Index

Adjusted gross revenues (AGRs), 181 Aircel, 169, 173, 176, 177, 180 AT&T/Time Warner, 128-129 Austrian Federal Competition Authority (BWB), 12 Austrian telecoms regulator (RTR), 12 Average revenue per user (ARPU), 125 Bharti Airtel, 163, 165, 169–170, 172, 179 Body of European Regulators for **Electronic Communications** (BEREC), 14 Bouygues Telecom, 65, 145-147 BSNL, 163, 165, 177, 180 BT/EE, 124-125 Business model innovation, 4–5 Buyer switching costs, 48 Cablevision, 127 Carrier Aggregation, 66 21st Century Fox, 132-133 Chief executive officer (CEO), 122 Christiansen interpretation, 1-3 critiques of, 3-5 telecommunications-based critique, 5-6 CK Hutchison, 27, 40 financial performance, 200-205 3G, 189 geographical footprint, 195–199 initial public offering (IPO), 197 mobile subscribers, 200 in telecommunications industry, 190-195 Code-division multiple access (CDMA), 59 Competition and Markets Authority (CMA), 124

Concentration ratios, 92 'Connect' test, 13 Council for Economic Defense (CADE), 128 Customer acquisition, 10

Department of Justice (DOJ), 129 Department of Telecommunications (DoT), 165 Deutsche Telkom, 131 Dhan Dhana Dhan plans, 170 Difference-in-differences (DiD) methodology, 12 Dish Network, 134 Disruption case studies of, 21-45 caused by new entry, 47-89 clarifications. 2-3 contrasted cases of, 215-217 internal and external factors, 213-215 'low-end.' 1 multifaceted nature of, 213-215 'new-market,' 1 Ofcom analysis of, 7-10, 21-22 patterns of, 7, 220 in practice, 218 theory of, 1 and trend towards multi-play, 121 - 139Disruptive activity by Aircel, 169 BASE, 25 Bharti Airtel, 163, 217 **BSNL**, 163 CK Hutchison, 27 Digicel, 109 Fastweb, 109 Free Mobile, 216

Hutchison and VimpelCom, 108 - 109Idea Cellular, 163, 174, 177, 178, 180, 216 Iliad, 109, 216, 217 KPN, 25 LTE network, 16 mobile network operator (MNO), 10mobile virtual network operators (MVNOs), 6 Mobistar, 25 MTNL, 164 NJJ Capital, 34–35 Proximus, 25 Quadrant Televentures, 164 radio access network (RAN), 11 RCom, 163 Reliance Jio, 35, 216 Sistema Shyam, 164 Tata DoCoMo, 164 Tele2, 22 Telecoms Disputes Settlement & Appelate Tribunal (TDSAT), 169 Telenor, 11, 164 Telia One, 26 TeliaSonera, 11 T-Mobile/Orange merger, 12 T-Mobile/tele.ring merger, 12 T-Mobile US, 38–39 United Internet/Drillisch, 27 Vodafone, 25, 216-217 Disruptive activity in Australia, 35–36 Austria, 12, 25, 98-99 Belgium, 25 Canada, 36 China, 15 Czech Republic, 25 Denmark, 11, 26, 104-105 European Union (EU), 91-119 Finland, 13, 26-27 France, 27, 102-104

Germany, 11, 27–28, 100–102, 121 Greece, 28 Hong Kong, 36 India, 163-187 Indonesia, 36-37 Ireland, 11, 28–29, 100 Italy, 29-30, 108-110 Japan, 37 Malaysia, 37 Netherlands, 12, 30-31, 110-111 New Zealand, 37-38 Norway, 13, 31, 99 Poland, 31–32 Portugal, 32 Scandinavian countries, 13 South Africa, 38 Spain, 33 Sweden, 33–34 Switzerland, 34–35 UK, 34, 105–108, 124–125 USA, 38–40 'Disruptive Growth Fund,' 4 Disruptive innovation, 5 Disruptive firms, 8, 10, 21 Disruptors, 112-113 Earnings/loss before interest and taxation (EBIT/LBIT), 200 EBITDA, 203 European Commission (EC), 10, 31, 63, 91 European Economic Free Trade Area, 50 European mobile in 2017, 93-97 concentration ratios, 92 Denmark, 104-105 disruptors, 112–113 France, 102–104 Germany, 100-102 International Telecommunication Union (ITU), 92 Ireland, 100

Italy, 108–110 Long-Term Evolution (LTE) licences, 93 mergers, 97-98 mobile market, 93-96 mobile virtual network operator (MVNO), 98 NetCom GSM. 99 Netherlands, 110-111 new entry, 111-112 Norway, 99 one-off exception, 97 quad-play, 113-114 sample, 91 takeovers, 97-98 Telia Norway, 99 T-Mobile, 103 UK, 105-108 Ziggo, 110 European mobile communication markets, 47 European Union (EU), 10, 50, 91, 114

Federal Communications Commission (FCC), 38 Freebox, 147 Free Mobile, 65 Altice, 154-155 Bouygues Telecom, 155–157 Freebox, 147, 148 2G, 143 3G and 4G (LTE) licences, 144-147 3G services, 149-150 GSM standard, 143 Iliad, 147–149, 152 Internet protocol TV (IPTV), 147 Orange, 154 outcomes, 150-152 pink Minitel services, 147 SFR, 154–155 stable three operator market, 143 - 144

Time-Division Long Term Evolution (TD-LTE) licences, 146 Timeline of Events, 1989-2018, 142 Video-on-Demand (VoD), 148 Voice over IP (VoIP), 148 French telecommunications market. See Free Mobile General financial information, 10 Gigabyte (GB), 38, 168 Gigahertz (GHz), 16, 64, 130 2G (GSM) licensing, 49-50 3G (UMTS) licensing, 50-65 new entrants, 51, 60-62 4G (LTE) licensing, 66-86 Global System for Mobile (GSM), 163 GSM standard, 143

Harvard Business Review (HBR), 3 Hong Kong Broadband Network (HKBN), 126 Hutchison, 6, 13, 40, 59, 112 Hutchison Asia Telecommunications (HAT), 194 Hutchison 3G Italy Investments, 64, 108 Hutchison H3G. 63 Hutchison Telecommunications International Ltd (HTIL), 193-194, 198, 199 Hutchison Whampoa, 8, 59, 63, 87, 111 Idea Cellular, 163, 166, 168, 171, 178 Iliad, 147-149, 152

Indu, 147–149, 152 Incumbents customers, 2 Indian mobile market adjusted gross revenues (AGRs), 181 2016auction, 164–168 mobile network operators, 163–164 restructuring, 171–173

Securities and Exchange Board (SEB), 169 telecom regulatory framework, 165 Telecoms Disputes Settlement & Appelate Tribunal (TDSAT), 169 Initial public offer (IPO), 131 Interconnection usage charge (IUC), 175 International Telecommunication Union (ITU), 25, 26, 34, 92 Internet of Things, 6 Internet protocol (IP), 122 Internet protocol TV (IPTV), 147 Internet service provider (ISP), 38 Jio Prime Membership Programme, 170 Kodak, 4, 7 Long-Term Evolution (LTE), 16, 93, 216 'Low-end' disruption, 1 LTE-Advanced (LTE-A), 66 Machine-to-machine (M2M), 6, 28 Margrethe Vestager, 11 Megabits per second (Mbps), 16, 66 Megahertz (MHz), 16, 30, 38, 42, 88 Merger and acquisition (M&A) activity, 16, 230 Mergers, 97–98 Millimetre wave (mmWave), 130 Mobile market, 93-96 Mobile messaging service (MMS), 26 Mobile network operator (MNO), 10 Mobile operator licensing, in Europe first-mover advantages, 48-49 3G licensing, 50-65 4G licensing, 66-86 GSM licensing, 49-50 Mobile virtual network operators (MVNOs), 6, 98, 101

MTNL, 164, 171, 180–181 Multifaceted nature, of disruption contrasted cases of, 215-217 internal and external factors, 213-215 Multi-play Asia, 125-126 BT/EE, 124-125 Cablevision, 127 definition, 121 Deutsche Telkom, 131 Hong Kong Broadband Network (HKBN), 126 initial public offer (IPO), 131 Netflix, 134 over-the-top (OTT) services, 134 pay-off, 134–135 quad-play, 121 recent activity, 133 Sky, 132-133 Spectrum Mobile, 133 21st Century Fox, 132-133 Time Warner Cable (TWC), 126 T-Mobile, 121 USA, 126–128 Verizon Communications, 127, 130, 131 Vodafone, 122-124 Yahoo!, 130 National Company Law Appellate

Tribunal (NCLAT), 179 National Company Law Tribunal (NCLT), 169, 177 NetCom GSM, 99 Netflix, 39, 134 Network coverage and quality, 16–17 New entry, 111–112 'New-market' disruption, 1 Next generation network (NGN), 123 Ofcom analysis, 21–22 aggressive behaviour, 10

core hypothesis, 7–8

disruptive firms, 8 effects on investment, 8–9 European countries cited, 22–34 European countries not analysed, 34–35 motivation, for disruption, 9 summarised, 9–10 One-off exception, 97 Orange, 154 Outcome-based approach, 6–7 Over-the-top (OTT) services, 134

Pink Minitel services, 147

Quad-play, 113–114, 121 Quadrant Televentures, 164 Quality of service (QoS), 2, 16

Radio area network (RAN), 11, 109 RCom, 163 Reliance Jio, 35, 131, 164, 168, 170

Salop model, 16 Securities and Exchange Board (SEB), 169, 172 Significant disruptors CK Hutchison, 40 ice, 41-42 PPF Group, 40-41 Tele2, 40 SIM card, 149–150 Significant market power (SMP), 177 Sistema Shyam, 164 Sky, 132-133 Smart Telecom, 59 Spectrum Mobile, 133 Stable three operator market, 143-144 Strategic debt restructuring (SDR), 174

Takeovers, 97–98 Tata DoCoMo, 164 Telecom Italia, 63 Telecommunications-based critique, 5–6 Telecom Regulatory Authority of India (TRAI), 165, 168, 170 Telecoms Disputes Settlement & Appelate Tribunal (TDSAT), 165, 169, 177 Telenor, 11, 26, 105, 164 Telia Norway, 99 Time dimension duplex (TDD), 110 Time-Division Long Term Evolution (TD-LTE) licences, 146 Timeline of Events, 1989–2018, 142 Time Warner Cable (TWC), 126 T-Mobile, 98, 121, 133 Triple-play, 124

Uber, 3, 5 Universal mobile telecommunications system (UMTS), 47, 67–77, 144

Verizon Communications, 127, 131 Video-on-Demand (VoD), 148 VimpelCom, 63, 64, 108, 109 Virgin Mobile, 145 'Virtual' operators, 6 Vodafone, 63, 121–124, 163 Vodafone Hutchison Australia (VHA), 198 Voice over Internet Protocol (VoIP), 35 Voice over IP (VoIP), 148

Western PCS Corp., 199 Western Wireless Inc., 199 WiMAX to LTE, 36 Wireless fidelity (Wi-Fi), 125, 127 Wireless industry, 15 Worldwide interoperability for microwave access (WiMAX), 36

Yahoo!, 127, 130

Zapp Mobile, 59