



Digital Transformation of the Workforce

West Des Moines Chamber Luncheon

THE WORLD'S LEADING LOCATION STRATEGISTS



Credit to SSG Member Authors

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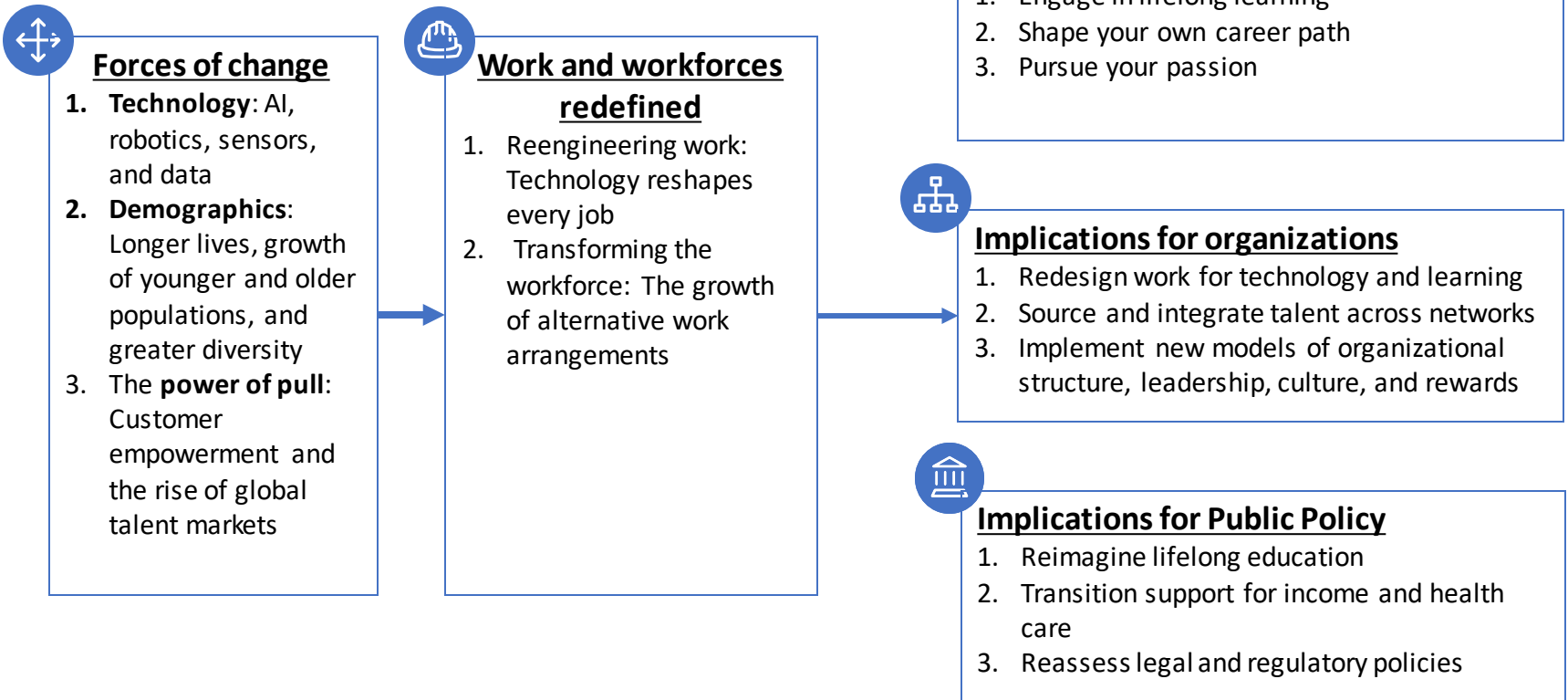
Digital Transformation of the Workforce: 5 Key Takeaways

1. Massive investments will be required for **retraining and re-skilling the workforce** – communities who lead the way will have a distinct advantage in business attraction and retention
2. Cognitive technology and robotic process automation (RPA) are transforming shared services and contact centers – the demand for **soft skills and judgement is becoming critical on most projects**
3. The “gig economy” is accelerating, as companies increase their use of a contracted, distributed workforce. **Co-working space is replacing traditional offices** – large office projects will be fewer in number
4. The **automation of warehousing and manufacturing** is altering workforce requirements. Expect smaller job counts and higher demand for skills in process automation and robotics
5. The “**human cloud**” **enables smaller communities to capture IT projects** looking beyond Silicon Valley as the demand for high-tech skills forces companies to expand their footprint to capture talent



Understanding the Future of Work

Why are we talking about this?





4th Industrial Revolution Skill Categories

Workforce Readiness	Literacy, numeracy, digital literacy, resume writing, self-presentation, time management, professionalism, etiquette, social norms	<u>TRAINING</u> <u>METHODOLOGY</u> <ul style="list-style-type: none">• Team-based• Project-based• Practical Application• Experiential• Case simulation• Business exposure• Job shadowing• Mentorship• Coaching
Soft Skills	Communication, critical thinking, creative thinking, collaboration, adaptability, initiative, leadership, social emotional learning, teamwork, self-confidence, empathy, growth mindset, cultural awareness	
Technical Skills	Computer programming, coding, project management, financial management, mechanical functions, scientific tasks, technology-based skills, and other job-specific skills (e.g., nursing, farming, legal)	
Entrepreneurship	Initiative, innovation, creativity, industriousness, resourcefulness, resilience, ingenuity, curiosity, optimism, risk-taking, courage, business acumen, business execution	

LIFELONG LEARNING

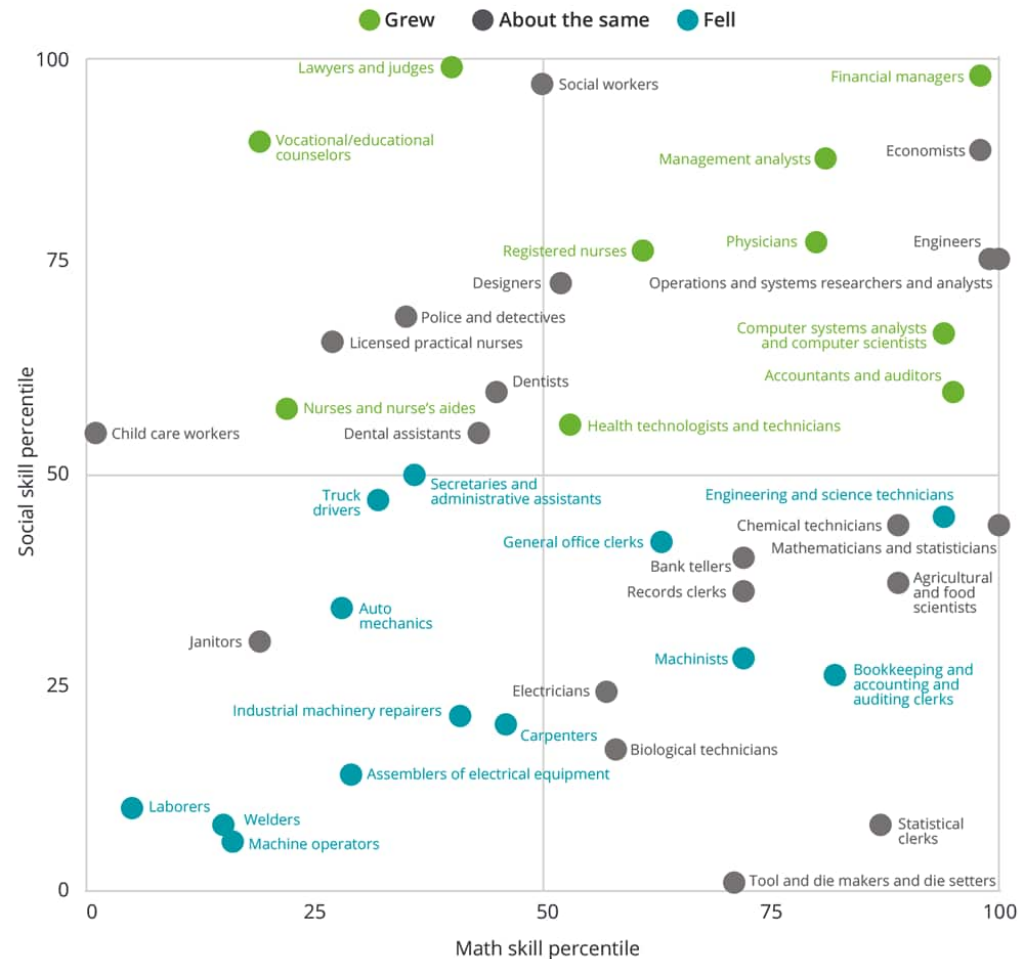
Source: Deloitte Analysis, Deloitte University Press



Impact of Digital and “New Work”

Figure 1. Which jobs require social skills?
Change in share of jobs, 1980–2012

- **Brains over brawn:** In absolute terms, knowledge of specialist STEM subjects is 40% more important than the physical abilities of strength, endurance, flexibility, or the ability to manipulate objects
- **Social and cognitive skills:** A 10 percent increase in cognitive abilities contributes to a 12 percent increase in median hourly earnings
- **STEM and STEAM continue to grow:** By 2039, math and science knowledge is expected to increase in importance by 7%
- ~4.5M new STEM-enabled jobs to be created globally, including engineers, scientists, IT and digital professionals, economists, statisticians, and teachers



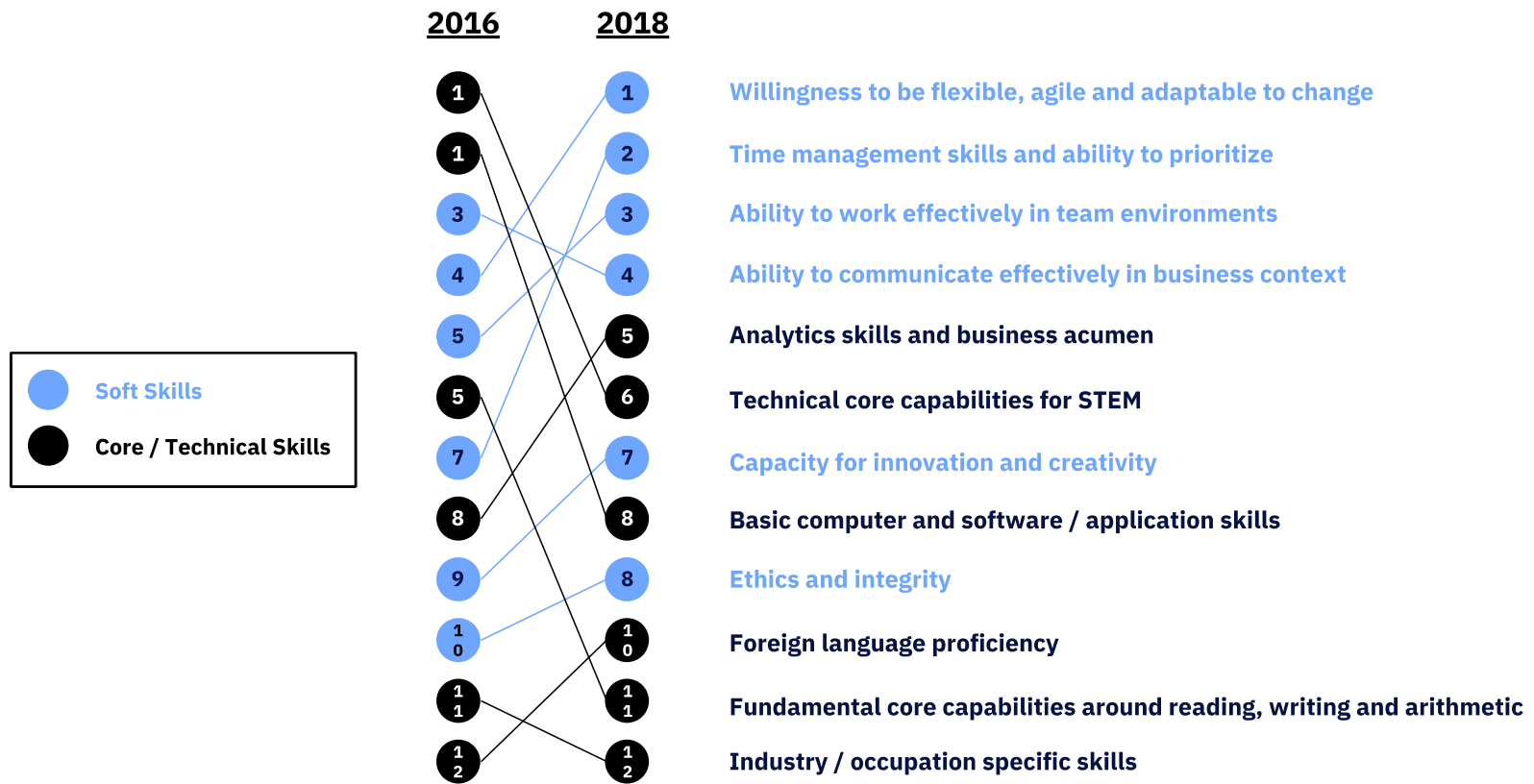
Source: David Deming, Harvard University.

Takeaway #1

Massive investments will be required for **retraining and re-skilling the workforce** – communities who lead the way will have a distinct advantage in business attraction and retention



Soft skills have grown in importance among executives around the world



Sources: 2016 IBM Institute for Business Value (IBV) Global Skills Study, 2018 IBM IBV Country Survey



Technological advances are significantly impacting the workforce

67%

Advancements in technology will require new roles and skills in our organizations that do not exist today

65%

Advancements in robotics, AI and automation will impact the demand for skills in the next 5 years



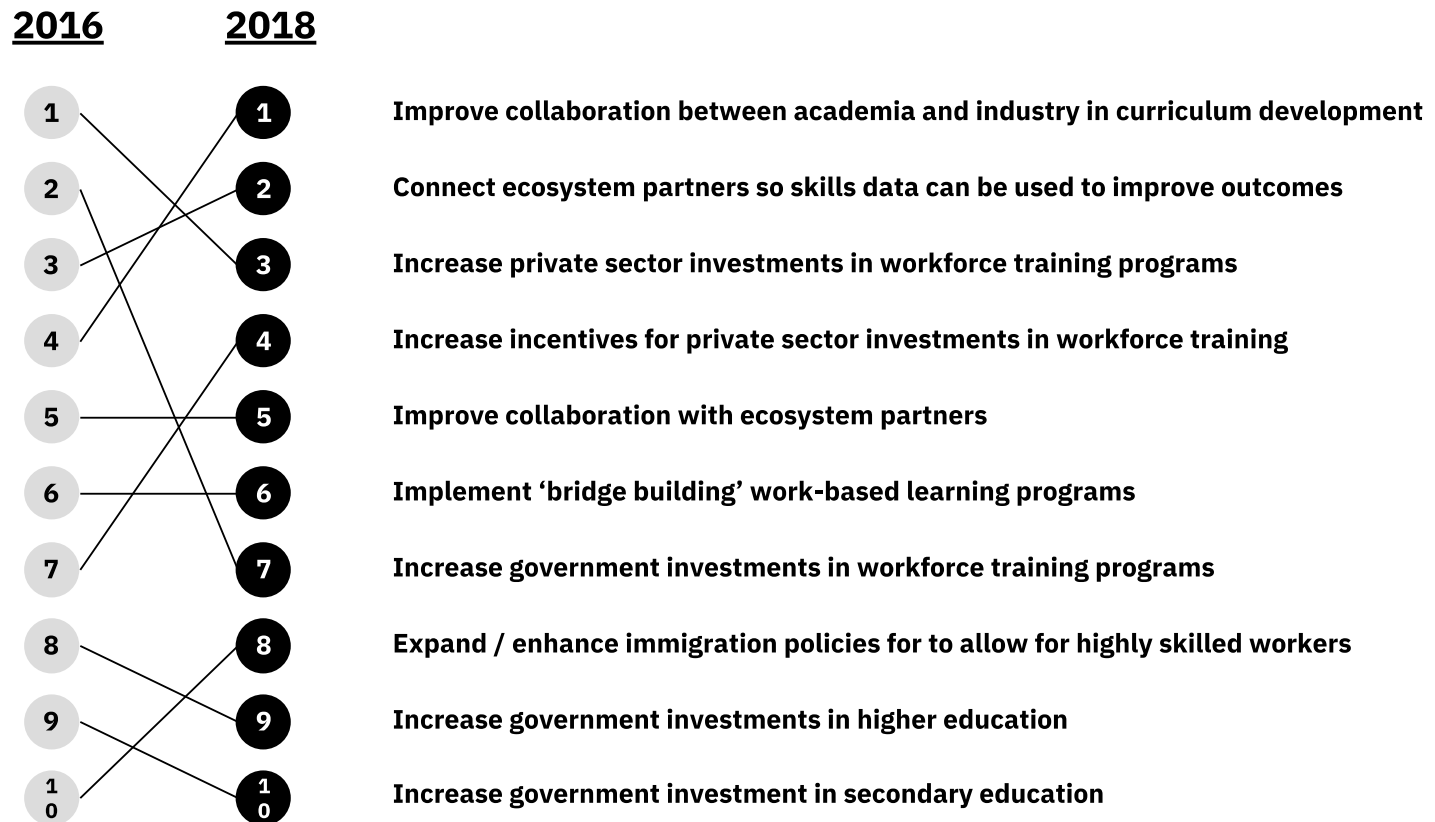
Massive investments will be required to address retraining & reskilling requirements

120+ million

workers in the world's 12 largest economies may need to be retrained / reskilled in the next 3 years as a result of intelligent automation



Most execs believe improved collaboration and private sector investments are most critical



Sources: 2016 IBM Institute for Business Value (IBV) Global Skills Study, 2018 IBM IBV Country Survey

Takeaway #2

Cognitive technology and robotic process automation (RPA) are transforming shared services and contact centers – the demand for **soft skills and judgement is becoming critical on most projects**



Impact of Digital Technologies in GBS - RPA



Bots designed to eliminate need for human interaction in transactional/repetitive processes



Can manage increasingly complex decision tree...limit is ~20 decisions before human intervention required



Companies increasingly demanding that employees understand underlying technology platforms and downstream applications...



- Python
- R

What is left for Humans to do??...



Functional Design



Programming



Exception Case Processing (80%)



Face to Face interaction



Problem Solving



Judgement



Email Communication



Telephone Interaction

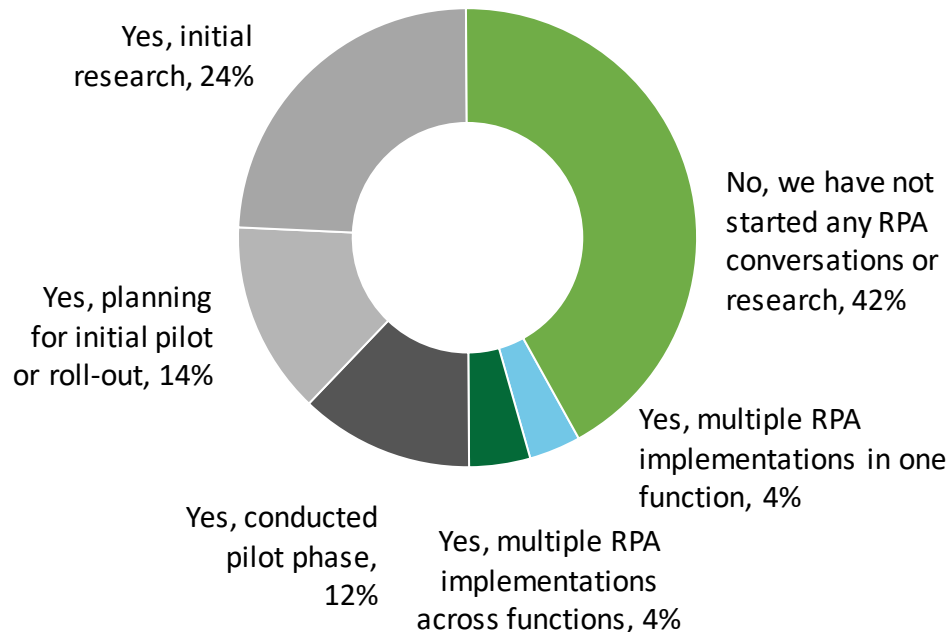


Data Analytics



How widespread is RPA?

Is your SSC or GBS organization actively exploring RPA activities?



RPA is happening. Some organizations are more advanced, but majority are actively exploring or actioning adoption

Source: Deloitte 2017 Shared Services & Outsourcing Survey

Takeaway #3

The “gig economy” is accelerating, as companies increase their use of a contracted, distributed workforce. **Co-working space is replacing traditional offices** – large office projects will be fewer in number



Gigs vs Contract Work

Gig Work vs Contract Work

- Gigs are toward the lower end of expertise or specialization
- Contract work is specialized, knowledge-based freelance work

A.I. will replace current gig workers

- E.g. autonomous vehicles will replace Uber drivers

A.I. will create opportunities for specialists

- Consultants/contractors will be able to do more in less time
- They will be able to work for multiple clients



Contract Work will be the new normal

U.S. workforce in freelance economy

2019: 18%

2030: >50%

During economic recovery 94% of all net jobs created between 2008 and 2016 were impermanent jobs

Lawrence Katz and Alan Krueger – Labor Economists

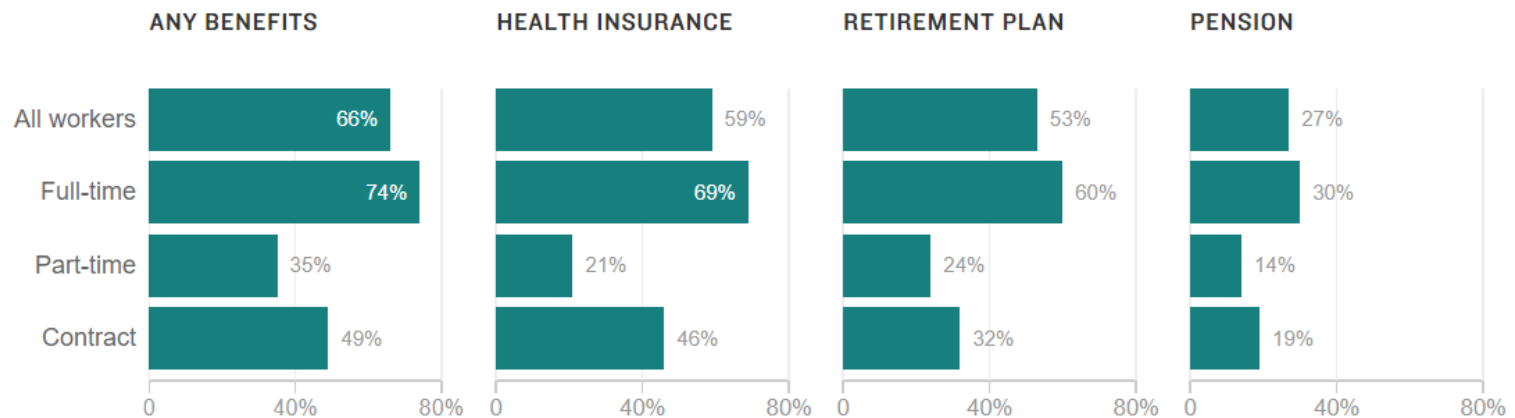


Contract Work will be the new normal

The economy has created jobs in the last two years but most jobs have no benefits. Quality of jobs has fallen.

How Benefits Differ For Part-Time, Full-Time And Contract Workers

Share of workers receiving benefits of each type listed below



Source: *NPR/Marist poll* of 1,267 adults conducted Dec. 4-7, 2017. "Workers" includes 794 adults who are employed full time, part time or self-employed. The margin of error is +/- 3.5 percentage points.

Credit: Hilary Fung and Katie Park/NPR



There will be talent shortage
even as A.I. creates redundancy

Upskilling within the same generation will be the biggest challenge for communities and countries.

A.I. will replace 5 million jobs in OECD countries by 2020

At the same time there will be 6 million unfilled cyber-security positions.

Source: LinkedIn Talent Solutions



Coworking is a new normal

With more contractors who work in small, temporary teams, a coworking environment provides the needed flexibility

74% report greater productivity and enhanced social connectivity in coworking spaces.

Source: HBR

Takeaway #4

The **automation of warehousing and manufacturing** is altering workforce requirements. Expect smaller job counts and higher demand for skills in process automation and robotics



Automation Impact on Warehouse & Distribution Workforce

Distribution and Fulfillment Centers

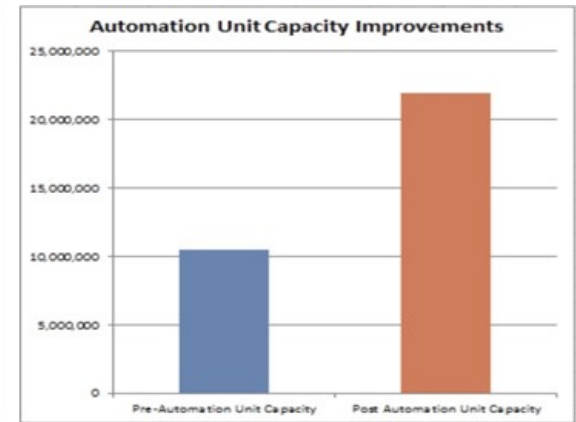
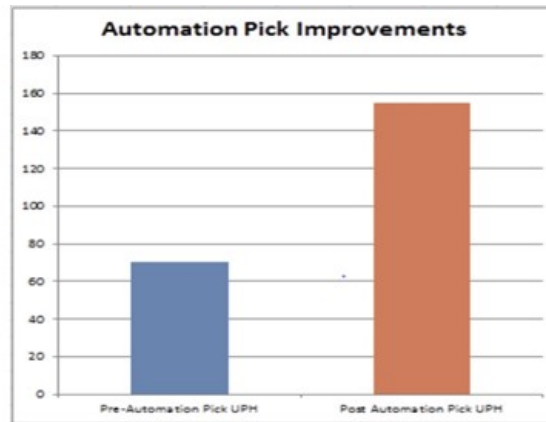
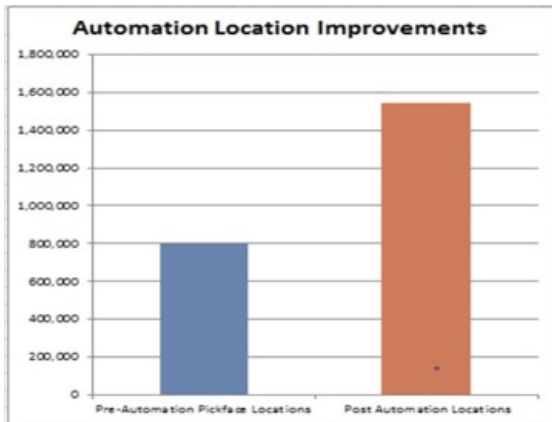
Client SVP of Supply Chain: “In the past automation scenarios were evaluated based on IRR, Payback, ROCD, etc. – today it’s all about what do we need to just survive this labor shortage crisis”.

- Impact: Skill levels rise with automation; need less people and more skills (ballpark goal; for every 3 is now 1, caveat below)
- Fact (Past): Material handling & fulfillment process, manifested in large labor intensive e-commerce warehouses with single skill workstations or tasks – 1,000 to 2,000 people plus seasonal temp workforce
- Fact (Future): Digital technology deploys workers to multiple stations and machines and specific tasks aligned with workflow – 500 to 800 FTE people; multiple shifts; less seasonal/temp; skill level higher

Automated systems can keep operations running 24/7, without the traditional costs of manual handling. These benefits offer significant cost savings over time, resulting in a high return on investment.



A Picture is worth....





Automation Impact on Manufacturing Workforce

- Much is discussed about automation taking jobs but automation also allows expensive cost environments with tight labor markets compete.
- Today's industrial engineers can “tune” the various factory inputs of capital, labor, utilities and technology. Project parameters are surprisingly fluid and change over site selection as automation is implemented.
- US has a major advantage with access to capital, low cost & reliable utilities.



Source: CMTC Manufacturing Network



Source: Berkeley Engineering



Automation Impact on Manufacturing Workforce

- Real-time project tuning example over 6 months. EDOs saw project parameters change to make US manufacturing more cost effective than Asia:
 - ↑ Capex, automation, robotics, and power consumption
 - ↓ Labor count, site size, parking
- Order of labor automation:
 1. Manual operations – warehousing, goods moving. Over three shifts, every robot can save 3 people.
 2. Skills and machines improve so one person supervises multiple machines (1:1 in Asia vs 1:5 in US).
 3. Higher value robotics speed line, decrease takt time and increase output per employee and per SF.

Takeaway #5

The “**human cloud**” enables smaller communities to capture IT projects looking beyond Silicon Valley as the demand for high-tech skills forces companies to expand their footprint to capture talent



Human Cloud / Liquid Workforce

Today

30% Workforce

Liquid Workforce Emergence



Crowdsourcing of Work

“New normal” for daily work orchestration and management



The Hollywood Model

Potential future dominant workforce management model

2030

75% Workforce

Future Liquid Workforce Growth



The Internet of Work

Social business platforms organize work via the Internet



The Human Cloud

Scaling of the enterprise workforce and infrastructure



Human Cloud / Liquid Workforce

Today



Big Announcements

EDOs seek the big new company announcement



Large Corporate Presence

EDOs seek new jobs by recruiting a large corporation



Employer Driven Training

Reactive company driven education programs

Tomorrow



Industry Announcement

Announcements about sector growth



Talent Development

Proactive industry driven education programs



Talent Recruitment

Recruit specific talent to grow an industry