

Index

- absorptive capacity
 - in Argentina 204–6
 - in Canada 56, 216
 - in Costa Rica 56, 229–31
 - GM crops 204–5
 - influences on 16–17
 - in Jamaica 56
 - in Malta 56
 - meaning 18
 - mobile phones 205–6, 231, 288
 - in Mozambique 287–9
 - open source software 205–6, 230–31, 288
 - plant tissue cultures 205, 230–31, 287
 - recombinant insulin 204, 230
 - technology-specific nature of 13–14
 - trends 56
 - in United States 56
- Advisory National Commission of Agricultural Biotechnology (CONABIA)(Argentina) 209, 213
- Alcatel-Lucent 260
- América Móvil Claro 128, 206
- Angel Gallardo 95
- anti-trust policy, influences of 19, 325
- Apache 162, 164–5, 260
- Apple 129–30
- Argentina
 - economic and developmental background 26–9
 - economic indicators 24, 28
 - educational trends 28
 - emerging technologies, generally
 - absorptive capacity 204–6
 - access and penetration rates 210–12
 - diffusion generally 212–13
 - inequalities 207–8
 - policy and regulation, influence of 206–10
 - socio-economic influences on 203
- employment trends 106
- equal access policies 193
- gender equality trends 28
- GM crops
 - absorptive capacity 204–5
 - access and penetration rates 211
 - distributional benefits 109–11, 113
 - farm structure 104
 - global role in 13
 - industry and farm effects 109–11
 - industry employment trends 106
 - industry structure 101–2
 - policy and regulatory influences on 96, 207–9
- healthcare
 - access to 209–10
 - expenditure trends 69
 - health insurance 82
 - subsidies 82
- human development trends 29
- income equality trends 56
- mobile phones
 - absorptive capacity 205–6
 - market structure 134
 - penetration rates 136–7, 210–11
 - policy and regulatory influences on 206–8
 - pre-paid service trends 141
 - service provider trends 128
 - universal service funds 133, 211
- open source software
 - absorptive capacity 205–6
 - access and penetration rates 211–12
 - corporate contributors 155
 - policy and regulatory influences on 156, 207–8, 210
- plant tissue cultures
 - absorptive capacity 205
 - access and penetration rates 211
 - business characteristics 187, 211

- diffusion, influences on 187, 191–2, 194, 196–7
- introduction history 183
- market characteristics 191–2
- policy and regulatory influences on 194, 196, 207–9
- potato yields, impacts on 182
- R&D trends 184–5
- political instability, influences of 27, 29
- poverty trends 27
- R&D trends
 - generally 28–9, 56–7
 - in plant tissue cultures 184–5
- recombinant insulin
 - absorptive capacity 204
 - access to 86–7, 207–10, 212, 308
 - expenditure trends 69
 - and health insurance 82
 - policy and regulatory influences on 78–9, 207–10
 - and subsidised public health care 82
- technology capability ranking 29
- Asgrow 101, 205
- AstraZeneca 102
- AT&T 124–5, 128, 150, 305–6
- Azko Nobel 72

- Bahrain Telephone Company (Batelco) 125
- Banana Export Company 186–7
- bananas *see under* plant tissue cultures
- BASF 101
- Bayer 101
- Bayh-Dole Act (1980)(US) 54–5, 76
- Bazaar model (OSS) 149
- Bell Labs 125, 150, 305–6
- Bell Wireless 128
- BenQ 259
- Berkeley Software Distribution (BSD) 149–50
- BioBras 72
- Biosafety Regulations (Jamaica) 241
- BioSidus 76, 204
- biotechnology, generally *see also*
 - GM crops; plant tissue cultures; recombinant insulin
- meaning 178
- scope and uses of 178–9

- Blackberry 130, 252, 256, 320
- Bodles Research Centre 243, 245, 248

- Cable and Wireless Jamaica 128, 130, 245
- Canada
 - economic and developmental background 30–33
 - economic diversification 30
 - economic indicators 24, 31
 - education
 - influence of emerging technologies on 219–22
 - trends 32
 - emerging technologies, generally
 - absorptive capacity 56, 216
 - benefits and costs 221
 - diffusion, generally 220–21, 226–7
 - distributional boundaries 224–6
 - distributional consequences 216, 219–24
 - employment, influences on 219–22
 - policy and regulation, influence of 32–3, 217–19, 221–3
 - and racial inequalities 224–5
 - employment
 - influence of emerging technologies on 219–24
 - trends 32
- GM crops
 - distributional benefits 108–11, 113, 224, 226
 - farm structure 103–4
 - industry and farm effects 108–11
 - industry structure 102
 - policy and regulatory influences on 97, 113, 217–18, 221–3, 325
 - policy support mechanisms 114
- healthcare
 - expenditure trends 69
 - health insurance 79–81
 - policy standards and responsibilities 217–18
- income equality trends 56
- mobile phones
 - access and penetration rates 136–8, 143, 223–4
 - distributional inequalities 224–5
 - manufacturing 130

- market structure 134
- policy and regulatory influences
 - on 132, 143, 217, 221, 223
- pre-paid service trends 141
- service provider trends 127–8
- service provision plans 131
- open source software
 - benefits and costs 160–61, 224, 225–6
 - corporate contributors 154–5
 - diffusion trends 162–7
 - policy and regulatory influences
 - on 157–8, 218–19, 221–3
 - poverty trends 31–2
 - racial equality trends 55
 - R&D trends 32–3, 56–7
 - recombinant insulin
 - access to 85
 - expenditure trends 69
 - health insurance 79–81, 222
 - policy and regulatory influences
 - on 78, 79–81, 85, 218, 221
 - trade with US, influences of 30, 226–7
- Canadian Food Inspection Agency (CFIA) 217–18
- Canadian Radio-television and Telecommunications Commission (CRTC) 132, 217
- Canonical 150
- Cargill 101, 205
- Cathedral model (OSS) 149
- CATIE 36, 183–4, 192, 196, 230, 232–3, 235
- cellular technology *see also* mobile phones
 - meaning 124–5
- champions
 - influences of 313, 321
 - GM crops 96–7, 99, 101–3, 117
 - mobile phone manufacturing companies 129–30
 - mobile phone service companies 127–9
 - recombinant insulin 72–4
 - meaning 18
- Christiana Potato Growers Co-op 187, 189, 195–6, 241–2, 246
- City of Hope 71
- Claro 128, 206
- Co-ordinated Framework for the Regulation of Biotechnology Products (US) 97
- commercialization
 - commercial laboratories, role of 14, 16
 - context of, meaning 18
 - of GM crops, history of 96–7
 - pathways, influences on emerging technologies 14, 16–17
 - of plant tissue cultures 306
 - US role 183, 305–6
- Community Plant Variety Office (CPVO)(EU) 100
- Competition Act 1986 (Canada) 217
- Copyright Modernization Act 2012 (Canada) 157
- CORBANA 36, 183–4, 189, 192, 196, 230, 232–6
- Costa Rica
 - economic and developmental background 33–7, 229
 - economic indicators 24, 33, 229
 - education trends 35
 - emerging technologies, generally
 - absorptive capacity 56, 229–31
 - diffusion, generally 236
 - distributional consequences 232–5
 - distributional inequalities 233–6
 - policy and regulatory influences on 36, 235–6
 - employment trends 231
 - foreign direct investment trends 34
 - gender equality trends 35
 - GM crops 116, 231–2, 325
 - healthcare
 - expenditure trends 69
 - health insurance 82
 - subsidies 82
 - human development trends 229
 - income equality trends 56, 229
 - international collaborations 36
 - mobile phones
 - absorptive capacity 231
 - access and penetration rates 136–7, 232–4
 - market structure 134–5
 - policy and regulatory influences on 133, 235

- pre-paid service trends 141
- service provider trends 127–8, 235
- open source software
 - absorptive capacity 230–31
 - corporate contributors 155
 - diffusion trends 164–5, 232–4
 - industry challenges 155, 232, 235
 - policy and regulatory influences on 158
- plant tissue cultures
 - absorptive capacity 230–31
 - banana yields, impact on 180
 - business characteristics 186, 195
 - diffusion, influences on 186, 189–90, 192, 195–7, 232–4
 - employment and education trends 189–90
 - introduction history 183
 - market characteristics 192
 - policy and regulatory influences on 193–4, 196, 235–6
 - R&D 183–4, 195
 - political stability, influences of 33–4
 - poverty trends 229
 - R&D trends
 - generally 35–6, 56–7
 - in plant tissue cultures 183–4, 195, 197
 - recombinant insulin
 - absorptive capacity 230
 - access to 82, 233–4
 - expenditure trends 69
 - and health insurance 82
 - and subsidised public health care 82
 - socio-economic challenges 229–30
 - technology capability ranking 35
 - trade influences on 34–5
- Costa Rican Social Security Fund 235
- Czech Republic
 - GM crops
 - distributional benefits 107, 109, 113–14
 - farm structure 104
 - industry and farm effects 107, 109
 - introduction of 93, 96–7
 - regulatory influences on 325–6
- Dekalb Genetics 96, 99, 101–2, 205
- Denver Farma 204
- Diabetes Foundation of Jamaica 244, 250
- diabetes mellitus (type 2 diabetes) 54–5
 - see also* recombinant insulin
 - global trends 67–70
 - healthcare expenditure 69, 85
 - undiagnosed cases 85
- Diagnosticos Vegetales 194
- diffusion theory 9
- Digicel 128
- digital divide 124, 138, 167, 258, 262–3, 311
- Digital Millennium Copyright Act 1998 (US) 159, 170
- distributional boundaries
 - in Canada 224–6
 - in Germany 38–9
 - of GM crops 93, 326
 - in Jamaica 13
 - meaning 18
 - mobile telephones 141–2, 325
 - in Mozambique 13
 - in plant tissue cultures 326
 - strategic patenting 324
- distributional dynamics 17–18, 320–23
- Dow AgroSciences 96, 101–2
- Dupont 96, 101–2
- E-Plus 128
- economics
 - diffusion theory 9
 - evolutionary economics 8–9
- education
 - and emerging technology diffusion 324
 - in Canada 219–22
 - in Costa Rica 189–90
 - gender equality 167
 - in Jamaica 188–9, 239–40, 245–6, 252
 - in Mozambique 190, 288–91, 293–4
 - open source software 167
 - plant tissue cultures 188–9, 189–90, 239–40, 245–6, 252, 308
- trends
 - in Argentina 28
 - in Canada 32
 - in Costa Rica 35, 189–90

- in Jamaica 41–2
 - in Malta 45–6, 272
 - in Mozambique 50
 - in United States 52–4, 309, 313–14
- EduLinux 160
- Electronic Communications
 - (Regulation) Act 2004 (Malta) 265
- Eli Lilly & Co 70–77, 204, 305
- employment
 - and emerging technology diffusion
 - in Canada 219–22
 - corporate influences on 321
 - in Costa Rica 189–90
 - general influences of 18, 321
 - in Germany 130, 256, 259
 - GM crops 103–7
 - in Jamaica 188–9, 239–40, 245–6, 252
 - in Malta 130–31, 266, 271–2
 - mobile phones 130–31, 141–2, 245, 256, 266, 271–2, 290–91, 308–9, 321
 - in Mozambique 131, 190, 290–91
 - open source software 308
 - plant tissue cultures 188–90, 239–40, 245–6, 252, 290–91, 308
 - recombinant insulin 74–5, 266, 272, 308–9
 - in United States 104–6, 190, 308–9, 313–14
 - trends
 - in Argentina 106
 - in Canada 32
 - in Costa Rica 189–90, 231
 - in Germany 37–8, 259
 - in Jamaica 40, 245–6
 - in Malta 130–31, 266, 271–2
 - in United States 53–5
- Environment Protection Agency (US) 111
- environmental regulations
 - influences of 19, 325–6
- European Computer Driving Licence (ECDL) 276
- European Union
 - GM crops
 - distributional benefits 110, 113–14
 - industry and farm effects 110
 - intellectual property 100
 - regulation 97–8, 100, 325–6
 - mobile phone roaming policy 277
 - open source software policy 158
 - evolutionary economics 8–9
- Federal Communications Commission (FCC)(US) 125, 134
- Firefox 162, 166, 258
- Free Software Foundation 149, 158
- Gautheret, R.J. 179
- gender equality 7, 55–6, 139, 167
- Genentech 71, 76–7
- Germany
 - economic and developmental
 - background 37–9
 - economic indicators 24, 37
 - emerging technologies, generally
 - absorptive capacity 39, 56
 - business opportunities 259–60
 - diffusion, generally 261–3
 - distributional boundaries 38–9
 - distributional consequences 257–60
 - economic challenges 256
 - and employment, influences on 259
 - market forces role in 255–6
 - policy and regulatory influences on 261
 - employment trends 37–8, 259
 - gender equality trends 38
 - healthcare
 - expenditure trends 69
 - health insurance 81
 - income equality trends 56
 - mobile phones
 - access and penetration rates 136–7, 256–7
 - business opportunities 259–60
 - employment trends, influences on 130, 256
 - policy and regulatory influences on 132
 - pre-paid service trends 141
 - service provider trends 127–8
 - open source software
 - benefits and costs 160
 - business opportunities 260

- corporate contributors 154
- diffusion trends 162–7, 256–7
- policy and regulatory influences
 - on 158
- political regime, influences of 38, 255–6, 261–2
- racial equality trends 55
- R&D trends 38, 56–7, 256
- recombinant insulin
 - access to 85
 - expenditure trends 69
 - and health insurance 81
 - policy and regulatory influences
 - on 78, 81
- GM crops *see also under* individual countries
 - benefits distribution
 - industry and farm effects 107–11
 - reduced/ non-tillage farming 111
 - regulatory effects 113–14, 116–17
 - social and consumer effects 112–13
 - generally
 - and alternative approaches to yield increases 117
 - commercialization background 96–7
 - cultivation trends 93
 - distributional boundaries 93, 326
 - refuge areas, role of 111
 - regulatory restrictions on 325–6
 - risks from, attitudes to 310
 - government policy support
 - mechanisms 114–15
 - industry
 - corporate champions, influence of 96–7, 99, 101–3, 117
 - employment trends 103–7
 - structure 101–3
 - intellectual property
 - developments 98–101, 307–8, 320
 - enforcement challenges 100–101
 - in Mozambique 116, 325
 - regulation
 - approaches to 97–101
 - UPOV 98–9
 - technology 93
 - background 94–6
 - Bt/ Cy toxins 96
 - disadvantages 115–16
 - herbicide tolerance 94–5
 - limitations 115–17
 - principle DNA improvements in 94–5
 - R&D trends 95–6
 - WHO guidelines 217–18
- GNU General Public Licence (GPL) 149–50
- Go Mobile 128
- Haberlandt, G. 179
- health and safety regulations
 - influences of 19, 325–6
 - phytosanitary regulations 193–4, 197
- health insurance
 - and insulin access problems 79–82, 88–9
- healthcare
 - expenditure, global and national trends 69
 - subsidies 82–3, 89, 324
- horizontal inequality
 - gender inequality 7, 55–6, 139, 167
 - meaning 6, 18
 - racial/ ethnic inequality 55
- human resources policies
 - influence on STI policies 324
- inequality, generally *see also* horizontal inequality; vertical inequality
 - meaning and interpretation 7–8, 18
- Infineon 259
- infrastructure limitations, relevance of 16–17
- innovation
 - conditions for 152
 - and diffusion theory 9
 - and economic growth 7–8
 - economics of 8–9
 - intellectual property role in 152–3
 - S-curve theory, problems with 9–10
- Institute for Quality and Efficiency in Health Care (QWIG) 81
- Instituto Costarricense de Electricidad (ICE) 127–8, 133, 235
- insulin, generally *see also* recombinant insulin
 - purpose 68
 - and WHO model list of essential medicines 68

- Intel 34
- intellectual property
 - on GM crops 98–101, 307–8, 320
 - influences of 19
 - innovation, role in 152–3
 - on mobile phones 307, 320
 - on open source software 148–9, 152–3, 157–60, 320
 - on plant tissue cultures 194, 320
 - on recombinant insulin 76–7, 89, 308, 320
 - and Science, Technology and Innovation (STI) policies 324
 - strategic patenting 324
- International Potato Research Center (Peru) 306
- International Union for the Protection of New Plant Varieties (UPOV) 98–9
- invention
 - and commercialization, US role in 183, 305–6
 - context of 18
- Jamaica
 - economic and developmental background 39–44
 - economic indicators 24, 39
 - education
 - emerging technology influences on 245–6
 - policy influences on 239–40
 - trends 41–2
 - emerging technologies, generally
 - absorptive capacity 56
 - access and use rates 246–51
 - benefits and costs, generally 240
 - business opportunities 241–5
 - diffusion, generally 240, 251–3
 - distributional boundaries 13
 - distributional consequences 240
 - geographical size, influence of 238
 - policy and regulatory influences on 41–4, 239–42
 - employment
 - influences on emerging technologies 240
 - trends 40, 245–6
 - gender equality trends 41–2
- GM crops 116
- healthcare
 - expenditure trends 69
 - health insurance 82
 - subsidies 82–3
- income equality trends 56
- mobile phones
 - access and penetration rates 136–7, 240, 246–7
 - business opportunities 244–5, 252–3
 - employment trends, influences on 130, 245
 - market structure 134–5
 - policy and regulatory influences on 133–4, 238, 240–42
 - pre-paid service trends 140–41
 - service provider trends 128
 - socio-economic advantages 140
 - universal service funds 133–4
- open source software
 - industry challenges 155
- plant tissue cultures
 - access and penetration rates 247–8, 252
 - banana yields, impact on 180–81
 - business characteristics 186–7
 - business opportunities 242–4, 252
 - diffusion, influences on 186–9, 192, 194–7
 - employment and education trends 188–9, 239–40, 245–6, 252
 - introduction history 183
 - market characteristics 192
 - policy and regulatory influences on 194, 196, 238, 240–41
 - R&D 185, 195, 197
- poverty
 - reduction initiatives 193
 - trends 41
- R&D trends
 - generally 42–4, 56–7
 - plant tissue cultures 185, 195, 197
- recombinant insulin
 - access to 83, 87, 89, 249–51
 - business opportunities 244, 252
 - challenges 249–51
 - expenditure trends 69
 - and health insurance 82

- policy and regulatory influences
 - on 82–3, 87, 89, 238–40, 249–51
 - and subsidised public health care 82–3
 - trade influences on 40
 - US economy, influences of 40
 - juvenile onset diabetes 68, 70
- Kloppenburg, Jack 114–15
- Kuhkenah Network (K-Net) 161
- laboratories
 - commercial vs. public, role of 14, 16
 - LG Electronics 129
 - Linux 11, 151, 154–67
 - Linux Education Program (Malta) 165
- M-Pesa 301
- maize *see* GM crops
- Malta
 - economic and developmental background 44–7
 - economic indicators 13, 24, 44–5
 - educational trends 45–6, 272
 - emerging technologies, generally
 - absorptive capacity 56
 - access and penetration rates 272–6
 - benefits and costs 266–9
 - business opportunities 266, 269–71
 - challenges for 279–80
 - diffusion, generally 264, 278–80
 - distributional consequences 270–72
 - employment, influences on 130–31, 266, 271–2, 271–272, 130–31
 - geographical size, influence of 280
 - policy and regulatory influences on 45–7, 265–9, 276–8
 - employment trends 130–31, 266, 271–2
 - healthcare
 - expenditure trends 69
 - health insurance 81
 - subsidies 82
 - income equality trends 56
 - mobile phones
 - access and penetration rates 136–7, 272–4
 - benefits and costs 267
 - business opportunities 266, 270
 - employment trends, influences on 130–31, 266, 271–2
 - market structure 134, 272–3
 - policy and regulatory influences on 132, 265–8, 276–7
 - pre-paid service trends 141, 273–4
 - service provider trends 127–8, 272–4
 - open source software
 - benefits and costs 267–8
 - business opportunities 266, 270–71
 - corporate contributors 155
 - diffusion trends 163–5, 275–6
 - employment trends 266, 272
 - policy and regulatory influences on 158–9, 267–8, 275–8
 - restrictions on 275–6
 - R&D trends
 - generally 46–7, 56–7
 - recombinant insulin 269
 - recombinant insulin
 - access to 82, 274–5, 277
 - benefits and costs 267–9
 - business opportunities 266, 269, 270
 - employment trends, influences on 266, 272
 - expenditure trends 69
 - and health insurance 81
 - policy and regulatory influences on 81–2, 267–9, 277
 - and subsidised public health care 82
 - Malta Communications Authority (MCA) 132, 135, 265
 - Malta Diabetes Association (MDA) 277
 - Malta Information Technology Agency (MITA) 158–9, 268, 270–71, 278
 - Manhiça Research Centre 164
 - Mauritius 288
 - MCel 127–8, 285, 301
 - Medicare health insurance 79–81, 85, 311
 - Melita Mobile 127–8

- micro-enterprise, advantages of
 - emerging technologies for 321
- Microsoft 150, 257, 275–6
- Millennium Project 5
- mobile phones 10–11 *see also under*
 - individual countries
 - absorptive capacity 205–6, 231, 288
 - benefits and costs
 - challenges 133–4
 - data security implications 139
 - gender equality 139
 - general benefits 138
 - horizontal and vertical differences 139–40, 142–3
 - low-income households 124, 139–43, 210–11
 - and micro-enterprises 321
 - negative impacts 138–41
 - penetration rates 136–8
 - socio-economic advantages 139–40
 - competition trends 134–5
 - distributional boundaries 141–2, 326
 - employment trends, influences on 130–31, 141–2, 245, 256, 266, 271–2, 321
 - history and development 124–7
 - monopolies, role of 124–7
 - network standards 125–6
 - wireless networks 126
 - intellectual property 307, 320
 - manufacturing
 - company ownership trends 129–30
 - component manufacturing 130
 - penetration rates 123, 136–8
 - and digital divide 138, 258
 - and market access reliance 123–4, 136, 141–3
 - policy and regulatory influences
 - distributional challenges 133–4, 143
 - history 125
 - influences of 123–4
 - market regulation 132–3, 143
 - public utility oversight 325
 - universal service funds 133–4
 - pre-paid services 131, 140–42, 285, 320
- service providers
 - calling party pays *vs.* receiving party pays 131–2
 - challenges for 143–4
 - market structure 134–5
 - number portability and interconnection agreements 135
 - ownership trends 126–9
 - pre-paid services 131, 140–42
 - public utility oversight 127
 - service provision structures 131–2
 - smartphones, global trends 129
- Monsanto 96, 99–102, 219, 308, 320
- Montana State University 185, 187–8, 190
- Moodle 161
- Moseug 268, 278
- Motorola 125, 259
- Movicom 206
- Movistar 206
- Movitel 128, 134, 285, 298, 300
- Mozambican Agricultural Research Institute (IIAM) 295
- Mozambique
 - distributional boundaries 13
 - economic and developmental background 48–51, 284
 - economic indicators 24, 48
 - education
 - influences on emerging technology diffusion 288–9, 293–4
 - trends 50
 - emerging technologies, generally
 - absorptive capacity 287–9
 - alternative strategies for 298–300
 - benefits and costs 289–91
 - challenges 294–8
 - and development aid, reliance on 289–90
 - diffusion, influences on 294–301
 - distributional consequences 289–91
 - employment, influences on 290
 - equality, influences on 291–8
 - innovation, promotion of 294–8
 - national conditions, influences of 322–3
 - policy and regulatory influences on 50–51, 289–91, 294–8

- gender equality trends 48–9, 292–4
- GM crops 116, 325
- healthcare
 - challenges 286–7
 - expenditure trends 69
 - health insurance 82
 - subsidies 82–3
- income equality trends 56, 292–4
- informal economy, influence of 48, 57
- mobile phones
 - absorptive capacity 288
 - access and penetration rates 136–7, 143, 284–5
 - alternative strategies for 298–300
 - benefits and costs 290–91
 - employment trends, influences on 131, 290–91
 - market structure 134–5
 - policy and regulatory influences on 133, 295–7
 - pre-paid service trends 140–41, 285
 - service provider trends 127–8, 285
- open source software
 - absorptive capacity 288
 - alternative strategies for 298–300
 - benefits and costs 161, 289–90
 - corporate contributors 155
 - diffusion trends 164–5, 167, 285–6
 - industry challenges 155
 - policy and regulatory influences on 159, 290, 295–7
- plant tissue cultures
 - absorptive capacity 287
 - benefits and costs 289–90
 - diffusion, influences on 190–91, 196–7, 286–7
 - employment and education trends 190, 290–91
 - introduction history 183, 286
 - market characteristics 191
 - policy and regulatory influences on 194, 196, 296–7
 - R&D 184, 197
 - sweet potato yields, impact on 181–2
- political regime, influences of 49–50
- poverty
 - reduction initiatives 193
 - trends 48–9
- R&D trends
 - generally 50–51, 56–7, 295
 - in plant tissue cultures 184, 197
- recombinant insulin
 - access to 3, 67–8, 83, 86–7, 89, 286–9, 293–4, 300, 322
 - alternative strategies for 299–300
 - benefits and costs 290–91
 - expenditure trends 69
 - and health insurance 82
 - policy and regulatory influences on 82–3, 295–7
 - and subsidised public health care and 82–3
- STI Policy (2006) 295–8
- Mozambique Science, Technology and Innovation Strategy (MOSTIS) 295
- National Administration of Medicaments (ANMAT) (Argentina) 209
- National Commission of Communications (CNC) (Argentina) 211
- National Commission on Science and Technology (NCST)(Jamaica) 241–2
- national conditions, influences of 16–17, 322–3
- National Institute of Agricultural Technology (INTA)(Argentina) 96, 184–5, 196, 205–7, 213
- National Institute of Seeds (INASE) (Argentina) 209
- National Telecommunications Company (Argentina) 206
- Nippon Telegraph Company (NTT) 125
- Nokia 129–30, 259–60
- Nordisk Insulin Laboratory 70
- Novartis 102
- Novo Nordisk 12, 71–7, 86–7, 305
- O2 128
- Open Source Observatory and Repository for European public administrations (OSOR) 158
- open source software 11 *see also under* individual countries

- benefits and costs 160–62
 - advantages, generally 147–8, 151–2
 - cost limitations 147–8
- diffusion, influences on
 - absorptive capacity 205–6, 230–31, 288
 - anti-trust regulation 325
 - developed countries *vs.* developing countries 162–3, 171
 - distributional boundaries 320–21
 - in education sector 165
 - gender and educational influences 167
 - horizontal differences in 167
 - identification challenges 162–3
 - industry size and type 166–7
 - and micro-enterprise 321
 - national conditions 322
 - public sector *vs.* private sector 163–6
 - vertical differences in 166–7
- history and development
 - background 148–9
 - diffusion trends 149–51
 - Internet influence on 150
 - investment focus 154
- implications
 - for developing countries 151–2
 - innovation opportunities 152
 - intellectual property ownership 152–3
 - peer production models 152–3
 - social and economic benefits 151–2
- industry structure 153–5
 - corporate contributors 154–5
 - market investment trends 154
 - and intellectual property 148–9, 152–3, 157–60, 170–71, 320
- LINUX OS, role in 150, 153–4, 165–6
- meaning 147–9
- policy and regulatory influences on 148, 156–60
 - anti-trust regulation 325
 - intellectual property 157–60, 170–71
 - limitations 170–71
 - open standards, advantages of 170–71
 - and public procurement 170–71
 - purpose 152
- Pfizer 101
- phytosanitary regulations 193–4, 197
- Pioneer 96, 101–2
- Plant Patent Act (PPA)(US) 99
- Plant Quarantine and Agricultural Produce Acts (Jamaica) 193
- plant tissue cultures *see also under* individual countries
 - advantages 179
 - applications 178–9
 - in bananas
 - propagation cycle 179
 - yield increases 180–81
 - crop yields, impacts on 180–82
 - diffusion, influences on
 - absorptive capacity 205, 230–31, 287
 - business character 186–8
 - distributional boundaries 320–21, 326
 - employment 188–90
 - generally 185–6, 195–7
 - markets 191–2
 - policy and regulation 192–4, 196, 324–5
 - price 322
 - history and development 177, 179
 - importance of 177
 - industry structure
 - funding 183–5
 - growth environment 182–5
 - infrastructure requirements 177
 - R&D trends 183–5
 - technique introduction rates 183
 - and intellectual property 194, 307, 320, 324
 - invention and commercialization, US role in 183, 306
 - meaning 178
 - and phytosanitary regulation 193–4
 - in potatoes
 - propagation cycle 182
 - yield increases 182
 - in sweet potatoes
 - propagation cycle 181–2

- yield increase 182
- tissue culture cycle 179–80
- Plant Varieties Protection Act 2003 (PVPA)(US) 99
- potatoes *see under* plant tissue cultures
- poverty
 - and emerging technology costs 327
 - reduction initiatives 193
 - trends 3
 - in Argentina 27
 - in Canada 31–2
 - in Costa Rica 229
 - in Jamaica 41
 - in Mozambique 48–9
 - in United States 53–4, 313–14
- price, relevance for emerging technology diffusion 16, 322
- public intervention policies
 - anti-trust policy 19, 325
 - and emerging technology diffusion 324–5
 - environmental regulations 19, 325–6
 - health and safety regulations 19, 325–6
 - intellectual property
 - on GM crops 98–101, 307–8, 320
 - influences of 19
 - innovation, role in 152–3
 - on mobile phones 307, 320
 - on open source software 148–9, 152–3, 157–60, 320
 - on plant tissue cultures 194, 320
 - on recombinant insulin 77, 89, 308, 320
 - and Science, Technology and Innovation (STI) policies 324
 - strategic patenting 324
 - public procurement 16, 19, 324–5, 328
 - public utility oversight 19, 127, 325
 - public procurement 16, 19, 324–5, 328
 - public utility oversight 19, 325
- racial/ ethnic minorities
 - and emerging technology diffusion, influences on 224–5
 - inequality trends 55
- R&D trends
 - generally 28–9, 56–7
 - plant tissue cultures 183–5, 195
 - recombinant insulin 75–7, 269
- recombinant insulin *see also under* individual countries
 - absorptive capacity 204, 230
 - access to
 - in Argentina 86–7, 207–10, 212
 - in Canada 85
 - in Costa Rica 82, 233–4
 - delivery system issues 87
 - in Germany 85
 - and health insurance 79–82
 - Jamaica 83, 87, 89, 249–51
 - in Malta 82, 274–5, 277
 - in Mozambique 67–8, 83, 86–7, 89
 - problems 67–8, 79–82, 84–9
 - in United States 67–8, 79–80, 85
 - benefits and costs distribution 84–7
 - in Canada
 - access to 85
 - expenditure trends 69
 - health insurance 79–81, 222
 - policy and regulatory influences on 78, 79–81, 85, 218, 221
 - history and development 70–72
 - industry
 - corporate champions, role of 72–4
 - employment trends 74–5, 266, 272, 308–9
 - manufacturing plants, locations 72–3
 - market structure 72–7
 - ownership structure 72–4
 - intellectual property 76–7, 89, 308, 320
 - in Malta
 - access to 82, 274–5, 277
 - policy and regulation 78–9
 - FDA regulation 325
 - framework, establishment of 71
 - influences on 76–8, 82–4
 - products
 - generic forms, development 77
 - global sales by company and type 72
 - insulin analogs, relative costs 84, 87
 - intellectual property 77, 89, 308, 320
 - older insulin products, influence on use of 85

- transgenic cows, research
 - involving 76
 - purpose 70
 - R&D trends, ongoing 75–7, 269
- Rogers Wireless 128
- Samsung 129
- Sanofi Aventis 71–7, 204
- SAP 154
- Schmeiser, Percy 99–100, 219
- Science and Innovation Policy Studies, generally
 - economics of innovation, criticism of 7–8
 - emerging technologies, research role 7–8
 - inequality, meaning and interpretation in 7–8
- Science and Technology Studies (STS) and emerging technologies
 - research role 5–6
 - technological projects, use of 6–7
- Science, Technology and Innovation (STI) policies
 - and human resources policies 324
 - influences on, generally 323–4
 - and intellectual property 324
 - non-STI influences 324–6
- Scientific Research Council (Jamaica) 185–7, 189, 242–3, 248
- Seed Laws (Argentina) 209
- SemBioSys 76
- Senegal 288
- Siemens 259–60
- SourceForge.net 170
- Sprint Nextel 128
- sweet potatoes *see under* plant tissue cultures
- Syngenta 96, 101–2
- T-Mobile 128
- technology ownership
 - recombinant insulin 70–77
 - relevance of 16
- technology packaging, relevance of 319–20
- technology transition point 327–8
- Telecom Personal 128, 206
- Telecommunications Act 1993 (Canada) 132
- Telecommunications Act 1996 (US) 132
- Telecommunications Act 2000 (Jamaica) 133
- Telefónica Movistar 128, 206
- Telenet 260
- Telus 128
- Torvalds, Linus 150
- type 1 diabetes 68, 70
- type 2 diabetes *see* diabetes mellitus
- Ubuntu 150, 162
- United States
 - Bayh-Dole Act (1980) 54–5, 76
 - economic and developmental background 26–9, 51–5
 - economic indicators 13, 51–2
 - educational trends 52–4, 309, 313–14
 - emerging technologies, generally
 - absorptive capacity 56
 - benefits and costs 311–12
 - corporate dominance, impact of 313
 - diffusion patterns, influences on 311–15
 - employment, influences on 308–9
 - global role in 314–15
 - innovation policy influences on 313–15
 - and intellectual property 98–9, 307–8, 310–11
 - invention and commercialization, role in 305–6
 - policy and regulatory influences on 52, 54–5, 304–7, 311–15
 - risks and representation 309–11
 - social inequalities, relevance of 313–14
 - employment
 - and emerging technologies, influences on 308–9, 313–14
 - trends 53–5
 - Food and Drug Administration (FDA) 78
 - gender equality trends 309, 314
 - GM crops
 - benefits and costs 107–11, 113, 312
 - corporate dominance in 96–7
 - employment, influences on 308

- farm structure 103–4
- industry and farm effects 107–11
- industry employment trends 104–6
- intellectual property 98–9
- policy and regulatory influences
 - on 97–8, 113, 116–17, 306, 312, 325
- policy support mechanisms 114
- risks from, attitudes to 309–10
- healthcare
 - expenditure trends 69
 - health insurance 79–81, 85, 311
 - subsidies 82–3
- income equality trends 56, 313–14
- mobile phones
 - access to services 143
 - benefits and costs 312
 - employment, influences on 308–9
 - invention and commercialization,
 - role in 305–6
 - manufacturing 129–30
 - market structure 134–5
 - penetration rates 136–7
 - policy and regulatory influences
 - on 132, 307, 312
 - pre-paid service trends 141
 - service provider trends 127–9
 - service provision plans 131–2
 - universal service funds 133
- open source software
 - benefits and costs 160, 312
 - corporate contributors 153–4
 - diffusion trends 162–7
 - employment, influences on 308
 - invention and commercialization,
 - role in 306
 - policy and regulatory influences
 - on 159–60, 312
- plant tissue cultures
 - benefits and costs 312
 - business characteristics 187–8
 - diffusion, influences on 186–7, 190–91, 196–7, 312
 - employment and education trends 190, 308
 - invention and commercialization,
 - role in 183, 306
 - market characteristics 191
 - policy and regulatory influences
 - on 194, 196, 307
 - potato yields, impact on 182
 - R&D trends 185
 - political regime, influences of 51–2
 - poverty trends 53–4, 313–14
 - racial equality trends 52, 55, 309
 - insulin access problems 79–80
 - R&D trends
 - generally 54–7
 - in plant tissue cultures 185
 - recombinant insulin
 - access to 67–8, 79–80, 85, 308, 311
 - benefits and costs 311
 - employment, influences on 308–9
 - expenditure trends 69
 - FDA approval 78
 - and health insurance 79–81, 311
 - invention and commercialization,
 - role in 305
 - policy and regulatory influences
 - on 76, 79–83, 306, 308, 310–11
 - and subsidised public health care 82–3
 - representational equality trends 310–11
 - technology capability ranking 55
 - wealth distribution trends 304–5
- Verizon Wireless 128
- vertical inequality, meaning 8, 18
- Vodacom 128, 285, 301
- Vodafone 128, 270
- Wada Potatoes 187–8
- Wikipedia 258
- World Health Organization
 - GM crops guidelines 217–18
- WTO
 - GATS influence on education policy 239
 - plant protection regime 98–9
 - TRIPS Agreement 98–9
- ZTE 129