Index

absorptive capacity 281
accounting-based profitability measures 246
actor’s perspective 108
adaptive models of strategy 256, 259, 262, 263
Aharoni, Y. 255
alliance-driven governance in Scotland 139–55, 273
  clustering 141–2
  commodity chains 150–53
  extra-local linkages and global commodity chains 142–4
  less-favoured regions 148–50
  regional development in less-favoured regions 139–40
  research context 144–8
alliances 95
  collaborations of Italian firms 131, 137
  decision-making processes 262
  horizontal 280
  strategic 132, 134, 136
  see also alliance-driven governance in Scotland
Almeida, J.G. 191, 195
Amazon.com 253
Amgen 243–4, 252, 253
appropriability regime 258–9, 266
ArcDia (Finland) 111
Aurora Biotechnologies 180, 181–2, 183, 184–6, 188, 189, 190, 191
Australia/Australian firms 4, 250
Autio, E. 191, 195
Baden-Fuller, C. 106
Barney, J.B. 176, 177, 178, 182, 191, 249
Bartholomew, S. 105
Bayer Innovation 112
Bearden, W.O. 43
Bell, J. 178, 179, 191
Benavides-Velasco, C.A. 117
benchmarks 224
best alternative solution 256
biases 259
Big Pharma 4–5, 9, 22, 23, 64, 73
  changing focus 84–7
  collaborations of Italian firms 126, 129, 131
  dominance 77
  evolution 78–80
  partnership formation 102–103, 115, 120
BioCis Pharma (Finland) 110
Biotie Therapies (Finland) 115
Birch, D. 245–6
Birley, S. 247
  ‘blocking competitors’ 205–206
blue biotechnology 3
‘born-global’ firms 21, 22, 24–8, 34, 36, 37, 39
  alliance-driven governance in Scottish firms 152
  collaborations of Italian firms 127, 134
networks 269
  partnership formation 120–21
  performance and growth 284
Boyer, H. 243
branding 168–9
Brännback, M. 248, 249, 251, 253
Brewer, M.B. 105
Burđica Biomed 180, 181–2, 183–6, 188, 189, 190, 191
Burgel, O. 188
business churn 223
business competencies 281
business models 6–8
business networks 190
Bussiere, D. 104, 105, 106
Butler, J.E. 177
International entrepreneurship in the life sciences

Calatone, R.J. 46
Canada/Canadian firms 129
capabilities 6, 11, 267, 280–81
commercial 233, 239
entrepreneurial 246
idiosyncratic 259–60
innovation 227
lower-order operational 72
marketing 233, 239
ordinary 80
see also dynamic capabilities; internationalization capabilities of new ventures; small Pharma capabilities
Carleton, J.M. 190–91
Carrillat, F.A. 44
Carsrud, A. 248, 253
Castellani, D. 127
Cavusgil, S.T. 176, 188
Chambers, D. 261
change aspects 23, 37
Chetty, S.K. 176
Child, J. 104–105
China/Chinese firms 181–2
clinical trials 65–73, 281
Big Pharma 78
Big Pharma trials and Phases I, II and III 86
global locations 74
mean duration 71
mean duration of Big Pharma trials 79, 81, 82
mean duration of Big Pharma trials and other organizations compared 81
mean duration of Big Pharma trials and Small Pharma trials compared 91
mean duration of Phase I trials 71
mean duration of Phase I trials: Big Pharma and other organizations compared 82
mean duration of Phase I trials: Big Pharma and Small Pharma compared 92
mean duration of Phase II trials 71
mean duration of Phase II trials: Big Pharma and other organizations compared 83
mean duration of Phase II trials: Big Pharma and Small Pharma compared 94
mean duration of Phase III trials 71
mean duration of Phase III trials: Big Pharma and other organizations compared 84
mean duration of Phase III trials: Big Pharma and Small Pharma compared 94
mean duration of Small Pharma trials 90
number of Big Pharma trials 78, 89
number of registered trials 75, 76
number of Small Pharma trials 89
Phase I trials 66–7, 71, 75–6, 82, 83, 84, 85–6, 91–2, 95–6
Phase II trials 66–7, 71, 75–6, 82, 83, 85–6, 91–2, 93, 95–6
Phase III trials 66–7, 68, 71, 75–6, 77, 82, 83, 84, 85–6, 91–2, 94–6
Phase IV post-market launch trials 65–6
proportions of Phase I, II and III Big Pharma trials 85
proportions of Phase I, II and III Small Pharma trials 95
registered between 1990 and 2009 75
registered between 1990 and 2009 with completion dates between 1990 and 2009 76
Small Pharma trials and Phases I, II and III 96
ClinicalTrials.gov 71, 73, 74, 75, 78, 85, 88–9
clusters 6, 8, 41, 105, 141–2
alliance-driven governance in Scottish firms 153
collaborations of Italian firms 123, 125, 127
institutional influences 282
networks, innovation and export performance in Scottish firms 229–30
cohesion formation 256
Coase, R.H. 103
cognitive institutions 42
Cohen, S. 243
collaborations 126, 204
alliance-driven governance in Scottish firms 143
domestic 129
dyadic 125, 131, 134, 137–8
informal 87
intellectual property protection and Swiss firms 200, 208
interfirm 134
international 129, 131, 132, 136, 150
national 132
with research organizations and customers 238
Small Pharma capabilities 89, 93
see also collaborative entrepreneurship in Italy;
partnership formation in small firms; upstream
collaborative entrepreneurship in Italy 122–38, 272–3
research design and methodology 127–8
role and nature of collaboration 124–7
survey 128–31
commercial capabilities 233, 239
commercial ties 127
commercialization 109, 118, 163, 282
successful 238, 241
commitment 121, 191
to decision-making 262
commodity chains 142–4, 145, 149, 150–54, 155, 280
communication 280
lateral 257, 259
personal 170–71
route 166
competencies 27–8, 37, 80, 235, 281
competitive advantage 31–4, 36, 37, 80, 82, 281
alliance-driven governance in Scottish firms 141
collaborations of Italian firms 124
sub-suppliers and Danish university spin-offs 169
see also internationalization and competitive advantage
competitive structure of the market 206–207
complementary protection measures 194, 199, 200, 202, 204, 206, 208
consolidation 102
cost-sensitive research 37
context-sensitive research 102
cooperation 44, 126
coopetition (competition and cooperation) 116–17
Coviello, N.E. 11, 87, 180, 233, 262
Covin, J.G. 44, 51
Crick, D. 176
culture 260
customer focus 52, 53, 54, 55, 57
customer networks 228
cyclical characteristic 244
Dai, O. 190
Darby, M. 41, 105
Das, T.K. 105
Davidsson, P. 249–51
de facto protection methods 194
DeCarolis, D. 225
decentralization 259
decision-making processes 225–6, 255–67, 279
environmental conditions 257–9, 265
managerial cognition 257–60, 264–5
motives 261
organizational factors 259–60, 265
participation/involvement in 256–7, 264
performance and growth 284
performance outcomes 263, 265–6
political 256
process outcomes 261–2
quality 262
strategic 265, 267
urgency 261, 267
Deeds, D. 109, 225
Deloitte 120
DelSiTech (Finland) 112
demand-pull factors 241
Denmark/Danish firms see sub-suppliers: Danish university spin-offs
development 118, 127, 165, 167–9
rapid, necessity for 69–70

Marian V Jones, Colin Wheeler and Pavlos Dimitratos - 9781849808200
Downloaded from Elgar Online at 02/14/2019 02:00:30PM
via free access
international entrepreneurship in the life sciences
regional in less-favoured regions 139–40
DeVol, R. 175
Dimitratos, P. 259, 261, 263
discovery and new product development 109
domestic collaborations 129
domestic market environment 235
dominance of Big Pharma 77
Dosi, G. 169
downstream processes 109, 118
collaborations of Italian firms 129–30
established pharmaceutical companies 114–16
Drucker, P.F. 247
Dundee University 182
dyadic collaborations 125, 131, 134, 137–8
dynamic capabilities 46, 80
higher-order 72, 80
performance and growth 284
resource-based view (RBV) and international new ventures 192
sub-suppliers and Danish university spin-offs 169–70
earnings before interest and tax (EBIT) 251
economy of scope 91, 93, 96
Edinburgh Pre-Incubator Scheme (EPIS) initiative 182, 193
Edinburgh University 182, 193
efficiency 72, 79
improvements 70
Eisenhardt, K.M. 104, 160, 179, 192, 196
empowerment 44
endogenous factors of influence 199, 201–205
collaborations 204
financial resources 199, 201–202
infringements 202–203
market strategy 204–205
Entific Medical Systems (Sweden) 117
entrepreneurial capabilities 246
entrepreneurial orientation 41, 44–5, 46, 47, 49–50, 52, 282
entrepreneurial style 260, 267
entrepreneurs 233
migrant 190, 192
entrepreneurship theory 124
entry modes 262, 267
environmental bio-remediation 152
environmental conditions 265, 266
and managerial cognition 257–9
environmental factors 233, 263
Epogen 243
equity relationships 114
Ernst, D. 282
established companies see downstream processes
Etzkowitz, H. 172–3
Europe 4, 40, 146
European markets 241
European Regional Development Fund (ERDF) 193
European Union:
collaborations of Italian firms 129
European Medicines Agency (EMEA) 152
less-favoured regions 139
Lisbon Strategy 3
partnership formation 101
regional assistance 148
evolution of Big Pharma 78–80
evolutionary models 125
examination partnerships 109, 111–12, 118
exogenous factors of influence 205–208
experience as capability 89
exploitation partnerships/agreements 109, 112–13, 120, 169
collaborations of Italian firms 123, 131, 132
exploration partnerships 109–11, 112, 118
collaborations of Italian firms 123, 127, 131
export destinations 234–5, 267, 280, 283
export intensity in the European markets 236–7
export intensity in markets outside Europe 236–7, 241
export performance 283
see also networks, innovation and export performance
export propensity 236
export sales, early 284
external factors 227, 235, 236
external opportunities 237
external research collaborations 239, 283
external resources 236
extra-local linkages 142–4
factor structure 44
Faby, J. 176
Faillo, M. 169
Faulkner, D. 104–105
Feldman, M. 152
Fernhaber, S.A. 176, 188
finance 49, 182, 188, 192, 255–6
see also venture capital
financial partnerships 132
financial resources 177, 187, 191, 199, 201–202, 208
financial strength 246
Finland/Finnish firms 250
ArcDia 111
BioCis 110
Biotie Therapies 115
DelSiTech 112
HealthBio Competence Cluster 254
Sticktech 114
Vivoxid 116–17
see also strategic orientations of
Nordic and United States-based ventures
firm characteristics 235
firm size 233, 260
Fitzsimmons, J. 249–51
Florida, R. 105
Food and Drug Administration (FDA) 58, 64, 66, 73, 152
Food and Drug Administration (FDA) Modernization Act (1997) 80
foreign market environment 235
four-stage model and university spin-offs 162
France/French firms 101
Fratocchi, L. 127
‘freedom of action’ 205–206
Freeman, J. 162
Friesen, P.H. 259
fully integrated pharmaceutical networks (FIPnets) 9
funding 49, 188
fundraising 225–6
Gassmann, O. 107, 178
Gatignon, H. 46
Genentech 243–4, 252
George, G. 162–3, 172
Germany/German firms 233
global commodity chains 142–4, 145, 153–4
‘Global Scot’ 153
goals 224–5
Goll, I. 259
Google 253
government funding 188
government links 238–9
government marketing assistance programmes 234
government networks 228
Grant, R.M. 106, 177
green biotechnology 3
Greenaway, K. 104, 105, 106
growth 282, 283–5
market 263
organic 246
growth and performance 243–54, 278
accounting-based profitability measures 246
Amazon.com 253
Amgen 243–4, 252, 253
earnings before interest and tax 251
entrepreneurial capabilities 246
Epogen 243
financial data 248–53
financial strength 246
Genentech 243, 252
Google 253
ICT 253, 254
managerial slack 246
Markov chain analysis 251
mergers and acquisitions 246
Oracle 243
organic growth 246
return on assets 250
sales growth rate 246, 250–51
VRIO framework 249
‘gut’ feelings 257
H. Lundbeck A/S 115
Hall, R. 177
International entrepreneurship in the life sciences

Han, Y. 104
Hannan, M. 162
Harris, L.C. 51
Headd, B. 246
HealthBio Competence Cluster
(Finland) 254
Heckman, J.J. 236
Hennart, J.-F. 104
heuristics 259
hierarchical decentralization 257
Hitt, M.A. 175–6, 177
Hofstede, G. 44
horizontal/lateral partnerships 116–17, 118, 129–31
Hoskisson, R.E. 175–6, 177
hostility 257–9, 266
hot spots 125
Hult, G.D. 215
human capital 9, 35, 188
human resources 177, 184–5, 189, 191
hunches 257
hybrid role identity 172
imitability 96–7, 195, 205–206, 208
impulses 257
individualism 45
industrial organization theory 235
industry background 23–4
industry infrastructure 282
informality 90, 97
information and communication technology 253, 254
information gathering 234
information spillover 227, 234–5, 236, 237
infringement case costs 201–202
initial public offering (IPO) 136
innovation 10–12, 45, 118, 238, 240
alliance-driven governance in Scotland 155
behaviour 259
capabilities 227
collaborations of Italian firms 125, 137
geographic dispersion 282
national 6
orientation 123
performance and growth 283
process 5–6, 281, 284
production value chain 7
regional 6
resource-based view and international new ventures 188
resources 177, 184–5, 189, 191
sales intensities 241
sales variable 237–8
strategy, internal product 237
systems, open 6
technological and non-technological 5, 281
Triple Helix model 6
see also networks, innovation and export performance
innovativeness 44, 46, 51–2, 54
institutional influences 282–3
intangible assets 190, 209
intangible resources 177, 179–80, 184–6, 188, 189, 191
integrative export performance model 235
integrative framework model 235
intellectual property protection in Switzerland 194–209, 276
collaborations 204
competitive structure of the market 206–207
data analysis 198–9
data collection 196–7
data sources 197–8
financial resources 199, 201–202
imitation, risk of 205–206
infringements 202–203
strategies 204–205, 280–81, 283
structural properties of firms 200
 technological level 207–208
interfirm collaborations 134
intermediary knowledge transfer 280
Intermediary Technology Institutes 151, 155, 230
internal factors 227, 229, 235
internal product innovation strategy 237
internal resources 236
internal strengths 237
international collaborations 129, 131, 132, 136, 150
international investment 282
Index

international new ventures (INVs) 10
see also internationalization
   capabilities of new ventures
international orientation 123
international performance outcomes 267
international profits 218–19, 220
international sales 217, 218–19
internationalization 10–12, 165–7
internationalization capabilities of new ventures 21–38, 270
‘born-global’ firms 24–8
   competitiveness in the global arena 31–4
data collection and analytical procedures 29–30
industry background 23–4
networks, ability to build and maintain 34–5
purpose, focus and limitations of the study 22–3
sample selection 28–9
speed of involvement in international trade 30–31
internationalization and competitive advantage in United States and United Kingdom: resource-based view 175–93, 275
differences 188–91
financial resources 182, 187
firm profiles 181–2
human resources 184–5, 189
innovation resources 184–5, 189
method and research focus 179–80
organizational resources 182–3, 187
physical resources 183, 187
reputational resources 185–6, 189
resource-based view 176–7, 178–9
   similarities 186–8
   technological resources 183–4, 187
interorganizational agreements 128, 131, 132, 135, 137–8
interorganizational networks 122
interorganizational ties 125–6
interpersonal ties 134
interpretive models of strategy 256, 259, 262, 263, 264, 265
intuition 256, 257, 260, 263, 264
Investigational New Drug application (IND) 66, 68, 73, 80
investment:
   decision-making processes 262
   international 282
   Ireland, R.D. 175–6, 177
   Ireland/Irish firms 234
   Luxcell Biosciences 111
   Italy/Italian firms see collaborative entrepreneurship
   Jain, S. 162–3, 172
   Japan/Japanese firms 101, 129
   Jaramillo, F. 44
   Jaworski, J. 50–51
   Jayachandran, S. 43
   Johanson, J. 23
   Jones, M.V. 11, 180, 262, 280
   Jones, T. 126
juridical (legal) protection methods 194, 199, 200, 201, 205–206, 208
Keupp, M.M. 107, 178
Kirca, A. 43
Kirchhoff, B. 246
Kiviluoto, N. 248, 253
Knight, G. 51, 176, 188
knowledge:
   -based commodity chains 153
   -based Scottish firms 141–2, 143, 145, 148, 151, 154, 155
   -based view 9, 46, 106, 110, 178
   collaborations of Italian firms 127
diffusion 40–41
economy 139–40
exchange 93
explicit 106, 112
intensity 8
market 106
organizational 260
partnership formation 121
resource-based view (RBV) and international new ventures 191–2
sharing 6
tacit 106, 110
transfer 150, 159, 163, 280, 282
unambiguous 112
Kohli, A.K. 50–51
Koput, K.W. 107
Korri, J.S. 259
Kreiser, P.M. 44–5
International entrepreneurship in the life sciences

Kuemmerle, W. 5
Kumar, A. 51

learning 95, 118, 141, 260, 267
- before-doing 89
- by-doing 89
from experience 225–6
organizational 72, 93, 105–106, 110

see also knowledge
legitimacy 121
less-favoured regions 139

see also alliance-driven governance in Scotland
limitations of study 22–3
linear models of strategy 256, 259, 263, 265
linkages 260
see also networks
Lioukas, S. 261
litigation 208
Liu, X. 190
Loane, S. 179, 191
local context 4–5
local relationships 149
local specialization 280
loyalty 191
Luxcell Biosciences (Ireland) 111

McAuley, A. 233
McDougall, P.P. 10, 175, 178, 179, 188, 255, 268
McDougall-Covin, P.P. 176, 188
Maltarich, M. 162–3, 172
management-related attributes and resources 235
managerial cognition 257–9, 264–5, 267
and decision-specific factors 260–61
and organizational factors 259–60
managerial factors 233
managerial slack, access to 246
Manev, I.M. 16, 214–15, 225
Manolova, T.S. 16, 214–15, 225
Marengo, L. 169
Marino, L.D. 44–5
market:
capabilities 233, 239
growth 263
intelligence 44, 53, 233
orientation 43–4, 50–51, 54, 55, 56, 57–62, 260, 267, 282
presence in lead industry countries 262
segmentation 166–7
share 263
spillover 241
strategy 200, 204–205, 208, 241
structure 208
Markman, G.D. 163
MARKOR scale 50–51, 57–62
Markov chain analysis 251
Martin, M. 192
Matherne, B.P. 190–91
Mehta, S.S. 7
Melén, S. 120–21, 261, 264
Menn, J. 253
mergers and acquisitions 246
Merton, R.K. 163
micromultinational firms 262
migrant entrepreneurship 190, 192
Miles, G. 14, 123
Miles, R.E. 14, 123
milestones 224–5
Miller, D. 259
Mixed Markov Latent Class (MMLC) models 251
MolMed S.p.A. (Italy) 128, 131–6, 137–8
Montoya-Weiss, M.M. 46
Munro, H.J. 87
Murray, G.C. 188
national collaborations 132
National Health Service 182
Scotland 151
national innovation 6
nationality 105
Ndonzuau, F.N. 162, 163
negotiation 256
networks 87, 89, 93, 95, 107, 269, 280, 281
ability to build and maintain 34–5
advantages and limitations 170–72
business 190
collaborations of Italian firms 123, 125, 127
customer 228
decision-making processes 260, 267
fully integrated pharmaceutical (FIPnets) 9
Index

government 228
institutional influences 282
intensity 240
interaction theory 235
interorganizational 122
partnership formation 121
performance and growth 283
personal 170
research 228, 238
social 122, 126, 132, 136–7, 190
strategic 227
see also networks, innovation and export performance in Scotland
networks, innovation and export performance in Scotland 227–42, 277
European markets versus overseas markets 239–41
exports 231, 233–4
external networks and information spillover 234–5
high technology context 228–30, 237–9
innovation 232, 233–4
model estimation 236–7
model specification 236
networks 232
New Drug Application (NDA) 66, 68, 80
new product development 108–13, 117, 118–19
new ventures 10, 281
see also internationalization
capabilities of new ventures
newness, liability of 33
niche markets 96
Nilsson, A. 49
nimbleness 97
nine-item scale 51
non-territorial rights 194
non-technological innovation 5
Nordic countries see strategic orientations
Nordman, E.R. 120–21, 261, 264
normative institutions 42
normative systems 282
Norris, M. 126
operating profit 246
operational capabilities, lower-order 72
opportunities 235
Oracle 243
ordinary capabilities 80
organic growth 246
organizational factors 233, 265, 267
and managerial cognition 259–60
organizational knowledge stock 260
organizational learning 72, 73, 105–106, 110
organizational resistance to decisions 256
organizational resources 177, 182–3, 187, 191
Ospol Ab (Sweden) 117
out-licensing 126–7, 132–4, 138
outsourcing 9, 138
Oviatt, B.M. 175, 178, 179, 188, 268
Papadakis, V.M. 261
Parnell, J.A. 45
participation/involvement in decision-making 256–7, 264
partnership formation in small firms 101–21, 272
downstream partners: established pharmaceutical companies 114–16
examination partnerships 109, 111–12, 118
horizontal/lateral 116–17, 118, 129–31
motives 103–108
new product development, different phases of 108–13
synthesis 117–20
upstream partners: universities and research institutions 113–14
see also exploitation; exploration partnerships:
financial 132
multiple 280
see also partnership formation in small firms; upstream
past performance 260
patents 195, 201, 202–203, 205, 206, 209, 241
and licenses relationships 114
life, effective 69
networks, innovation and export performance in Scottish firms 232, 234
drives 281
Peng, M.W. 176, 191
Penrose, E. 104, 176, 190, 246
people and talent, investment in see human capital; human resources perception 260, 267
performance 283–5
measures, multiple 246
outcomes 263, 265–6, 267
see also growth and performance; performance trade-offs
performance trade-offs: success, revenue and profitability 213–26, 276–7
case firms 216–17
conventional performance indicators and early internationalization 217–20
early international development measures 222–3
overall impact of internationalization and long-term prospects 224
satisfactory/unsatisfactory internationalization measurements 220–22
personal communication 170–71
personal networks 170
physical resources 177, 183, 186–7, 191
Pirnay, F. 162, 163
Pisano, G.P. 89
policy intervention 280, 282
political decision-making model 256
political processes 260
politicization 256, 263, 264
Posner, M. 234
Powell, W.W. 107
power distance 44, 45
pre-clinical phase 66, 68
price of products 166
Priem, R.L. 177
private venture capital 46
proactiveness 44, 46, 51, 259
process:
approach 37
innovation 5
outcomes and decision-making processes 261–2, 267
processual perspective 108
product:
innovations 5, 234
life-cycle approach to trade 234
pipeline 225
price 166
quality 166
superior 238, 283
production 127
focus 51–2, 53, 54
orientation 54, 56–7
profitability 263, 284
overall 218–19, 220
see also performance trade-offs
profits:
-based measures 217
international 218–19, 220
operating 246
Proof of Concept programme 151
protection measures:
complementary 194, 199, 200, 202, 204, 206, 208
de facto 194
juridical (legal) 194, 199, 200, 201, 205–206, 208
public funding 49
public grants 192
publications 199, 205–206, 208
purpose of study 22–3
Quintana-García, C. 117
Rajagopalan, N. 284
Rasheed, A.M.A. 259
rationality 256, 260, 263, 264
red biotechnology 3, 22, 102, 104, 106, 120, 123, 125
region, size of 280
regional development in less-favoured regions 139–40
regional innovation 6
registrable rights 194, 201
regulatory institutions 42
regulatory pathways 5
regulatory requirements 67
Reid, D. 104, 105, 106
relational view of firm 123, 124
relationships 121
Rennie, M.W. 26, 30, 34, 269
reputational resources 177, 185–6, 189, 190–91, 281
research and development 234
see also Small Pharma capabilities and global R&D
research networks 228, 238
research partnerships 114
resource base 235
resource dependency 118
resource endowment 282
resource fungibility theory 190
resource-based view (RBV) 11, 46, 104–105, 106, 112
 collaborations of Italian firms 124
firm growth and performance 249
networks, innovation and export
 performance in Scottish firms 235
performance and growth 284
sub-suppliers and Danish university
spin-offs 169
see also internationalization and competitive advantage in
United States and United Kingdom: resource-based view
resource-dependency theory 42, 105, 111
resources 267, 280–81
external 236
financial 177, 187, 191, 199, 201–202, 208
human 177, 184–5, 189, 191
idiosyncratic 259–60
intangible 177, 179–80, 184–6, 188, 189, 191
internal 236
management-related 235
organizational 177, 182–3, 187, 191
physical 177, 183, 186–7, 191
reputational 177, 185–6, 189, 190–91, 281
tangible 177, 179–80, 182–4, 187
technological 177, 183–4, 187, 190
return on equity 246
return on investment/assets 246, 250, 263
revenue see performance trade-offs
rigidities, lack of 97
risk capital 40
risk-taking 44, 46, 51, 259
Rodriguez Cano, C. 44
Rothaermel, F.T. 109
Salavou, H. 261
sales:
 - based measures 217
growth 246, 250–51
international 36, 217, 218–19
Sapienza, H.J. 36, 186, 190, 191, 195, 215
Schoonhoven, C.B. 104
Scotland 22, 28–9
see also alliance-driven governance;
 networks, innovation and export performance
Scottish Development Agency 229
Scottish Enterprise 149, 151, 155, 193, 230
Scottish Government 151
Scottish Seed, Co-investment and
 Venture Funds 151
Scripps Research Institute (United States) 48
search routines 169–70
secrecy agreements 199, 205–206, 208
selective perception 259
Shane, S. 45, 160, 248
single performance measures 246
Sinopharm (China) 181–2
Slevin, D.P. 44, 51
small firms, importance of 8–10
Small Pharma capabilities and global
R&D 64–97, 271
changing focus of Big Pharma 84–7
contribution and evolution 87–94
dominance of Big Pharma 77
evolution of Big Pharma 78–80
global pharma, entrepreneurial
 behaviour of 94–7
R&D pipeline 65–73
duration of development,
 reduction of 70–73
rapid development, necessity for
69–70
research method 73–6
speed of Big Pharma-sponsored
trials 80–84
Smith-Doerr, L. 107
International entrepreneurship in the life sciences

Snow, C.C. 14, 123
social cognitive theory 42–3
social network and social-exchange theories 107
social networks 122, 126, 132, 136–7, 190
social ties 125–6
sociological perspectives 107
Solomon, L. 126
specialization 91
speed:
of Big Pharma-sponsored trials 80–84
of internationalization 30–31, 262, 267
Spence, M. 176
spillover sources 238, 240
spin-outs 148
Springs, B. 255
'star’ scientists 41
state aspects 23–4, 37
Steffens, P. 249–51
Sticktech (Finland) 114
strategic alliances 132, 134, 136
strategic approach 95–6
strategic assets 31–2
strategic decision-making processes 265, 267
strategic focus 96
strategic management 261, 262, 263, 264
strategic networks 227
strategic orientations of Nordic and United States-based ventures 39–63, 271
customer focus 52, 53, 54, 55, 57
entrepreneurial orientation 44–5, 50–51, 52, 53, 54, 56–7, 62–3
innovativeness 54
market intelligence 53
market orientation 43–4, 50–51, 54, 55, 56, 57–62
Nordic countries (Finland and Sweden) 41, 46, 47, 49–50, 52, 54, 55
Philadelphia area and South Florida 48, 52, 55, 56
production focus 51–2, 53, 54
production orientation 54, 56–7
research context 40–41
Silicon Valley/Bay Area, California 41, 48–9, 50, 52, 54–5, 56
technological orientation 46–7, 50–51, 56
technology focus 52, 53
United States 46–7
variables 50–52
strategic positioning 106–107
strategic postures 282
strategies 227, 235, 238, 240
adaptive models 256, 259, 262, 263
interpretive models 256, 259, 262, 263, 264, 265
Structural Funds 139
structural problems 280–81
structural properties of firms 200
sub-suppliers: Danish university spin-offs 159–74, 274
branding 168–9
development 165, 167–9
global market 165
internationalization 165–7
methodology 160–64
network advantages and limitations 170–71
university and commerce, balance between 171–2
success see performance trade-offs
Surlemont, B. 162, 163
Sweden/Swedish firms 250
Osspol 117
see also strategic orientations of Nordic and United States-based ventures
Switzerland/Swiss firms 129
see also intellectual property protection in Switzerland
Tallman, S.B. 104–105
tangible resources 177, 179–80, 182–4, 187
teamwork 44
technological level 200, 207–208
technological and non-technological innovation 5
technological orientation 46–7, 50–51, 56
technological reputation 190–91
technological resources 177, 183–4, 187, 190
<table>
<thead>
<tr>
<th>Index</th>
<th>345</th>
</tr>
</thead>
<tbody>
<tr>
<td>technologies, superior 238</td>
<td>University of Southern Denmark 160, 161, 167</td>
</tr>
<tr>
<td>technology focus 52, 53</td>
<td>university spin-offs see sub-suppliers:</td>
</tr>
<tr>
<td>technology gap theory of trade 234</td>
<td>Danish university spin-offs</td>
</tr>
<tr>
<td>technology push factors 239, 241</td>
<td>upstream partners/collaborations 109, 113–14</td>
</tr>
<tr>
<td>technology stage, licensing strategy and transfer partner, relationship between 164</td>
<td>Italian firms 129–30, 134</td>
</tr>
<tr>
<td>Teng, B.-S. 105</td>
<td>Scottish firms 151, 155</td>
</tr>
<tr>
<td>threats 235</td>
<td>Vahlne, J.-E. 23</td>
</tr>
<tr>
<td>three-item innovativeness scale 52</td>
<td>value system/network 5</td>
</tr>
<tr>
<td>time and timing 33</td>
<td>venture capital 40, 46, 188, 192</td>
</tr>
<tr>
<td>trade promotion 234</td>
<td>Vernon, R. 234</td>
</tr>
<tr>
<td>training relationships 114</td>
<td>vertical division of labour 129</td>
</tr>
<tr>
<td>transaction-cost theory 103–104</td>
<td>Vioxx incident 65</td>
</tr>
<tr>
<td>Translational Medicine Research Collaboration 151, 155</td>
<td>Vivoxid (Finland) 116–17</td>
</tr>
<tr>
<td>Triple Helix innovation model 6</td>
<td>Voudouris, I. 261</td>
</tr>
<tr>
<td>Tsang, E.W.K. 104</td>
<td>VRIN criteria 176, 178, 182, 191</td>
</tr>
<tr>
<td>two-stage model 236</td>
<td>VRIO framework 249</td>
</tr>
<tr>
<td>Ucbasaran, D. 176, 225</td>
<td>Waters, R. 253</td>
</tr>
<tr>
<td>Udell, G. 163</td>
<td>Weaver, K.M. 44–5</td>
</tr>
<tr>
<td>uncertainty 45, 258–9, 266</td>
<td>Wernerfelt, B. 176</td>
</tr>
<tr>
<td>Unilever 182</td>
<td>Westhead, P 176, 225, 247</td>
</tr>
<tr>
<td>United Kingdom see internationalization and competitive advantage in United States and United Kingdom</td>
<td>white biotechnology 3</td>
</tr>
<tr>
<td>United States 4, 101, 129, 146, 154</td>
<td>Wills, D. 87</td>
</tr>
<tr>
<td>see also Food and Drug Administration; internationalization and competitive advantage in United States and United Kingdom; strategic orientations</td>
<td>Wilson, H.I.M. 176</td>
</tr>
<tr>
<td>universities and research institutes 113–14, 118</td>
<td>Winter, S.G. 169</td>
</tr>
<tr>
<td>see also upstream partners/collaborations</td>
<td>Wright, M. 176, 225</td>
</tr>
<tr>
<td>Wyeth (firm) 151, 155</td>
<td>Xuereb, J.-M. 46</td>
</tr>
<tr>
<td>Yin, R.K. 160</td>
<td>Yu, J. 259</td>
</tr>
<tr>
<td>Zaheer, S. 190–91, 259</td>
<td>Zanfei, A. 127</td>
</tr>
<tr>
<td>zero-order routines 72, 80, 82</td>
<td>Zollo, M. 169</td>
</tr>
<tr>
<td>Zollo, M. 169</td>
<td>Zucker, L.G. 41, 105</td>
</tr>
</tbody>
</table>