

# Index

1stDibs 266

358

INDEX

## A

- Aadhaar (India) 31, 229, 312–13, 316, 319, 321–2
- Abide Financial 282
- ABN Amro 183
- Accenture 26, 340
- Access 150
- access control risk 152
- Access to Accounts (XS2A) 182
- account information service providers (AISPs) 62, 181–2
- account information services (AISs) 89
- Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) 40
- Actiance Platform 283
- Actor 83
- administrative errors, identity and 311
- Administrative Procedures Act (APA) (1946) (US) 97
- advanced machine learning 165
- advanced natural language processing 73
- advanced persistent threats 20
- Africa, financial inclusion in (case study) 320–1
- AIFMD 200
- AIM Software 74
- Airbnb 126
- Akka framework 83
- alerting 83
- algorithm model bias 239–40
- algorithmic trading 207
- Alibaba 73, 82, 205, 206, 236
- Alipay 183, 310
- Alyne 68
- Amazon 26, 32, 73, 95, 126, 219, 236
  - Amazon Athena 84
  - Amazon DynamoDB 84
  - Amazon EMR 84
  - Amazon Kinesis 84
  - Amazon QuickSight 84
  - Amazon Web Services 184
- ambiguity 87–8
- AMLD4 200
- Amnesty International 250
- analytics 31, 46–7, 109
- Android 90
- Ant Financial 73, 206
- anti-bribery 275–6
- anticorruption 24, 275–6
- anti-financial crime (AFC) framework 20, 24
- antifraud 24
- anti-money laundering (AML) 12, 23, 24, 30, 38, 58–9, 60, 68, 73, 106, 122, 164, 166, 172–4, 190, 191–2, 207, 227, 237, 274, 287, 288, 289, 293, 338, 348
  - analysts 231
  - artificial intelligence 219
  - compliance with 154–7, 192–4
  - life cycle 232
- Antwerp Diamond Bank, 252
- Apache Avro 82
- Apache Flink 82
- Apache Foundation 82
- Apache Kafka 82, 84
- Apache Spark 82
- app store banking 132
- Apple 26, 32, 73, 90, 95
- application programming interface (API) 7, 18, 23, 46–7, 62, 66, 68, 107, 109, 130–3, 141, 181, 236, 275, 285, 332, 336–7, 350
- Approved Contractor Scheme 263
- art provenance 266–9
- Art Tracks project 268

artificial intelligence (AI) 20, 26, 46–7, 73, 74, 85, 91, 98, 160, 165,  
194, 207, 224, 292, 337, 341  
definition 231–2  
responsibility liability framework 235–45  
return on investment 219  
usage-based pricing 220  
Artsy 266  
Ascent 282  
asset management 118  
Association of Southeast Asian Nations (ASEAN) 184, 316  
Assurance 52  
Atom 68  
Augmented Compliance Office 221–5  
augmented intelligence 242  
Australia  
consumer protection 111  
RegTech companies 107  
regulatory sandboxes 109–10  
Australian RegTech Create Training 275  
Australian Securities and Investment Commission (ASIC) 109  
authenticity 251  
automated data processing 109  
automated ingestion 13  
automation, control of 28, 31  
availability 52, 53  
Ayasdi 74  
Azure HDInsight 84

## B

BAASIS 183  
Baidu 236  
Bain & Company: *Banking RegTechs to the Rescue?* 59–60  
balance sheet 133  
Banco Bilbao Vizcaya Argentana (BBVA) 183  
Bancorp, The 183  
bank as a platform (BaaP) 131, 183, 184  
bank as a service (BaaS) 131, 183, 184

Bank Leumi 252  
Bank of England 173  
BankID (Norway) 31  
Banking Secrecy Act (US) 274  
Barclays 252  
Basel Committee on Banking Supervision (BCBS) 56, 150, 196  
Basel II regime 197  
Basel III regime 55, 106  
batch-only frameworks (Hadoop MapReduce) 82  
BearingPoint 68  
Belgium, passporting and 178  
Big 5 Personality Traits 141  
big data analytics 207, 231–2  
big data architecture 82  
big data storage 292  
big data systems 59, 73, 81–4  
big data trends 284  
biometric identification 20  
biometrics 208, 312  
bitcoin 6, 103, 157, 192, 201, 246, 249, 344, 348  
BitPesa 321  
blockchain 12–13, 15, 40, 49, 61, 91, 103, 199, 201, 222, 341, 342  
art provenance 266–9  
data protection regulations and 246–9  
identity management and 338–9  
potential of 253–4  
supply chain transparency and 250–4  
Blockstack 312  
Bloomberg 26  
Boston Consulting Group (BCG) 70  
botnets 20  
bots/spiders 156  
Bouvier, Pascal 26  
Braintree 183  
Brazil 107  
Brexit 10, 57, 147, 179  
bribery 71  
Bribery Act (UKBA) 250, 275

BRRD 200  
Buffett, Warren 147  
business as usual (BAU) 18  
business case for RegTech 218  
business intelligence (BI) layer 333  
Business Semantics 87  
Business-Related Rules 68  
Buttarelli, Giovanni 304  
buyers, regulating 345

## C

Canada  
    Digital Privacy Act 246  
    Ontario Securities Commission: *Current Practices for Risk Profiling in Canada and Review of Global Best Practices* 138  
    Trulioo 107  
Cannon, Professor Walter Bradford 288  
Capital Markets Policing Challenges 330–1  
Capital One 82, 83  
Capital Planning 28  
carbon cap-and-trade 285  
carbon trading 271  
Carbon Trust Footprint Expert 285  
Carnegie Museum of Art and the Getty Research Institute 268  
CB Insights 22, 207, 208  
CBW Bank 183  
central clearing parties (CCPs) 56, 57  
central securities depositories (CSDs) 56  
'chacun pour soi' approach 203  
challenger banks 68  
charge by call 133  
Chari, V.V. 308  
chatbot 24, 73, 237, 317  
chief compliance officers (CCOs) 48, 340  
chief executive officers (CEOs) 47–8  
chief information security officer (CISO) 341  
chief risk officers (CROs) 48  
Christensen, Clayton: *Innovator's Dilemma, The* 123, 124  
clean energy revolution 270–1  
ClearBank 312  
Clearing House: *A New Paradigm: Redesigning the US AML/CFT Framework to Protect National Security and Aid Law Enforcement* 59  
clearing-houses 57  
clearing members (CMs) 332  
client onboarding 164  
closed-circuit television (CCTV) 264, 276  
Cloud 31, 293  
cloud applications 112  
Cloud Infrastructure for Storage 158  
CloudCover 233  
CME Group 331  
Coca-Cola 250  
'code is law' concept of smart contracts 285  
code review and certification 347  
coding academies 346–7  
coding errors 152  
Coding Industry Association 347  
cognitive computing 140–1  
cognitive learning 46  
collect request 90  
combating the financing of terrorism (CFT) 58, 154–7  
Communication Monitoring 29, 276  
COMPAS algorithm 240  
Competition and Markets Authority (CMA) (UK) 181  
competitive advantage 220  
compliance 6–8, 37, 106, 118  
    artificial intelligence 219  
    burden of 218, 220  
    collaboration in 10–15  
    culture 340–1  
    difficulties with 6  
    digital 109  
    immutability 7

- implementation of 15
  - key challenges 10
  - legacy integration 7
  - management 207
  - not addressing blind spot 164
  - real-time data 6–7
  - regime 193–4
  - reporting and 196–7
  - risk/reward trade-off 7
  - rules-based user interface for nonprogrammers 7
  - sharing responsibility 11–12
  - spending 73–4, 163–7
  - technology-enabled collaborative 10–15
  - training 29
  - compliance as a service (CaaS) 348, 349
  - compliance officer, role of 16–17
  - compliance personnel 10
  - ComplyAdvantage 282
  - Comprehensive Capital Analysis and Review (CCAR) 160
  - Conduct Risk 37, 72
  - conflicts of interest 70
  - Confluent.io 82
  - Congressional Review Authority (CRA) 94
  - consent 62–3, 64
  - consumer empowerment 262
  - Consumer Financial Protection Bureau (CFPB) (US) 94, 211
  - consumer protection 6, 110–11, 112, 219
  - Consumer Protection Act (US) 94
  - contracts for differences (CFDs) 178
  - Convention for the Suppression of Unlawful Seizure of Aircraft 190
  - Cook, Nick 313
  - co-ownership of products and customers 132
  - corruption 71
  - cost
    - of compliance 218, 260
    - of cyber crime 20
    - of governance, risk, and compliance 59
    - of regulatory compliance and control costs 17, 146–9
    - SRE and 161
  - Counter-Financing of Terrorism (CFT) 219
  - counterterrorism financing (CTF) 59, 60, 227, 287
  - counterterrorist financing law 190–1
  - counterterrorist financing (CTF) 173, 191–2, 288, 289
  - crawl agents 156
  - CRD IV 200
  - credit bureaus 228
  - CreditKarma 310
  - cross-border cooperation agreements 104
  - cross-border e-commerce 349
  - cross-industry digitization 278–81
  - crowdfunding 40, 199
  - crowdsourcing trust 310
  - cryptocurrencies 40, 41, 103
  - Cukier, Kenneth 244
  - cultural change across banking 70–5
  - CurrencyCloud 183
  - Curve 183
  - customer authentication and security 182–4
  - customer due diligence (CDD) 106, 154, 173, 174, 175, 207, 349
  - customer engagement 343
  - customer journeys 68
  - customer metadata 90
  - customer relationship management (CRM) 128, 300
  - CVs 279, 280
  - cyber attacks 261
  - cybercrime 20, 22–4
  - cyber security 22, 28, 122
- D**
- data analytics 47, 109
  - data breaches 30, 261
  - data exchange 109, 133

- data integration 292
- data lake 13–14
- data mining 106
- data modelling 148
- data privacy 6, 25, 28, 122, 161–2, 261
  - laws 244
  - regulation 234
- data protection
  - regulations 246–9, 261
- data quality 161
- data reliability, cleansing, and consent 239
- data revolution 260–1
- data wrangling 239
- data-led services 62–3
- Datarama 275
- Davidson, Jonathan 336
- decentralization 344–5
- decentralized autonomous organizations (DAOs) 40, 41, 102, 346
- deep learning 106
- DeepStack 242
- Denham, Elizabeth 279
- 'de-risking' 288
- Designated Non-Financial Businesses and Professions (DNFBPs) 287–91
- Deutsche Bank 206, 277
- diamond industry 250–4
- digital advisory processes 136
- digital asset management 199
- digital compliance processes 109
- digital conduct risk 336–8
- digital identification (ID) 9, 30–1
  - generic 226–7
- digital marketing data, journey of 126–9
- digital payment systems 199
- digitization
  - know your client 138–41
  - regulations 135–7
- Dimon, Jamie 124, 163
- direct debit 181
- direct market access (DMA) providers 332
- Directorate-General of the Financial Stability, Financial Services and Capital Markets Union (DG FISMA) 181
- distributed ledger technology (DLT) 22, 40, 112, 199, 201, 208, 234, 244
- distributed processing and transparency 246
- Dodd-Frank Act (US) 6, 55–7, 106, 147, 150, 250, 278
- Dodd-Frank Wall Street Reform 94
- domain knowledge 293
- dot-com boom 44
- downstream clearing 154
- due diligence 29, 227, 275
  - customer due diligence 154, 173, 174, 349
  - enhanced 275
- Dwolla 183
- Dynatrace 107
- E**
- earnings before interest and taxes (EBIT) 331
- eBay 206
- e-commerce 182
- Edge, John 311
- education 108
- efficiency 51, 52, 218–19, 220
- electronic funds transfers 193
- end user computing (EUC) 150–3
- enterprise resource planning (ERP) 8, 131
- enterprise risk management 207, 221, 223
- environmental regulation 270–3
- environmental violations 22–4
- environmental, social, and governance (ESG) risks 22
- Estonia: e-ID program 31
- Ethereum 346
- ethical behaviours 70
- EUC Solutions 150–3
- EUREX 331

European Banking Authority 28  
 European Central Bank (ECB) 27, 106, 195, 197  
 European Commission  
   Call for Evidence: EU Regulatory Framework for Financial Services 204  
   Digital Single Market strategy 300  
   Financial Regulatory data 197  
 European Data Protection Supervisor (EDPS) 303–4  
   Ethics Advisory Board 303  
 European Legislation Identifier (ELI) 86, 196  
 European Market Infrastructure Regulation (EMIR) 55–7, 200  
 European Securities and Markets Authority (ESMA) 177, 200, 332  
 European Supervisory Authorities 200, 203  
 European Union  
   Capital Requirements Regulation (EU) No. 575/2013 (CRR) 196  
   e-Privacy Directive 261, 262, 278  
   General Data Protection Regulation 37, 62–5, 79, 89, 90, 126, 128, 234, 244, 246–9, 261, 262, 278, 279, 281, 284, 295, 301–3, 339  
   Market Abuse Regulation 200, 278, 332  
   Markets in Financial Instruments Directive 147, 178, 180, 278  
   Markets in Financial Instruments Directive, second 22, 37, 50–7, 81, 106, 107, 147, 164, 200, 278, 332, 335  
   Markets in Financial Services Directives 2004/39/EC and 2014/65/EC 177  
   MiFIR 200  
   Money Laundering Directive, fifth 172  
   Money Laundering Directive, fourth 172, 231, 266, 293, 349  
   passporting in 177–80  
   Payment Services Directive, second 62–5, 79, 89, 117, 130, 181–4, 200, 350  
   Senior Management Regime 335  
   Solvency II 151, 200  
 event-driven business 81–2  
 Excel spreadsheets 150–3  
 ex-post safeguards 111  
 eXtensible Business Reporting Language (XBRL) 8  
 extract, transform, load (ETL) platform 332

**F**  
 Facebook 26, 32, 73, 127, 226, 236, 240, 276  
 Facebook Messenger 29  
 fatwas 40  
 Federal Financial Services Act (FFSA/FIDLEG) in Switzerland 126  
 federal register 97  
 Federal Reserve (US) 106  
 fee-based model 133  
 FFSA/FIDLEG 126, 127  
 FIDO Alliance 91  
 Financial Action Task Force (FATF) 154, 174, 190, 191, 228, 287–8, 349  
   FATF 40 Recommendations 287  
   mutual evaluations 222, 266  
   recommendations (2012) 222  
 Financial Conduct Authority (FCA) (UK) 20, 27, 71, 83, 103, 104, 146, 173, 203, 231, 234, 260, 313  
   Project Innovate and its Advice Centre 337  
   regulatory sandbox 109, 110  
   TechSprint 87–8  
 financial crime 37, 72, 74  
   prevention 20–5  
 financial inclusion 314–17  
   empowerment and 318–22  
   role of government 314  
   role of technology 315  
 Financial Industry Regulatory Authority (FINRA) 83, 330  
 Financial Innovation Now (FIN) 95  
 financial intelligence units (FIUs) 172, 190  
 Financial Market Supervisory Authority (FINMA) (Switzerland) 99, 100, 101, 110  
 Financial Services and Markets Authority (FSMA) 178  
 Financial Stability Board (FSB) 196  
 Finchat 276  
 fines 218  
 FinLeap 68  
 FinTech 106, 108, 109–12  
 Fintellix 107

FIS Global 74  
Flash Crash (2010) 331  
flexible laws 108  
Flink 83  
Foreign Account Tax Compliance Act (FATCA) 6  
Foreign Corrupt Practices Act (FCPA) (US) 250, 275  
foreign exchange derivatives 178  
Frankfurt 108  
fraud 71, 152  
    claims 253–4  
    detection 28, 237  
    discovery 166  
    prevention 22, 23,  
free access to trade 46  
Freemium 132, 261  
French Corporate Duty of Vigilance Law 250  
Fuller, R. Buckminster 308  
full-text search 83  
Fundamental Review of the Trading Book (FRTB) 161, 162  
FundApps 282  
Fundsquare 107  
future of RegTech 340–3

## G

Gambling Commission 173  
gambling sector 292–5  
'garbage in, garbage out' 239  
generative adversarial networks (GANs) 242  
Germany  
    Federal Financial Supervisory Authority (BaFin) 68  
    rise of RegTech in 66–9  
Getter, Frank 341  
GFT Technologies 68  
Global Digital Trust Protocol 226–30  
Global Financial Crisis (GFC) 106, 112, 199, 206, 340, 346  
global hubs 107–8, 112

Global Report on Islamic Finance 2018 42  
global sandboxes 111–12  
Goldman Sachs 60, 82  
Goodhart's law 198  
goods and services taxes (GSTs) 251  
Google 32, 73, 95, 226, 236, 274–5, 313  
Google BigTable for NoSQL 84  
Google DataProc, 84  
Google Search 243  
Gotsch, Maria 340, 343  
governance 118  
Governance Risk AML Compliance and Ethics Foundation  
    (GRACE) 275  
governance, risk, and compliance (GRC) 17, 118–21, 218–19,  
    276, 282  
government procurement 107  
graph processing 82  
graphical processing units (GPUs) 235  
Gresham 74  
GSM Association 31

## H

H&R Block 237  
Health Insurance Portability and Accountability Act (US) 284  
Her Majesty's Revenue and Customs (HMRC) 173  
heterogeneity 51  
Hewlett Packard 250  
high-frequency trading (HFT) 207, 331, 332  
Hong Kong Monetary Authority (HKMA) 103  
*House of Cards* (series) 58  
HSBC Holdings PLC 73  
hubs 107–8, 112  
human factors impact of RegTech 60  
human rights 24  
Hyperledger Fabric 252  
hyperlinked HTML documents 85

IBanFirst (France) 183  
 IBM 17, 26, 74, 140–1, 236, 237, 252  
 IBM Data Stage 332  
 IBM Watson 236  
 identity  
     as market failure 311–13  
     problem 30–2  
     theft 30, 311  
 'Identity on Blockchain' 91  
 IFSB 39, 41  
 IHS Energy and Carbon Solution 285  
 IMD 200  
 impact analysis 14  
 implementing technical standards (ITSs) 200  
 improper selling of financial products 16  
 inconsistency 152  
 India  
     Aadhaar program 31, 229, 312–13, 316, 319, 321–2  
     Central Vigilance Commission 227  
     Criminal Investigation Department 227  
     financial inclusion 319  
     Insurance Regulatory and Development Authority 227  
     National Investigation Agency 227  
     payment bank licences 7  
     Registrar of Companies 227  
     RegTech companies 107  
     Reserve Bank of India 227, 319  
     Securities and Exchange Board of India 227  
     Unique Identification Authority of India 319  
 India Stack 319  
 information security/cyber security 207  
 innovation  
     burden of compliance 218, 220  
     regulatory 106  
     sandboxes 109–12  
     Innovation Lab 340  
     Innovation, bottlenecks to 26–9  
     inseparability 50  
     insider dealing 16  
     insider trading 27, 276  
     Institute of International Finance (IIF) 22, 148  
         *Deploying RegTech against Financial Crime* 21  
     insurance 49, 254  
     intangibility 50  
     Integrated Risk Reporting 160  
     integrity 70  
     intelligence 51, 52  
     interactive voice response (IVR) 211  
     internal auditing 23  
     Internally displaced citizens 311  
     International Convention Against the Taking of Hostages 190  
     International Islamic Financial Market (IIFM) 39  
     International Monetary Fund (IMF) 154  
     International Organization for Standardization (ISO)  
         ISO 24707 88  
         ISO 704/1087 88  
         ISO TC 37 88  
         ISO TC 307 339  
     Internationalized Resource Identifiers (IRIs) 86  
     internet of things (IoT) 260–1, 262  
     Interpol Art Database and Art Loss Register 268  
     Intuit 95  
     ipushpull 153  
     Ireland 108  
     Islamic Banking 38–9  
     Islamic capital markets (ICMs) 38, 39  
     Islamic crowdfunding platforms 41  
     Islamic Development Bank Group (IDB) 40, 41  
     Islamic Finance 41, 103  
     Islamic Financial Regulation 40  
     Islamic financial services industry (IFSI) 38–43



Islamic insurance (takaful) 38, 39  
Israel 108

## J

J.A.R.V.I.S. (Just A Rather Very Intelligent System) 323  
Jeopardy! 141, 244  
JPMorgan 150, 206, 277  
JPMorgan Chase & Company 124  
Juncker, Jean-Claude 300  
just in time 6

## K

Kafka 82, 83, 84, 92  
Kahneman, Daniel 140  
Kantox 183  
kappa architecture 82  
key performance indicators (KPIs) 10  
key person risk 152  
Kimberley Process Certification Scheme (KPCS) 253  
Knight Capital 331  
know your business (KYB) 349  
know your customer (KYC) 6, 12, 22, 28, 29, 30, 68, 73, 89, 132,  
138, 154, 155–6, 192, 207, 221–2, 237, 293, 295, 316–17,  
338, 348  
    artificial intelligence 219  
    digital compliance processes 109  
    Federal Reserve 106  
    online derivatives 90–1  
    platform 229  
    questionnaires 139  
know your customer's customer (KYCC) 349  
knowing your object (KYO) 252–3  
Kramer, Mark 307  
Krug, Steve: *Don't Make Me Think* 121  
KyoLAB 276  
KYT 91

## L

*laissez-faire* regulation 106  
Lamfalussy approach 200  
Larosière, Jacques de 203  
legal entities identifiers (LEIs) 156  
Lehman Brothers 16, 55, 305, 306  
Lenddo 226  
Liberatus AI 242  
lines of defence (LODs) 71  
LinkedIn 82, 166  
LinkedIn Today 82  
Linux Foundation: Hyperledger project 252  
liquidity 55–6  
liquidity coverage ratio (LCR) 55  
London 107–8  
London Interbank Offered Rate (LIBOR) 305  
    scandal (2015) 37, 331, 335  
London Stock Exchange (LSE) 331  
London Whale 150, 153  
Loot 183  
loss aversion 140  
Luxembourg  
    RegTech companies 106–7  
Luxembourg: Central Legislation Service (SCL) 196  
Lyft's cars 239

## M

Ma, Jack 205  
machine learning (ML) 15, 20, 27, 31, 59, 73, 82, 91, 160, 194,  
207, 235, 272, 337, 341  
    Black Box Problem 295  
    regulation 85–8, 134–7  
Malaysian SilverLake 184  
Malaysian sukuk market 39  
malware 20  
market analysis platforms (MAPs) 330, 332–4

market surveillance 27, 219, 330–4  
Markets in Financial Instruments Directive (MiFID II) 106, 107  
MatLab 150  
Mayer Brown 125  
Mayer-Schonberger, Viktor 244  
McNamara, Robert 244  
MENA Region, financial inclusion 320  
Mercedes 243  
Merkle trees 244  
metadata, customer 86, 90  
MetricStream 17, 282  
Meyer, Michael 27  
Microsoft 24, 153, 236, 284  
Microsoft Azure 236  
Microsoft Excel spreadsheets 150–3  
Microsoft PowerBI 84  
millennials 206  
*Minority Report* (movie) 58, 59, 232, 241  
mispricing assets 16  
misuse of private data 30  
ML as a service (MLaaS) 235  
MLRs 172, 174  
mobile commerce (m-commerce) 182  
Mobile Connect 31  
mobile payments 315  
model management 29  
Modern-Day Slavery Act (205) (UK) 250  
Monetary Authority of Singapore (MAS) 66, 316  
money laundering 6, 16, 20, 287, 293, 335  
Money Laundering, Terrorist Financing and Transfer of Funds  
(Information on the Payer) Regulations 2017 *see* MLRs  
Moneyball 244  
MoneyGram 320  
Monzo 183  
Moore's law 59  
Mougayar, William 246  
M-Pesa 316  
Mulder, Jan-Maarten 22

multilateral trading facilities (MTFs) 331  
multinational corporations (MNCs) 284, 285  
Musharaka partnership 41  
mutual evaluation reports (MERs) 287

## N

N26 68, 183  
NASDAQ 331  
National Bank of Abu Dhabi 320  
national competent authorities (NCAs) 148, 195  
natural language processing (NLP) 14, 98, 106, 207  
Nestlé 250  
net stable funding ratio (NSFR) 55  
Netflix 58, 82  
New York 107, 108  
New York Stock Exchange (NYSE) 331  
Newsfeed 82  
NICE 17  
NICE Actimize 74  
non-compliance 218  
non-finance options 287–91  
Nordic banks 31, 32  
NoSQL for Fast Read-write Access 83–4

## O

Object Management Group (OMG) 85  
    Business Motivation Model (BMM) standard 87  
'obliged entities' 174  
Office for Professional Body Anti-money Laundering Supervision  
(OPBAS) 173  
Office of Foreign Assets Control (OFAC) 191  
Office of the Comptroller of the Currency (OCC) 93  
OnDeck Capital 124, 183  
'one leg out' (OLO) payments 182  
one-time password (OTP) 89

online analytical processing (OLAP) 333  
online offerings 207  
open banking 89–92, 130  
OpenFin 152  
Operational Riskdata eXchange Association (ORX) 12  
operational risks 152, 221  
Oracle 17, 74  
Oracle Data Integrator 332  
Oradian 320  
organization-specific risk application programming interfaces (ORAPIs) 62, 158, 159, 160  
organized trade facilities (OTFs) 56, 331  
Otoritas Jasa Keuangan (OJK) 315  
over-the-counter (OTC) derivatives 55, 332

## P

Page, Larry 274  
Panalytics 342  
Paris Agreement on climate change (2015) 271  
Partnership Fund for New York City 340  
passporting in the EU 177–80  
pay request 90  
pay-as-you-go pricing 219–20  
payment initiation service providers (PISPs) 62, 181–2  
payment initiation services (PISs) 89  
payment service providers (PSPs) 89, 91  
PayPal 82, 83, 94, 95, 206, 315  
PayTM 310  
peer-to-peer (P2P) transfer 181, 199, 315  
penetration rate of bank accounts 318  
perishability 51  
personal liability 10  
personally identifiable information (PII) 278, 279  
pharming 20  
Phelan, Christopher 308  
Philippines 316–17  
phishing 20  
Piketty, Thomas 308  
PIN setup/reset 89  
platform banking 131  
'plug-and-play' bank 131  
politically exposed persons (PEPs) 154, 172, 174, 193, 232  
Ponzi schemes 20  
Porter, Michael 307  
portfolio risk management 207  
Postal Savings System (UK) 314  
precision 87–8  
predictive analytics 59  
predictive regulatory monitoring 223–4  
preventive safeguards 111  
price-to-earnings (P/E) ratios 331  
PRIIPS 200  
principles-based approach 134  
privacy 63–4, 65  
Privacy Shield (US) 278  
Private Security Act 2001 263  
private security industry 263–5  
Privitar 283  
process errors 152  
procurement 107  
Promontory 26, 237  
proof of address (PoA) 228  
proof of identity (PoI) 228  
prospect theory 140  
protected personal information (PPI) 335  
provenance 251  
    and blockchain 267–8  
psychometric risk tolerance 140  
Public Comment 97  
Public Notice 97  
Public Sector for Vibrant Ecosystem 284–5  
Publishing Machine-readable Regulation on the Web 85–7  
'pumping and dumping' 20, 330

## Q

quality framework 50–1, 53  
Quaranta, Ron 340, 342, 343  
QumRam 74, 107, 276

## R

Rackspace 219  
radio frequency identification (RFID) 294  
real-time feed management system 332  
record customer dialogues' 85  
record keeping 193, 228, 229–30  
refugees (case study) 321–2  
RegTech, definition 260  
RegTech Quality Compass 50–4  
Regulation-as-a-Service (RaaS) 107  
regulators 108–9, 205–9

- consumer protection 111, 112
- emerging market 210–12
- engagement 343

Regulators Accelerator 211  
regulatory reporting 12, 27–8, 74  
regulatory sandbox *see* sandbox  
regulatory technical standards (RTSs) 200  
reinforcement learning 242  
relational database systems (RDBMSs) 82, 83  
reporting standards 106  
Resource Description Framework (RDF) technology 85  
responsibility, sharing, compliance and 11–12  
return on investment (ROI) 66, 218–20, 295

- lack of 20–1

revenue sharing 133  
Revolut 183  
RHT Taylor Wessing 275  
riba (interest) 38  
Ricciuti, Christopher 342

risk assessments 193  
risk data aggregation 148  
Risk Ident 68  
risk indicators (RIs) 198  
risk management 28–9, 37, 58–9, 118, 274  
risk mitigation 111, 198  
risk profiling questionnaires (RPQs) 139–40  
risk reporting 160, 219  
risk tolerance 140  
risk, operations, compliance, and audit (ROCA) costs 146, 148  
risk-data warehouses 264  
robo-advice 135–6, 199  
Robocop 274, 324  
robotic process automation (RPA) 15, 73  
robotics 26  
Rose, Nicole 275  
RSA Archer 17  
rule-based approach 134

## S

SaaS industry 279  
Saatchi Art 266  
SAI Global 17  
sales and marketing 166  
Samsung 73, 90, 284  
sanctions law 191–2  
'sandbox' ('regulatory sandbox') 79, 109–12

- emergence of 315
- legal guidance for 102–5
- reason for entering 102–5
- for RegTech 99–101
- requirements when entering 104–5
- selection of 103–4

SAP 17  
Sarbanes-Oxley Act (US) 151, 276  
SAS 74, 282

- Sberbank 183
- scalability 160
- scenario analysis 148, 160
- science of regulation 58–61
- search engine marketing 127–8
- secure space to process transactions 248–9
- Securities and Exchange Commission (SEC) 8, 93, 164
- security concerns 261
- Security Industry Authority (SIA) 263
- self-sovereign data control 65
- self-sovereign identity 208, 311, 313
- sellers, regulating 345
- Semantics of Business Vocabulary and Rules™ (SBVR) 85, 87–8
- service-level agreements (SLAs) 133, 295
- serving layer 83
- SERVQUAL 50
- 'shadow systems' 152
- shared risk engine (SRE) 158–62
- Sharia 39, 40, 41, 42, 103
- shell banks 154
- ShoCard 312
- short message service (SMS) 211, 276
- Silicon Valley 108, 122–5, 236
- Singapore
  - preventive safeguards 111
  - RegTech companies 106–7, 108
  - regulatory sandboxes 109, 110
- single market 46
- Skinner, Chris 246
- Skype 156, 166, 276
- Slack 276
- small and medium-size enterprise (SME) 7–8, 45, 130
  - funding for 42
  - lending 93, 96
- smart contracts 40, 41, 254, 272
- 'smart nation' 66
- smurfing 20
- social due diligence 313
- social media identities 311
- social media surveillance 166
- software as a service (SaaS) providers 219, 220, 278
- software providers, regulating 346
- solarisBank (Germany) 68, 183
- Sonali Bank (UK) Limited 231
- Spark 83
- spoofing 27, 330
- spreadsheets in financial organizations 151–2
- Square 82
- Squirro 282
- SRM 200
- SSN 229
- Standard Chartered Bank 252
- Stark, Tony 323
- Stellar 320
- straight through-processing (STP) 219
- strategy vis-à-vis purpose paradigm 46
- stream SQL 82
- streaming analytics 293
- stream-only frameworks (Apache Storm) 82
- stress testing 28, 106, 158, 160
- Stripe 95
- strong customer authentication (SCA) 90
- struggle detection 166
- Suade 107
- Suade Labs 282
- subprime mortgage catastrophe 16
- sukuk (Islamic bonds) 39
- SunGuard 162
- supervised learning 241–2, 293
- supervisory streaming 79
- support and dispute resolution 166
- suspicious activity monitoring 231–4
- suspicious activity report (SAR) 60
- Susskind, Richard 135
- swap execution facilities (SEFs) 56
- SWIFT 32, 156, 310, 320

Swiss Crealogix 184  
Switzerland  
    Banking Act 99  
    Banking Ordinance 99  
    consumer protection 111  
    Federal Act on Data Protection (FADP) 126  
    Financial Market Supervisory Authority 99, 100, 101,  
    RegTech companies 106–7, 108  
    regulatory sandboxes 110  
Sybenetix 107  
systematic internalizers (SIs) 331  
systemic model risk 162  
systemic risk 6  
Szabo, Nick 272

## T

TalkTalk 261  
tamper-proof ledger 247–8  
Tanaqu 312  
Tandem 68  
Tapscott, Alex and Don 246  
tax evasion 16, 24  
tax management 207  
Tay 24  
technological inclusion 315–16  
technology assessment 218  
technology and regulation 196  
Telegram 276  
Temenos 74  
Tencent 73, 206, 236  
Terminator scenario 274  
text mining 14  
third-party providers (TPPs) 89, 91  
Thomson Reuters 17  
tolerance for risk 138  
trader, role of 16–17  
Tradle 312

transaction monitoring 154, 231  
transaction status check 89  
transfer learning 242  
TransferTo 183  
transparency 182, 250–1, 310  
Trulioo 74, 107, 322  
Trump, Donald, administration 10, 94, 147  
    collapse of 306–7  
    identity and, impact on 310–13  
    tools for restoring 310–11  
trust 46–9  
    safety and 276  
Truven Health Analytics 282  
Turner, Lord Adair Turner: *Between Debt and the Devil: Money, Credit and Fixing Global Finance* 305  
Twitter 82, 226

## U

UAccount (UK) 183  
UAE 107  
Uber 73, 82, 130  
    Greyball program 239  
UBS 60, 107, 260  
UCITS V 200  
UK: GOV.UK Verify 31  
UK Information Commissioners Office 279  
ultimate beneficial owners (UBOs) 174  
Unicorn Training Group 282  
unified data processing 82  
unified global identity 226–7  
Unique Resource Identifiers (URIs) 86  
United Kingdom  
    preventive safeguards 111  
    RegTech companies 106, 107, 108  
    regulatory sandboxes 109, 110  
United Nations 58  
    Federal Reserve 106

General Assembly declaration in 1990 228  
Millennium Development Goals 270  
Security Council Resolution 1373 190–1  
Sustainable Development Goals 270, 309  
RegTech companies 106, 108  
United Nations Conference on Trade and Development  
(UNCTAD) 320

unsupervised learning 241, 294  
uPort 311  
USA  
    Federal Trade Commission Consent Order 261  
    financial regulatory system 94–6  
    National Association of Manufacturers 283  
    National Small Business Association 283  
    regulatory process 93–8  
usage-based pricing 219–20  
user identity and marketing automation 128–9

## V

value 342–3  
value at risk (VaR) 153, 158  
value-added taxes (VATs) 251  
van Liebergen, Bart 342  
vendor landscape 218  
vendor risk management 207  
Venmo 310  
venture capital 108  
videoconferencing 156  
violation analytics 29  
vishing 20

Volcker Rule 278  
Volkswagen 239

## W

Walmart 205  
Web Analytics Data 128  
WeChat 166, 183  
Westerheide, Fabian 22  
Western Union 320  
WhatsApp 29, 166, 276  
whistle-blower 166  
Winsome Diamond default 252  
Wirecard 183  
Wolters Kluwer 17, 74  
World Bank 40, 196  
    Consultative Group to Assist the Poor (CGAP) 319  
World Citizenship 312  
World Economic Forum (WEF) 205

## X

Xenomorph 153  
XML files 85

## Z

zeb.rolfes.schierenbeck.associates gmbh 68  
Zenefits 124  
Zubairi, Nasir 23