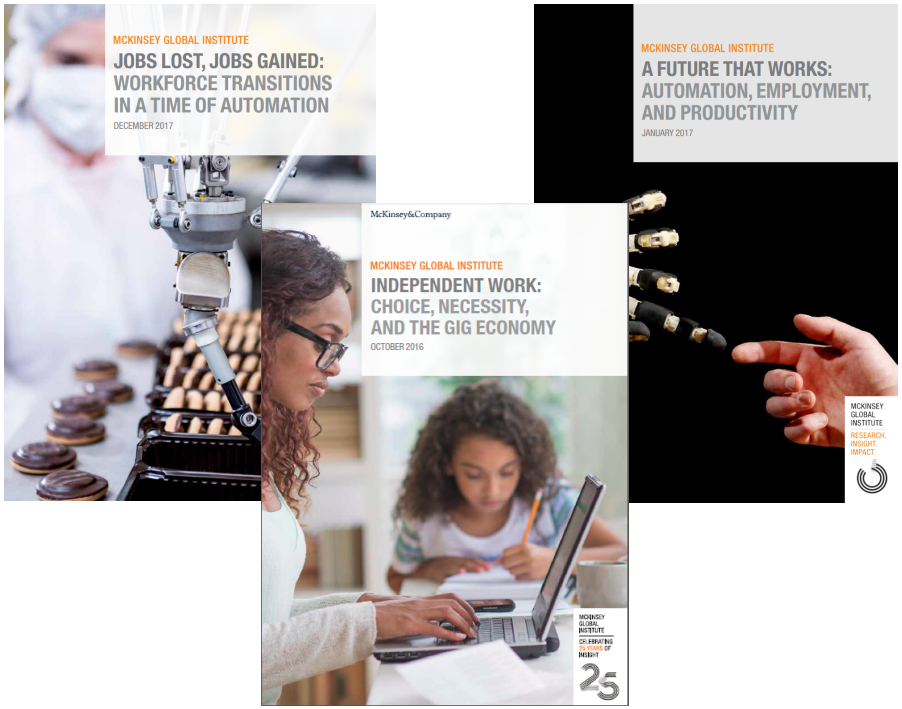
McKinsey&Company

Implications of the future of work

National Academy of Public Administration | September 25 2018

McKinsey Global Institute research on the future of work



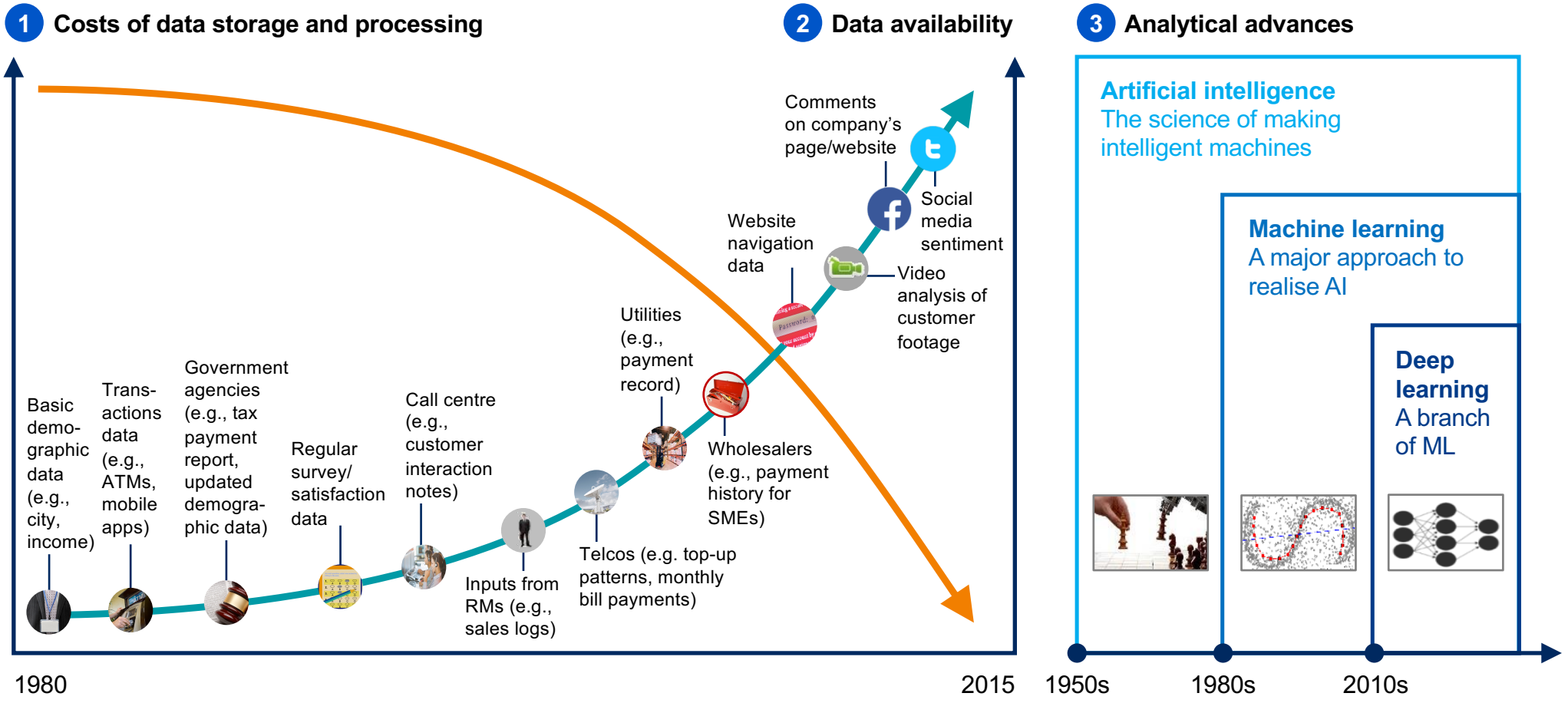
>3 years of proprietary research into Automation, Artificial Intelligence, the gig economy, and income inequality

- **Proprietary data set** that maps over 800 occupations against 2,000 activities and over 20 capabilities required across US, China, Germany, India, Mexico, and Japan

- **Experts consulted across industries** including: Richard N. Cooper (Harvard), Christopher Pissarides, Nobel laureate; Michael Spence, Nobel laureate; Laura Tyson (Berkeley)

- **Reports and research include:**
  - Jobs Lost, Jobs Gained (Dec 2017)
  - A Future That Works (Jan 2017)
  - Independent Work (Oct 2016)
  - A Labor Market That Works (June 2016)
  - Digital America (Dec 2015)

Why now? Advances in data availability, processing costs, and analytical algorithms



Intelligent tools have the potential to unlock huge savings, elevate performance, and enable new products and services

Robotic process automation

Automate routine tasks through existing user interfaces (e.g., data extraction and cleaning)

Machine learning

Identify patterns in data through supervised and unsupervised learning (e.g., decision algorithms)

Smart workflows

Integrate tasks performed by groups of humans and machines (e.g., month end processes)

Natural language processing

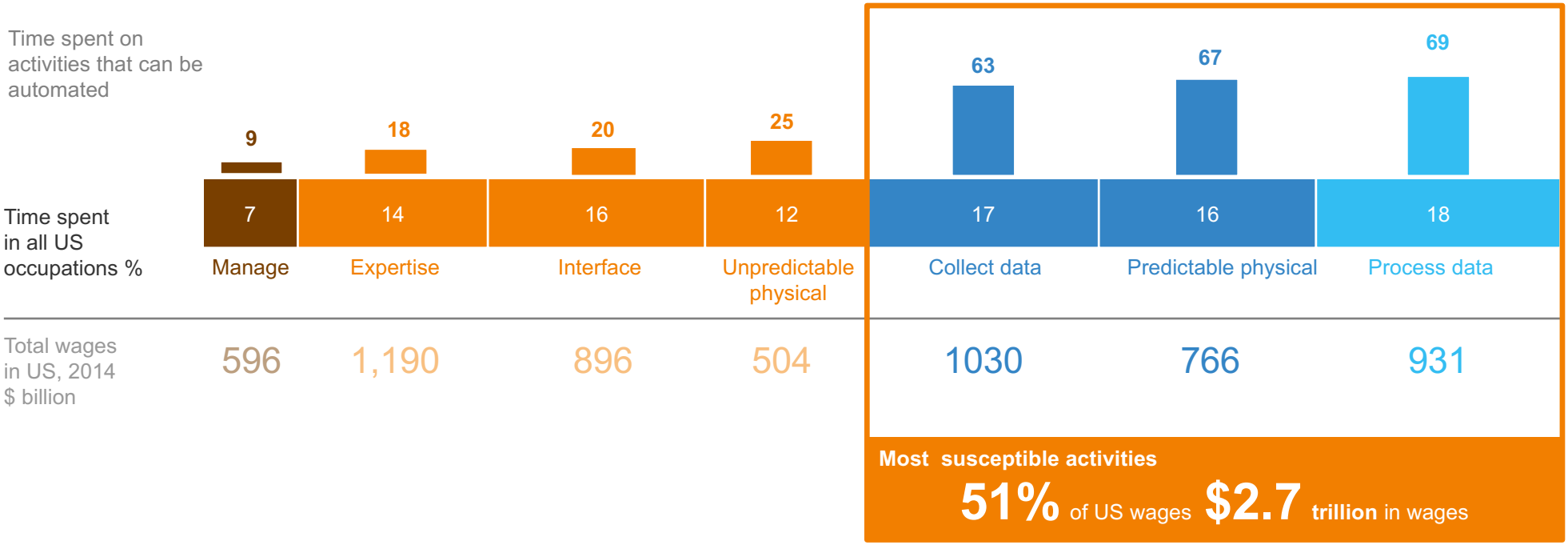
Create seamless interactions between humans and technology (e.g., data-to-story translation)

Cognitive agents

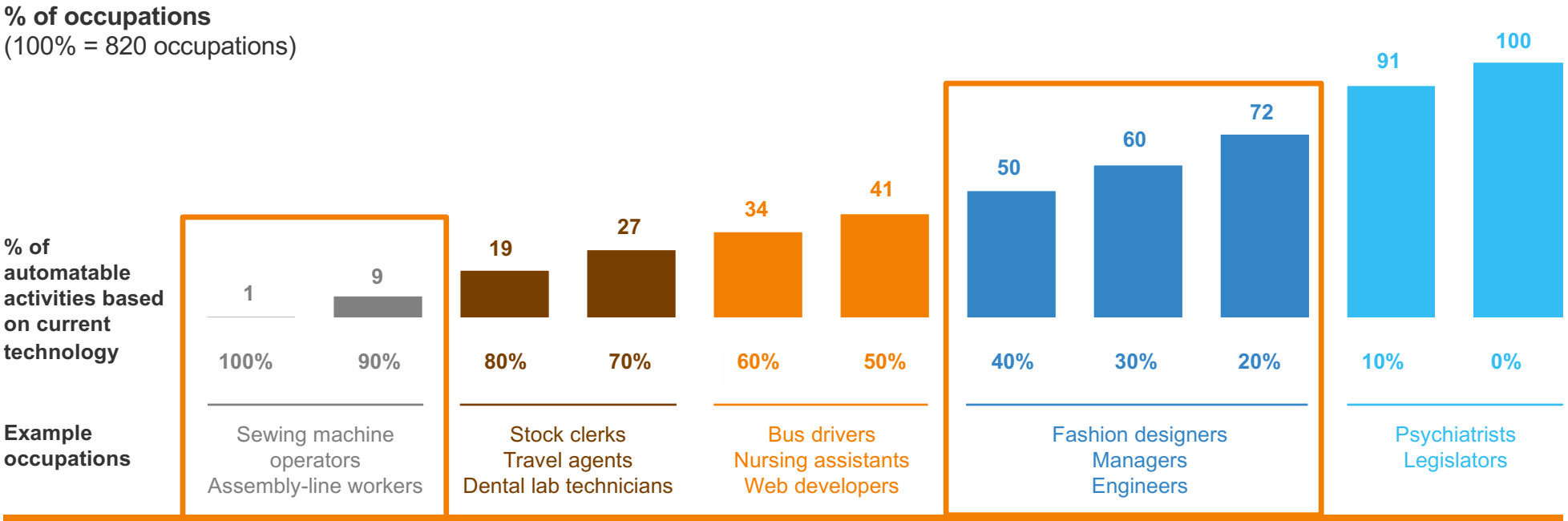
Build a virtual workforce capable of supporting employees and customers (e.g., employee service centers)

Data collection and processing and physical activities in predictable environments have the highest technical automation potential

Automation potential across activity categories based on currently demonstrated technologies



Most jobs will change rather than disappear: 60 percent of occupations have 30 percent of activities that are fully automatable

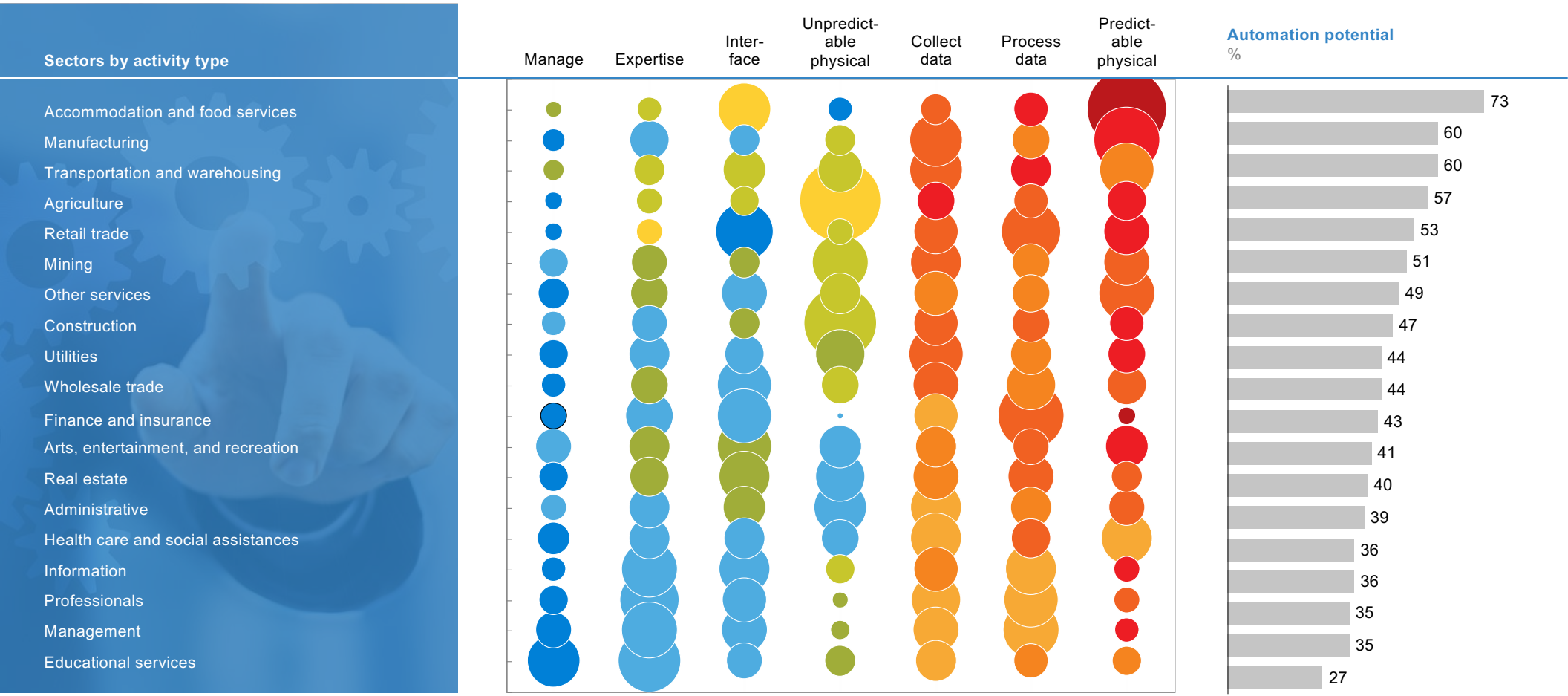


While about

1% of occupations have close to **~100%** of tasks automatable …

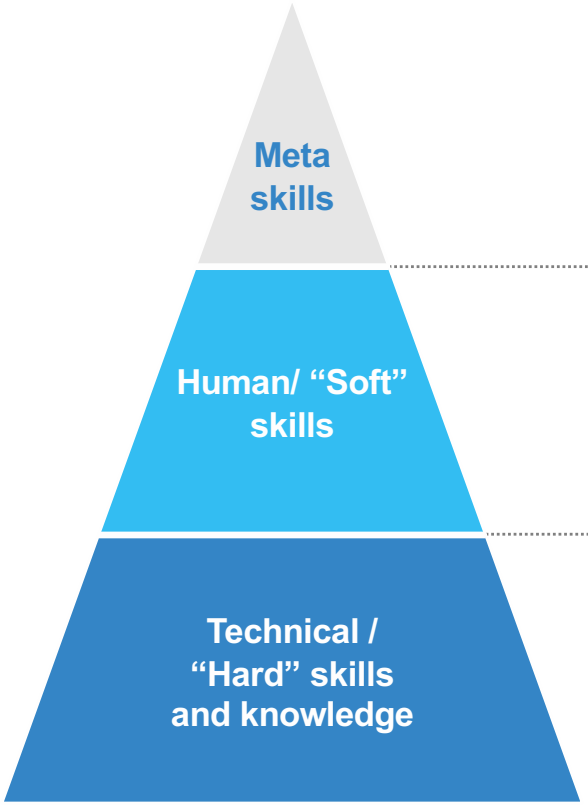
~60% of occupations have **~30%** of tasks automatable

Impact of automation will vary by sector and type of work



SOURCE: US Bureau of Labor Statistics; McKinsey Global Institute analysis

How work will change: meta-skills will be critical to adapt to evolving soft and hard skills demanded by the market



	Examples	Frequency of market changes in demand
Meta skills	▪ Lifelong learning aspiration/ growth mindset ▪ Self-direction ▪ Comfort with change, uncertainty	▪ Always critical
Human/ "Soft" skills	▪ Creativity ▪ Critical thinking and problem solving ▪ Social intelligence ▪ Communication and influence	▪ Always critical, depth and complexity of skills demanded will increase
Technical / "Hard" skills and knowledge	▪ Software development ▪ Design ▪ Product management ▪ Big data analytics ▪ Agile methodologies ▪ Lean management practices	▪ Specific skills demanded will change several times within a career

Success will be determined by the ability to redesign work and right-skill workforces for the future

Shifts in skill needs within next ~ 10 years

Example skills that will grow in criticality

- Adaptability and lifelong learning meta-skills
- Digital design and development
- Advanced analytics
- Innovation
- Complex communication

Example skills that will decline in criticality

- Predictable physical work
- Data input and retrieval
- Simple data analysis

Redesigning work and reskilling

The ability of employers to re-organize work and right-skill their workforce for the future will be **the rate limiting factor** of leveraging new technologies

Accelerating War for Talent

"In the next 5 years, the demand for talent to deliver on new [digital] capabilities will significantly outstrip supply. For agile skills, demand will be 4x supply; for big-data talent, it will be 50-60% greater than supply"

McKinsey & Company 9

Thank you