Index

Note: Page numbers in italics represent tables and figures.

administrative management vs. institutional leadership 146
agglomeration economies 104
agro-industrialization, of the poultry industry 260
Althoff, Friedrich 19
Althoff system 19
AluCluster 225, 227
artificial intelligence, development of 16
Audretsch, David 102, 228
Austrian School of Hayek 3
Baumol, William J. 72
behavior system, renewing of 151
binary logit model, for knowledge transfer 90, 92–3, 96–7
blue-collar workers 177
Bombardier 131
Brazilian Association of Poultry Producers and Exporters (ABEF) 262
Brazilian Institute of Geography and Statistics (IBGE) 262
Bureau of Labor Statistics (BLS) 40
business development policy 213–15, 225
cluster-oriented 218, 220
implementation of 221
practical-oriented 217
business services 107–8, 214, 220, 223
knowledge-intensive 109, 127
occupations in 205
Canadian Survey of Innovation 119
Capitalism, Socialism and Democracy 58
career development 184–5
career development 184–5
chance encounters 123
Chesbrough, Henry 63
Clinton, Bill 26
closed system innovation 119
cluster-oriented development policy 213
clusters
beneficial effects of proximity and shared skills 227
business development policy 220
concepts of 214–18
definition of 215
development policy in Denmark 221–6
core elements of 222
for economic development 216
features of 214
growth forum and its partners of cooperation 231
high-tech 214
identification of potential 225
importance of 216
and knowledge economy 9–11, 218–20
triple-helix model 218, 227
life cycle of 233, 244, 248
partnership of innovation triangle 219
regional policy aspects 220
cognitive proximity 122, 247
cognitive skills 35, 40
Colbjørnsen, T. 179, 186
Collins, Harry 27
communication skills 105
community development 148–9
Community Innovation Survey 119
competitive city 35
creative activities, types of 151
creative leadership 140, 143
analysis 144
concept of 139
creative leadership (continued)
definition of 144–5
framework of 150–52
behavioral system, renewal of 152–3
creative and innovative leadership, outcome of 152
transformation system, restructuring of 153–4
Haram case
brief summary of 147–8
mission and vision 148
new community plan 149–50
situation 148–9
value creation, paradigms of 148
integrated 145–7
learning cycles 155
in practice 147–50
roles of 145
cultural capital 25
curriculum 27

Dagens Næringsliv (newspaper) 187
Danish Ministry of Economics and Business 221
data 40–42
databases 25
decision making, garbage can model of 241
Denmark, cluster development policy 221–6
core elements of 222
new administrative structure 232
didactics 27
division of labor 191–92, 198, 214
intra-industrial 200–201, 208–9
production and functional 213
qualification-related 205
skill-related 201
Drucker, Peter 34
dual system of vocational education (DSVE) 194, 196
employer branding 187
employment growth
coefficient estimates of industry-specific (de-)concentration processes 206–7
median industry effects by region type 204
by qualification class 196, 197
qualification-specific 193
components of 200
shift-share regression of
baseline specifications 200
components of regional employment growth 200
concentration processes 201–8
empirical model 197–9
region type effects vs. industry effects by region type 200
in skilled occupations 208
sources of 105
entrepreneurial learning 103
environmental knowledge circulation process (EKCP) 35
European Union 26
expermental learning 35, 167
expert systems 15
explicit knowledge 7, 20, 35, 63–4, 72–3, 166, 168, 177, 220
explicit learning 167
external learning, categories of 259
face-to-face (F2F) interactions 101, 108, 111, 181, 233, 247
Fagerberg, J. 59, 269
Federal Employment Agency 195
firm level productivity
empirical approach, variables and modeling 107–9
empirical results for measurement of 109–12
factor scores of principal components of 107
knowledge externalities in 102–3
firm-specific characteristics in 103–4
spatially bounded 104–6
multilevel models for analysis of 115–16
regression results of alternative models explaining 110–11
formal learning 167
fortuitous encounters 123
Frascati Manual 83
Freefall 3
fringe benefits 183–4, 188
functional specialization, theory of 200, 205, 208–9
game theory see non-cooperative game theory model
General Educational Development-Reasoning Scale (GEDR) 40–42
Generation-X workers 177
geographic proximity 122
German Network ‘Learning Regions’ 167
Gini coefficient 108
globalization 26, 216, 218, 240
gold-collar workers 177
Googleplex 187
Great Places to Work Institute 187
Growth Forum Spring (2009) 226

Haram case
brief summary of 147–8
mission and vision 148
new community plan 149–50
situation 148–9
strategy-focused change program 151–2
system design process 155
value creation, paradigms of 148
Hartley, J. 141, 154
head-hunting competition 183
high-tech clusters 214
Hillestad, T. 177
human capital 24–5, 108, 113, 182, 244, 246
difference with creative capital 105
indicators 191
labor pooling effect 192
spatial division of 208
IAB (Institute of Employment Research) Pallas Online 195, 197
implicit knowledge 29, 166
implicit learning 167
incidental learning 167
industrial design 264
industrial districts see clusters
industrial economy
Marshall, Alfred, growth theory 22
science-based 19
industrial society 20, 29, 176, 178
informal learning 161, 167
processes of 168–71
information and communication technologies (ICT) 34, 104–5, 108, 111, 139, 168, 193, 218, 221, 223, 233
information exchange 122, 172, 193
innovation 3–7
closed system 119
comments on Schumpeter 57–9
definition of 60–61
and documentation of changes and impacts 152
empirical evidence of connection between accessibility and 127–9
empirical example of analysis during production of Valhall steel jacket 68–72
data collection 66–8
project background 64–6
regression results for process innovations 70
framework for integrating innovation findings 62
geographic pattern of 124–7
framework for understanding 125
two-dimensional typology of establishment location 126
interaction-intensive 123
vs. knowledge 63–4
in late 1980s explanations and measurement of innovative behavior 60–63
systems of innovations 59–60
local see local innovation systems
market-oriented 244
micro-level motivation for 118
national systems of 59, 119
in poultry production 260
poultry slaughter and processing industry, Parana (Brazil) 258–60
process of 124
in public sector 140–43
radical 259
regional systems of 59
role in social development 57
sectoral systems of 59
systems of 59–60
technical vs. non-technical 106
types of 120, 123–4
innovative behavior, explanations and measurement of 60–63
innovative cluster 35
innovative leadership 146, 151
elements of 152
‘innovativeness’ with indicators 106
institutional capacity building 147
institutional proximity 122, 163
intellectual capital 24–5, 176, 183
development of 182–3
interaction environments, types of 125–6
inter-firm relationships 108, 111, 168
internal learning, categories of 259
International Virtual Industry Cluster (IVIC) 9, 234–9
characteristics of 238
concept of 234
global markets of 248
indicators of 235–7
policy process framework for 241
policy recommendations for supporting SMEs 239–40
absorptive capacity and policy 248–9
change in capacity and capabilities and policy 245–6
culture and policy 242–3
infrastructure and policy 246–7
IVIC self-identity 243–4
leadership 241–2
markets and policy 248
mechanism for using and tapping 247
outcomes and policy 249
recommended process 240
strategy and policy 244–5
sustainable development and policy 249–50
vision 244
stages of the policy process for 240
international virtual mega-region (IVMR) 234, 238
international virtual teams 243
intra-class correlation (ICC) 109, 116
ISI (Institute for Scientific Information) Highly Cited database 75, 77, 80, 91
isomorphism, types of 181
Italian industrial districts 214
IT systems, for automation of knowledge processes 15
Jacobs’ externalities 104, 108
Jensen, Hans Siggaard 2, 139
‘know-how’ 21–3, 104
knowledge by acquaintance 29
for analysis of regional development processes 162–4
codification 181
definition of 105
by description 29
different types of 167–8
and educational attainment 35
vs. innovation 63–4
leadership 182
measurement process 39–40
meta-cognitive 27
micro-level model of 165–6
personalization 181
poultry slaughter and processing industry, Parana (Brazil) 258–60
role in economic growth 21
strategies for managing 181
tacit vs. explicit 20
and value creation in the firm 24–6
as a value creator 20–23
workers 37, 39–40, 44, 46, 106, 112–13 see also human capital; knowledge-based workers
Knowledge and its Limits 18
knowledge-based city, evolution and growth of 34–5
knowledge-based entrepreneurship 228
knowledge-based organizations characteristics of 177, 179
leadership in 181, 189
recruitment, problem of 176
workers in 177–9
knowledge-based systems 15, 24
artificial intelligence of 16
knowledge-based workers 183
characteristics of 177, 179
demands and expectations of 185
leadership challenges 179
leadership roles and personnel policy 178, 185
recruitment of 179
strategies for management of intellectual capital perspective 182–7
organizational recipes, use of 179–81
psychological factors, significance of 187–8
Index

<table>
<thead>
<tr>
<th>Term</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>tailoring strategies</td>
<td>279</td>
</tr>
<tr>
<td>gold-collar workers; knowledge, workers</td>
<td></td>
</tr>
<tr>
<td>knowledge capital</td>
<td>279</td>
</tr>
<tr>
<td>39, 66–8, 176–7</td>
<td></td>
</tr>
<tr>
<td>knowledge concept, definition of</td>
<td>279</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>knowledge ‘content’</td>
<td>279</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>knowledge creation</td>
<td>279</td>
</tr>
<tr>
<td>103, 143</td>
<td></td>
</tr>
<tr>
<td>impact of 153</td>
<td></td>
</tr>
<tr>
<td>self-reinforcing mechanisms of 164</td>
<td></td>
</tr>
<tr>
<td>knowledge economy</td>
<td>279</td>
</tr>
<tr>
<td>definition of 1</td>
<td></td>
</tr>
<tr>
<td>indicators of 105</td>
<td></td>
</tr>
<tr>
<td>‘natural’ growth of 46</td>
<td></td>
</tr>
<tr>
<td>theoretical considerations 2–3</td>
<td></td>
</tr>
<tr>
<td>knowledge externalities, spatially bounded 104–6</td>
<td></td>
</tr>
<tr>
<td>knowledge in production, significance of 34</td>
<td></td>
</tr>
<tr>
<td>knowledge-intensive business services (KIBS) 109, 127, 129</td>
<td></td>
</tr>
<tr>
<td>knowledge-intensive occupations 35, 108–9</td>
<td></td>
</tr>
<tr>
<td>knowledge-intensive organizations 34</td>
<td></td>
</tr>
<tr>
<td>basic building blocks of 35</td>
<td></td>
</tr>
<tr>
<td>value of labor in 35</td>
<td></td>
</tr>
<tr>
<td>knowledge-intensive workforce</td>
<td></td>
</tr>
<tr>
<td>cognitive skills of 35</td>
<td></td>
</tr>
<tr>
<td>growth of 36</td>
<td></td>
</tr>
<tr>
<td>knowledge management</td>
<td></td>
</tr>
<tr>
<td>20, 24, 30, 155</td>
<td></td>
</tr>
<tr>
<td>evolution of 139</td>
<td></td>
</tr>
<tr>
<td>knowledge processes, IT system for automation of 15</td>
<td></td>
</tr>
<tr>
<td>knowledge society</td>
<td></td>
</tr>
<tr>
<td>15, 19, 140, 176, 178</td>
<td></td>
</tr>
<tr>
<td>key factors in development of 139</td>
<td></td>
</tr>
<tr>
<td>knowledge transfer</td>
<td></td>
</tr>
<tr>
<td>binary logit model of 90, 92–3, 96–7</td>
<td></td>
</tr>
<tr>
<td>modes of 90–91</td>
<td></td>
</tr>
<tr>
<td>ordered logit model of 90, 94–5</td>
<td></td>
</tr>
<tr>
<td>knowledge types and forms, importance of 26–30</td>
<td></td>
</tr>
<tr>
<td>Kyoto school 25</td>
<td></td>
</tr>
<tr>
<td>labor force</td>
<td>279</td>
</tr>
<tr>
<td>cognitive skills 35</td>
<td></td>
</tr>
<tr>
<td>educational level of 36</td>
<td></td>
</tr>
<tr>
<td>intra-industrial division of 201, 208–9</td>
<td></td>
</tr>
<tr>
<td>skill-related division of 201</td>
<td></td>
</tr>
<tr>
<td>labor market</td>
<td>279</td>
</tr>
<tr>
<td>conditions for low-skilled workers 194</td>
<td></td>
</tr>
<tr>
<td>pooling effect 192, 208</td>
<td></td>
</tr>
<tr>
<td>leadership 143</td>
<td></td>
</tr>
<tr>
<td>administrative management vs. institutional 146</td>
<td></td>
</tr>
<tr>
<td>creative see creative leadership</td>
<td></td>
</tr>
<tr>
<td>entrepreneurial 151</td>
<td></td>
</tr>
<tr>
<td>innovative 152</td>
<td></td>
</tr>
<tr>
<td>International Virtual Industry Cluster (IVIC) 241–2</td>
<td></td>
</tr>
<tr>
<td>in knowledge-based organizations 181–2</td>
<td></td>
</tr>
<tr>
<td>and managerial capabilities 151</td>
<td></td>
</tr>
<tr>
<td>Leadership in Administration 139</td>
<td></td>
</tr>
<tr>
<td>learning</td>
<td></td>
</tr>
<tr>
<td>for analysis of regional development processes 162–4</td>
<td></td>
</tr>
<tr>
<td>development of 7</td>
<td></td>
</tr>
<tr>
<td>different types of 167–8</td>
<td></td>
</tr>
<tr>
<td>interactive 119, 134</td>
<td></td>
</tr>
<tr>
<td>internal and external 259</td>
<td></td>
</tr>
<tr>
<td>micro-level model of 165–6</td>
<td></td>
</tr>
<tr>
<td>poultry slaughter and processing industry, Parana (Brazil) 258–60</td>
<td></td>
</tr>
<tr>
<td>learning-by-cooperating process 269, 272</td>
<td></td>
</tr>
<tr>
<td>learning-by-interaction process 269</td>
<td></td>
</tr>
<tr>
<td>learning-by-searching process 272</td>
<td></td>
</tr>
<tr>
<td>learning economy, definition of 164</td>
<td></td>
</tr>
<tr>
<td>learning region 34, 161, 164, 168</td>
<td></td>
</tr>
<tr>
<td>learning society 178</td>
<td></td>
</tr>
<tr>
<td>LISA database 109</td>
<td></td>
</tr>
<tr>
<td>local innovation systems</td>
<td></td>
</tr>
<tr>
<td>development of 118–20</td>
<td></td>
</tr>
<tr>
<td>evolution of 133</td>
<td></td>
</tr>
<tr>
<td>geographic pattern of 124–7</td>
<td></td>
</tr>
<tr>
<td>framework for understanding 125</td>
<td></td>
</tr>
<tr>
<td>two-dimensional typology of establishment location 126</td>
<td></td>
</tr>
<tr>
<td>innovation and non-local external factors, influence of 120–24</td>
<td></td>
</tr>
<tr>
<td>macro-economic policy 118</td>
<td></td>
</tr>
<tr>
<td>and regional development policies 119–20</td>
<td></td>
</tr>
<tr>
<td>localization economies 104, 108</td>
<td></td>
</tr>
<tr>
<td>Löwendahl, B. R. 179</td>
<td></td>
</tr>
<tr>
<td>Lundvall, B-Ä. 59, 119, 124, 134, 166, 168</td>
<td></td>
</tr>
<tr>
<td>Lyotard, Francois 15</td>
<td></td>
</tr>
<tr>
<td>McCann, P. 123–4, 129–30, 218</td>
<td></td>
</tr>
<tr>
<td>Machlup, Fritz 19, 35</td>
<td></td>
</tr>
</tbody>
</table>
March, James 189
market-oriented innovation 244
Marshall, Alfred 22, 34, 163, 257
industrial districts 119, 214
Marshallian (technical) externalities 104
Marx, Karl 21
Massey, Doreen 7, 191
material-based production systems 218
meta-cognitive knowledge 27
Microcensus 194–5
Microtheory of Innovative Entrepreneurship, The 72–3
mobilization 143, 147, 150–51
multi-activity nomads 178
Nash equilibrium 3, 39, 43
national innovation policies 244
national systems of innovations, concept of 59
Nesheim, T. 178–9, 186
network governance and partnership, reform strategy under 143
new economic geography (NEG) 120, 192
new public leadership 143
new public management (NPM) 143, 154
concept of 140
reform strategy and innovation 141
Nonaka, Ikujiro 25
non-cooperative game theory model 37
outcomes 37–8
pay-offs 38–9
players 37
rules 37
non-formal learning 167
Norwegian Administrative Research Fund (AFF) 185
Norwegian municipality 6, 139–40
occupational employment 40
occupational pay-offs, measurement process of 39–40, 45–7
occupational skill, classification of data and cluster analysis 194–5
descriptive results 195–7
occupations classification of 105
knowledge-intensive 35
mean annual salaries in 2005 and 2008 43
measurement process 39–40
ordered logit model, for knowledge transfer 90, 94–5
organizational identity 186
organizational knowledge 5, 139–40, 155, 164, 171, 266
organizational proximity 122
organizational recipes, use of 179–81, 188
Oslo Manual 60–61, 128, 132
outsourcing 15–6, 218
partnership of innovation, definition of 219–20
patents 25, 90
pay-offs, occupational 44
measurement process 39–40
Penrose, Edith 24
Philosophical Investigations 27
Polanyi, Michael 7, 25, 30, 64, 72
Polenske, Karen R. 60, 247
policy maker, role of 141
Popper, Karl 17
Post-modern Condition, A Report on Knowledge, The 15
poultry slaughter and processing industry, Parana (Brazil)
Brazilians Association of Poultry Producers and Exporters (ABEF) 262
concentration in western region 260–61
features of the companies of 262–4
innovation process and learning 260
process innovations 264–71
product innovations 264
knowledge, learning and innovation 258–60
MAR effects 257
methods used in case study of 261–2
pragmatic institutionalism 140
problem solving 40, 145–6, 180
gold-collar workers 177
process innovations 70, 120, 264–71
of companies between 2005 and 2007 267
in companies during the 2005–7 period 265
impact on companies 269
regression results for 71
product development 123, 236–7, 264, 266
product innovations 120, 264
of companies between 2005 and 2007 268
impact on companies 269
production process, economic model of 151
productivity, in context of knowledge economy 9–11
product life cycles 123, 193, 250
proximity, types of 122
public administration 141, 143, 154, 168
public management 140–41, 143, 152, 155–6
public policies, indicators for 236–7
public sector, innovation in 140–43
public value creation
paradigms of 142
in public organizations 141
quality of service ‘delivery’ 142
Quebec, Canada
economic activity 128
innovation, types of 127, 129
local innovation systems, evolution of 133
peak probabilities of establishment-level innovation, location of 130
policy implications of innovation activities 132–4
simplified urban system and regional boundaries 128
radical innovation 123, 259, 268, 272
readiness for cultural change prerequisite test 242
recruitment, problem of 176
regional development processes
individual learning for 171–2
learning and knowledge for analysis of 162–4
Rheintal 171
Walgaus 168–71
regional employment growth, components of 200
regional externalities, components of 104
regional innovation systems, concept of 59, 119
regional knowledge clusters, concept of 235
regional policy aspects, of clusters 220
relationship capital 182, 183
research and development (R&D) 105, 113, 244
with indicators 2, 106
partnerships 86, 90
research system 15, 29, 72
resource-based theory, of the firm 24
Rolf, Bertil 25
Romer, Paul 21–2, 34, 257
Russell, Bertrand 29
Russ, Meir 234, 238
salary 36, 38, 40, 42, 45, 183–4, 188
Schumpeter, Joseph A. 63–4
Capitalism, Socialism and Democracy 58
innovation, analysis of 57–9, 72
science and technology, role in development of industrialized societies 20
scientific knowledge 15, 17–18, 21, 80, 249
social use of 29
search-learning processes 145
sectoral systems of innovations, concept of 59
self-directed learning 167
self employment 178
Selznick, Philip 139–40, 146
semantic knowledge 23
service delivery system 153–4
Silicon Valley 187, 214, 239
skill-biased employment growth 191
employment and educational structure, by qualification class 196
localization effects on low-skilled employment 208
occupational skill classification data and cluster analysis 194–5
descriptive results 195–7
region type effects vs. industry effects, assessment of 200–201
theory 192–4
skilled labor 139, 191, 200
role of 192
skilled occupations 196, 200–201, 205, 209
employment in 208
skills development, in organizations 176–7, 183
skills of employees, indicators of 113, 176
skills requirements distribution 41
small and medium-sized enterprises (SMEs) 219
policy recommendations for supporting IVIC 239–40, 244
absorptive capacity and policy 248–9
change in capacity and capabilities and policy 245–6
culture and policy 242–3
infrastructure and policy 246–7
IVIC self-identity 243–4
leadership 241–2
markets and policy 248
mechanism for using and tapping 247
outcomes and policy 249
recommended process 240
strategy and policy 244–5
sustainable development and policy 249–50
vision 244
social capital 25, 163, 239, 247–8
social institutions 15, 29, 271
social insurance 194–5
social networks 217–18, 226, 243
social proximity 122, 237
society development 150
Solow, R. 21, 118
star scientists, engaged in regional knowledge transfer
academic productivity 76
concepts and previous literature 76–80
empirical analysis of factors influencing
data and methodology for 80–85
dependent variables 88
descriptive analysis 85–7
explanatory variables 89
sample characteristics I 81–2
sample characteristics II 84
statistical models for 87–91
and intraregional knowledge transfer activities 79
types and intensity of regional sharing activities 86
strategic management, components of 141, 147
strengthening, of management system 151
structural capital 182, 183
structure frames habitus frames practice 167
supply chain 131
sustainable development 141, 155, 249–50
systems of innovations (SI), concept of 59–60, 119
tacit knowledge 20, 24, 30, 64, 122, 168, 233, 269, 271
Taylor, Frederick 20
Technological Innovation Research (PINTEC) 262
technological product and process (TPP) innovations 61
territorial capital 164
Third Community Innovation Survey for the Netherlands 106
Torre, A. 122–3
transformation system, restructuring of 145, 150–51, 153–4
triple-helix model, for cluster development in a knowledge economy 218
urban externalities, components of 104
urbanization economies 104
density indicator for measurement of 108
US National Occupational Employment Statistics (OES) data 40
value chain 215–16
‘decoupling’ of 234
value creation in the firm, role of knowledge in 24–6
<table>
<thead>
<tr>
<th>Index</th>
<th>283</th>
</tr>
</thead>
<tbody>
<tr>
<td>virtual organizations</td>
<td>217, 226</td>
</tr>
<tr>
<td>virtuous cycle</td>
<td>36, 46</td>
</tr>
<tr>
<td>vocational education</td>
<td>194–7, 208</td>
</tr>
<tr>
<td>vocational training</td>
<td>194</td>
</tr>
<tr>
<td>participation rate in</td>
<td>196</td>
</tr>
<tr>
<td>wages, occupational</td>
<td>46</td>
</tr>
<tr>
<td>Ward’s linkage procedure</td>
<td>195</td>
</tr>
<tr>
<td>white-collar workers</td>
<td>177</td>
</tr>
<tr>
<td>Williamson, Timothy</td>
<td>18</td>
</tr>
<tr>
<td>Wittgenstein, Ludwig</td>
<td>27</td>
</tr>
<tr>
<td>workplace, anti-standardization of</td>
<td>178</td>
</tr>
</tbody>
</table>