

# Index

*Note:* Page numbers followed by “*n*” indicate footnotes.

- Abilities gap, 63–64
- Achievement, 79
- Advanced human–machine–customer interfaces, 135
- Airbnb, 4
- Alibaba, 11
- Alternative Workplace pilot projects, 158–159
- Amazon, 11, 162
- Analytics, 57–58
- Apple, 11
- Artificial intelligence (AI), 4, 10, 20, 37, 43, 77, 160
  - and business, 112–113
  - chatbots, 160
  - discussion, 128–130
  - findings, 114–116
  - future directions for research, 131
  - implications for industry, 130–131
  - influence over human capital processes, 125–127
  - influence over organisation, 127–128
  - influence over people, 123–125
  - influence over work, 118–122
  - methodology, 113–114
  - research agenda, 113
  - scope, 116–118
  - and SHRM, 83–84
  - technology, 135
- Attracting talent, 43
- Attractiveness, 41
- Augmentation strategy, 22
- Augmented reality, 20, 135
- Autonomous vehicles, 20
- Baidu, 11
- Best Buy, 164
- Best-practice school, 76
- Big data, 20
  - analytics, 37
  - and analytics, 4
- Bitcoin, 11
- Black box, 67
- Blade.org, 11
- Block chain, 37
- Blockchain technology, 4
- BMW, 10, 11
- Bosch, 10
- Boss, 163–164
- Brand, 41
  - equity, 41
- Bureaucracy, 163–164
- Business
  - apps, 159
  - knowledge, 58
- Capability beyond decision-making
  - for targeted solutions, 118
- Capacity building intervention, 100
- Captures, 134
- Center for Erhvervsrettede uddannelser Lolland Falster (CELFL), 23<sup>n1</sup>
- Chat applications, 159
- Cleartrip, 160
- Cloud computing, 20, 37
- Cloud-based services, 135
- Coaching, 84
- Collaborative robots (co-bots), 130
- Collaborative system based on
  - commitment, 25

- Communication, 24–27
  - skills, 80–81
- Comparative case analysis, 136, 146–151
- Compensation and benefits, 44
- Competence
  - building, 31
  - context and analysis, 30
  - description, 30
  - evaluation, 31
  - measurement, 30
- Competencies
  - for HR professionals, 84–85
  - of HRA, 57–58
  - language, 20, 33
- Competency model
  - challenges to be solved by having shared semantic reservoir, 29–32
  - competency model, tools and procedures, 32–33
  - as multifunctional semantic reservoir, 33
  - requirements for, 32
- Complementarity skills, 22
- Complex problems, 122
- Contemporary firms, 11
- Contemporary organisations, 10
- Contingency theory, 7
- Coordination, 6–7
- Coronavirus
  - coronavirus-related recession, 161–162
  - lockdown, 159
  - pandemic, 165
- Corporate reputation, 41–42
- Country-level comparisons of Industry 4.0 (*see also* Industry 4.0)
  - analysis of policies and practices, 133–134
  - comparative case analysis, 146–151
  - evolution of Industry 4.0, 134–135
  - Germany, 138–140
  - ideal types, 151–152
  - India, 144–146
  - research method, 136–138
  - South Korea, 142–144
  - United States, 140–142
  - US firms, 152–153
- Coursera, 151
- Covid-19, 161–162
- Creativity, 122
- Customer engagement skills, 80–81
- Cyber-physical systems, 37
- Daimler, 11
- Danish Construction Association, 23n1
- Data, 93–94
  - availability, 59
  - collection, 114
  - fluency, 84–85
  - generation and storage, 64–65
  - integration for decision-making, 117
  - science competence, 84
  - visualization, 58
- Decision-making
  - capability beyond, 118
  - data Integration for, 117
- Design changes across industrialisation
  - phases, 8–9
- Design thinking, 27–29
- Desperate times, 165
- Digital employee, 38
- Digital fluency, 92
- Digital immigrants, 92
- Digital inquisitiveness, 84
- Digital organisations, 7, 11
- ‘Digital Pathways to Growth: Competency’, 20
  - digitalisation and transformation of jobs, tasks and skills, 21–22
  - relevance and context of project, 22–24
- Digital reverse mentoring, 90, 96
  - analysis and discussion, 102–106
  - benefits from, 105
  - process flow, 99
- Digital savviness, 84–85
- Digital technologies, 12–13, 20, 89
- Digital transformation, 4, 90–93
  - initiatives, 112

- Digital transformation initiative
  - early experiences of, 98–100
  - structure of, 97–98
- Digital work, 90
- Digital world, OD in, 7–13
- Digitalisation, 10
  - of jobs, tasks and skills, 21–22
- Disruption, age of, 75–77
- Disruptive technologies and SHRM, 78–79
- Domain competence, 84
- Drones, 20
- DuPont, 6
  
- EBDITA, 95, 103
- EdX, 151
- Eisenhardt cross-case analysis, 137
- Electrical voting machine, 165
- Electronic/digital HRM, 93
- Elite informants, 113
- Employee attractiveness, 42
- Employee recruitment cycle, 43–44
- Employer branding, 39–42
  - challenges and avenues, 42–44
  - conceptual framework, 47
  - framework, 46–48
  - impact of HRM 4.0 on strategies, 44–46
- Engaged scholarship, 27
- Engaged semantic research strategy, 27–29
- Enterprise architecture expertise, 84
- Enterprise Resource Planning, 128
- EUC Sjaelland, 23n1
  
- Facebook, 11, 160–161
- Firms, 7
- First Industrial Revolution, 165
- Formal reporting relationships, 5
- Fourth industrial revolution, 10
- Futuristic organisations, 10
  
- Gen Z, 43, 48
- General cognitive skills, 22
- GenY, 43, 48
  
- German firms, 149
- Germany, Industry 4.0 in, 136, 138–140
- Gig economy
  - and implications for SHRM, 83
  - incentives and rewards in, 81
  - platforms and SHRM, 79–83
- Google, 11
- Google docs, 160
- Google Hangouts Meet, 159–160
- Google Play, 159
- Guidance, 84
  
- Haier, 11
- High commitment management, 76
- High involvement work systems, 76
- High performance work system (HPWS), 76
- High-speed 4G/5G networks, 43
- Houseparty app, 160
- HRM 4.0, 37–39, 48, 75–76, 90, 92–93, 106
  - impact on Employer branding strategies, 44–46
- Human behaviour, 53
- Human capital processes, influence of AI over, 125–127
- Human civilisation, 163
- Human interactions and capabilities, 121–122
- Human resource (HR), 37, 45–46, 55
  - knowledge, 57–58
- Human Resource Development, 150–151
- Human resource management (HRM) (*see* HRM 4.0)
- Human Resources Analytics (HRA), 54
  - availability of data and technology, 59
  - case organisations, 56
  - competencies, 57–58
  - contribution to org. strategy and preferred location, 61
  - directions for future research, 70
  - facilitators, 67
  - generating and storing data, 64–65

- key competencies for working in, 57
  - location of HRA function, 65–67
  - ‘non-users’ perception, 62–63
  - perception from current users, 56–62
  - perceptions about role, 65
  - restraints for using, 63–64, 67
  - role of motivation, 69
  - strategic value, 60
  - uses, 54–55
  - value of using, 68
- IIOT, 149
- Image, 41
- Incentives in gig economy, 81–82
- India, 79
- Industry 4.0 in, 135, 144–146
- Industrial revolution, 134
- first (1800–1875), 6, 8
  - fourth, 13
  - second (1875–1960), 6, 8
  - third (1960–2010), 7, 9, 13
- Industrial Revolution 4.0
- coronavirus pandemic in, 167
  - history of boss, slave and office, 163–164
  - to rescue, 160–161
  - SARSCov2, 158
  - sudden shift, 158–159
  - tipping point, 161–162
  - work from home work, 164–165
  - zooming to top, 159–160
- Industry 4.0 (*see also* Country-level comparisons of Industry 4.0), 37–39, 48, 134
- Information, 164
- Information Technology (IT), 58, 159
- skills, 58
- ING Netherlands, 11
- Intelligent robots, 12
- Internal branding process, 41
- International Labour Organization (ILO), 90
- Internet of things (IoT), 4, 37, 134
- iOS, 159
- Jobs, Steve (Apple), 11, 167
- Johnson & Johnson, 10
- Knowledge, 80
- Koege Business College, 23n1
- Learning Management System (LMS), 120
- Linux*, 11
- LO-Skolen (The LO School), 23n1
- Mac, 160
- Machine Language (ML), 117
- Machine learning, 4
- algorithms, 135
- Macrostructural design issues, 5
- Makemytrip, 160
- Management culture, 164
- Manufacturing factories, 120
- Mark Zuckerberg (Facebook), 167
- Market, 146
- directions, 149
- Mass-energy equivalence, 167
- Meaning, 24–27
- Mentoring, 84
- Metal multinational company (MMNC), 90, 93–96, 106
- digital reverse mentoring, 96
  - early experiences of initiative, 98–100
  - initial training of reverse mentors, 98
  - post-capacity building intervention, 100–102
  - selection of reverse mentees, 97
  - selection of reverse mentors, 97
  - structure of initiative, 97–98
- Methodological approach, 27–29
- Microsoft, 11
- Microsoft Teams, 159
- Middle-class white-collar workers, 158
- Millennial, 38
- Modern corporate office, 163
- Motivation, 62, 79
- gap, 68

- Multifunctional semantic reservoir, 29–33
- Multivariate problems, 122
- Neoinstitutional theory, 7
- Net generation, 38
- Netflix*, 11
- Networks, 21
  - theory, 7
- New skill sets, 123–124
- ‘Non-users’ perception of HRA, 62–63
- NPTEL programme, 151
- OECD, 20, 21, 32
- Office, 163–164
- Online ticketing companies, 160
- Operational coupling (*see* Structural couplings)
- Operational IT backbone, 84
- Opportunity, 62
- Organisation(al), 105–106
  - change, 90–93
  - contemporary, 10
  - digital, 7, 11
  - factors, 58–59
  - identity, 40, 47
  - across industrialisation phases, 8–9
  - influence of AI over, 127–128
  - reputation, 47
  - structure, 127
  - systems, 24
- Organisational design (OD), 4
  - in digital world, 7–13
  - historical, 6–7
  - multilevel perspective, 4–6
- Participants, 113–115
- People
  - influence of AI over, 123–125
  - science, 38
- Perception
  - on future of HRA, 61–62
  - of HRA from current users, 56–62
- Performance
  - appraisal, 44
  - assessment, 81
- Pervasiveness across Industries, 118–120
- Policy recommendations, 136, 138
- Policy-driven approach, 135
- Policy-makers, 153
- Polycentric networks, 24, 26
  - competency model as embryo of multifunctional semantic reservoir, 29–33
- ‘Digital Pathways to Growth: Competency’, 20–24
  - engaged semantic research strategy and design thinking, 27–29
  - theoretical approach, 24
- Population-ecology theory, 7
- Post-capacity building intervention, 100–102
- Power, 27
- Prima facie, 92
- Primacy of customer experience, 82–83
- Proactivity, 61
- Protocols, 149–150
- Public policy, 146
- Recruitment, 41
- Region Zealand, 23
- Regional consortium, 23
- Relationship building, 57–58
- Resource-dependence theory, 7
- Restrains for using HRA, 63–64
- Retail industry, 119
- Reverse mentees, 105
  - selection of, 97
- Reverse mentors, 105
  - initial training of, 98
  - selection of, 97
- Rewards in gig economy, 81–82
- Robotic Process Automation, 4, 10, 129
- Robotics, 20
- Robots, 161
- Roskilde Technical College, 23n1
- Roskilde University (RUC), 23n1

- SAP-Hana, 95
- Scepticism of HR professionals, 62
- Semantics, 27
- Severe Acute Respiratory Syndrome Coronavirus 2 (SARSCov2), 158
- Shared, multifunctional competency model, 34
- Shared multifunctional semantic model, 20
- Shared semantic reservoir, 24–27
- Siemens, 149
- Skills, 80
  - development, 124–125
  - for HR professionals, 84–85
- Skype, 159
  - calls, 114
- Slack, 159
- Slave, 163–164
- Small and medium-sized enterprises (SMEs), 20–21, 23, 35, 136, 146, 149
- Smart Advanced Manufacturing and Rapid Transformation Hub (SAMARTH), 145
- SME Denmark, 23*n*1
- Social Foundation project, 20
- Social systems, 24
  - theory, 21, 24, 28
- Social-collaborative technologies, 4
- Sociotechnical systems theory, 7
- South Korea, 153
  - Industry 4.0 in, 142–144
- Spreadsheets, 160
- Stakeholder engagement, 58
- Standard Oil*, 6
- Standards, 149–150
- State-of-the-art technologies, 135
- Statistics, 58
- STEM, 151
- Strategic human resource management (SHRM), 75–77
  - artificial intelligence and, 83–84
  - disruptive technologies and, 78–79
  - gig economy and implications for, 83
  - gig economy platforms and, 79–83
  - new competencies and skills for HR professionals, 84–85
- Structural couplings, 24–25
- Structure, 5
- Substantial capital, 149
- Sustainability, 150
- Sustainability in United States, 152–153
- SWOT analysis (*see also* Industry 4.0), 136, 146
  - in Germany, 139–140
  - in India, 145–146
  - in South Korea, 143–144
  - in United States, 141–142
- Talent, 42, 77
  - development, 43, 126–127
  - management, 125–126
  - retaining, 43–44
- Task Rabbit, 4
- Taylorism, 164
- Teamwork, 7
- Technical University of Denmark (DTU), 23*n*1
- Technology, 4, 158
  - alignment with business, 116
  - availability, 59
  - importance of, 127–128
- Telephonic calls, 114
- Tescent, 11
- Theoretical approach, 24
  - collaborative system based on commitment, 25
  - communication, 24–27
  - meaning, 24–27
  - organisational systems, 24
  - polycentric networks, 24
  - shared semantic reservoir, 24–27
  - structural (or operational) coupling, 25
  - structural couplings, 24

- Threat
  - of extinction, 120
  - to low-value high volume roles, 123
- 3D manufacture, 161
- 3D printing, 20, 135, 161
  - and additive manufacturing, 4
- Touch devices, 135
- Transaction cost theory, 7
- Transformation of jobs, tasks and skills, 21–22
- Transport Innovation Network (TINV), 23*n*1
- Trusting, 27
- Twitter, 160–161
  
- Uber, 4
- Udacity, 151
- Udemy, 151
- Udyog Bharat 4. 0, 145
- United States, Industry 4. 0 in, 136, 140–142
- US Bureau of Labour Statistics, 159
- US firms, 152–153
  
- Vaeksthus Zealand, 23*n*1
- Value of using HRA, 68
- Valve, 11
- VET programmes, 138, 151–152
- Video conferencing applications, 159
- Virtual parties, 160
  
- Virtual reality, 20, 37
- Voice-IT, 159
  
- Walmart, 162
- Water cooler effect, 165
- Web-based tools, 12
- Weber's ideal types, 134, 136–137, 146
- WhatsApp, 159
  - calls, 114
- Wikipedia, 11
- Windows, 160
- Work
  - from home, 164–165
  - influence of AI over, 118–122
  - new forms of, 120–121
- Working from home, 159
- World Economic Forum (WEF), 20, 22, 129
- World Health Organisation, 160
- World Wide Web, 158
  
- Yahoo, 164
- Younger human resources, 149
- YouTube, 160
  
- Zappos, 11
- Zealand Business College, 23*n*1
- Zealand Institute of Business and Technology, 23*n*1
- Zoom Cloud Meetings, 159–160