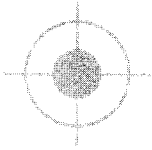


Brief Contents

1 **The Role of Innovation** *1*

2 **Innovation and Economics** *43*

3 **Contrasting Services with Manufacturing** *72*

4 **Developing an Innovation Strategy** *98*

5 **Ideas: Managing Creativity and Knowledge** *144*

6 **Prioritization: Selecting and Managing the Portfolio** *186*

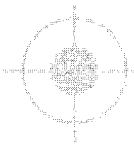
7 **Implementation of New Products, Processes and Services** *225*

8 **People, Organization and Innovation** *265*

9 **Boosting Innovation Performance** *312*

10 **The Future of Innovation Management** *343*

Appendix: Innovation Auditing *360*



Contents

List of Case Studies *xiii*
Preface *xv*
Acknowledgements *xvii*

1 The Role of Innovation 1
Introduction *1*
Innovation Drivers *2*
Technological advances *2*
Changing customers and needs *4*
Intensified competition *5*
Changing business environments *5*
Responding to the Need *5*
Companies' innovation management – examples *6*
Characteristics of Innovation *7*
Definitions of innovation *8*
Dimensions of innovation *9*
Dimensions of innovation in services *12*
Degrees of innovation *14*
Evaluating dimensions and degrees *15*
Phases of innovation *16*
Innovation complexity *18*
Innovation throughout the organization *19*
Key Research on Innovation *20*
Research methodology *20*
Macro-level investigations *21*
Micro-level investigations *22*
Project-level investigations *23*
Service innovation research *26*
Managing Innovation – The Challenge *27*
Need for a framework *27*
The innovation pentathlon framework *28*
The Structure of this Book *34*
Format of the chapters *35*
Summary *36*
Management recommendations *36*
Recommended Reading *37*
Main Case Study NTT-DoCoMo, Japan – partnerships for innovation *37*

2 Innovation and Economics 43
Introduction *43*
Research Methodology *44*

Economic measures of innovation *44*
Factors Mediating Innovation *46*
Company size and innovation *46*
Education levels, national culture and innovation *50*
Government policies and innovation *52*
Impacts of Innovation *54*
Innovation and business cycles *54*
Innovation and employment *59*
Product innovation and growth *59*
Diffusion theory *61*
Summary *63*
Management recommendations *65*
Recommended Reading *65*
Main Case Study Richardson – strategy and NPD *65*

3 Contrasting Services with Manufacturing *72*
Introduction *72*
The Importance of Services *72*
Service and the economy *73*
R&D in services *73*
Manufacturers need services *77*
Characteristics of Services *77*
Terminology of services and manufacturing *78*
Service delivery *79*
The servicescape *79*
Service characteristics and innovation *81*
Managing quality in services *83*
Innovation in Services *86*
The need for innovation *86*
Managing service innovation *87*
New service development processes *90*
Services and Innovation Management *91*
Summary *92*
Management recommendations *93*
Recommended Reading *93*
Main Case Study AXA Insurance – the innovation manager *94*

4 Developing an Innovation Strategy *98*
Introduction *98*
The Elements of Strategic Management *99*
Strategic analysis *100*
Strategic choice *102*
Strategic implementation *103*
Innovation Strategy and Stakeholder Satisfaction *104*
Kano's feature analysis *105*
The Challenge of Meeting Expectations *108*

Capability maturity: the 'S' curve *108*
The predictability of technical advance *111*
Evolution of strategy as technology matures *114*
Dominant design *116*
Threshold effects *117*
Network effects *118*
The Challenge of Changing Expectations *119*
Disruptive technology *121*
Responding to a disruptive technology *124*
Timing in Innovation *126*
Linking the Components of Strategy: Road-Mapping *128*
Building a roadmap *130*
The Cambridge 'fast-start' process *130*
Keeping a roadmap alive *133*
Looking further ahead: Scenario Planning *135*
The Success Trap *136*
Summary *137*
Management recommendations *138*
Recommended Reading *138*
Main Cast Study Domino Printing Sciences – facing the limits of technology *139*

5 Ideas: Managing Creativity and Knowledge 144
Introduction *144*
Creativity *145*
Types of business creativity *145*
Individual creativity *146*
Team creativity and culture *147*
Creativity techniques for innovation *149*
Managing Knowledge *154*
Nature of knowledge *154*
Knowledge transfer *155*
Promoting knowledge t ransfer *156*
Ideas and Innovation *157*
Identifying customer needs – traditional approaches *158*
Hidden needs analysis *159*
Repertory grid technique *160*
Empathic design *164*
Lead Users *168*
Experimentation *170*
Identifying priorities – conjoint analysis *170*
Choosing the correct approach to market research *173*
Protecting Ideas *173*
Copyright *173*
Design right *176*
Trademarks *176*
Patents *177*

Summary *181*
Management recommendations *182*
Recommended Reading *182*
Main Case Study Texas Instruments – defining innovation *182*

6 Prioritization: Selecting and Managing the Portfolio 186
Introduction *186*
The Principles of Portfolio Management *187*
The need for a process *187*
Elements of a good portfolio *189*
Types of project *189*
Valuing Individual Projects: Financial Methods *190*
Single-stage projects *191*
A warning about probabilities *193*
Multi-stage and network projects *197*
The real options approach *200*
Valuing Individual Projects: Scoring Methods *202*
Designing a scoring system *203*
Using a scoring system *206*
Applying Valuation Methods *207*
Choice of method *207*
Ranking projects for selection *208*
Balancing the Portfolio *210*
Strategic alignment *210*
Time and resources *212*
Risk and reward *212*
The Management Process *218*
Summary *220*
Management recommendations *220*
Recommended Reading *221*
Main Case Study Britannia Building Society – building and evolving a portfolio management process *221*

7 Implementation of New Products, Processes and Services 225
Introduction *225*
The Techniques of Project Management *226*
Project aims *227*
Work breakdown structure *229*
The project schedule *229*
The resource plan *232*
Managing trade-offs *233*
Managing the Early Stages *236*
Linking customer expectations to design *237*
Managing information in the design phase *240*
Project Risks *242*
Issues in assessing project risks *243*

The FMEA process *245*
Team Structure and Organization *248*
The need for cross-functional working *248*
Managing an Innovation Department *250*
Phase gates *251*
Management process at the gates *251*
Improving and maturing the management process *253*
Managing collaborations *254*
Managing Simultaneous Projects *256*
Summary *260*
Management recommendations *260*
Recommended Reading *261*
Main Case Study Wipro Techologies, India – optimizing NPD *261*

8 People, Organization and Innovation *265*
Introduction *265*
Organizational Culture and Innovation *266*
Understanding and assessing culture *266*
Applying the cultural web *269*
Studies of innovation culture *273*
Managing Innovation Teams *282*
Team structures *282*
Making Project Teams Work *289*
Managing People for Innovation *296*
Recruiting and job assignment *296*
Managing performance *298*
Development of employees *304*
Summary *305*
Management recommendations *305*
Recommended Reading *305*
Main Case Study Lever Fabergé – Unilever *306*

9 Boosting Innovation Performance *312*
Introduction *312*
Performance Improvement *313*
Assessing Current Performance *313*
Performance measures *314*
The innovation audit *317*
Priorities and Linkages *324*
Priority areas *324*
Considering linkages *324*
Actions to Boost Performance *329*
Project-to-project learning *329*
Change management and innovation *331*
Making a breakthrough *336*

Summary *336*
Management recommendations *337*
Recommended Reading *337*
Main Case Study Sidler GmbH & Co – sourcing innovation *338*

10 The Future of Innovation Management 343
Introduction *343*
Customers *343*
Technology *346*
Competition *348*
The Business Climate *350*
Collaborative innovation *351*
The dangers of distributed inovation *354*
Managing Innovation *355*
Summary *355*
Management recommendations *356*
Main Case Study Hewlett-Packard BITS *356*

Appendix: Innovation Auditing 360

Notes and References 378
Index 405