Epilogue 235

Index 243