

Index

- ABB 474, 475
 Abernathy 19, 22, 31
 Acorn 262
 acquisition of technology 286–8, 322
 Adaptec 315
 adoption of innovations *see* diffusion of
 innovations; implementation
 Adplates 20–1
 advanced manufacturing technology (AMT) 83,
 398
 AEA Technology 320
 after-sales service 154
 Agouron Pharmaceuticals 323
 AIM (accelerating idea to market) process 381
 Airbus Industries 155, 304–5
 airlines 6, 155, 175, 268, 304–5, 356, 562
 Alcatel 161
 alliances 285–341
 joint ventures 303–6, 315–16, 318, 387
 learning through 329–40
 management comfort 328
 patterns 170–4, 315–19
 problems with 289–90, 333
 reasons for 285–91
 technology, organization and 319–28
 alpha testing 395
 Amazon.com 5, 21, 38, 45, 49, 350, 386
 AMP 399–400
 Apple 96, 158, 262, 278, 328, 371, 390, 471
 architectural innovation 16–18, 44, 249–57
 ARM Holdings 262
 Asea Brown Boveri (ABB) 291
 AT&T 114, 249, 388, 470
 Atari 31
 attitudes *see* culture
 audit 88, 404, 562–4
 innovation 564–9
 automation 193, 276–7
 automotive sector 6, 115, 170, 181, 187, 387–9
 see also under companies
 Autonomy 545
 Azko 322

 background technologies 185
 BAe Systems 54
 banking 5, 175
 BASF 135–7

 Bayer 540
 Bell, Alexander Graham 28, 470
 Bell Labs 52
 benchmarking 83, 147–50, 355–6, 404, 562
 Benetton 6, 124, 154, 350
 Berenson 193
 best practice 42, 83
 beta testing 395
 biotechnology 159, 174–80, 213, 475, 533, 536,
 538, 539–40, 551
 BMW 251, 338–9, 386, 444
 BOAC 37
 Boeing 147, 155, 304, 305, 433–4
 Boo.com 114
 Bookham Technology 544
 Boring 14
 Bosch, Robert 163
 BP 326, 435
 brainstorming 279
 British Airways 21, 294
 British Gas 451, 454
 Broens Industries 3
 BT (British Telecom) 39, 192, 426
 bubble chart 368
 business plans 444–6, 535–48
 business process re-engineering (BPR) 83, 115,
 181
 business-to-business (B2B) supply 293
 buyer behaviour *see* users' needs

 Cadbury Schweppes 432
 Cambridge University 428, 523–4
 Canon 96, 181, 182, 328 124, 191
 capabilities *see* competencies
 Caterpillar 315
 Celltech 262, 325
 Ceramides 260
 change management 396–400
 CharterRail 453
 Chevron Texaco 360
 Chirosience 546–7
 Christensen, Clayton 29–30, 125, 267, 406
 Chrysler 37, 196, 214
 CIA 352
 Cisco 53, 185, 344
 CITER 55
 Citibank 6

- Citigroup 44
 coalitions, building 370–1
 codification 324–5, 439
 cognitive dissonance 407
 collaboration *see* alliances
 collective efficiency 504
 Coloplast 357–8
 Comet 151
 commercializing 263–9
 communication 361–2, 501–2
 compatibility 271–2
 competencies and capabilities 109, 111, 123,
 125–6, 137–41, 181–94, 289, 327
 competition 112, 320–2, 118–21, 146–51
 competitive advantage 5–8, 401
 competitive rivalry 135–7
 complete spin-off 454–6
 complexity 70, 76, 112, 115, 169, 173, 243, 272,
 322–4
 adoption 267, 268–9
 component innovation 16–18, 44
 computer-aided design (CAD) 392
 concept testing 371
 concurrent working 385–8
 consortia 299–303
 Consumers' Association 250
 continuous improvement 485–92
 cooption 304–6
 copyright 47, 260–1
 core competencies 115, 181–3, 184–7,
 333–4
 core rigidities 187, 388
 Corning 195–6
 corporate ventures 425–62
 assessment 444–7
 definition 425–9
 development 442–4
 identification 437–42
 internal 456–61
 managing 436–47
 objectives 436
 reasons for 429–36
 structures for 447–56
 Cosworth 379
 Covisint 294
 creativity 92
 credibility 325
 CRL 302, 322
 C-space 439
 culture
 company 327–8, 499
 innovative 448, 456, 498–500
 space 440
 customer testing 394

 Daimler-Benz 163, 379, 444
 DaimlerChrysler 294
 Dal Ichi Kangyo (DKB) 312
 Data General 390
 DEC 198, 391
 Dell Computers 53, 386
 Delphi method 280–1

 Delphi panels 354
 Delphian.com 147
 design 94, 116, 149, 170, 188, 246, 388, 392
 rights 261
 developers, relations with 265–7
 development funnel 376, 380
 Diageo 407
 differentiation, product 119, 244–9
 diffusion of innovations 239, 267, 269–80
 Digital 249, 390–1
 direct integration 449
 Direct Line 5
 discontinuity 32–7
 discontinuous change 20–1, 98
 discontinuous conditions 405–11
 discontinuous practice 43
 disruptive innovation 29–32, 256, 268, 572–4
 diversification 434–5
 DoCoMo 325
 Dosi, Giovanni 19, 170
 dot.com companies 38, 179, 426
 Doz 303
 dual ladder 500
 DuPont 14, 210
 Dutton Engineering 496
 dynamic capability 125–6
 Dyson, James 467, 481–2

 e-Bay 5, 49
 Econowaste 431
 Edison, Thomas Alva 18, 25, 65, 78
 education *see* training and education
 electronics 131–2, 173, 175–80, 198, 474
 Elf 435
 Eli Lilly 298, 323
 Emerson, Ralph Waldo 65
 EMI 151, 154, 270
 employees, innovation from 359–60
Encyclopaedia Britannica 21
 Enron 11
 enterprise resource planning (ERP) 485
 entrepreneurship 226, 430–1, 527–31, 531–4
 environment
 external 441–2
 internal 439–41
 selection 406
 Ericsson 157, 161, 186, 191, 262, 326, 426
 ESPRIT 302
 Ethernet 361
 Expedia 8
 expeditionary marketing 265
 experimentation *see* learning
 external scanning 67, 441–2

 facilitation 506
 fashion
 management fads 82, 115
 statements 82–3
 Fibernet 3
 financial performance, impact of innovation on
 535–48
 First Direct 5

- Fisher Price 454–5
flexible manufacturing systems (FMS) *see* advanced manufacturing technology (AMT)
focus groups 369
Ford 11, 37, 52, 196, 214, 249, 286, 294, 379, 386, 391, 480
forecasting 113, 269–80, 354
Fruit of the Loom 369
Fuji 312, 328
Fujitsu 262, 304
fusion *see* technology fusion
- gamma testing 395
GEC 226, 228–9
General Electric (GE) 26, 40, 53, 270, 315, 461, 471, 474
General Motors (GM) 37, 40, 196, 294, 432, 469
GICN 453
Glaxo 327–8, 546
globalization 44–8, 131, 211–16
Globetronics 297
good practice 382–4
groups *see* teamworking
GSM 161
Guinness 320, 325
Gulf 113
- Hamel, Gary 109, 181–4, 191, 200, 265, 303
heavyweight product manager 187, 393
Herve Thermique 315
Hewlett Packard 31, 52, 83, 388, 441
high-involvement innovation 489–93, 494, 495
Hitachi 147
Honda 6, 108, 117, 181, 184, 187, 304, 338–9, 388
Hoover, W.H. 67
Hotpoint 124
HP 262
- IBM 13, 30, 40, 48, 53, 54, 85, 114, 123, 154, 155, 156, 352, 407, 408, 469, 471
ICI 230, 299, 453
ICL 304
ideas, generation of 438–9
IDEO 240, 242
IG Farben 184
IKEA 309–10
Imperial College 428, 450, 523
implementation 68, 91, 112, 124–5, 376–93, 410
Incat 6
incremental innovation 11–12, 13–15, 170, 220, 485
incubators 525–31
Inditex 3–4
individuals, role of 476–84, 506
information and communications technology (ICT) 48–50, 114
information gathering 147, 148
information technology (IT) 77, 94, 110, 122, 173–4, 174–80, 194, 213, 215, 229
innovation management archetypes 509
innovation process 41, 67–75
innovation space 12–13
innovation
 definitions 66
 influences on 97–8
 insiders and 359
 management of 78–84
 models of 75–7, 88–97, 347–8
 regional 71, 72
 resourcing 91–3, 220–3
 sources of 170–1
 success and failure 85–97
 types of 8–13
In-Q-Tel 352
integrated business teams 449–50
Intel 53, 156, 264, 344, 408, 433, 471
intellectual property 42, 159, 161, 259–63, 324
 see also copyright; licensing, patents
Intermagetics General Corp. (IGC) 461
internal scanning 439–41
Internet 6–8, 38, 45, 48–9, 67–8, 114, 277–8, 352, 426
intranet 313, 440, 545
intrepreneurship *see* corporate ventures
Intuit 268
invention versus innovation 67, 92
ITT 226, 228–9
- Jaguar 286
Johnson and Johnson 541
joint ventures *see* alliances
just-in-time (JIT) 489
- kaizen* 360, 365, 485
Kay, John 112, 124
keiretsu 312
Kingfisher 294
Kirin 299
knowledge 15–18
 acquisition 372–6, 409–10
 -building 222
 management 83, 108, 115, 170, 179, 265, 439–41
 networks 213
 sources of 124
 tacit 116, 154, 324
 types of 154, 169, 292, 324, 336–7
knowledge manager 441
Kodak 28, 40, 43, 151, 324, 334
Kumba Resources 3
- lastminute.com 8, 49
launch 393–400
lead times 154
lead users 267–8, 357
leadership 468–73
leadership versus follower 121, 153
lean production 149, 295, 365, 476, 488
lean thinking 14
learning 410–11
 through alliances 329–40
 through corporate ventures 435–6, 456–61
 enabling 400–4

- evaluation of 216, 218–20
- generative 406
- networks 507–8
- organizational 68, 94, 150–1, 205, 435–6, 502–3, 561
 - from others 355–6
- Learning before Doing 384, 385
- learning curve 14, 154
- Levi Strauss 386
- licensing 150, 296–9
 - pricing 261–2
- life cycles, technological, market and product 22–3, 243
- light bulb 18, 25–6, 65, 78
- light-emitting diode (LED) 27–8
- Linux 314
- Lockheed Martin 390
- Lucent 382, 426, 445

- Magink 4
- Mannesman 40
- Marconi 39, 544
- marketing mix 395
- marketing plan 395–6
- markets 239–81
 - boundaries 350
 - business 251–6
 - consumer 250–1
 - dynamics 350
 - forecasting 354
 - friction 95
 - internal 396–400
 - maturity 244
 - segmentation 250–7
- Marks & Spencer 294, 295
- mass customization 386
- mass production 480
- materials 131–2, 174–80
- Matsushita 153, 181, 263, 328, 428, 444, 485
- McDonald's 476
- measures of innovation 563–4
- Medical Technology Partners 540
- MEES Energy 434
- Mercede Benz 444
- Merck 262
- MetalSite 294
- Microelectronics & Computer Technology Corporation (MCC) 300–1
- Microsoft 24, 156, 175, 198, 263, 264, 304, 315, 407, 460, 471, 473
- Midland Bank 254
- Mindscape 115
- MINE 180
- Minolta 328
- Mintzberg, H. 112, 476
- mistakes management 361
- MIT 147, 219, 483, 523–4
- Mitsubishi Chemicals 299, 312
- Mitsui 312
- Mondex 254–5

- Morse Code 67
- Motorola 38, 161, 247, 326, 442
- MP3 45–7
- multimedia 459–60

- Napster 46–7, 467
- national demand, patterns of 134–5
- national systems of innovation 131–46
 - learning from 143–6
- Natural History Museum (NHM) 449
- NatWest Bank 254
- NCR 114
- NEC 147, 184, 262
- net present value 221, 223
- networks 42, 52–5, 71–2, 83, 213, 271, 307–15, 505
 - configuring 412–14
 - engineered 412
 - learning 507–8
 - management 414
 - types 411–12
- 'New Economy' 179
- New Medical Technologies 540
- new product development 70, 433
- 'new sciences' 211
- new technology-based firms (NTBFs) 196, 198–9, 523–4, 531–4, 548–50, 552
- new ventures department 450–1
- new ventures division 451–2
- Nichia Chemical 19, 27, 28
- Nike 53
- Nikon 328
- Nintendo 262
- Nippondenso 286
- Nissan 6, 388
- Nokia 40, 161, 247, 326, 473
- Nono-Nordisk 356
- Nortel Networks 426–7, 544
- Novartis 540
- NTT 325
- nurtured divestment 454

- observability 272
- opto-electronics 194
- organization
 - behavioural change 82–3
 - culture 327–8, 499
 - knowledge *see* knowledge
 - learning *see* learning
 - memory 435–6
 - multitechnology 184–5
 - networks *see* networks
 - project-based 72–3
 - roles 506
 - size 71, 170
 - structure 225, 473–6
 - support 396
 - see also* small firms, innovation by
- organizational development (OD) 397
- Oticon 475
- outsourcing 70

- Oxford Instruments 6
Oxford University Press 459–60
- paradigm innovation 8, 11
partnerships 295
Pasteur, Louis 598, 535
patents 45–7, 109, 150, 158–9, 324, 526–7, 531, 533
 costs 263
 legal requirements 260
 measures of innovation 563–4
Pearson 115
personal computer (PC) 30–1, 258
Pets.com 114
Pfeffer 467
Pfizer 361
pharmaceutical industry 159–60
Philips 26, 85, 147, 157, 161, 181, 211, 287, 291
Pilkington 52, 151, 479
Pisano, Gary 109, 111, 125
Pixar 471
planning
 business 444–6, 535–48
 marketing 395–6
 scenario 279–80
 strategic 225–6
Polaroid 28, 151, 190, 191, 198, 334, 407, 479
Porter, Michael 47, 108, 111, 115, 118–19, 123, 124–5
portfolio management 366–8
position innovation 8, 11
post-project reviews (PPRs) 403
Pralhad, C.K. 109, 181–4, 191, 200, 265
process innovation 8, 87, 400–4
Procter & Gamble 15, 53, 353, 359, 385
product innovation 8
product mapping 369
product standards 155–8
profit impact of market strategy (PIMS) 245
profitability *see* financial performance
project
 data management (PDM) 392–3
 management 80
 structures 388–9
prototypes 173, 179, 240, 242, 392
Psion 326
- Quaker Oats 454–5
quality circles 83
quality function deployment (QFD) 246–9, 362, 392
quality management 245, 488, 501, 562
QXL 49
- radical innovation 11–12, 158, 191–3
rapid, reiterative redevelopment (RRR) 257
Raytheon 23
RCA 29
reduced instruction set computing (RISC) 258
reinnovation 96–7
relative advantage 271
research and development (R&D) 53
 competencies in 137–41
 consortia 299–303
 expenditures 536–9
 funding 109, 110, 132–4, 217–18
 location 110, 187, 206–16
 resource allocation 220–3
RISC (reduced instruction set computing) 258, 262
risk *see* uncertainty
Roberts, E. 444, 531, 535
robotics 276–7
robust designs 14
Rohm 114
Rolls-Royce 14, 154, 442, 451
Rothwell, Roy 52, 77, 96, 97
Route 128 523, 533
routines, organizational 80–4, 189, 364–6, 408, 503, 559
Rover 304, 338–9
Ryanair 268
- Samsung 85, 247
Sanwa 312
Sapsed, Jonathan 115, 192
scenario planning 279–80
Schnaars 193
Schumpeter, Joseph 7, 18
science-based firms 173, 211
scientific management 480
S-curve 272–4, 354
search 349–62
secrecy 153–4, 159–60
Sega 262
segmentation 240
SEMATECH 300
Semco 474
semiconductor sector 123, 124, 524
service innovation 6–7, 14, 70, 257
 measures of 570–1
Severn Trent International 432
Sharp 262
Shell 13, 39, 435
Short Message Service (SMS) protocol 351
Siemens 147, 270, 382, 454, 473
Silicon Valley 163, 523–4
Singer, Isaac 67
Skandia 441
skills *see* training
small firms, innovation by 110, 125–7, 161–3, 170, 194–9, 474, 523–53
SmithKline Beecham 11, 546
software 175–80, 459–60, 562
Sony 14, 45, 85, 124, 153, 156, 157, 181, 198, 262, 263, 287, 444
SonyEricsson 247
Southwest Airlines 6, 268, 356, 562
stage gate system 406
stakeholders 356–8
Standard Oil 435
steady state 506–12

- strategic advantages 9–10
- strategic architecture (vision) 183, 191–3, 200
- strategic selection 408–9
- strategy 90–1, 108, 143–6, 362–72
 - control 226
 - corporate 325–6
 - deployment 365
 - incremental versus rational 111–18
 - marketing 395
 - monitoring 371–2
 - planning 225–6
 - positioning 110, 122, 222
 - technology and 223–34
- subcontracting 292–6
- success and failure
 - alliances 329–30, 331
 - definition 85
 - innovation 85–97
 - new venture 456–7
 - roadmaps for 88–97
- Sumitomo 297, 312
- Sun Microsystems 391
- superstars 196–8
- suppliers
 - internal 432
 - relations with 171, 199, 288, 292–6
- sustainability 50–2, 136
- Swann, Joseph 18, 25
- SWORD approach 364
- SWOT analysis 112, 116
- Sylvania 26
- Symbian 304, 326

- Tarmac 431
- teams/team working 388, 390, 468, 494–8
- technological trajectories, paths 109, 111, 123, 169–201, 210
- technology
 - acquisition 286–8, 322
 - codifiability 324–5, 439
 - complexity 70, 76, 112, 116, 154–5, 169, 173, 243, 263–9, 272, 322–4
 - diffusion 271–2, 439
 - forecasting 278–80, 354
 - fusion 16–18
 - implementation 68, 91, 112, 124–5, 376–93
 - life cycles 243
 - marketing 257–63
 - road-mapping 365
 - transfer 373–4
 - trends 351–3
- technology product matrix 200, 201
- Technophone 247
- Teece, David 91, 109, 111, 125, 151, 154
- telecommunications 67, 114, 454, 468
- Teleste 247

- Tesco 186, 294
- test marketing 394–5
- Texas Instruments 262
- Thomson 40
- Thorn 322, 453
- 3Com 262
- 3i 544
- 3M 39, 52, 80, 81, 83, 85, 147, 181, 184, 196, 208, 361, 366, 427, 442, 500, 510–11
- time to market 6, 387–8
- Toshiba 147, 262
- Total 435
- total quality management (TQM) 14, 83, 115, 501
- Toyota 6, 83, 249, 312, 485
- training, education and skills 170, 398, 484–5, 502–3, 533–4
- transaction costs 286, 288–9
- trend-spotting 350–1
- trialability 272
- TRIZ system 442
- trust 330, 333
- TRW Inc. 193
- Tui 40

- UK Medical Ventures (UK) 540
- uncertainty 78, 111, 116, 217–18, 286, 559
- Unilever 252, 260, 385
- universities 198, 322, 525–31
- unlearning 402
- users' needs 96
- Utterback, J. 19, 22, 31, 40

- value networks 406
- Vancom Zuid-Limburg 497
- venture capital 434, 538–9, 539–41, 541–8
- Vickers 184
- Virgin 471
- visions 192, 390–1, 468–73
- Vodafone 40
- Von Hippel, E. 96, 267, 293, 385

- Wellington 408
- Welsh Water 450
- Westinghouse 26
- Winter, Sidney 170, 189
- Worldwide Retail Exchange (WWRX) 294

- Xerox 29, 147, 151, 198, 209, 352, 359, 361, 388, 455–6, 461, 524–5

- Yahoo! 38
- Yet2.com 147

- Zara 6, 350
- Zeneca 230, 322, 323, 328, 546