

Contents

Board of Advisors	vii		
Preface	ix		
About the Editors	xi		
List of Contributors	xiii		
Part One Technology-specific Concepts	1		
1 Technology: Discourse and Possibility	3		
	<i>J. C. Spender</i>		
2 Technology Evolution	9		
	<i>Joshua L. Rosenbloom</i>		
3 Technology Transition	19		
	<i>Ashish Sood and Gerard J. Tellis</i>		
4 Technology Intelligence	25		
	<i>Thomas Durand</i>		
5 Technology Forecasting	37		
	<i>Steve Russell</i>		
6 Disruptive Technology	47		
	<i>Erwin Danneels</i>		
7 Intellectual Property	49		
	<i>Clyde D. Stoltenberg</i>		
8 Options and the Analysis of Technology Projects	57		
	<i>Edward Nellling</i>		
9 Technology and Innovation Management: Financing Technology	59		
	<i>Patricia Robak</i>		
Part Two Industry Level	67		
10 Innovation-driven Industry Life Cycles	69		
	<i>Susan K. Cohen</i>		
11 Technological Characteristics of Industries	77		
	<i>Donna Marie De Carolis</i>		
12 Competitive Dynamics in High-technology Industries	81		
	<i>Ram Mudambi and Tim Swift</i>		
Part Three Innovation	87		
13 Types of Innovation	89		
	<i>Resanna Garcia</i>		
14 Sources of Innovation	97		
	<i>Jenny Darroch and Morgan P. Miles</i>		
15 Innovation Models	105		
	<i>Allan N. Afuah and Kwaku O. Prakah Asante</i>		
16 Diffusion of Innovation	113		
	<i>C. Anthony Di Benedetto</i>		
17 Consumer Adoption of Technological Innovations	117		
	<i>Paschalina (Lilia) Ziamou</i>		
Part Four Firm Level	119		
18 Open Innovation	121		
	<i>Mariann Jelinek</i>		
19 Technology Strategy	125		
	<i>Steven W. Floyd and Carola Wolf</i>		
20 Absorptive Capacity and Technological Innovation	131		
	<i>Shaker A. Zahra, Bárbara Larrañeta, and J. Luis Galán</i>		
21 The Generations of R&D and Innovation Management	135		
	<i>William L. Miller</i>		
22 Dual Career Ladders in Organizations	147		
	<i>Christy H. Weer and Jeffrey H. Greenhaus</i>		
23 Human Resources in R&D	149		
	<i>George F. Farris and Yi-Yu Chen</i>		

- 24 The Stage-Gate® Product Innovation System: From Idea to Launch 157
Robert G. Cooper
- 25 Learning and Experience 169
Paul Olk and Robert McGowan
- 26 New-product Development Innovation and Commercialization Processes 175
Abbie Griffin
- 27 Service Innovation 181
John E. Ettlie, Iliana Payano Mejia, and Jessica M. Walker
- 28 Process Innovation in Operations 191
John E. Ettlie and Shalini Khazanchi
- 29 Organizing for Innovation 199
Mariann Jelinek
- 30 The Concept of Corporate Entrepreneurship 207
Jeffrey G. Covin and Donald F. Kuratko
- 31 Intellectual Property Strategy at the Firm Level 215
Mariann Jelinek
- Part Five Project Level Concepts 223**
- 32 Innovation Teams 225
Gloria Barczak
- 33 Understanding Customer Needs 231
Abbie Griffin
- 34 The Front End of Innovation in Large Established Firms 233
Peter A. Koen and Heidi M. J. Bertels
- 35 Project Management under High Uncertainty 241
Svenja C. Sommer and Christoph H. Loch
- 36 Evaluating Innovation Projects 251
Mark P. Rice and Frederic C. Hamilton
- 37 Managing Project–Organization Coupling in Breakthrough Innovation 257
Trudy Heller
- 38 Promoters and Champions of Innovation: Barriers to Innovation and Innovator Roles 263
Soren Salomo and Hans Georg Gemünden
- Part Six National Innovation Systems 269**
- 39 Innovation at the National Level 271
V. K. Narayanan, Gina C. O'Connor, Lois Peters, and Mark Tribbitt
- 40 Australia's National Innovation System 279
Don Scott-Kemmis and Judy Matthews
- 41 Evolution of China's National Innovation System and Its Challenges in Technological Development 293
Mei-Chih Hu and John A. Mathews
- 42 The National Innovation System in Taiwan 309
Ta-Jung Lu and Jong-Wen Wann
- 43 The National Innovation System in Singapore 327
Winston Koh and Phillip Phan
- 44 The Indian Innovation System 341
Rishikesh Krishna
- 45 Japan's National Innovation System 351
Chihiro Watanabe and Kayano Fukuda
- 46 The National Innovation System of the Russian Federation 367
Julian Cooper
- 47 The National Innovation System in Germany 375
Matthew M. C. Allen
- 48 The National Innovation System in Finland 391
Raimo Lovio and Liisa Välikangas
- 49 The Dutch Innovation System: Raising the Lowland? 405
Patrick van der Duin
- 50 The National Innovation System of Italy 419
Daniela Virgillito
- 51 The National Innovation System of Ireland 431
James A. Cunningham and William Golden
- 52 The U.S. National Innovation System 445
Kenneth L. Simons and Judith Walls
- 53 Cooperative R&D Agreements (CRADAs) 469
Paul Olk
- 54 University Licensing 471
Paul Olk
- Part Seven Emerging Technologies 473**
- 55 What Are Emerging Technologies? 475
V. K. Narayanan and Gina C. O'Connor
- 56 Biotechnology: The Technology of the 21st Century 479
Shreefal Mehta
- 57 The Continuing Economic Potential of Nanotechnology 491
Lois Peters
- 58 Emerging Web Technologies 505
Murugan Anandarajan, Bay Arinze, Chittibabu Govindarajulu, and Maliha Zaman
- Glossary 513**
- Index 525**