

# Index

---

- added value 29, 30-31, 52, 137, 145, 146, 148
  - see also* synergies
- agency problems 68, 70, 73, 75
- Ahuja, G. 2, 48, 50, 52, 54, 59-60, 61, 87, 89, 136, 161
- AirTouch Communications, Inc 23
- Alcatel 23-4
- alliances 16, 17, 22, 150, 162-4, 165
- anti-trust authorities 164-5
- anti-trust laws 11, 12
- Arrow, K.J. 161
- Asian M&As 14, 15
- automotive sector 13
  
- bank loans 27
- banking sector 18, 32, 33
- bankruptcy 43, 46, 55
- bargaining power 40
- BASF and Solvay merger case study
  - see* Solvay and BASF merger case study
- Belgium *see* Solvay and BASF merger case study
- bidder corporate control 25-6
- biotechnology sector 16, 146, 148, 149, 154
- Bittlingmayer, G. 14
- Bourgeois, L.J. 79
- Bresman, H. 51
- Britain *see* United Kingdom
- broadband technologies 23-4
- bureaucracy 68, 69-70, 72-3, 75, 85, 86
- business culture 49, 138
- business cycles 16, 19
- business services sector 20
  
- Canada 26, 136
- Cantwell, J.A. 16-17, 33, 36
- capabilities *see* complementary technological capabilities; location-specific capabilities; management capabilities; R&D capabilities
- capital markets 12, 38-9, 43, 69, 73
- Capron, L. 49, 50, 57
- case study designs 8, 54, 58-9, 77-8, 79-81, 124, 159
- Chakrabarti, A. 50, 52-3, 54, 58-9, 61
- champions, innovation 50, 163, 164
- Chatterjee, S. 52
- Chaudhuri, S. 49
- chemicals and pharmaceutical sectors 20, 21, 22, 32-3, 34-5, 52, 59-60, 134-5
  - see also* DSM acquisition of Gist-brocades case study; Henkel acquisition of Novamax case study; Pharmacia & Upjohn and Monsanto merger case study; Solvay and BASF merger case study
- Chevalier, J.A. 52
- collaboration 51, 108, 152, 154
  - see also* alliances; joint ventures; manufacturer-supplier relationships; networks; prior relationships
- commercialization 72, 73, 153
- communications 31, 33, 41, 51, 162
- competences *see* complementary technological field (CTF) firms; new technological competences; same technological field (STF) firms; technological competences
- competition 22, 32, 34, 35, 135, 136, 137, 138
  - see also* non-rival firms; rival firms; technological competition
- competition motivated M&As 29, 42-3, 140, 142-3, 144-5
- competitive advantage 21, 22, 29, 33, 135
- complementary culture 136, 140

- complementary products 135, 137, 145, 147, 151
- complementary technological capabilities 29, 30–31, 33, 34, 35, 61
- complementary technological field (CTF) firms
- policy implications 164–5
  - R&D personnel 2, 139, 140, 150–51, 160
  - in R&D process empirical study
    - M&A classification 82, 83–4, 85, 86
    - in M&A sample 97, 98–9
    - effect of market relatedness 108, 115–16
    - effect of technological relatedness 106, 107, 108, 111, 114, 115–16, 117–18
  - resource redeployment 85, 116, 117
  - technological competences 85, 115, 117
  - see also* DSM acquisition of Gist-brocades case study; Henkel acquisition of Novamax case study; Pharmacia & Upjohn and Monsanto merger case study
- construct validity 79–80
- cost savings 31, 33, 50, 148, 149
- costs 32, 33, 162
- see also* fixed cost spreading; R&D costs; social costs; transaction cost reductions
- cross-border competitiveness 135
- cross-border intra-firm networks 16–17
- cross-border M&As
- absorptive capacity 33
  - bureaucracy 86
  - competitiveness 29
  - cultural differences 86, 162
  - EU 19, 25, 26
  - and global competitiveness 29
  - local skills and expertise 31
  - market motivated 22
  - in merger waves 12, 13
  - pharmaceuticals sector 34–5
  - rationalization 86
  - in R&D process empirical study 83–4, 86–7, 108, 109, 119–21
  - and regulations 22
  - resource redeployment 86–7
  - restructuring motivated 31
  - telecommunications sector 22–3
  - trends 13–16
- cross-border MNE networks 16–17
- cultural distance 53, 86, 150–51, 162
- culture 49, 50, 68, 136, 138, 140, 146, 150–51
- customers 22, 32, 142, 144, 147, 151, 154
- cutbacks 29, 69, 71, 74, 139, 140, 142–3, 146
- Daimler Chrysler merger 13
- De Jong, H.W. 25
- debt 43, 45, 46, 55, 61
- defensive reactions 30, 136–8
- deregulation 17, 22–3, 30
- development 85, 117, 139, 144, 153, 156
- diseconomies of R&D 41, 49, 68, 72–3
- distribution networks 21
- diversification 12, 29, 36, 42, 67, 72
- see also* technological diversification
- domestic M&As 14, 18, 86–7, 99, 108, 109, 119–21
- downsizing 29, 139, 142–3
- see also* cutbacks; rationalization; R&D rationalization; R&D restructuring; restructuring
- DSM acquisition of Gist-brocades case study
- discussion 151–2
  - introduction 135, 145–6
  - potential fit 146–9
  - success 149–51
- duplication elimination 41, 67, 69, 71, 74, 82, 85
- see also* cutbacks; downsizing; rationalization; R&D rationalization; R&D restructuring; restructuring
- Duysters, G. 53
- Eastern Europe 25
- economic growth 11, 12
- economies of scale
- and M&A motivations 37, 52, 161
  - effect of M&As on R&D ex post 41, 42, 47, 48

- effect of M&As on R&D process 36, 65, 66, 71, 82
- and prior relationships 87
- production effects of M&As on R&D process 69, 73, 85
- in same technological field (STF) firms 160
- economies of scope
  - complementary technological capabilities 35
  - and M&A motivations 35, 37, 52, 161
- effect of M&As on R&D ex post 42, 47, 48
- effect of M&As on R&D process 66–7, 71, 82
- and prior relationships 87
- production effects of M&As on R&D process 69, 74, 85
- and technological relatedness 30–31
- efficiency 18, 22, 31, 33, 37, 46, 55
  - see also* cutbacks; diseconomies of R&D; downsizing; duplication elimination; economies of scale; economies of scope; fixed cost spreading; inefficiencies; rationalization; R&D rationalization; R&D restructuring; restructuring
- Eisenhardt, K.M. 78, 79
- employee motivation *see* motivation, employee
- employment
  - cutbacks 29, 74, 139, 140, 143
  - growth 140, 145, 150
  - effect of LBOs on R&D intensity ex post 46, 55
  - effect of M&As on R&D ex post 41
  - production process effects on R&D process 70, 74, 75
- Ericsson 24
- Ernst, H. 2, 49, 50–51, 53, 160
- Euro-zone countries 27
- Europe 12, 13, 14–16, 17, 23–4, 25, 134–5, 154, 164
  - see also* France; Germany; Ireland; Netherlands; Norway; Sweden; Switzerland; United Kingdom
- European Commission 134–5, 147–8
- European Single Market 17
- European Union 16, 18–27, 50–51
- external validity 80
- Faccio, M. 25
- fifth M&A wave
  - driving factors 1–2, 16–18
  - European trends 18–27
  - global trends 12, 13–16
  - transport and communications cost reductions 33
- finance 32, 37, 38–9, 41, 45, 69, 70, 73, 75
- financial markets 11, 30, 70, 75
- financial synergies 52
- financing instruments 18
- firms 16, 18, 33, 47, 50, 53
  - see also* complementary technological field (CTF) firms; large firms; local firms; MNEs; new technology based firms (NTBFs); non-rival firms; rival firms; same technological field (STF) firms; small firms
- fixed cost spreading 65, 66–7, 69, 71, 73
- flexibility 18, 22, 33, 41
- food industry 20, 21
- Fore Systems 24
- foreign investment 21, 32
- France 23–4
- Franks, J.R. 25
- GDP 24–5
- General Electric Co. 24
- General Motors (GM) 18
- geographic scope 83–4, 86–7, 99, 108–9, 119–21, 162
- geographical markets 32, 135, 137, 140, 142, 152, 154
- Germany 24, 25
  - see also* Henkel acquisition of Novamax case study
- Gist-brocades acquisition by DSM case study *see* DSM acquisition of Gist-brocades case study
- globalization 17
- Gort, M. 47, 48
- Granstrand, O. 50, 51, 54, 58

- Hagedoorn, J. 53
- Hall, B.H. 2, 45, 47, 53, 55–6, 89
- healthcare sector 16
- Henkel acquisition of Novamax case study  
 acquirer, target and motives for deal 137–8  
 discussion 140  
 introduction 135, 136–7  
 market rivals 135  
 post-deal 138–40, 163
- high-tech industries 16, 17, 21, 48, 161, 164
- high-tech products 17
- Hitt, M.A. 2, 41, 45, 53, 56, 89
- hold-up problem 39
- horizontal M&As 11, 22, 52, 89, 97, 161
- hostile takeovers 12, 25
- imitation 34, 118
- in-house R&D 32  
*see also* R&D departments; R&D facilities; R&D personnel; R&D teams
- incentives 41, 49
- indivisibilities 65, 66–7, 69, 71, 73, 74, 82
- industrial sector 16, 20
- inefficiencies 38–9, 40
- information 31, 49, 162, 163–4, 165  
*see also* know-how; knowledge; learning
- Information and Communications Technologies (ICTs) 22, 23–4, 31, 33, 35–6, 53
- innovation *see* R&D
- innovation champions 50, 163, 164
- innovative cultural differences 50–51
- innovative culture 50, 68
- intangible assets 21, 33
- internal validity 80
- international *see* cross-border
- Internet sector 22, 23–4
- intra-industry M&A 32, 34
- inventors 50–51, 53
- investment *see* foreign investment; R&D investment
- investment banks 18
- Ireland 25
- Japan 26
- Johansson, S. 22, 23–4, 34
- joint ventures 136, 141, 144, 145, 146, 151, 163
- junk bonds 12, 18
- Kang, N.-H. 22, 23–4, 34
- Katila, R. 2, 48, 50, 52, 54, 59–60, 61, 87, 89, 136, 161
- know-how 17, 42, 49–50, 51–2, 61, 66, 67, 148, 149
- knowledge  
 and complementary technological competences 33, 117–18  
 and cross-border M&As 21, 33  
 impact of M&As on R&D ex post 148  
 and prior relationships 17, 87, 162–3, 164  
 relatedness 51–2, 54, 59, 117–18  
 in same technological competence (STC) firms 117–18, 143, 145  
 transfer 150–51  
*see also* information; know-how; learning; local knowledge; local skills; tacit knowledge; technological knowledge
- knowledge bases 49–50, 51–2, 53, 54, 59, 61, 117–18
- knowledge spillovers 33, 66–7, 71, 120, 122, 139
- knowledge synergies 29, 51–2, 67, 72, 161–2
- Kodama, F. 35
- large firms 47, 50, 51
- laws, anti-trust 11, 12
- learning 49, 51
- Lee, J. 135
- leveraged buyouts (LBOs) 12, 46, 55–6
- liberalization 30, 31
- Lichtenberg, F. 46
- local firms 21
- local knowledge 21, 35
- local skills 31, 33
- location-specific capabilities 17
- Long, W. 46
- M&As (mergers and acquisitions)  
 anti-takeover provisions 40

- classification 81–7
- cross-border *see* cross-border M&As
- domestic *see* domestic M&As
- by global sectors 16
- intensity 20–21, 29
- merger waves 11–13
  - see also* fifth M&A wave
- motivations 30–33, 36, 37, 38, 52, 135–6, 161
- post-deal strategies 49
- pre-deal strategies 49
- trends (1985–2003) 13–16
- management 18, 25, 150–51
  - see also* managers; organizational structures; top management
- management capabilities 33
- managers 30, 39, 40, 61
- Manchin, M. 27
- Mannesman 13
- manufacturer-supplier relationships 137
- manufacturing sector 19, 20, 21, 45, 47–8, 55–6, 57
- market motivated M&As
  - cross-border 22
  - financial synergies 52
  - intra-industry 32, 34
  - pre-deal relatedness 32
  - in R&D process empirical study 83–4, 87, 100–102, 122, 123
  - and R&D restructuring 123
  - and technology market power 34
  - compared to technology motivated M&As 87, 161
- market power
  - and deregulation 30
  - horizontal M&As 52, 161, 164
  - M&A motivations 30, 31–2, 33, 37
  - effect of M&As on R&D ex post 42, 47
  - effect of M&As on R&D process 68, 72, 85
  - and restructuring 34
  - and technology 34, 82
- market relatedness
  - in M&A integration processes 51, 52, 53
- measurement 52, 53
- R&D process empirical study
  - M&A classification 83–4, 85, 86
  - M&A sample 97, 98
  - effect on R&D inputs and performance 107–8
  - effect on synthetic indicators 115–16, 118–19, 126–33
  - see also* DSM acquisition of Gist-brocades case study; Henkel acquisition of Novamax case study; Pharmacia & Upjohn and Monsanto merger case study; Solvay and BASF merger case study
- market share 138, 140, 161
- marketing 152, 154
- markets
  - concentration 47
  - and defensive reactions 30, 136–8
  - integration 19
  - and M&A motivations 30, 31–2
  - effect of M&As on R&D ex post 42–3
  - and political power 30
  - production process effects on R&D process 69, 73
  - size 47
  - and technological change 22
- Masulis, R.W. 25
- Mayer, C. 25
- media sector 16, 22
- methodologies
  - empirical studies linking M&A to R&D 7–8, 53–61, 159
  - R&D intensity 47, 48, 54, 56, 60, 61, 159
  - R&D process empirical study 8, 77–81, 105–6, 109–11, 112–14, 124, 159–60, 165, 167–79
  - relatedness measurement 52, 53, 59–60
- MNEs 16–17, 29
- mobile communications sector 22, 23
- Molson Group 136–7
- monopoly power 42–3
- Monsanto and Pharmacia & Upjohn merger case study *see* Pharmacia & Upjohn and Monsanto merger case study
- motivation, employee
  - effect of M&As on personnel 36
  - effect of M&As on R&D personnel 68, 73, 85, 144, 163

- effect of prior relationships 162
- production process effects on R&D
  - personnel 70, 75
- in same technological field (STF)
  - firms 85, 113, 117, 163
- motivations, M&A 30–33, 36, 37, 38, 135–6
  - see also* competition motivated M&As; market motivated M&As; non-technology motivated M&As; technology motivated M&As
- national regulations 22
- Netherlands 24, 25
  - see also* DSM acquisition of Gist-brocades case study
- networks 16–17, 21, 35
- new business opportunities 30, 32, 34
- new markets 30, 32, 33, 34
- new production processes 118
- new products 32, 34, 138–9, 148, 149, 153, 156
- new technological competences 117, 118, 119, 161
- new technologies 22, 30, 153, 162
- new technology based firms (NTBFs) 50, 51, 58
- non-core activities 18
- non-rival firms
  - in R&D process empirical study
    - complementary technological field (CTF) firms 6, 106, 107, 115–16, 117
    - effect of market relatedness 107, 108, 115–16, 118–19
    - same technological field (STF) firms 6, 106, 107, 115–16, 117
    - sample 6, 97, 98
    - effect of technological-relatedness 106–7
    - see also* DSM acquisition of Gist-brocades case study; Solvay and BASF merger case study
- non-technology motivated M&As 34, 48, 59, 64–5, 109, 161
- Norway 24, 26
- Novamax acquisition by Henkel case study *see* Henkel acquisition of Novamax case study
- OLI (Ownership, Location, Internalization) paradigm 33
- oligopolies 11, 161
- organizational change 138, 145–6, 163
  - see also* technological change
- organizational structures 18, 49, 68, 72–3, 85, 86, 143–5
  - see also* management; R&D organization
- outsourcing 18, 150, 156
- patents
  - effect of market relatedness 118
  - as measure of R&D intensity 47, 48, 54, 56, 60, 61, 159
  - as measure of technological relatedness 52, 53, 60
- payment methods 25–6
- personnel *see* employment; inventors; management; managers; motivation, employee; R&D departments; R&D personnel; R&D teams; top management
- pharmaceutical sector *see* chemicals and pharmaceutical sectors
- Pharmacia & Upjohn and Monsanto merger case study
  - deal description and motivation 153–4
  - discussion 156
  - introduction 135, 152–3
  - effect on technological performance 154–6
- Philips Electronic NV 24
- political power 30, 32
- post sector 23
- power *see* bargaining power; market power; monopoly power; political power; technology market power
- prior relationships
  - in DSM acquisition of Gist-brocades case study 145, 146, 151
  - economies of scale 87
  - economies of scope 87
  - and knowledge 87, 162–3, 164
  - and R&D integration 162
  - in R&D process empirical study 83–4, 87, 99–100, 108, 110
  - and restructuring 87

- and technological competences 87
- see also* alliances; collaboration; joint ventures; manufacturer-supplier relationships; networks
- privatization 30, 31
- product life-cycles 17, 22, 135, 138–9, 140
- see also* time horizons
- product specialization 135, 141, 142, 144
- production inputs 64
- production know-how 148, 149
- production outputs 64, 65, 66
- production plant closures 139, 142–3, 146
- production process 64–5, 69–70, 73, 74, 75, 85
- production specialization 69, 73, 74, 85
- products 138–9, 140, 146–7, 148
- see also* complementary products; high-tech products; new products; product life-cycles; product specialization; same products
- profitability 135, 143, 149
- rationalization 31, 34, 36, 146, 148
- see also* cutbacks; downsizing; R&D rationalization; R&D restructuring; restructuring
- Ravenscraft, D.J. 2, 45, 46, 53, 55, 89
- R&D
  - and competition 42–3
  - downsizing 29, 139, 142
  - and foreign investment 32
  - international MNE networks 16–17
  - and market power 42, 47, 68, 72, 85
  - effects of M&As on long-term performance 29, 39
  - effects of M&As on short-term performance 29, 32, 39
  - see also* development
- R&D capabilities 42, 50, 57, 65, 66–7, 71
- R&D costs 17, 22, 32–3, 148, 155
- R&D departments
  - in DSM acquisition of Gist-brocades case study 148
  - effect of M&A on R&D process 67, 72
  - in Pharmacia & Upjohn and Monsanto merger case study 155, 156
  - in R&D integration processes 51, 53
  - in Solvay and BASF merger case study 143, 144, 145
- R&D efficiency 41, 143, 161
- R&D effort 32, 111, 115, 118, 122, 123, 144
- R&D expenditures 114, 150, 152, 156, 159
- see also* R&D intensity; R&D performance
- R&D facilities
  - in DSM acquisition of Gist-brocades case study 150, 151
  - in Henkel acquisition of Novamax case study 139
  - effect of market relatedness 118
  - in R&D process empirical study 106, 107, 108–9, 110, 111, 112
  - in Solvay and BASF merger case study 142, 145
  - see also* resource redeployment
- R&D funding
  - in complementary technological field (CTF) firms 155, 156
  - and Information and Communications Technologies (ICTs) costs 33
  - effect of LBOs on R&D intensity ex post 46, 55
  - effect of M&As on R&D ex ante 38–39, 40
  - effect of M&As on R&D process 68, 69, 73, 74
  - and production process effects on R&D process 70, 75
  - effect of technological relatedness 114, 150, 151
- R&D inputs
  - and bureaucracy and internal structure 68, 70, 72, 75
  - description 63, 64
  - in DSM acquisition of Gist-brocades case study 148
  - and economies of scale in production 69, 73
  - and economies of scope in production 69, 74

- elimination of duplication in R&D
  - 41, 67, 71
- effect of geographic scope 108, 109, 119, 120
- indicators 105–6, 110, 112
- indivisibilities/specialization in R&D
  - quantity 65, 66, 71
- indivisibilities/specialization in R&D
  - types 66–7, 71
- effect of M&A motivations 108–9, 111, 122, 123
- effect of market relatedness 107–8, 115, 118, 126–7
- effect of prior relationships 108, 110, 120
- in R&D process empirical study 108, 109, 110, 119
- synergies 67, 69, 71–2, 74
- effect of technological relatedness
  - 106–7, 108, 111, 114, 115, 126–7
- see also* knowledge; R&D
  - capabilities; R&D expenditures; R&D facilities; R&D funding; R&D investment; R&D personnel
- R&D integration process 49–53, 57–8, 162, 163
- R&D intensity
  - in chemicals and pharmaceutical sector 135, 138, 143, 155–6
  - in European sectors 20–21
  - and firm size 47
  - effect of M&As on R&D ex ante 38–40
  - effect of M&As on R&D ex post
    - critical assessment of empirical evidence 53–4, 61
    - empirical evidence 44–5, 47–53, 55–60
    - theories 40–44
  - effect on M&As 1–2, 47–8
  - measurement 47, 48, 53–4, 55, 56, 61, 159
- R&D investment 40, 42, 43, 66, 67, 135, 148, 156
- R&D mission
  - in DSM acquisition of Gist-brocades case study 150, 151
  - effect of geographic scope 121
  - indicators 110, 114
  - effect of M&A motivations 122
  - effect of market relatedness 116, 118–19, 133
  - effect of prior relationships 121
  - effect of technological relatedness 114, 116, 117, 133
- R&D motivated M&As *see* technology motivated M&As
- R&D organization
  - effect of geographic scope 120–21
  - indicators 110, 113–14
  - effect of M&A motivations 122, 123
  - effect of market relatedness 115–16, 118–19, 131–2
  - effect of prior relationships 120–21, 122
  - effect of technological relatedness 115–16, 117, 131–2, 150, 151
- R&D outputs
  - and bureaucracy and internal structure 68, 70, 72, 75
  - description 63–4
  - effect of geographic scope 120
  - indicators 110, 112–13
  - indivisibilities/specialization in
    - production quantity 69, 74
  - indivisibilities/specialization in R&D
    - quantity 65, 66, 71
  - indivisibilities/specialization in R&D
    - types 66–7, 71
  - effect of M&A motivations 48, 122, 123
  - effect of market relatedness 53, 115, 118, 128–9
  - effect of prior relationships 120, 122
  - in R&D integration processes 50–51, 53
  - and synergies in R&D 67, 71–2
  - effect of technological relatedness 53, 115, 117, 119, 128–9
- R&D outsourcing 45, 150, 156
- R&D performance
  - and bureaucracy and internal structure 68, 70, 72, 75
  - in complementary technological field (CTF) firms 2, 138, 140, 155
  - defined 64
  - elimination of duplication in R&D 67, 71, 74, 82, 85



- effect of geographic scope 107–8, 109, 120
- indicators 105–6, 110, 113
- indivisibilities/specialization in
  - production quantity 69, 74
- indivisibilities/specialization in R&D
  - quantity 65, 66, 71
- indivisibilities/specialization in R&D types 66–7, 71
- effect of M&A motivations 34, 108–9, 111, 122, 123, 135–6, 161
- and market power 68, 72
- effect of market relatedness 107–8, 115, 118, 130
- effect of prior relationships 108, 110, 120, 122
- rival firms 161
- in same technological field (STF)
  - firms 85, 119, 130, 144–5, 160, 163
- synergies in R&D 67, 71–2
- effect of technological relatedness
  - 106–7, 108, 111, 114, 115, 117, 119
- R&D personnel
  - in complementary technological field (CTF) firms 2, 139, 140, 150–51, 160
  - and economies of scale and scope 32, 48
  - effect of firm-level motivation 108–9, 111
  - effect of geographic scope 109, 119
  - in large diversified firms 47
  - effect of M&A on R&D process 66, 67
  - effect of market relatedness 107, 118, 162
  - effect of prior relationships 108, 110
  - in R&D integration processes 49, 51, 58, 61, 162
  - in same technological field (STF)
    - firms 85, 106, 107, 143, 144, 145, 160, 163
  - effect of technological relatedness
    - 106, 107, 114
  - see also* inventors; motivation, employee; R&D departments; R&D teams
- R&D process empirical study
  - bureaucracy and internal organization 68, 69–70, 72–3, 75, 85
  - conclusions 123–4
  - elimination of duplication in
    - production 69, 74, 82
  - elimination of duplication in R&D 47, 67, 71, 82
  - indivisibilities/specialization in
    - production quantity 69, 73
  - indivisibilities/specialization in
    - production type 69, 74
  - indivisibilities/specialization in R&D
    - quantity 65, 66, 71, 82
  - indivisibilities/specialization in R&D
    - type 66–7, 71
- M&A classification 81–7
- M&A sample 89–90
  - construction 90–91
  - geographic scope and pre-merger relationship 99–100
  - motivations 100–102
  - relatedness 92, 97–9
  - size and stratification 91–2, 93–6
  - and market power 68, 69, 72, 74, 82
  - research design and methodology 8, 77–81, 105–6, 109–11, 112–14, 124, 159–60, 165, 167–79
- results
  - effect of geographic scope 108, 109, 119–21
  - effect of M&A motivations 108–9, 111, 122, 123
  - effect of market relatedness 107–8, 115–16, 118–19, 126–33
  - effect of prior relationships 108, 110
  - effect of technological relatedness
    - 106–7, 108, 111, 114–18, 119, 126–33
  - synergies in R&D 67, 71–2, 82
- R&D projects 114, 117, 118, 139–40, 144, 150, 156
- R&D rationalization
  - cross-border M&As 86
  - and diversification 36
  - effect of geographic scope 119, 120
  - in Henkel acquisition of Novamax case study 138

- long-term 29
- in Solvay and BASF merger case study 143, 144–5, 163
- effect of technological relatedness 114, 117, 119, 160
- short-term 29
- R&D resources 32–33
  - see also* R&D expenditures; R&D facilities; R&D funding; R&D inputs; R&D investment; R&D personnel
- R&D restructuring
  - in complementary technological field (CTF) firms 155, 156
  - in cross-border M&As 86–7
  - elimination of duplication 67, 71
  - in market-motivated M&As 122, 123
  - effect of prior relationships 87, 121, 122
  - effect of technological relatedness 117, 143, 144–5
- R&D specialization 41, 65–7, 71, 115, 117, 152, 155, 156
- R&D teams 66, 67, 139, 144, 150
- regulations 30
  - see also* deregulation; liberalization
- relatedness 29, 32, 51–3, 54, 59–60
  - see also* DSM acquisition of Gist-brocades case study; Henkel acquisition of Novamax case study; market relatedness; Pharmacia & Upjohn and Monsanto merger case study; R&D process empirical study; Solvay and BASF merger case study; technological relatedness
- reliability 80
- resource redeployment
  - in complementary technological field (CTF) firms 85, 106, 116, 117
  - cost savings 50
  - cross-border M&As 86–7
  - effect of geographic scope 119, 120
  - in R&D integration processes 49, 50, 57, 66, 67, 71
  - effect of technological relatedness 106, 107
- restructuring 30, 31, 34–5, 135, 139, 140
  - see also* R&D restructuring
- risk reduction 43, 45, 163
- risk-sharing 22, 32
- risk-spreading 67, 72
- risk-taking 139
- rival firms
  - market power 161, 164
  - R&D performance 161
  - in R&D process empirical study 6, 97, 98, 107, 108, 115–16, 118–19, 123
  - see also* Henkel acquisition of Novamax case study
- Rumelt, R. 51
- sales 138–9, 140, 149, 152, 154, 155, 156, 163
- same products 135, 137
- same technological field (STF) firms
  - bureaucracy and internal organization 85, 163
  - development 85
  - in innovation process empirical study
    - M&A classification 82, 83–4, 85, 86
    - M&A sample 6, 97, 98–9
    - effect of market relatedness 6, 107, 108, 115–16, 118–19
    - effect of technological relatedness 6, 106, 107, 108, 111, 114–18
    - motivation, employee 85, 113, 117
    - motivations, firm-level 34
    - policy implications 164
    - R&D performance 85, 119, 130, 144–5, 160
    - R&D personnel 85, 106, 107, 143, 144, 145, 160, 163
    - technological competences 115, 118
    - see also* Solvay and BASF merger case study
- Santangelo, G.D. 35, 36
- Scherer, F.M. 2, 45, 46, 53, 55, 89
- sectors 19–24, 29
  - see also* automotive sector; banking sector; biotechnology sector; business services sector; chemicals and pharmaceutical sectors; food industry;

- healthcare sector; high-tech industries; industrial sector; Information and Communications Technologies (ICTs); Internet sector; manufacturing sector; media sector; mobile communications sector; post sector; service sectors; technology sector; telecommunications sector
- service sectors 19, 20, 32, 33
- share swap restrictions 25
- shareholders 39
- Shleifer, A. 40
- short-termism 32, 39, 41, 160
- Sjölander, S. 50, 51, 54, 58
- small firms 11, 12, 41, 50, 51, 58
- social costs 40
- Solvay and BASF merger case study  
deal 141–3  
discussion 144–5  
introduction 135, 140–41  
effects of merger 143–4, 163
- specialization *see* product specialization; production specialization; R&D specialization
- spillovers *see* knowledge spillovers; technological spillovers
- stock market bubbles 13
- strategic control 41, 45
- surveys 54, 57, 61
- Sweden 24, 51, 58  
*see also* Pharmacia & Upjohn and Monsanto merger case study
- Switzerland 25, 26
- synergies  
and asset relatedness 29  
in cross-border M&As 36  
in Henkel acquisition of Novamax case study 137  
effect of M&A on R&D process 67, 71–2, 82  
effect of market relatedness 115, 118  
in Pharmacia & Upjohn and Monsanto merger case study 152, 155–6  
production process effects on R&D process 69, 74  
effect of technological relatedness 30–31, 161  
*see also* added value; financial synergies; knowledge synergies; technological synergies
- Tabrizi, B. 49
- tacit knowledge 29, 51, 143
- technical communications 51
- technical learning 51
- technological change 1, 20–24, 30–31, 32–3, 34, 135
- technological competences 85, 87, 115, 117, 118
- technological competition 115, 117–18, 119, 164
- technological distance 51, 53
- technological diversification 117
- technological fusion 35–6
- technological knowledge 115, 117–18
- technological opportunity 47
- technological relatedness  
and M&A motivations 30, 33, 34  
measurement 52, 53, 59–60  
in R&D integration processes 51, 52–3
- R&D process empirical study  
M&A classification 82–5  
M&A sample 97, 98  
effect on R&D inputs and performance 106–7, 108, 160  
effect on R&D synthetic indicators 111, 114–18, 119, 126–33, 160  
and technological competition 115, 117–18, 119, 164  
technology motivated M&As 34, 52–3, 59–60  
transaction cost reduction 31  
*see also* DSM acquisition of Gist-brocades case study; Henkel acquisition of Novamax case study; Pharmacia & Upjohn and Monsanto merger case study; Solvay and BASF merger case study
- technological spillovers 42
- technological synergies 48, 148, 161
- technological uncertainty 53
- technology fusion 67, 72, 161
- technology market power 34, 82

- technology motivated M&As  
 compared to market-motivated M&As 87  
 economies of scope 35  
 and M&A motivations 30, 32–3  
 effect of M&As on R&D ex post 51, 52–3, 58, 61  
 measurement of impact of M&As on R&D ex post 54  
 effect on R&D 34, 65, 161  
 R&D effort 122, 123  
 R&D outputs 48, 59  
 R&D performance 34, 135–6, 161  
 in R&D process empirical study 83–4, 87, 100–102, 108–9, 111, 122–3  
 R&D resource acquisition 32  
 risk-sharing 22  
 effect of technological relatedness 34, 52–3, 59–60  
 technological synergies 48, 148  
*see also* DSM acquisition of Gist-brocades case study
- technology sector 16
- telecommunications sector 13, 16, 22–4, 32
- Telenor 24
- Telia 24
- time horizons 17, 85, 117, 140, 144, 150  
*see also* product life-cycles
- time series 54
- top management 51, 58, 139–40, 163
- transaction cost reductions 31
- transnational customers 22
- transport cost reductions 33
- United Kingdom 23, 24, 25, 155
- USA  
 anti-trust legislation 11, 12  
 chemical sector M&As 135  
 deals 14, 15, 16  
 deregulation 17  
 European Union bidders 25, 26  
 European Union targets 25, 26  
 impact of M&As on R&D ex post 45, 55–6  
 impact of R&D intensity on M&As 47–8  
 M&A relatedness 53  
 telecommunications sector,  
 European takeovers 23–4  
 transaction values 14, 15, 16  
*see also* Pharmacia & Upjohn and Monsanto merger case study
- validity 79–80
- value creation *see* added value; synergies
- value culture 49, 146
- vertical mergers 11
- vertically-integrated firms 18
- vinyl activities of Solvay merger with BASF case study *see* Solvay and BASF merger case study
- Vishny, R. 40
- Vitt, J. 2, 49, 50–51, 53, 160
- Vodafone 13, 23
- Yin, R. 79