

## Index

- Aaronson, Susan A., 110, 241  
 Accenture, 136  
 accountability frameworks, 198  
 adaptive governance, 18  
 Administrative Measures on Internet Information Services, 256–258  
 Administrative Rules on International Networking Entry and Exit Gateways for Computer Information Networks, 254  
 AEOs. *See* authorized economic operators  
 Africa, 91–92  
 Agency for the Protection of Data of Inhabitants (PRODHAB) (Costa Rica), 297–298  
 Agreement on Rules of Origin (WTO), 139–140  
 Agreement on Technical Barriers to Trade (TBT), 85, 107–108, 139  
 Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), 85, 140, 160, 166–168, 176–178, 187–188, 349  
 Article 10.2, 170  
 release of goods and, 191  
 three-step test, 173–176  
 AI. *See* Artificial Intelligence  
 algorithms, 38–39, 108–109, 117, 131–132, 191–192, 308  
 data-processing, 198  
 decision-making, 233–234  
 DL and, 163  
 law enforcement and, 192  
 proprietary, 212–213  
 Alibaba, 246–247, 266, 341–342  
 Amazon, 1–2, 168, 268, 345–346  
 anonymization, 13–14, 206  
 ANTAI. *See* National Authority of Transparency and Access to Information  
 anti-counterfeiting technologies, 186–187  
 APEC. *See* Asia-Pacific Economic Cooperation  
 APL Ltd., 136  
 Apple, 1–2, 69–70  
 applications, 24  
 Argentina, 140–141  
 Argentina–Chile FTA, 273, 285, 289–290, 299–300  
 Artificial Intelligence (AI), 2–4, 12–13, 99, 340  
 accumulation of large data sets to train, 215  
 applications of, 212–213, 246–247  
 Committee on Regional Trade Agreements and, 164–165  
 concentration of control over, 214  
 cross-border data flows and, 224–225  
 cross-border digital trade and, 215–224  
 cross-border provision of, 227–228  
 cross-border trade in, 240–241  
 customers of, 352–353  
 decision-making based on, 118  
 defining, 160–164  
 designed for different environments, 118–119  
 ethics of, 355–356  
 functional applications, 182, 192  
 governance, 231–232, 241–242  
 impact of, 160  
 increased use of, 89  
 industry, 74–75  
 insurance coverage and, 125–127  
 IP enforcement and, 178–181  
 Kangaroo Problem of, 117–119  
 limits in governing, 230  
 medical diagnosis and, 122–125  
 negotiations on issues related to, 214–215  
 patents and, 163  
 personal and non-personal data in context of, 225–227  
 regulation of, 116–117, 127

- Artificial Intelligence (AI) (cont.)  
 rise of, 145–146  
 supply chain, 346  
 Text and Data Mining (TDM) and, 161  
 trade law and, 119–122  
 value of, 227  
 WTO and, 119–121
- ASEAN. *See* Association of Southeast Asian Nations
- Asia-Pacific Economic Cooperation (APEC), 87,  
 283–284, 299, 309  
 Cross-Border Privacy Rules, 284  
 Privacy Framework, 37–38  
 Privacy Principles of, 356
- Ask.com, 69–70
- Association of Southeast Asian Nations (ASEAN),  
 352
- augmented reality, 197
- Austin, Lisa, 347
- Australia, 26–27, 33, 52–53, 220. *See also specific agreements*  
 consumer protection and, 56–58
- Australia–Chile FTA, 287
- Australian Productivity Commission, 348
- Australia–Peru FTA, 273
- authority, 178–179
- authorized economic operators (AEOs), 138
- automated decision-making, 207–208, 327–328
- automation, 133–134, 178–181  
 of border enforcement, 191–192  
 concerns arising from, 190–191  
 estimation of potential losses and damages, 184  
 of procedures, 191  
 semi-automated border controls, 181–182
- B2C e-commerce, 213–214
- Bahrain, 33
- Baidu, 1–2, 258–259
- Barlow, John Perry, 235–236
- Bauer, M., 71
- Berne Convention, 167–168, 173–174
- Bext360, 139
- BGI Group, 259–260
- big data, 345–346  
 age of, 200–201, 242  
 analytics, 222–223  
 applications of, 246–247  
 Committee on Regional Trade Agreements and,  
 164–165  
 copyright protection and, 169–170  
 corpora of, 162, 166–170, 176  
 customs control and, 183–185  
 data colonialism and, 228–229  
 defining, 160–164  
 IP and, 166–170  
 market of, 212–213  
 outputs of processing corpora, 162  
 patents and, 163  
 personally identifiable information and, 200  
 potential threats of, 320–321  
 privacy and, 205  
 WTO and, 164–166
- Bignami, Francesca, 236
- Binding Corporate Rule, 86–87  
 bindingness, 56  
 biometric screening, 181–182
- Bipartisan Trade Promotion Authority Act,  
 268–269
- Bitcoin, 128
- blockchain, 128, 132, 134–136, 185  
 applications of, 144–145  
 cross-border data flows and, 156  
 cybersecurity and, 145–146  
 data localization and, 146  
 data protection and, 148–151  
 data sovereignty and, 147  
 enforcement issues with, 144–145  
 GDPR and, 148–151  
 international trade and, 129, 134, 137, 151, 156,  
 158  
 IP and, 140  
 key features of, 128–131, 133–134, 141  
 legal recognition of transactions, 142–144, 152  
 legal status of, 144  
 nature of, 134  
 paperless trade and, 136–137  
 personal data and, 149  
 polycentric governance and, 155–156  
 privacy and, 147  
 regulatory considerations around, 141,  
 152–154  
 traceability and transparency features of,  
 139  
 transnational nature of, 154, 158  
 types of platforms, 130–132  
 United States and, 143–144  
 WTO and, 128, 137–141, 156, 158
- Blockchain Center, 157
- Blockchain Interoperability Alliance, 155–156
- Blockchain Knowledge Center, 157
- Blockchain Observatory Forum, 153
- Blockchain Research Institute, 155–156
- Blockpharma, 140–141
- Blockverify, 140–141
- Bolero, 137
- border enforcement, 191–192
- Boston Consulting Group, 135–136
- Brandeis, Louis, 195–196

- Brazil, 70–71, 140–141, 165–166. *See also specific agreements*
- Brazil–Chile FTA, 273, 290
- Breznitz, Dan, 348
- Buenos Aires Ministerial Conference, 142
- business trust  
   enabling, 107–109
- Buterin, Vitalik, 133
- Buxbaum, Hannah, 237
- Bygrave, Lee, 236
- CAC. *See* Cyberspace Administration of China
- Cadena, 138
- California Consumer Privacy Act (CCPA), 196–197, 237
- Cambridge Analytica scandal, 197–198
- Canada, 51–53, 279, 305–307, 314–315. *See also specific agreements*  
   data regulation and, 312  
   PIPEDA and, 307
- Canada–Costa Rica Free Trade Agreement, 29–30, 272, 275, 282–283, 285–286
- Canada–Honduras FTA, 26
- Canada–Korea FTA, 26
- Canada–Peru FTA, 26, 276–277
- Castells, Manuel, 233–234
- Catalini, Christian, 135
- CCP. *See* Chinese Communist Party
- CCPA. *See* California Consumer Privacy Act
- CEFTA. *See* Central European Free Trade Agreement
- censorship, 12–13, 262–263, 357–358
- central actors, 51–55
- Central America–Mexico FTA, 26
- Central European Free Trade Agreement (CEFTA), 48–51
- Central Product Classification (CPC), 122–124
- centralization, 178–179, 181
- CEPA. *See* Closer Economic Partnership Agreement
- CERNET. *See* China Education and Research Network
- CETA. *See* Comprehensive Economic and Trade Agreement
- Chamovitz, Steve, 121–122
- Charter of Fundamental Rights (EU), 222
- Chile, 21–23, 33, 271–272, 291–293, 299. *See also specific agreements*
- Chile–EU Association Agreement, 272
- Chile–Uruguay FTA, 28, 273, 290
- Chile–US FTA, 272
- China, 1–2, 12–13, 66, 256, 264, 312–313, 352. *See also specific agreements*  
   censorship and, 262–263  
   cross-border data flows and, 264–265  
   Cybersecurity Law, 246, 251–252, 257–261  
   data regulation in, 256–263  
   growth of Internet in, 247–248, 266–267  
   guarded position of, 265  
   Internet regulation in, 246–247, 252–254, 260–261  
   National Security Law, 251  
   privacy and, 87  
   regulatory landscape in, 247–252  
   WTO and, 254–255  
   Zimbabwe and, 353–354
- China – *Audiovisual Products*, 19, 120–121
- China Education and Research Network (CERNET), 246–247, 254
- China – *Electronic Payments*, 124
- China Golden Bridge Network (CHINAGBNET), 254
- China Mobile, 254
- China Public Computer Network (CHINANET), 254
- China – *Publications and Audiovisual*, 265
- China Science and Technology Network (CSTNET), 254
- CHINAGBNET. *See* China Golden Bridge Network
- China–Korea Free Trade Agreement, 164–165
- CHINANET. *See* China Public Computer Network
- Chinese Communist Party (CCP), 248–250  
   Politburo of, 250–251
- Chinese Penal Code, 257–258
- Christensen, Lauritz, 70
- Citron, Danielle K., 191–192
- Ciuriak, Dan, 302–303
- civil law, 317
- civil society, 155–158, 219–220, 294, 350, 356
- CJEU. *See* Court of Justice of European Union
- Clarifying Lawful Overseas Use of Data (CLOUD) Act, 90–91
- Closer Economic Partnership Agreement (CEPA), 21
- CLOUD. *See* Clarifying Lawful Overseas Use of Data Act
- cloud computing services, 84
- CloudWalk, 353–354
- CNIL. *See* French National Commission on Informatics and Liberty
- Cohen, Julie, 234–235
- Colombia, 33, 48–49, 271–272, 296–297. *See also specific agreements*
- Colombia–Costa Rica FTA, 26
- Colombia–EU–Peru FTA, 32–33, 285

- Committee on Regional Trade Agreements, 164–165
- communication technology, 201–202
- Communications Decency Act, US, 38–39
- competition law, 334–335
- Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), 20, 24–25, 28, 34–37, 40, 55–56, 112, 216–217, 238–239, 273
- Canada and, 302, 305–307, 312, 314–315
- chapter 14 of, 314
- data flows and, 304–307
- data localization and, 307–308
- e-commerce and, 303–304
- privacy and, 351
- source code and, 308
- United States and, 351
- USMCA difference with, 309–312
- Comprehensive Economic and Trade Agreement (CETA), 55–56
- compulsory licenses, 335–336
- computational processing power, 178–179
- computer vision, 182
- conductive regulatory environment, 151–152, 157–158
- confidentiality, 147
- consent, 326–328
- constitutional rights, 347–348
- Consumer Privacy Bill of Rights Act, 196–197, 202
- consumer protection, 36–37, 47, 61
- Australia and, 56–58
- deficiency of binding international frameworks on, 110
- digital trade and, 96
- Latin America and, 285–287
- PTAs and, 107, 285–287
- Singapore and, 56–58
- WTO and, 107
- consumer rights, 89–90, 345
- consumer trust enhancing measures, 106–107
- containerized cargo, 188–189
- content, 24
- content regulation, 256–260
- control rights, 327–328
- Convention on the Use of Electronic Communications in International Contracts (2005), 157–158
- coordination costs, 135–136
- Copyright Act (US), 171–172
- copyright protection, 169–170
- Costa Rica, 48–49, 279, 297–298
- Couldry, Nick, 228–229
- Council for Trade in Goods, 349–350
- Council for Trade in Services, 124–125, 349–350
- Court of Appeals for the Second Circuit (US), 175
- Court of Justice of European Union (CJEU), 36, 168–170, 188–189, 218–219
- CPC. *See* Central Product Classification
- CPTPP. *See* Comprehensive and Progressive Agreement for Trans-Pacific Partnership
- Creative Passport, 140–141
- critical infrastructure, 35–36, 305
- Cross-Border Privacy Rules System (APEC), 284
- cryptocurrency, 128
- cryptographic techniques, 130
- CSTNET. *See* China Science and Technology Network
- Cultural Revolution, 251
- customs control, 181–183
- big data and, 183–185
- IoT and, 186
- customs duties, 109, 275, 277–278, 304
- cybercrimes, 106
- cybersecurity, 20–21, 36–37, 83–84, 86, 122, 223–224, 251–252, 356–357
- blockchain and, 145–146
- cross-border data flows and, 87–88
- data regulation and, 109–110
- deficiency of binding international frameworks on, 110
- GATS and, 94–96
- international cooperation on, 103–104
- regulatory coordination on, 98
- standards, 103–104
- Cybersecurity Law (China), 246, 251–252, 257–261
- Cyberspace Administration of China (CAC), 248–252, 259–261, 265–266
- cyberstalking, 106
- cyber warfare, 245–246
- data, free movement of, 24–25, 46–47
- with trust, 234
- data, new uses for, 345–348
- data, trade and, 344–345
- data access rights, 329–338
- for businesses, 332–333
- compulsory licenses and, 335–336
- data collection, 3–4, 12, 341
- data colonialism, 197–198, 228–229
- data controllers, 149–150
- data flows, 15, 18–19, 24–25, 53, 231, 288–289, 316–317
- CPTPP and, 304–307
- cross-border, 63, 84, 92, 145–146, 241
- access to, 344
- AI and, 224–225
- blockchain and, 156
- China and, 264–265
- cybersecurity and, 87–88

- data localization and, 101–103
- data regulation and, 302–303
- distortion of, 356–359
  - data localization, 101–103
  - hindering, 83–84
  - limitations of, 226–227
  - restriction of, 86, 88, 223–224
- EU and, 220
- governance of, 214–216, 230, 232–233
- liberalization of, 232, 238–239, 241–242
- non-trade dimensions of, 359
- political gains from, 214
- privacy and, 86–87
- regulating barriers to, 351–352
- rules regarding, 343, 349–354
- sub-index on, 79–80
- embedded liberalism and, 45–46
- ensuring free, 141
- evolution of, 49
- GDPR and, 320, 337–339
- Latin America PTAs and, 270–273
- network of PTAs regulating, 54
- of personal data, 318–319, 325–326
- policies on, 78
- provisions in Latin American PTAs, 287–288
- provisions on, 288–289, 299
- PTAs and, 24–25, 43–44, 58–60, 102, 288–289, 298
- regulation of, 48–49, 265, 356–357
- regulatory coordination on, 98
- regulatory issues pertaining to, 84
- regulatory models on, 52–53
- rules on, 24, 26–27
- trade-related aspects of, 93
- US–South Korea FTA and, 34–35
- WTO and, 98, 110–112
- data governance, 3–5, 92
  - future-oriented models for, 6
- data innovation, 28–29
- data localization, 28, 34–35, 37, 145–146, 223–224, 263, 265–266
  - blockchain and, 146
  - CPTPP and, 307–308
  - cross-border data flows and, 101–103
  - e-commerce and, 357–358
  - provisions on, 311
  - PTAs and, 28, 290
  - requirements for, 287–288, 305
- data ownership, 320–325, 338
- data policies, 65–66, 71
  - cross-border, 65–66, 72
  - domestic, 65–66, 72
  - informed dialogue on, 77–78
  - for trade, 76–77
- data pollution, 203
- data portability, 327–328, 331, 338–339
- data privacy. *See* privacy
- Data Privacy Impact Assessment (DPIA), 65
- data processing, 12, 70, 196–197
  - restrictions on, 327–328
- data protection, 28–33, 105, 198, 234
  - blockchain and, 148–151
  - EU and, 230
  - GDPR and, 299–300
  - laws, 201–202
  - mechanisms, 40
  - national, 314
  - officials, 356
  - PTAs and, 30–31
- Data Protection Authority (DPA), 291–293
- Data Protection Officer (DPO), 65
- data protectionism, 3–4, 358–359
  - cost of, 12–13, 65–69
  - WTO and, 76–78
- data realms, 349–354
- data regulation, 100–102, 109–112
  - Canada, 312
  - China, 256–261, 263
  - constraints on, 302
  - cross-border data flows and, 302–303
  - main players in, 265
  - standards in, 107
- data restrictive measures, 69, 76, 89–90, 92–93
- Data Restrictiveness Index, 65–68, 75
- data retention, 80–81
- data sovereignty, 147, 200
- data subject's rights, 327–328
- data territoriality, 84
- data transfer, 112
- data trusts, 229
- Database Directive (EU), 168–170
- data-driven
  - economy, 85, 341–342, 353–354, 356–357
  - growth, 111
  - innovation, 3
  - services, 214–215, 254
- data-industrial complex, 199–200
- data-intense sectors, 73
- data-sharing agreements, 205
- decentralization, 133, 152–153
- 'Declaration of the Independence of Cyberspace' (Barlow), 235–236
- Declaration on Global Electronic Commerce, 42, 261
- deep learning (DL), 161–162
  - algorithms, 163
  - high value outputs of, 162
- de-identification, 208–209

- DEPA. *See* Digital Economy Partnership Agreement
- Department of Agriculture, 138–139
- depth indicator for trade agreement provisions, 49–51, 59
- descriptive risk rating, 183–184
- developing countries, 87, 91–92, 109–111, 353
- DGCE. *See* General Directorate of Electronic Commerce (Panama)
- Digital Economy Partnership Agreement (DEPA), 5–6, 8, 21–23, 40–41, 299
- digital flows, 35–36
- digital goods and services, 326–327
- digital identity, 40–41
- digital industrial policy, 91–92, 97
- digital innovation, 98, 107–109
- digital intelligence, 212–213
- Digital Millennium Privacy Act, 203
- digital natives, 12
- digital platforms, 40, 213–214, 234–236, 238
- digital protectionism, 165, 215–216
- digital services, 84, 89–90, 108
- digital single market, 316–317, 323–324, 336–337
- Digital Single Market Strategy (EU), 316, 318–320, 325, 337–339
- digital sovereignty, 230
- digital technologies, 128, 141, 199, 201, 215, 231–234, 268
- concentration of, 228
  - impact of, 5–6
  - limited availability of, 222–223
  - rise of, 145–146
  - security issues related to, 100
  - trade regulation and, 6
- digital tracking, 199
- digital trade, 15, 61, 74–76, 215–216
- chapter in USMCA, 312–313
  - consumer protection and, 96
  - costs for, 78–79
  - cross-border, 215–224
  - desirable baseline for, 232
  - development-related concerns in, 109–110
  - e-commerce and, 342
  - EU and, 214–224, 350–352
  - governance and, 33–34, 48
  - negotiations on, 213–214
  - personal data/personal information and, 212
  - personal information and, 105
  - provisions in PTAs, 20–23, 28–29, 43–44, 46, 48–49, 51–53, 61, 102–104, 109–110, 215–216, 270–273, 277–278, 285–288, 299–300, 302
  - United States and, 34, 39–40, 74, 215–216, 238–239, 263, 312–313, 358–359
  - WTO and, 33–34, 36, 43–44, 85, 100, 111–112, 215–217, 239–240, 275, 301–302, 307–308, 315, 349
- Digital Trade Agenda (US), 268–269
- Digital Trade Estimates (DTE), 65–66, 78
- Digital Trade Restrictiveness Index (DTRI), 58–61
- digital trade rules
- evolution of, 40–41
  - PTAs as preferred venue for, 40
- digital trust, 98, 101
- digitalization, 181–183, 192
- digitalization of services, 86–87
- digitization, 3, 11
- disinformation, 355–356, 359
- dispute settlement, 17, 160, 174, 239–240, 286–287, 312
- distributed denial of service attacks, 106
- distributed ledger technology (DLT), 131–132
- law enforcement and, 192
  - letters of credit and, 135–136
  - localization of traded goods and, 185–187
- distributed ledgers, 129–132
- DL. *See* deep learning
- DLT. *See* distributed ledger technology
- domestic security, 356–357
- domestic use of data, 76, 80–82
- DPA. *See* Data Protection Authority
- DPIA. *See* Data Privacy Impact Assessment
- DPO. *See* Data Protection Officer
- DTA. *See* US–Japan Digital Trade Agreement
- DTE. *See* Digital Trade Estimates
- DTRI. *See* Digital Trade Restrictiveness Index
- EAEU. *See* Eurasian Economic Union
- ECIPE. *See* European Center for International Political Economy
- e-commerce, 20–21, 26–27, 48, 53, 55–56, 105–106, 239–240, 274–275
- B2C, 213–214
  - CPTPP and, 303–304
  - cross-border transactions, 89
  - data localization and, 357–358
  - data-driven services and, 215
  - digital trade and, 342
  - IoT and, 268
  - Latin American countries' legal frameworks on, 298
  - Latin American PTAs and, 273–274
  - legal framework of, 291
  - network of PTAs regulating, 54
  - PTAs and, 40, 55, 105, 298
  - regulation of, 48–49, 268–269
  - regulatory convergence in, 270–273
  - regulatory models on, 52–53

- users of, 283
- USMCA and, 273, 303–304
- WTO and, 43, 146, 216–217
- WTO Plurilateral Negotiations on Trade-Related Aspects of Electronic Commerce, 312–314
- economic globalization, 42
- economic growth, 215, 344
  - data as driver of, 1–2
- Economic Partnership Agreement with Japan (Japan–EU EPA), 219–220
- The Economist* (magazine), 130, 345–346
- eCustoms Decision (EU), 182–183
- e-documents, 141–144, 152, 156
- EDPS. *See* European Data Protection Supervisor
- EEA. *See* European Economic Area
- EFTA. *See* European Free Trade Association
- electronic authentication, 278–281
- Electronic Commerce Law (Colombia), 296
- electronic signatures, 46–47, 141–144, 152, 156, 263
- electronic transmissions, 109
- embedded liberalism, 45–46
- e-Privacy Directive, 89–90
- erasure/right to erasure, 149, 327–328, 338
- EssDocs, 137, 139–140
- Ethereum, 133
- eTradeConnect, 135–136
- EU. *See* European Union
- EU–Japan EPA, 26–27
- EU–Japan Free Trade Agreement, 351
- EU–Mexico Global Agreement, 26–27, 288–289
- Eurasian Economic Union (EAEU), 53–55
- European Blockchain Partnership, 154
- European Center for International Political Economy (ECIPE), 58–61, 65–66, 78
- European Commission, 138, 214, 222–223, 226–227, 318–319, 332–333, 351–352
- European Copyright Society, 172–173
- European Data Protection Supervisor (EDPS), 227–228
- European Economic Area (EEA), 218–220
- European Free Trade Association (EFTA), 48–49
- European Strategy for Data 2020, 222–223
- European Union (EU), 14, 20–21, 26–27, 38, 52–53, 212–213, 222–223, 312–313. *See also specific agreements*
  - Blockchain Observatory Forum, 153
  - Charter of Fundamental Rights, 222
  - cross-border data flows and, 220
  - data protection and, 105, 230
  - Database Directive, 168–170
  - Digital Single Market Strategy, 34, 316, 318–320, 325, 337–339
  - digital trade and, 218–219
  - digital trade war, 358–359
  - eCustoms Decision, 182–183
  - EU–US Privacy Shield, 104–105, 149–150
  - EU–US Safe Harbor Agreement, 36
  - Free Trade Agreements (FTAs) and, 24–25, 105, 219–220, 224, 312–313, 351–352
  - Osaka Declaration on the Digital Economy and, 301–302
  - personal data in, 148
  - policymakers in, 355–356
  - Public Sector Information Directive, 333–334
  - sui generis right in databases in, 169–170
  - Trade Secrets Directive, 335–336
- EU–US Transatlantic Trade and Investment Partnership (TTIP), 238–239
- extraterritorial digital data, 90, 97–98
- Facebook, 1–2, 117, 147, 168, 268, 345–346
- facial recognition, 181–182, 197
- fair, reasonable, and non-discriminatory terms (FRAND), 335–336
- FCA. *See* Financial Conduct Authority
- Federal Trade Commission, 209–210
- Ferracane, Martina F., 65–66, 71–72, 75–76, 302–303
- Financial Conduct Authority (FCA), 153–154
- financial institutions, 125
- financial intermediation, 135
- financial services, 25, 31–32, 125
- 5G, 1–2
- flexibility indicator for trade agreement provisions, 47, 51–52, 143–144
- Football Dataco*, 168
- Fourth Industrial Revolution, 3, 165
- France, 66, 170–171
- FRAND. *See* fair, reasonable, and non-discriminatory terms
- Free Trade Agreements (FTAs), 21, 183, 216–217, 261, 307–308. *See also specific FTAs*
- freedom of expression, 63–64
- freedom of speech, 248
- French National Commission on Informatics and Liberty (CNIL), 149–151
- Friend, C., 74
- FTAs. *See* Free Trade Agreements
- fundamental rights, 4–5, 13–14, 40, 214, 218–219, 222–224, 230, 241, 316–317, 320–322
- G7, 234
- G20, 212–213, 234, 301–302
- GAFA. *See* Google, Apple, Facebook, and Amazon
- Gans, J. S., 135
- Gasser, Urs, 8

- GATS. *See* General Agreement on Trade in Services
- GATT 1994. *See* General Agreement on Tariffs and Trade 1994
- GDP. *See* Gross Domestic Product
- GDPR. *See* General Data Protection Regulation
- Geiger, Christophe, 170
- Geist, Michael, 307
- General Agreement on Tariffs and Trade 1994 (GATT 1994), 85
- General Agreement on Trade in Services (GATS), 16–17, 20–21, 85, 92, 307–308, 349
- Article VI, 110
  - Article VII, 106
  - Article XIV, 126
  - Article XIV(c)(ii), 217, 220
  - Article XVIII, 110
  - Article XX, 176
  - characteristics of, 119–121
  - commitments, 17–18, 92–93, 110–111, 122, 239–240
  - cybersecurity and, 94–96
  - digital industrial policy and, 97
  - existing architecture of, 111
  - general exception under, 16–17, 92–93, 111, 217, 220, 222, 239–240, 265, 307–312, 356–357
  - IMF and, 100–101
  - privacy and, 16–17, 93–94, 105–106, 220–222
  - public interest regulation and, 239–240
- General Data Protection Regulation (GDPR), 14, 26–27, 61, 70, 86–87, 125, 147, 196–197, 237, 299–300
- access granted by, 338–339
  - application of, 337
  - blockchain and, 148–151
  - data flows and, 26–27, 86–87, 219–220, 224–225, 239–240, 320, 337–339
  - data subjects' rights and, 327–328
  - enactment of, 200
  - European Commission and, 319, 351
  - ownership as control and, 325, 338
  - personal data and, 149–150, 219–220, 317, 329–332
  - privacy and, 246
  - scope of, 218–219
- General Directorate of Electronic Commerce (DGCE) (Panama), 294–295
- General Directorate of Transparency, Access to Public Information and Protection of Personal Data (NDPA) (Peru), 294
- German Copyright Act, 170–171
- German Ethics Commission, 229
- German Ministry of Economic Affairs, 229
- Germany, 66, 126
- Global Financial Innovation Network (GFIN), 153–154
- global public goods, 8
- global regulation, 45
- Global Trade Analysis Project (GTAP), 73
- Global Trade and Blockchain Forum (WTO), 157
- globalization, 42, 137, 158, 231, 233–234, 348
- Goldfarb, A., 74–75
- Google, 1–2, 116, 168, 263–264, 268, 341–342, 345–346
- Google, Apple, Facebook, and Amazon (GAFA), 117
- Google Books, 172, 175
- governance toolkits, 2–3
- Gross Domestic Product (GDP), 69
- long-run growth of, 71–72
  - total increased world, 73
- Grotius, Hugo, 235–236
- GTAP. *See* Global Trade Analysis Project
- Guide on the Determination of Critical Information Infrastructure, 259–260
- Guidelines for the Protection of Personal Information and Transborder Data Flows, 353
- GVC. *See* value chains
- Habeas Data Law (Colombia), 296
- hacking, 87–88, 106, 162, 330
- hardware regulation, 252–255
- Harvard University Privacy Tools Project, 208
- hate speech, 117
- Heap, Imogen, 140–141
- Hedera Hashgraph, 132
- Heraclitus, 231
- Hikvision, 116
- Hong Kong Monetary Authority, 154
- Hong Kong–New Zealand FTA, 26
- Hugenholtz, Bernt, 169–170
- human rights, 45–46, 77, 97–98, 231–235, 237, 239–241, 357–358
- digital, 242
  - domestic, 238
  - international economic law, 232
  - respect for, 241
- Hyperledger Fabric, 132–133
- Hyperledger Project, 132–133
- Hyperledger Sawtooth, 131–132
- IBM, 132–133, 135
- ICANN. *See* Internet Corporation for Assigned Names and Numbers
- ICC. *See* International Chamber of Commerce
- ICO. *See* Initial Coin Offerings
- ICT. *See* information and communication technology



- identity theft, 106  
 IETF. *See* Internet Engineering Task Force  
 I.L.O. *See* International Labour Organization  
 IMF. *See* International Monetary Fund  
 Implementation of the Internet Power Strategy, 266–267  
 Implementation Rules for the Provisional Regulations (Implementation Rules), 252–256  
*Import Licensing Agreement*, 138–139  
 INATBA. *See* International Association for Trusted Blockchain Applications  
 India, 90–92, 268–269  
 individual rights frameworks, 45–47, 214–215, 224–230, 325–326, 331, 338  
 Indonesia, 26–27, 92, 220  
 information and communication technology (ICT), 42, 46, 201–202  
 information privacy. *See* privacy  
 information processing. *See* data processing  
 information technology (IT), 69, 130–131, 140–141, 201–202, 223–224  
 Information Technology Agreement (ITA), 15–16, 349  
 informational autonomy, 325–326, 338–339  
 infrastructure, 222–224, 227, 233–234, 251, 347  
   cloud-based, 226–227  
   complementary policies and, 343  
   critical, 35–36, 259–260, 281, 305, 314–315  
   cybersecurity and, 87–88  
   data as form of, 348  
   data economy and, 212–213  
   development of, 164  
   regulation of, 24  
 Initial Coin Offerings (ICO), 153  
 Instagram, 116, 147  
 Institute for Computer Science of China's State Commission of Machine Industry, 246–247  
 insurance, 39–40, 74–76, 116–118, 120–121  
   coverage, 125–127  
   obligations, 294  
 intellectual property (IP)/intellectual property rights (IPRs), 15, 20–21, 75, 91–92, 166, 177–178, 184–185, 234, 273  
   AI and enforcement of, 178–181  
   big data and, 166–170  
   blockchain and, 140  
   compulsory licenses and, 335–336  
   customs surveillance of, 177–178  
   enforcement, 178–179, 190–191  
   goods protected by, 186–188  
   infringement of, 140–141, 188–189  
   offices, 190  
   protection of, 161–162, 176, 178–179, 189–190  
   territoriality of IP protection, 187–188  
 Inter-American Development Bank, 138  
 Inter-American Juridical Committee, 299  
 Interim Regulations on Electronic Publications, 257  
 International Association for Trusted Blockchain Applications (INATBA), 155–156  
 International Chamber of Commerce (ICC), 138, 145, 157  
 International Conference of Data Protection and Privacy Commissioners, 106  
 International Consumer Protection Enforcement Network, 106  
 International Institute for the Unification of Private Law (UNIDROIT), 99  
 International Labour Organization (ILO), 348  
 International Monetary Fund (IMF), 100–101  
 International Organization for Standardization (ISO), 107–108, 143  
 international regulatory cooperation, 111–112  
 international relations, 44  
 international rule-making, 8  
 International Telecommunication Union (ITU), 143  
 international trade, 128  
   blockchain and, 129, 134, 137, 151, 156, 158  
 Internet  
   China, growth of, 247–248, 260–261, 266–267  
   China, regulation of, 246–247, 252–254  
   fragmentation of, 77  
   governance, 5–6, 47, 77, 100, 155, 232, 235–236, 238–239, 241, 248–250, 260–261, 354  
   history of, 152  
   regulation of, 265–266  
   regulatory fragmentation, 144, 146, 152–153  
   stakeholders and, 180  
   of value, 137  
 Internet Corporation for Assigned Names and Numbers (ICANN), 155  
 Internet Engineering Task Force (IETF), 107–108  
 Internet Explorer, 268  
 Internet of Things (IoT), 12–13, 87–88, 99, 165, 197, 341  
   customs control and, 186  
   e-commerce and, 268  
 Internet service providers (ISPs), 253–254  
 interoperability, 33–34, 89, 99–100, 106, 154, 203–206, 208–209, 291, 304, 354  
 IoT. *See* Internet of Things  
 Ireland, 131–132  
 ISO. *See* International Organization for Standardization  
 ISPs. *See* Internet service providers

- IT. *See* information technology  
 ITA. *See* Information Technology Agreement  
 ITU. *See* International Telecommunication Union
- Japan, 48–49, 165, 171, 183, 234. *See also specific agreements*  
 Japan–EU EPA. *See* Economic Partnership Agreement with Japan  
 Japan–Mongolia FTA, 26, 28  
 Japan–Thailand PTA, 49–51  
 Joint Statement Initiative on Electronic Commerce (WTO), 19–20, 26, 77, 142, 156, 158, 266, 268–269, 301–302  
 Joint Statement on Global Electronic Commerce, 29–30, 272  
 Jordan, 21  
 Jordan–US FTA Joint Statement on Electronic Commerce, 29–30  
 Jordan–US PTA, 43–44
- Kelsey, Jane, 239–240  
 Korea–Peru FTA, 26  
 Korea–US PTA, 43–44  
 Kuehne + Nagel, 136
- labour, 350  
 capital and, 302–303, 347  
 data, 346  
 invisible, 346  
 market, 318  
 productivity, 348
- Latin America/Latin American countries (LACs), 53, 269–270, 273, 298–299  
 consumer protection and, 285–287  
 customs duties and, 277–278  
 data flows and, 288–289  
 data localization and, 290  
 e-commerce and, 273–274  
 electronic authentication and, 278–281  
 personal data and, 281–282  
 privacy and, 282–285, 291  
 PTAs and, 270–274, 287–288  
 source code and, 281
- law enforcement, 63, 90–91, 127, 145–146, 179–180, 192, 356–357  
 layered structure of the Internet, 24  
 LDCs. *See* least-developed countries  
 Leading Group for Information Technology Advancement, 252–253  
 League of Nations, 348  
 least-developed countries (LDCs), 109–112  
 Leblond, Patrick, 110, 358–359  
 Lee, Kai-Fu, 353
- legal harmonization, 180–181, 332–333  
 legal pluralism, 100  
 legal transplants, 118–119  
 Leistner, Matthias, 169–170  
 Leong, Lily, 115–116  
 letters of credit, 135–136, 145  
 Leviathan Security Group, 70–71  
 Li Keqiang, 250–251  
 liberalization, 232, 238–239, 241–242  
 libertarianism, 234–235  
 lie detection, 181–182  
 LinkedIn, 1–2  
 Linux Foundation, 132–133  
 local companies, 69–73, 76  
 Lupton, Deborah, 233–234
- machine learning (ML), 161, 222–223, 233–234  
 applications of, 246–247  
 high value outputs of, 162
- Macron, Emmanuel, 117  
 Maersk, 134–135  
 Malmström, Cecilia, 64–65  
 Malta, 143–144  
 manufacturing sector, 101–102  
 Manyika, James, 73  
 ‘Mare Liberum’ (Grotius), 235–236  
 market access commitments, 125–126, 305  
 market capitalization, 212–214  
 market failure, 321–322  
 Marrakesh Agreement, 268  
 mass communication, 195–196  
 mass-market software, 305  
 Mattoo, Aadiya, 75, 104–105  
 McKinsey Global Institute, 233–234, 341–342  
 McLean, Malcolm, 134
- Measures for Security Protection Administration of the International Networking of Computer Information Networks, 255–258
- medical diagnosis, 122–125  
 MEI. *See* Ministry of Electronic Industry  
 Mejias, U. A., 228–229  
 Meltzer, Joshua P., 75, 104–105  
 Mexico, 52–53  
 Mexico–Panama FTA, 289, 298–299  
 MFN. *See* most-favoured nation  
 Microsoft, 1–2, 69–71  
 MII. *See* Ministry of Information Industry  
 MIIT. *See* Ministry of Industry and Information Technology  
 Ministry of Electronic Industry (MEI) (China), 248–249, 254  
 Ministry of Industry and Information Technology (MIIT) (China), 248–249, 256, 260–261

- Ministry of Information Industry (MII) (China), 248–249
- Ministry of Posts and Telecommunications (MPT) (China), 248–249, 254
- Ministry of Public Security (MPS) (China), 248–249, 260–261
- Ministry of Science and Technology (China), 259–260
- Mishra, Neha, 307–308
- Mitchell, Andrew, 307–308
- ML. *See* machine learning
- MLATs. *See* Mutual Legal Assistance Treaties
- Model Law on Electronic Commerce (UNCITRAL), 107, 157–158
- Model Law on Electronic Transferable Records (UNCITRAL), 142–143, 157–158
- monetization of data, 355
- Mongolia, 49–52
- Morocco, 33
- most-favoured nation (MFN), 15–16, 33–34, 47, 275–277
- MPS. *See* Ministry of Public Security
- MPT. *See* Ministry of Posts and Telecommunications
- Multi-annual Strategic Plan (EU), 182–183
- multilateral institutions, 100–101, 106–107
- multinational companies, 11, 96
- Mutual Legal Assistance Treaties (MLATs), 90–91, 97–98
- mutual recognition, 93–94, 138  
 Article VII GATS and, 99, 106  
 authentication technologies and, 278–281  
 mechanisms, 104–106
- Myanmar, 118–119
- NAFTA. *See* North American Free Trade Agreement; United States-Mexico-Canada Agreement
- Naik, Ravi, 347–348
- NASSCOM-DSCI, 75
- National Authority of Transparency and Access to Information (ANTAI) (Panama), 295
- National Informatization Leading Group, 248–249
- National Infrastructure Commission (UK), 347
- National Institute of Standards (NIST) (US), 341
- national interests, 11, 87–88
- National Network Security Inspection Operation Manual, 259–260
- National People's Congress (NPC) (China), 248
- National Register of Data Bases (NRDB) (Colombia), 296–297
- National Security Law (China), 251
- national treatment (NT), 15–16, 92–93, 97, 122–125, 275–277
- natural language processing, 182–184
- NDPA. *See* General Directorate of Transparency, Access to Public Information and Protection of Personal Data
- Netflix, 263–264
- Netscape Navigator, 268
- network neutrality, 36–37
- New Zealand, 21–23, 26–27, 220
- Nigeria, 92
- NIST. *See* National Institute of Standards
- non-discrimination, 15–16, 37, 47, 56–58, 275–276, 315
- non-personal data, 13–14, 225–227, 319, 325, 330, 332
- Nordic-Baltic Region, 212–213
- North American Free Trade Agreement (NAFTA), 34, 302, 351
- NPC. *See* National People's Congress
- NRDB. *See* National Register of Data Bases
- NT. *See* national treatment
- Nvidia AI, 116
- OAS. *See* Organization of American States
- OECD. *See* Organisation for Economic Co-operation and Development
- Office of the Privacy Commissioner of Canada (OPC), 307
- oil and gas companies, 212
- Okazaki, Y., 188–189
- Oman, 33
- OPC. *See* Office of the Privacy Commissioner of Canada
- Open Government Partnership, 355–356
- Opinions on Strengthening and Improving Internet Administration, 248–249
- Organisation for Economic Co-operation and Development (OECD), 11, 104–105, 157, 234, 309, 332–333, 353–354  
 Guidelines on Transborder Flows of Personal Data, 31  
 Privacy Guidelines, 29–30, 196–197  
 Privacy Principles of, 356  
 Recommendation of the Council Concerning Guidelines Governing the Protection of Privacy and Transborder Flows of Personal Data, 37–38, 283–284
- Organization of American States (OAS), 299
- Osaka Declaration on the Digital Economy, 234, 301–302
- ownership as control, 325–326, 328–329, 338
- Pacific Alliance Additional Protocol (PAAP), 27–28, 273, 275–276, 286–287, 289

- PAFTA *See* Peru-Australia Free Trade Agreement
- Pakistan, 263–264
- Panama, 48–49, 271–272, 289, 294–295, 298–299
- Panama–US PTA, 48–49
- paperless trade, 46–47, 136–137
- patents, 163–164
- path dependency, 300
- payment service providers, 90
- PDLP. *See* Personal Data Protection Law
- personal data, 13–14, 31–33, 148
- access to, 329–330
  - AI and, 225–227
  - blockchain and, 149
  - collection and use of, 196–197
  - constitutional rights and, 347–348
  - cross-border transfers of, 225
  - digital trade and, 105, 212
  - flow of, 318–319, 325–326
  - GDPR and, 149–150, 219–220, 317, 329–332
  - lack of control over, 319
  - ownership as control over, 328–329
  - privacy of, 245–246
  - processing of, 328, 338
  - property rights in, 323–325
  - protection of, 263
  - safeguards, 322
  - WTO and, 104–105
- Personal Data Protection Law (PDLP) (Peru), 294
- personal information. *See* personal data
- Personal Information Protection and Electronic Documents Act (PIPEDA) (Canada), 307
- Peru, 33, 271–272, 293–294. *See also specific agreements*
- Peru–Australia Free Trade Agreement (PAFTA), 102, 105–106
- Petersmann, Ernst-Ulrich, 234–235
- PETs. *See* Privacy-Enhancing Technologies
- Philippines, 138–139
- phishing attacks, 106
- Ping An Technologies, 116
- Pinterest, 1–2
- PIPEDA. *See* Personal Information Protection and Electronic Documents Act
- pirated goods, 187–190
- PoET. *See* Proof of Elapsed Time
- political economy, 1–2, 44, 61, 199–200
- polycentric governance, 100, 154–156
- Porter, Michael, 152
- PoS. *See* proof-of-stake
- PoW. *See* proof-of-work
- PPMs. *See* process and production methods
- predictive analytics, 181–184, 205, 240–241
- preferential trade agreements (PTAs), 5–6, 15, 19–20, 53, 268–269. *See also specific agreements*
- conclusion of, 299
  - consumer protection and, 107, 285–287
  - customs duties and, 277–278
  - data flows and, 24–25, 43–44, 58–60, 102, 288–289, 298
  - data flows provisions in Latin American PTAs, 287–288
  - data localization and, 28, 290
  - data protection and, 30–31, 282–285
  - data-related rules in, 24–26
  - design features of, 44, 46
  - digital trade provisions in, 20–23
  - disagreement among members of, 56–58
  - electronic authentication and, 278–281
  - Electronic Commerce Chapters in, 111–112
  - Electronic Commerce/Digital Trade Chapters in, 110
  - heterogeneity among, 48
  - Latin America and, 270–274
  - negotiators of, 43–44, 58, 61
  - network of, 54
  - obligations, 83–84
  - personal data and, 281–282
  - preferred venue for digital trade rules, 40
  - privacy and, 30–31, 282–285
  - regulatory convergence in, 269–270
  - source code and, 281
  - variation in design of, 58
  - violation of, 299–300
- prescriptive risk management, 183–184
- President’s Council of Advisors on Science and Technology (US), 209–210
- privacy, 3–4, 63–64, 77–79, 195–196, 282–285, 345
- administrative requirements on, 78–82
  - big data and, 205
  - binary notations of, 206
  - blockchain and, 147
  - China and, 87
  - CPTPP and, 351
  - cross-border data flows and, 86–87
  - data regulation and, 109–110
  - deficiency of binding international frameworks on, 110
  - differential, 207–209
  - EU and, 105
  - GATS and, 93–94
  - GDPR and, 246
  - Harvard University Privacy Tools Project, 208
  - institutional innovations and, 106

- limits to, 200–201
- mathematical guarantees of, 207–208
- of personal data, 245–246
- political economy of, 199–200
- protection, 14, 38
- regimes, 203, 304–307, 309
- regulatory coordination on, 98
- safeguards for, 197
- subject rights on, 81
- technology-induced concerns about, 201
- Privacy Framework, 11, 105–106
  - APEC, 31, 37–38, 87, 283–284, 309
  - developing countries and, 353
  - Future oriented, 210–211
  - variations in, 93–94
- privacy protection, 14, 20–21, 28–33, 38, 221–225, 281–282, 291, 304, 355
- Privacy-Enhancing Technologies (PETs), 203–204, 208
- private platform governance, 236
- privatization, 180
- process and production methods (PPMs), 121–122
- PRODHAB. *See* Agency for the Protection of Data of Inhabitants
- productivity, 70–73, 76
- Proof of Elapsed Time (PoET), 131–132
- proof-of-stake (PoS), 131–132
- proof-of-work (PoW), 131–132
- property rights, 317, 320–325, 328–329, 338
- Protection in the Handling of the Personal Data of Individuals (Costa Rica), 297–298
- Provenance, 139–141
- Provisional Regulations of the People's Republic of China on the Management of International Networking of Computer Information Networks (Provisional Regulations), 252–253
- PTAs. *See* preferential trade agreements
- public goods, 321–322, 332–333
- public interest regulation, 239–240
- public interests, 13–14
- public safety, 245–246
- public sector, 318
- Public Sector Information Directive (EU), 333–334
- public trust, 354
  
- Qian Tianbai, 246–247
  
- Radio Frequency Identification (RFID), 186–187
- RCEP. *See* Regional Comprehensive Economic Partnership
- R&D. *See* research and development
- reactive jurisdictional claims, 237–238
- reCAPTCHA, 346
- rectification, 327–328
- regime complexity, 45
- Regional Comprehensive Economic Partnership (RCEP), 352
- Regulation to the Law of Promotion of Competition and Effective Defence of the Consumer (Costa Rica), 297–298
- regulatory convergence, 154, 269–273
- regulatory cooperation, 41, 47–48, 56–58
- regulatory environments, 58, 66, 152–153
- regulatory fragmentation, 144, 146, 152–153
- regulatory harmonisation, 270
- regulatory sandboxes, 153–154
- Reidenberg, Joel, 237
- research and development (R&D), 74–76
- Resta, Giorgio, 236
- revenue collection, 137–138
- RFID. *See* Radio Frequency Identification
- right to information, 327–328, 353–354
- The Right to Privacy* (Brandeis and Warren), 195–196
- Ripple, 132
- risk analysis, 183–185
- risk management, 103–104, 183–184
- Ross, Wilbur, 358–359
- rule-makers, 51–60, 300
- rule-making, 269–270, 359
- rule-takers, 300, 359
- Russia, 66
- Rwanda, 165–166
  
- SAFTA. *See* Singapore-Australia Free Trade Agreement
- sanctions for non-compliance, 82
- Sanitary and Phytosanitary Measures (SPS), 139
- Scassa, Teresa, 308, 347
- Scholz, Lauren, 345–346
- Schrems*, 36
- Schwartz, Paul M., 225
- scope indicator of trade agreement provisions, 46
- Seal, 140–141
- sector-specific regulations, 333–334, 336–337
- security standards, 108–109
- Segura-Serrano, Antonio, 100
- Selby, John, 90
- semi-automated border controls, 181–182
- Services Sectoral Classification List, 254–255
- Shackelford, Scott, 100
- SIC. *See* Superintendence of Industry and Commerce
- Singapore, 20–23, 28, 33
  - consumer protection and, 56–58
- Singapore–Australia Free Trade Agreement (SAFTA), 21–23, 28

- small- and medium-sized enterprises (SMEs), 70,  
 135, 269–270, 274–275, 298, 332–333
- small services-oriented economies, 66
- smart city, 117
- smart contracts, 133–134, 138–139
- SMEs. *See* small- and medium-sized enterprises
- Snapchat, 147
- Snowden, Edward, 199–200
- social media, 345
- socialism, 256–257
- software regulation, 255–256
- Solove, Daniel J., 225
- source code, 108–109, 224, 281, 305, 308  
 transparency of, 99
- South Africa, 268–269
- South Korea, 33, 138
- South Korea–United States FTA, 24–27
- Sovrin, 147
- spam control, 36–37
- Spotify, 140–141
- SPS. *See* Sanitary and Phytosanitary Measures
- stakeholders, 5–6, 8, 63–64, 77, 106, 138–139, 145,  
 152, 157–158, 180, 186–187, 212–213, 229,  
 245–246, 317, 354
- Standard Contractual Clauses, 86–87
- Stitch Fix, 340–343, 345–346, 349
- Stone, S., 79
- Strava, 340–343, 345–346, 349
- supercomputers, 1–2
- Superintendence of Industry and Commerce  
 (SIC), 296–297
- Supreme People's Court (China), 257–258
- Supreme People's Procuratorate (China), 257–258
- surveillance capitalism, 197–198, 228–229
- Swedish National Board of Trade, 64–65
- Switzerland, 189–190
- Szabo, Nick, 133–134
- Taiwan–Nicaragua FTA, 288–289
- takedown requests, 180–181
- TAPED *See* Trade Agreements Provisions on  
 Electronic Commerce and Data  
 (dataset)
- tariff losses, 109
- tariffs, 176
- TBT. *See* Agreement on Technical Barriers to  
 Trade
- TDM. *See* Text and Data Mining
- technological advances, 187–188, 195–196, 205
- technological protection measure (TPM), 162, 173
- Telecommunication Act (US), 246
- Telecommunication Regulation (China), 254–256
- Telecommunications Reference Paper, 110
- Tencent, 258–259
- terrorism, 245–246
- Tesla, 119
- Text and Data Mining (TDM), 161,  
 169–176
- text-as-data analysis, 53–55
- TFA. *See* Trade Facilitation Agreement
- TFP. *See* total factor productivity
- TikTok, 115–116
- TiSA. *See* Trade in Services Agreement
- Total factor productivity (TFP), 71
- TPM. *See* technological protection measure
- TPP. *See* Transpacific Partnership Agreement
- trade agreements, 214–215, 245. *See also* Free Trade  
 Agreements; preferential trade  
 agreements
- Trade Agreements Provisions on Electronic  
 Commerce and Data (dataset)  
 (TAPED), 20–21, 58–61, 270–271,  
 275–276
- trade conflicts, 17
- trade distortions, 69
- Trade Facilitation Agreement (TFA), 15–16,  
 137–138
- trade finance, 134, 152–154, 156  
 coordination costs, 135–136
- Trade in Services Agreement (TiSA), 219–220,  
 238–239, 261, 349
- trade rules, 3, 15, 24, 85, 111–112, 116–117, 176,  
 238–241, 345
- digital, 20, 36, 40, 238–240, 268–269
- international, 122, 239–240, 242
- traditional, 268
- Trade Secrets Directive (EU), 335–336
- trade wars, 358–359
- trade-inhibiting effects, 64–65
- Tradelens, 135
- transaction costs, 269–270, 323–325
- Transpacific Partnership Agreement (TPP), 27–28,  
 55–56, 273, 289, 351
- transparency, 31–32, 38, 99–100, 107–108, 119,  
 129–130, 156, 191–192
- active, 291–293
- of blockchain, 139
- cooperation on, 47–48
- ensuring, 210–211
- facilitation of, 348
- GATS and, 92–93
- importance of, 140–141
- industry developments in, 272
- lack of, 269–270
- principles of, 337
- requirements of, 14
- of source code, 266
- treaty design, 58–60

- TRIPS. *See* Agreement on Trade-Related Aspects of Intellectual Property Rights
- Trump, Donald, 238–239
- TTIP. *See* EU-US Transatlantic Trade and Investment Partnership
- Tucker, Catherine, 74–75
- Tunisia, 26–27, 220
- Turkey, 66
- Twitter, 1–2, 342
- Uber, 345–346
- UDHR. *See* Universal Declaration of Human Rights
- Ukraine, 51
- UN Human Rights Council, 234–235
- UN/CEFACT. *See* United Nations Centre for Trade Facilitation and Electronic Business
- UNCITRAL. *See* United Nations Commission on International Trade Law
- UNCTAD. *See* United Nations Conference on Trade and Development
- Undisclosed Information Law (Costa Rica), 297–298
- UNIDROIT. *See* International Institute for the Unification of Private Law
- Uniform Customs and Practice for Documentary Credits, 145
- United Kingdom, 347
- United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT), 157
- United Nations Commission on International Trade Law (UNCITRAL), 99
- Model Law on Electronic Commerce, 107, 157–158
- Model Law on Electronic Transferable Records, 142–143, 157–158
- United Nations Conference on Trade and Development (UNCTAD), 91–92, 165–166, 223–224, 228
- Digital Economy Report, 213–214
- United States (US), 14, 21, 118–119, 196–197, 215, 312–313. *See also specific agreements*
- blockchain and, 143–144
- Census, 205, 207–208
- Communications Decency Act, 38–39
- Copyright Act, 171–172
- Court of Appeals for the Second Circuit, 175
- CPTPP and, 351
- Digital Agenda of, 33
- Digital Trade Agenda, 268–269
- digital trade and, 34
- EU–US Privacy Shield, 104–105, 149–150
- Telecommunication Act, 246
- trade war, 358–359
- United States–Mexico–Canada Agreement (USMCA), 20–25, 28, 31–32, 37–40, 112, 216–217, 238–239
- APEC Cross-Border Privacy Rules and, 284
- Article 19.16(2) of, 108–109
- Canada and, 302, 312, 314–315
- CPTPP difference with, 309–312
- digital trade chapter in, 312–313
- e-commerce and, 273, 303–304
- Financial Services Chapter of, 102
- NAFTA 2.0 and, 351
- Universal Declaration of Human Rights (UDHR), 234–235
- Universal Trade Network, 155–156
- urbanization, 195–196
- Uruguay Round, 15–16
- US – *Gambling* case, 17
- US International Trade Commission (USITC), 74
- US–Japan Digital Trade Agreement (DTA), 21–23, 33–34, 39–40, 224
- USMCA. *See* United States–Mexico–Canada Agreement
- US–South Korea FTA, 34–35
- utopianism, 234–235
- value chains, 181–182
- global value chains (GVC), 238–239
- value-added telecommunications services, 18–19
- van der Marel, Erik, 75–76, 302–303
- VCargoCloud, 139–140
- VeChain, 140–141
- Verified Organic, 139
- Vietnam, 183
- Virtual Private Network (VPN), 252–253, 256
- virtual reality, 197
- vital digital assets, 108
- Voltron, 135–136
- Volvo, 119
- VPN. *See* Virtual Private Network
- Warren, Samuel, 195–196
- WCO. *See* World Customs Organization
- WCOPYFIND, 53–55
- WEF. *See* World Economic Forum
- Weibo, 258–259
- Weinhold, D., 74
- West, Darrell, 357–358
- We.trade, 135–136
- WIPO. *See* World Intellectual Property Organization
- Work Programme on Electronic Commerce, 19–20, 239–240, 261–262, 264

- World Bank, 356  
 World Customs Organization (WCO), 157  
 World Economic Forum (WEF), 43, 234, 301–302, 341–342, 345–346  
 World Intellectual Property Organization (WIPO), 140, 173  
 World Trade Organization (WTO), 3, 42, 238–239, 301–302, 349  
   adaptive governance, 18  
   Agreement on Rules of Origin, 139–140  
   Agreements, 15–16, 116–117  
   AI and, 119–121  
   applicability of WTO rules to trade agreements, 275  
   big data and, 164–166  
   blockchain and, 128, 137–141, 156, 158  
   case law, 217  
   China and, 254–255  
   consumer protection and, 107  
   Council for Trade in Services, 124–125  
   customs duties and, 275  
   data flows and, 98, 110–112  
   data protectionism and, 76–78  
   data regulation, framework for, 101  
   data restrictive measures and, 92–93  
   data transfer and, 112  
   data-related issues, 97–98, 265–266  
   digital trade and, 315  
   Dispute Settlement Body, 174  
   e-commerce and, 43, 146, 216–217  
   exploring new regulatory approaches in, 100–101  
   fostering transparency of member's trade regimes, 156  
   General Council, 140–141, 261–262  
   Global Trade and Blockchain Forum, 157  
   interoperable and transparent standards in data regulation, 107  
   Joint Statement Initiative on Electronic Commerce, 19–20, 26, 77, 112, 142, 156, 158, 266, 268–269, 301–302  
   lack of progress under umbrella of, 40  
   members, 84–85, 99–100, 103–104, 350  
   Ministerial Conferences, 110, 261, 263–264, 268–269, 349–350  
   normative reach of, 176  
   norms, 35–36  
   obligations, 83–84, 122–123  
   Panel Report, 175–176  
   personal information and, 104–105  
   Plurilateral Negotiations on Trade-Related Aspects of Electronic Commerce, 312–314  
   as pre-Internet law, 15–20  
   secretariat, 352–353  
 Xi Jinping, 250–251, 260–261, 266–267  
 Xiaoice, 115–116  
 Yahoo!, 12–13, 69–70  
 Zero-Knowledge Proof (ZKP), 148–149  
 Zhao Lianhai, 257–258  
 Zhu Rongji, 248–249  
 Zimbabwe, 353–354  
 ZKP. *See* Zero-Knowledge Proof  
 Zuboff, Shoshana, 228–229  
 Zuckerberg, Mark, 117