

# INDEX

#BlackLivesMatter 234  
#justsayno movement 242  
#MeToo campaign 234

## A

A3 thinking 193  
ABS breaking and safety mechanisms 25  
Acropolis (Athens) 221  
Activate, definition 249  
activists 236–9  
add-app-ability 54, 113–28  
    adopting 125–6  
    applying 126–7  
    at scale 122–5  
Adidas 31, 135  
Adjaye, Sir David 137  
adult learning theory 204  
Akhenaten 215–17, 219, 220, 2231  
Albert, Prince 92  
Alexa 19, 23, 248  
Alexander the Great 177  
Alexandria 213  
algorithms 24–6  
Alinsky, Saul: *Rules for Radicals* 234  
Alka-Seltzers 175  
Al-Ma'mun, Caliph 200  
al-Mansur of the Abbasid, Caliph 199  
AlphaGo 172  
Amarna 217  
Amazon 6, 7  
    Alexa 19, 23, 248  
Amenhotep IV *see* Akhenagten  
Ancient Greece 129, 145–6, 147  
Ancient Roman classical architectural system 113–14  
Andean civilizations 106

Apple 6, 135, 161  
applied mathematics 37  
applied science 37  
apps 34, 39, 110  
Arab Spring 234  
*arete* 145–6, 147  
Aristophanes 233  
Aristotle 179, 199  
Arpanet 7  
Arsenale Nuovo (Venice) 76, 83  
Arte di Calimala (wool merchants' guild) 227  
artificial intelligence (AI) 6–7, 20, 193, 123  
asteroids 162  
Atari 162  
Aten 216  
Athens 219–21  
attractors 181–2  
augmented reality (AR) 162, 241  
automated voice-recognition 123  
automatic teller machines (ATMs) 24  
automation 249  
Axie Infinity 163  
Axie tokens (AXS) 163

## B

Bacon, Francis 5  
Baghdad 199–200, 213  
Barbican 137  
Bateson, Gregory 249  
Bayer 135  
Bayt al-Hikma (House of Wisdom) 200  
Beatles, The 238  
behaviour economics 28–9  
Berners-Lee, Tim 7, 59, 219  
Bersin, Josh 204, 207  
Big Data 19

- Blade Runner* (film) 142  
 blended learning 37  
 blockchain 35, 38–9, 162, 203  
 Bohn 28  
 Book spine 59–60  
 bots 123  
 Boulton, Matthew 86  
 brainstorming 249  
 Brexit referendum 19  
 broadcast 239  
 Bruce, Tina 164  
 Brunelleschi, Filippo 227  
*Building the Metaverse* (blog) 162  
 BYOD (bring your own device) 116–17
- C**  
 Caesar, Julius 59  
 Carroll, Lewis: *Alice's Adventures in Wonderland* 65  
 cascade 239  
 Centre for Human Compatible AI 21  
 centres of excellence 134, 135–6  
 CERN 7  
 chief digital officer (CDO) xvii  
 chief human resources officer (CHRO) xvii  
 China 115  
 Churchill, Winston 78, 230  
 co-bots (collaborative robots) 22  
 Coca-Cola 182, 193  
 coding for friendly AI 37  
 coffeehouses 140  
 Cohen, Leonard 147  
 Coleman, Ornette 52  
 collaboration 31, 40, 250  
   virtual 81–3  
 collaboration platforms 52  
 collaboration software 143  
 collaborating teams 70  
 collaboration technologies 53  
 collaborative authoring 83–5  
 collaborative construction 75–6  
 collaborative learning 40  
 collaborative work 34, 75–96  
 collective construction 75–6  
 community animator 211  
 community-based learning 211  
 community lives 31–2
- community spaces 134, 136–7  
 companion tools 34–5  
 complex evolving systems 51  
 complex systems 250  
 complexity 53  
 Condé, Jean de: *Lit Dit du Miroir* 189  
 Confucius 145, 172  
 connected production environments  
   134, 137–8  
 connectors 181  
 construction 75–96  
 consultant 250  
 continuous improvement 49  
 Continuous productive urban landscapes  
   (CPULS). 28  
 Covey, Stephen M.R. 234  
 Covid-19 pandemic xv, xvi, 7, 10, 62, 65,  
   80, 130, 189, 202  
 Cowan, Brian 139  
 co-working 138–9  
 Craigslist 7  
 creation sector 20  
 creativity 21, 84, 150–1, 154  
 credibility 68  
 crowdfunding 218–19  
 crowdsourcing 34  
 cryptocurrency trading 163  
 Csikszentmihalyi, Mihaly 211  
 cultural spaces 134, 136–7  
 culture 250  
 curated content 210
- D**  
 Dante Alighieri 227  
 dark web 5  
 Darwin, Charles 86, 191  
 Darwin, Erasmus 85  
 dashboards 34  
 data, making sense of 192–3  
 data cloud 196  
 data, information, knowledge, and wisdom  
   pyramid 192  
 Davis, Miles 52  
   *Kind of Blue* 120  
 Davis, Stan 47, 62  
 de-bossing 118  
 decision apps 71

- decision making 64, 65–7, 250  
and executing 53, 54  
online 67–8
- Deep Blue computer 172
- deep memory 161
- Del.icio.us 7
- deoxyribonucleic acid (DNA) 22
- design 80–1, 250  
global 32–3
- diaspora 7
- dice 157
- Didion, Joan 229
- digital, definition 251
- digital agora 129–30
- digital dashboards 143
- digital film production 132
- digital humans xv–xvi, 251
- digital illiteracy 24
- digital leader 177–9
- digital learning 202
- digital learning organizations 205
- digital media 30
- digital mirrors 190–1
- digital organizations xvi–xvii
- digital skills 24
- digital spine 54–74
- digital tools 13, 52, 83, 86–7, 91, 109–10,  
119, 121, 127, 142, 151–2, 153–4,  
173, 189, 213, 223, 224, 238
- digital tribes 100–2, 110
- digital winners 45–6
- digital working 11, 65, 70, 128, 130,  
138, 140–1
- Dijkstra's algorithm 25
- Diogenes 188
- distributed manufacturing  
environment 132–3
- dot-com bubble xvii, 7
- Dota2 (Defense of the Ancients)  
tournament 158
- drone 23
- Dropbox 141
- Duffy, Frank 31
- E**
- eBay 7
- Eco, Umberto 63
- ecosystem 251
- Eiffel Tower 130
- Einstein, Albert 17, 69
- e-learning 35, 205–6
- electronic cars 19
- Eliot, T.S. 192
- Elizabeth I 5
- emergent approach 239–40
- Empire State Building 115
- employment Experience 103–6
- Encyclopaedia Britannica* 60–1
- engagement 54
- entrainment 251
- Epic Games 161
- Ethereum 163
- ethics 13, 73
- European Council for Nuclear  
Research 7
- exhibition 92–3
- experiential learning 36–7
- experts, connected 209
- F**
- Facebook (Meta) xviii, 7, 161
- Fake, Caterina 177
- feedback 189
- Fei-Fei Li 12
- financial crash (2007) 26
- Flettner, Anton 173
- Florence 227
- fluid intelligence 29
- Fortnight 163
- Fourier algorithms 25
- Framework 251
- Frey, Carl Benedikt 23
- Friedman, Milton 35
- Friendster 7
- Fuller, Buckminster 116, 174
- G**
- Game Developers Conference (San Jose,  
April 2001) 167
- games 29, 39, 49, 157–69  
making 167  
online 37, 158–63  
reason for playing 160–1  
at work 163–6

gamification 163–4, 168, 208  
 Gandhi, Mahatma 233, 236  
 Gates, Bill xv  
 Gaudí, Antoni 149–50, 151, 153, 154  
 generative approach 240  
 genome sequencing 21  
 Geodesic domes 116  
 Ghiberti, Lorenzo 227, 228  
     Gates of Paradise 227–8, 229  
 Gillespie, Dizzy 52  
 global design 32–3  
 global time zones 105  
 Go 171–3, 177, 223  
 GoFundMe. 218  
 Goldsmith Jr, Thomas T. 161  
 golf 167  
 Google xvii, 6, 7, 13, 25, 61, 94, 141, 161  
 Google Drive 142  
 Google maps 48  
 Gordian Knot 179  
 graphics processing units (GPUs) 162  
 Great Exhibition, Hyde Park,  
     London 92, 93  
 great resignation 106  
 Greek mythology 63, 188, 197  
 Green, Charles 68  
 Grimm, Jacob 187  
 Grimm, Wilhelm 187

## H

half-life of professional skills 201  
 Hansel and Gretel 63  
 Hanyu, Yuzuru 159  
 haptics 30  
 Harari, Yuval Noah 99, 100  
 Hardin, Garrett: *Tragedy of the Commons, The* 235  
 Harund Al-Rasheed, Caliph 199  
 Harvard Universities 202  
 Hesse, Hermann: *Glass Bead Game, The* 64  
 heuristics 39  
 Hewlett-Packard 209  
 Hinduism 216  
 hip-hop 120, 121  
 home-schooling 143, 203  
 Hospital Club 139  
 HTC 8

Hudson Yards (New York) 137  
 Huizinga, Johan 164  
 human, definition 251  
 Hunicke, Robin 167  
 Huxley, Aldous 40  
     *Brave New World* 5, 36  
 hybrid learning 37  
 hyperlinks 64  
 hyper-local 27–8  
 Hypertext 59  
 Hypertext Mark-up Language (HTML) 7

## I

IBM 31, 154  
     Deep Blue computer 172  
 Identity, definition 252  
 Incas 106–7, 108  
 individual spaces 141–2  
 Industrial Revolution  
     First 4  
     Second 5  
     Third 5  
     Fourth 4, 22, 27, 62  
 informal learning 201  
 informal spaces 134, 139–40  
 Information Age 19  
 Innovation, definition 252  
 Instagram 141  
 internal communication 233  
 Internet 7, 64, 252  
 Internet of Things (IoT) 18, 193  
 Internet service provider (ISP) 7  
 intimacy 68  
 iPads 34  
 iPhone 8  
 Iteration 34, 252

## J

Japanese Society 48–50  
 Japanese tea ceremony 49–50  
 jazz 51–2, 120, 252  
 Jobs, Steve 50  
 Jobs, impact of automation on  
     23–4  
 Jodorowsky, Alejandro 46  
 Johnson Wax organization 78  
 Jonathan's Coffee House 140

**K**

- Kahneman, Daniel 175  
kaizen 49  
Kasparov, Garry 172  
Kaufmann, Stuart 191  
Kay, Alan 8  
Ke Jie 172  
Kelly, Kevin: *Out of Control* 47  
Khizanat al-Hikma (Library of Wisdom) 199  
Kickstarter 237  
King, Martin Luther 230  
*kintsugi* 49  
Knowledge Stores 137  
Knowles, Malcolm Shepherd 204  
Kodak 12  
Kurzweil, Ray 13  
Kwolek, Stephanie 18

**L**

- labyrinth 62–4, 252  
labyrinth of knowledge 63, 213  
Latour, Bruno 254  
Law, John 254  
leadership 252  
lean management 193  
learning, definition of 201  
learning buddies 207  
learning by doing 37, 87  
learning environments 39–40  
*learning in the flow of work* 26, 195, 196, 204, 207  
learning outside 201  
learning to learn 37  
LeBlanc, Marc 167  
Lego 108  
Leonardo da Vinci 114, 245  
lifelong learning 35, 49  
Link analysis 25  
LinkedIn 109  
Lisbon 130–1, 144  
living system 253  
Lloyd, Edward, coffee house 140  
Lloyds of London 140  
local fabrication 33  
London Philharmonic Orchestra 130  
London School of Economics and Political Science 202

London Stock Exchange 140

- Louvre 130  
Ludic 253  
Lunar Society 85  
Lysistrata 233, 242

**M**

- Made Smarter* 27  
map building 196–7  
map making 194–5  
Marais, Eugène: *Soul of the White Ant, The* 46  
Marcus Vitruvius Pollio *see* Vitruvius  
Mass media 253  
Massachusetts Institute of Technology (MIT) 154  
Mayan civilization 3–4  
McLuhan, Marshall: *Understanding Media* xiii  
MDA (mechanics, dynamics, and aesthetics) 167  
Meadows, Donella 222–3  
medical education 80  
meeting, definition 253  
members' clubs 139  
*Merge Sort* algorithm 25  
metaverse 38, 162, 169  
methodology, definition 253  
Meyer, Chris 47, 62  
micro-learning 201  
micro-production 27  
Microsoft 6, 161  
Mill, John Stuart 35  
Mill, The 142  
Mindmapper 151  
Minecraft 163  
Minotaur 63  
mirrors 187–97  
modal Jazz 120  
model, definition 253  
modularization 26–7  
Moltke, Helmuth von 90  
momentum, maintaining 184  
More, Thomas 35  
motivation 54  
of digital humans 222–4  
multi-channel 210–11

multi-media 210–11  
 Murray, Andy 160  
 Musk, Elon 21, 221, 222, 229  
 MySpace 7

**N**

Nadella, Satya xv  
 Narcissus (Greek myth) 188, 197  
 natural selection 191  
 navigation into digital Future 195–7  
 Ned 139  
 Nefertiti 215  
 Nestlé 26  
 Netflix 25, 26, 109  
 Network, definition 254  
 Neumann, John von 25  
 neuroscience 28–9  
*New York Times, The* 69  
 next generation learning 207–8, 209  
 Niantic 163  
 Nike 135, 158  
 Nintendo 49, 162, 163  
 Nokia 8  
 non-fungible tokens (NFTs) 38, 163  
 non-governmental organizations (NGOs) xviii  
 not-invented-here syndrome 77  
 NTT DoCoMo's smartphone 8  
 nudge theory 174–6, 182

**O**

O'Neill, Cathy: *Weapons of Math Destruction* 26  
 Olympic Games 158, 159  
 omni-channels 240–1, 254  
 online, definition 254  
 online gaming 163  
 online learning 203–4  
 online shopping 125  
 open self-organizing 253  
 Open University 202  
 open-plan office 78  
 optical-fibre 8  
 order and chaos 191  
 organic architecture 149  
 organization, definition 254  
 organization of one 54, 99–112

Osborne, Michael 23  
 Ostrom, Elinor 235, 236  
 Ovid 171

**P**

Pacman 49, 162  
 Palamedes 157  
 Parthenon 220  
 peer-to-peer learning 201  
 Pellegrini, Carlos 179  
 people-centred learning 211  
 Pericles 219–20, 221  
 personalized learning 209  
 Piketty, Thomas 35  
 Pinterest 151  
 pivot point 183  
 Platform 254  
 Plato 75, 76, 77  
 Platt, Lew 209  
 play 161  
     *see also* games  
 play spaces 30–1  
 PlayStation 161, 164  
 Pokémon Go 163  
 Pombal, Marques de 131, 144  
 poo emoji 148  
 Portuguese expeditions 130–1  
 PowerPoint 152  
 predictive analysis 20  
 Price, Cedric 137  
 Priestley, Joseph 86  
 Principle, definition 255  
 problem-solving 34  
 Propellerhead's 'Reason' 21  
*Proportional Integral Derivative* algorithm 25  
 PUBG (Player Unknown Battlegrounds) 163

**R**

radical personalization 40  
 Radoff, Jon 162  
 real-time feedback 212  
 relaxed alertness 29  
 reliability 68  
 remote worker 124  
 reticular activating system (RAS) 47  
 ribonucleic acid (RNA) 22

- robots 13, 34, 36  
rise of 22–4  
work and 102, 257
- Rowling, J.K. 140–1
- Royal Albert Hall 93
- Royal College of Art (RCA) 81, 93
- Royal Exchange 140
- Royal Society of Arts (RSA) 139
- RSA algorithm 25
- Russell, George 120  
*Lydian Chromatic Concept of Tonal Organization* 52
- Russell, Stuart 21
- S**
- Sagrada Família 149–50, 154, 155
- Saint-Exupéry, Antoine de 230  
*Little Prince, The* 84
- sandwich shops 124
- scale, definition 255
- Scher, Paula 85
- Schwab, Klaus 4, 62
- Scott, Ridley 142
- scrolls 59–60
- search engines 61, 64  
*see also* Google
- Sebastião Jose de Carvalho e Melo *see* Pombal, Marques de
- security, definition 255
- Sedol, Lee 172
- self-orientation 68
- semantic analysis of participation 194
- semantic memory 161
- Senet 157
- Senge, Peter: *Fifth Discipline, The* 204, 205
- sentiment analysis 193
- Seuss, Dr: ‘Lorax, The’ 215
- Shakespeare, William  
*As You Like It* 129  
*Hamlet* 189  
*Tempest, The* 3, 5, 40
- Shaw, George Bernard 157
- Shed, The (New York) 137
- Shen Kuo 172
- Shinkansen 50
- Sibelius 21
- simple rules, definition 255
- simplifiers 180
- simulation 37
- Singapore 130
- singularity 13
- Siri 19, 23
- skiing 183
- slalom 183
- slide presentation 152
- smart watches 141
- SmartLab 142
- smartphones 8, 162
- Snakes and Ladders 158
- social media 7, 108, 162
- social spaces 134, 138–40
- society, definition 255
- Socrates 188
- Sony 49
- Sophocles 157
- Sørensen, Dr Ib Holm 161
- Space Invaders 49, 162
- SpaceX 221, 222
- Speed Factory 31
- Spotify 7
- statista.com 160
- Stephenson, Neal 162
- Stiglitz, Joseph 35
- storytelling 91–2, 229–33
- Sunstein, Cass R. 29, 175
- Swarming 33–4, 255
- synthesize, definition 256
- system, definition 256
- T**
- tableau 147
- Tate Modern 137
- teams 142
- technology, definition 256
- TED talks 231
- Telenet 7
- Tesla, Nicholas xiii, 221
- Thai Culture and Design Centre 137
- Thaler, Richard 29, 175, 176
- Theseus 63
- Things to Come* (film) 91
- 3D printing 26–7, 30, 33

3G 7  
 Thucydides 220  
 Tichy, Noel: *Leadership Engine, The* 230  
 TikTok 141  
 timers 181  
 Tinker & Partners 175  
 TLAs (three letter acronyms) 87  
 Toyota production system 193  
 transformation, definition 256  
 transformational learning 205  
 tribe 232, 256  
 trim tabs 173–4, 182  
 trust 68–9, 109, 146, 148, 234  
     as barrier to decision making and working together 67  
     as barrier to flexible and remote working 142  
 communities of 235–6  
     definition 68  
     of website 69  
 Turing test 13  
 Tutankhamun 157, 215, 217  
 Tversky, Amos 175  
 Twitter 221

**U**

Uber 5  
 Under Armour 238  
 universal basic income 35–6  
 Unlawful Games Act (1541) (England) 158  
 Utopia 256

**V**

Vasco da Gama 131  
 Vatican Museums 130  
 Venetian economy 79–80  
 Venetian Guilds 79, 86, 236  
 Venetians 76–7, 83  
 version control 94  
 Victoria, Queen 93  
 video conferencing 105, 141  
 video games 160  
 Viljoen 28  
 Vimeo 21  
 Virgin 109

virtual classrooms 210  
 virtual collaboration 81–3  
 virtual reality (VR) 30, 162, 166, 241  
 Vitruvius 113–14, 128  
*Vogue* 94

**W**

Wellington, Duke of 159  
 wireless Internet 8  
 World Cup 159  
 Watt, James 86  
 Wedgwood, Josiah 86  
 Wells, H.G. 91  
 Wikipedia 30  
 wikis 64  
 Winnicott, Donald 160  
 work, definition of 257  
 work environments 133–43  
     centres of excellence 134, 135–6  
     connected production environments 134, 137–8  
     cultural and community spaces 134, 136–7  
     social spaces 134, 138–40  
     spaces for the individual 141–2  
 work from home 11, 24, 31, 65, 105, 109, 141, 160  
 World Cyber Games 158  
 World Economic Forum (WEF) xv, 4, 62, 109, 201  
 World Expo (1967) 116  
 world wide web 7  
 Wright, Frank Lloyd 31, 78

**X**

Xbox 161

**Y**

Yale Universities 202  
 YouTube 7, 9, 21, 30, 59, 91, 94, 141, 231

**Z**

Zen Buddhism 50  
 Zubek, Robert 167