Index

absolute product protection see product protection
abstract ideas 3, 131, 146–51, 195–8
abuse see market power abuse
Aerotel Ltd v Telco Holdings 61, 64
Affymetrix 279
Agreement on Trade Related Aspects of Intellectual Property Rights see TRIPS
AGREVO/Triazoles case 58
agriculture 65, 135, 291
agrochemicals 94–6
algorithms 27, 147–8
Allison, John 13–14
Amazon case 58, 87, 170
AMD 120
American Civil Liberties Union (ACLU) 4, 264–7, 270, 272–3, 278, 280–86
American Cyanamid Co (Dann’s) Patent 88
Amgen case
 Amgen v. Chugai Pharm. Co. 272, 282–3, 287
 Kirin-Amgen Inc v Hoescht Marion Rousel Ltd 57–9, 89, 283
 Kirin-Amgen Inc. v. Transkarvotic Therapies Inc. 289, 296–7
amino acids 269–70, 272, 290
animal testing 235, 313, 315, 317–18
anticommons 21–3, 28–31, 137, 274
antitrust law 2, 126, 186, 195
Arora, Ashish 15
Arrow, Ken 18–19
Asahi Kasei Kogyo KK 289
Association for Molecular Pathology 264
Astra Zeneca v Commission 108, 112–13, 115, 121, 127
Australian High Court 66
Barker, Alyson 206
BDPI Phosphatase/Max-Planck case 291
Benkler, Yochai 336
Berne Convention 158
Bessen, James 135
BGH see German Federal Court
Bilski v Kappos 3, 193–218
Biogen Inc v Medeva plc 58, 88, 297
biological material 251, 253, 255
morality 236
scope of patents 222, 245–6, 249
excluded subject matter 298
invention requirement 80–83
morality 313
stem cell patentability 4
Blackberry 204
blastocyst 223, 241–3, 289, 319–20
blocking patents 21
BRCA 1 & 2 genes see breast cancer genes
breast cancer genes 4, 87, 263–5, 270–73, 277–87
Breyer, Justice 195–7
British Airways v Commission 123–4
British Technology Group 72
Brüstle case 240–43
Bundesgerichtshof (BGH) see German Federal Court
bundling 109, 114
Burk, Dan 216
business methods 145–51
Bilski case 193–7, 216–17
industry-specific patents 33, 35
invention categorization 87–8
patentability 2–3
protection exclusion 25–6, 59–61, 74, 163
US patents 143

339
CAD/CAM 134
Canada 211
Canadian patent law 296
cancer 87, 315
   see also breast cancer genes; ovarian cancer
CFPH 60
chemical 65, 73
   analog 25, 29
   compound 98, 229, 316
   industry 36, 172
   patents 14
   products 73
   utility 65
Christian Franceries 74, 88
Classen Immunotherapies Inc v Biogen Idec 198, 201
clinical trials 93–4, 97, 281
cloning
   human beings 235, 313, 332
   software 125
Code of Industrial Property Rights, Italy 92
competition law 2, 43, 104–28, 138
competitive innovation 25–6
Computer Program Directive see
   European Commission, Computer Program Directive
Computer Software Copyright Act 158
copyright protection 105–16, 187, 191
   open source 177
   SMEs 174
   software 86, 154–8
Council of Europe 75, 82
   Committee of Experts on Patents 78
   Court of Justice of the European Union (CJEU) see European Court of Justice (ECJ)
cross-licensing 23, 31, 54
   see also license
cumulative innovation 19–21, 25–8
damages 202–7, 212–14, 276–7, 280
database protection 106, 187, 189
debugging 11
design rights 111
diagnostic testing 4, 264–5, 273, 281–2, 285–6
Diamond v Chakrabarty 3, 260–61, 267, 335
disclosure 140, 297
   biotechnology patents 34
gene patenting 273
   Kirin-Amgen case 89
   PHOSITA 37
   stem cells 293–5
DNA 22
   cancer genes 265
   microarrays 269, 279
   related invention 225–9, 234, 251
testing time 29
DNA sequence 272–3, 286, 291
   anticommons 22
   Biotech Directive 83
   isolation 4
   Monsanto case 247–58
   patent scope 34
   patentability 223–33
   PTO Guidelines 263
   see also gene sequencing
dominance 105, 108–25, 128
doms Licensing Associates decision 62–3, 81, 86, 89
Dutch Patent Act 248
Dutch Patent Office 132
Dutch Supreme Court 149
eBay Inc v MercExchange LLC 197, 204–5, 280
economic analysis 172
Edinburgh case 322, 324, 332
Eli Lilly v Human Genome Sciences Inc 81, 227, 290, 295, 308
embryo see human embryo
embryoid bodies 240
Enlarged Board of Appeal of the European Patent Office 3
   embryo definition 302–7
   human embryos 241–3
   invention requirement 291
   software patentability 86, 131, 166
   stem cell patentability 237–9
   Symbian case 61–2
   WARF patent 323
EPC see European Patent Convention
   Epogen 282
   EPSPS enzyme 247
erthropoietin 282–3
   European Commission abuse 126
Index

Astra Zeneca case 121
Directive (87/54) 189
Directive (91/250) 125, 127
intellectual property 127
intellectual property rights 112–16
Lisbon Treaty 325
Microsoft case 120, 122, 124–5
Nice Charter 325
Regulation on Community Designs 190
European Commission Biotech Directive see Biotech Directive
European Council of Ministers Competitiveness Council 161
European Court of First Instance (CFI) 112
European Court of Human Rights 326, 334
European Court of Justice (ECJ) 72, 229
Biotech Directive 249
competition 122
monopoly 116
morality 325–6, 331, 333
stem cells 240–41
see also Court of Justice of the European Union (CJEU)
European General Court 112, 115, 122–3, 126
European Patent Convention 1–2, 299–302, 305, 312–19
computer program exclusion 86, 164
ethics 309
exclusions from patentable subject matter 56, 59–71, 74–6, 84–6, 157–9
Implementing Regulations 4, 69, 76, 313
industrial application requirement 225, 227–8, 291–3
insufficient disclosure 296
invention requirement 55–8, 62–76, 85, 87, 169–70
product patents 245
software patentability 146, 161–3
stem cell patents 234–9
European Patent Office 297–305
Biotech Directive conflict 234–5
Biotech Directive provisions 257
breast cancer (BRCA) susceptibility genes 263
disclosure 297
gene patenting 223
human embryo 243
industrial application requirement 227
invention requirement 59–63, 72, 74, 77, 80–83, 87, 89
jurisprudence 4, 71
legal uncertainty 159
morality 308, 316, 331, 333
Opposition Division 316–18
software definition 144–5
software patentability 58, 63, 171
software patents granted 156
stem cell patent refusal 322
stem cell patents 237
Technical Board of Appeal see Technical Board of Appeal
Euthanasia Compositions case 316
extraterritorial patent infringement 208–9
Exxon case 62, 82–3, 89
Fair, Reasonable and Non-Discriminatory Terms (FRAND) 105, 108–9
Federal Circuit see United States Court of Appeal of the Federal Circuit (CAFC)
Federal Trade Commission (FTC) 262–4, 283–4
first-to-invent priority system 194, 217
Food and Drug Administration (FDA) 24, 96–7, 283, 285
fragmentation 89, 136–7, 140, 310, 314
free software 175, 178–9
see also open source
Freeman Walter Abele test 148
Fujitsu Ltd case 59, 63
G_003/8 case, President Reference/Computer Program Exclusion, decision by the Enlarged Board of Appeal of the EPO 56, 131, 145–6, 166–7
GenBank 273
gene fragment 29, 269, 272–3, 279–80
gene patenting 4, 260–87
Biotechnology and software patent law

gene sequencing 4, 29, 249, 265, 267
generic drugs 127, 283
manufacturers 24, 29, 33
market dominance 105, 108, 121
patent expiry 93–6
Generics v Lundbeck 56, 85
genetically modified 232, 244, 247, 249,
260, 314–18
gene
artificial 289, 295, 307
human 267, 275, 285
Genomic Research and Diagnostic
Accessibility Act 284
Georgia-Pacific Corp. v United States
Plywood Corp 214
German Federal Court 167–8, 240–42
German law 149
German Patent Act 142
Germany 75, 228–9, 240
Ghosh, Professor Shubha 202
Ginsburg, Justice 195–6
H2 blockers 113
Haase, Heiko 133
Hague Court 247–9
Halliburton Energy Services Inc v Smith
International Inc 59–60, 64
Heller, Michael 21
Hematopoietic cytokine receptor/
Zygmonogenetics 292
hemoglobin 269–70
heterogeneity 10, 13–15
HGS see Eli Lilly v Human Genome
Sciences Inc
Hoffman, Lord 59, 61–3, 88, 197
horticulture 65
House of Lords see United Kingdom,
House of Lords
human embryo 241–5, 289–327
patent exclusion 4, 222, 235–43
human embryonic stem cells (hESC)
morality 315
patentability 4
pluripotent 321
human genome see genome, human
IBM 125
IBM/Computer Program Product I 164,
171
IBM/Computer Program Product II 164
IMS Health GmbH & Co v NDC
Health GmbH & Co 112, 124
In re Bilski 71, 149, 194, 198, 199
incremental improvement 27–8, 40
industrial application 290–95, 307–8
gene patenting 223–9
invention requirement 71–6, 234, 298
software patentability 161
industry-specific legislation 33–9
absolute product protection 254
business methods 195–6
computer programs 86
experimental exemption 103
gene patenting 262–4, 271–80
genetic testing 284–5
insufficiency 296
Microsoft case 108
Monsanto case 247–9
morality 317
software patentability 176
injunction 197, 203–6, 276, 280
innovation 1–29, 39–54, 172–87,
280–86, 326–32
biotechnology 262–4, 310
cumulative see cumulative
innovation
damages 212
intellectual property 107–9
Microsoft case 124–6
sequential 135
software patentability 152
strategic patenting 140
Intel case 108, 120
intellectual property 12, 15–20, 28,
31–2, 330
law 153, 210, 336
protection 329
see also TRIPS
intellectual property rights (IPR) 104–21
morality 309, 311, 328, 335
patent value 182
product protection 127–8
software patentability 156
interface 150–51
International Patent Classification
(IPC) 133
interoperability 27, 117, 124–5, 137–40
invention
definition 82
requirement 2, 55–90
IVF treatment 303

Jacob, Lord Justice 61
Jensen, Kyle 267–70
Joint Electron Device Engineering Council (JEDEC) 113, 116

Kennedy, Justice 195–6
Kirin-Amgen Inc v Hoescht Marion Roussel Ltd see Amgen
Kitch, Edmund 16–17
Kitchin, Justice 293
Kokott, Advocate General 123
KSR International Co v Teleflex Inc 197, 215–16
La Jolla Cancer Research Foundation 278
Laddie, Justice 59, 63
Landes, William 20
Leahy, Senator Patrick 209, 214, 217
Lear Corporation 211
Leland case 318
Lemley, Mark 13–14, 19, 216
license 15, 30, 48, 108, 120, 187
agreements 51
compulsory 105, 107, 119, 124, 127, 185–6
fees 275
manufacturing 118
non-discriminatory 47
non-voluntary 186
open-source 51
royalties 276
sub-licenses 47, 49, 51
system 50
technology transfer 111–12
voluntary 51, 212
see also cross-licensing
Ligand Pharmaceuticals 278
Lisbon Treaty 325
Long, Clarissa 216
Losec 113, 115
Lourie, Judge 200–201
Lucent Technologies Inc v Gateway Inc 213–14
Luxembourg Convention on the Community Patent (CPC) 91–2
Machlup, Fritz 135, 191
Madey v Duke University 97
Magill case 116, 124
market power abuse 105, 107, 109–13, 116–27
see also dominance
market power acquisition 117–18, 121
market share 114–16
Marshall, Texas 210
Maskin, Eric 135
Mengozzi, Advocate General 82, 229–30
Merges, Robert 19–20, 216
Merrell Dow Pharmaceuticals v HB Norton & Co Ltd 59, 61, 63
metabolites 199–201
micro-organisms 88, 260
microarray 269, 279–80
microprocessor 11, 31
see also semiconductor industry
Microsoft 117
Money 213–14
Outlook 213–14
Windows 114, 122, 213
Windows Mobile 213–14
Microsoft Corp v AT&T Corp 208–9
Microsoft Corp v Commission 108, 112–16, 120, 122, 124
Mobil 72
monopoly 17–19, 89, 115–19, 293
anticommmons 22
Bilski v. Kappos case 196
competitive innovation 25
invention requirement 62
stem cell patents 297–8
see also dominance; market power abuse
Monsanto Technology LLC v Cefetra BV et al. 73, 83, 229–30, 234, 247–56, 258
Moore, Kimberly 14
morality 4, 235–6, 288, 298–337
Biotech Directive 222
European Union 242
exclusion 76
patent exclusion 258
Morse, Samuel 150–51
Munich 1973 Conference 73–4
Munich 2000 Conference 159
Murray, Fiona 267–70
Myriad Genetics 4, 264–6, 277–8, 280–81, 283–4, 286–7
Nard, Craig 216
National Research Development Corp v Commissioner of Patents 66, 69
Nelson, Richard 19–20
Netherlands case 324
Neuberger, Lord 61
neural precursor cells 240
Neutrokine-a 290
Nice Charter 325
NIH 224
No-Fume Ltd v Frank Pitchford & Co Ltd 296
NTP Inc v Research in Motion Ltd 204
nucleotide 272, 290
objective justification 110, 119, 124–6
oligonucleotide 279
Oncomouse decision 4, 314, 316–18
open source
community 160, 173, 175
model 51, 187
movement 43
software 175–9
operating system 117, 134, 138
ordre public 76, 235–42, 258, 299, 311–17, 325–6
ovarian cancer 87, 264–5
overlapping patents 23, 28, 30–31
Paris Convention 73, 80
Patent Cooperation Treaty (PCT) 67
patent examiners 178, 180, 183
patent overlap see overlapping patents
patent pool 45
patent theory 15–17, 23–4, 32
patent thickets 23, 30–32, 181, 276–7
flooding 109
gene patenting 274, 279
Penrose, Edith E.T. 135
pharmaceutical industry 29–33, 283
gene patenting 262
market dominance 105
product patents 14
research and development 11, 24–5
strategic patenting 108
PHOSITA 37–8
Plant Genetic Systems 316
plant patents 221, 244–6
plasmid 246
policy levers 10, 32, 37–9
polynucleotide probes 265–6
polypeptide 272, 292
pooling patents see patent pool
technique
Posner, Richard 20
Prescott, Peter, QC 60–61, 74
pricing policy 115
primary product markets 108, 111–12, 115–17
product protection 250
absolute 225–34, 250–51, 254–5, 258
purpose-bound 83, 224–9, 233–4
programmer 11, 88, 170, 173–8, 183
Prometheus Laboratories Inc v Mayo Collaborative Services 199–201
prospect theory 16–21, 24–5, 29
protein 272–3, 291
coding 248
DNA sequence 29
erthropoietin 282
production 227, 246
synthetic 270, 289
proton pump inhibitor (PPI) 112–13, 115, 121
PTO see United States Patent and Trademark Office
Pumfrey, Justice 60–61, 64, 74
purpose-bound product protection see product protection
Quanta Computer Inc v LG Electronics Inc 197
Rambus case 113, 115–16, 120
Read Corp v Portec Inc 206
recombinant cell 272–3
recombinant erythropoietin 282
Relaxin case 316
research and development 11, 24–6, 117, 329, 331
research exemption 91–104
Romer, Lord Justice 296
Index

Rooklidge, Bill 206, 216
Roundup-Ready (RR) soya 247
royalties 108–9, 118, 212, 270, 276–80, 332
eBay case 204
FRAND 113
patent pool 47
reach-through licenses 30
RTE 116
SACGHS Report 279, 281, 284
Scalia, Justice 195, 197
Schlumberger Holdings Ltd v Electromagnetic Geoservices AS 78
Schumpeter, Joseph 17–19
Seagate case 207–8
secondary product markets 111–12, 117, 120
Secretary’s Advisory Committee on Genetics, Health and Society (SACGHS) 280–81
Semiconductor Chip Protection Act (SCPA) 36
semiconductor industry 11–14, 32–3, 35–6, 113, 120, 189
patent thickets 23, 31
Shapiro, Carl 23
Sherman Act 117
SIEC 111
SLC 111
small and medium-sized enterprises (SMEs) 173–6
socio-economic analysis 161, 172
software
definition 132–4, 142–5
patentability 134, 159–61, 171, 173, 188
software patents granted 156
Sotomayer, Justice 195–6
soya 247–52
standardization 12, 47, 113, 138
State Street Bank & Trust Co. v. Signature Financial Group 196
Statute of Monopolies 65–6
stem cells see human embryonic stem cells (hESC)
Stevens, Justice 196
Strasbourg Convention 311
strategic patenting 108, 139–40
supplementary protection certificate (SPC) 112, 127
Switzerland 135
Symbian v Comptroller General of Patents 61–2, 81
synthetic biology 288–308
Technical Board of Appeal see European Patent Office
TFEU see Treaty on the Functioning of the European Union (TFEU)
Thomas, Justice 205
Treaty on the Functioning of the European Union (TFEU) 105, 110–13, 117–26, 333
TRIPS 35, 80, 83–4, 142, 329–31
biotech patents 311
EBA declaration 239
Monsanto case 250
morality 334
software 152, 158
stem cells 288, 306
see also intellectual property; intellectual property rights (IPR)
trivial patents 140, 170, 178, 181, 184
TS Tech USA Corp case 211–12
United Kingdom
Court of Appeal 61, 78, 81, 227, 296
House of Lords 55, 62, 89, 289
law 145–6
United States Code Section (101) 199, 266
United States Congress 207–18, 264, 283–4, 334
Patent Reform Acts 202–3
patent term length 33
patentability 146, 152
United States Constitution 141, 266, 335–7
United States Court of Appeal of the Federal Circuit (CAFC) 25, 203–11, 214–16, 265, 336
business methods 149, 194
patent infringement 94
research exemption 97
United States legal system 334
United States Patent and Trademark Office 334–5
bacterium patentability 260
biotechnology patents 290
business methods 147
cancer gene patents 264–5
Congress 216–17
gene patent issuing 275
gene patenting 267
Guidelines 3–4, 198, 262–3
invention requirement 170
Manual of Patent Examination Procedure 148
patentability 194
software patentability 158
United States Supreme Court 193–218
  *Bilski* case 3
  business methods 149–51
  *Diamond v Chakrabarty* 267
  infringement damages 276
  micro-organism patentability 260–61
  research exemption 96
  software patentability 131
University of Utah Research Foundation 265
university research 97, 99–100, 266, 275, 285
USPTO see United States Patent and Trademark Office
venue 202–3, 209–12
Vienna Convention on the Law of Treaties 64, 80
*Volvo v Veng* 111, 115, 120
Von Hellfeld, Axel 142
Walker, Lord 85
Weyand, Joachim 133
*Whittemore v Cutter* 91
willful infringement 203, 206–7, 277
*Wisconsin Alumni Research Foundation (WARF)* decision 4, 290, 301–2, 307–8, 322–4, 332
World Intellectual Property Organization (WIPO) 158, 188–9