



A North American Workforce Development Agenda

Better Jobs for a More Competitive Region

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July 17 2019

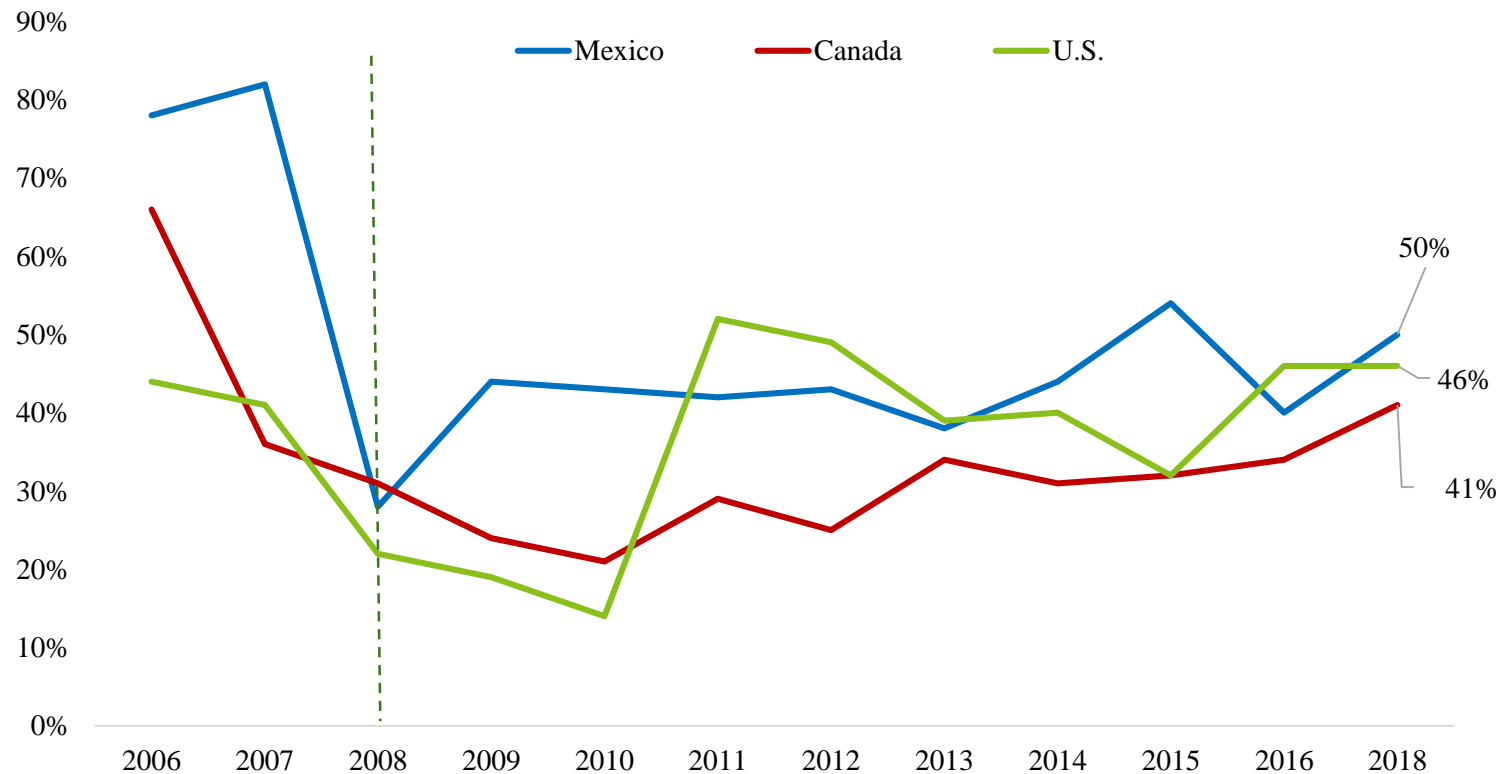


North American Challenges



- The United States, Mexico and Canada face **alarming skills gaps and mismatches:** harm competitiveness and economic performance.
- **Skills problems are likely to grow** given the technological transformations and global competition ahead.
- North America's **integrated production and commercial networks** mean **regional collaboration on workforce development is vital.**
- Governments, companies, schools and others should **focus now** on investment in continent's workforces to prepare for the "**future of work.**"
- **Mexico, Canada and the United States'** national programs are **not sufficient** and do **not encourage North American collaboration.**
- **USMCA will open opportunities** for tri-lateral collaboration.

Employers Are Having Difficulty Filling Jobs



According to Manpower's 2018 talent shortage survey, **50% of Mexican employers**, **46% of U.S. employers** and **41% of Canadian employers** have had difficulty filling open positions: **skills mismatches as a key problem.**



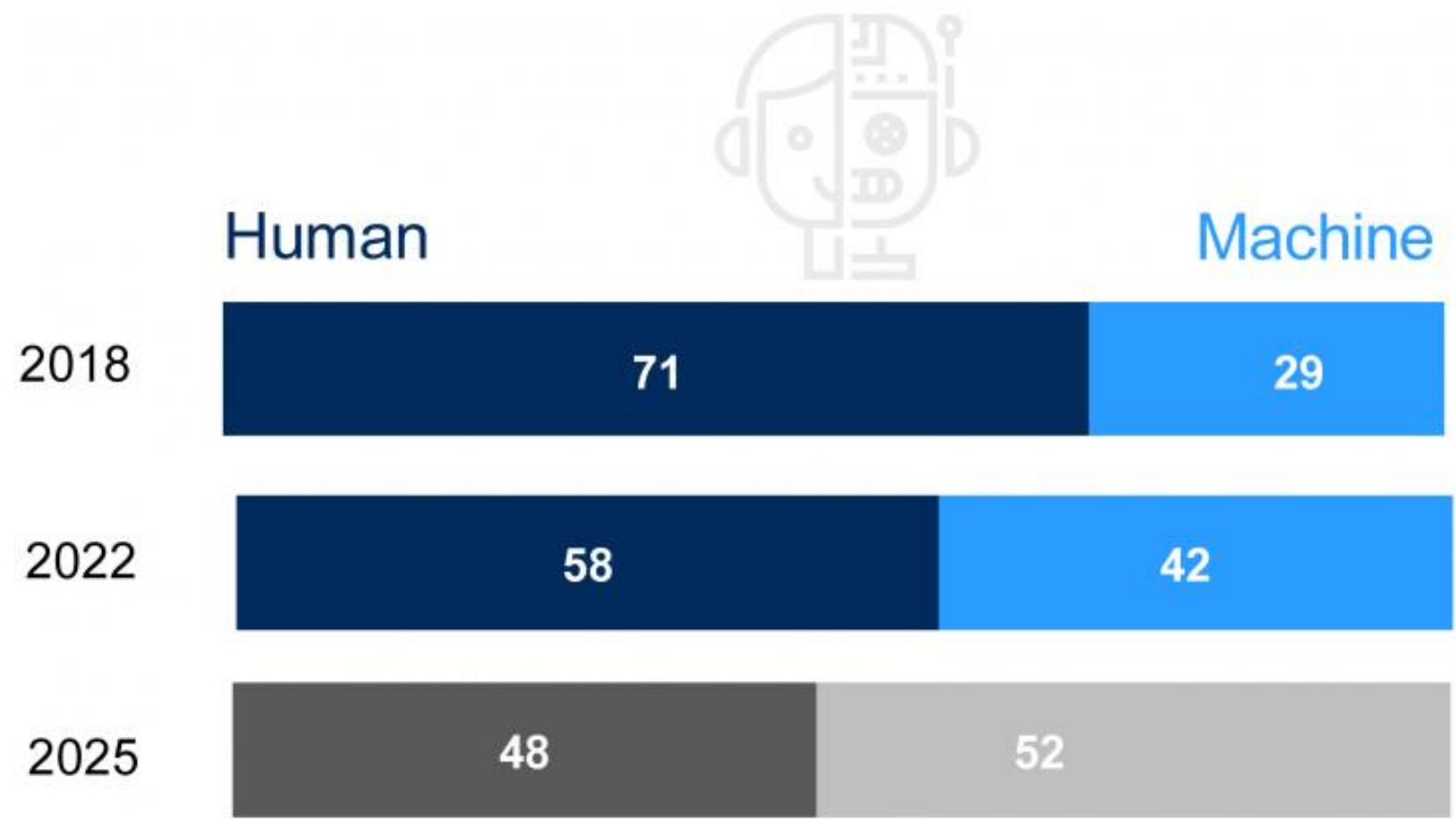
World Economic Forum's 2018 Future of Jobs Report

Surveyed over **300 global companies** from 20 economies - representing 70% of global GDP and 15 million employees:

1. Across all jobs there will be a **42% change in workforce skills** from 2018-2022.
2. Over **54% of workers will require reskilling or upskilling**.
3. **50%** of companies expect to **reduce full-time workers**. But, almost **40% expect to expand** their workforce.
4. **Geographic location for production** likely determined by **availability of skilled local talent** say **74%** of companies surveyed. 64% highlight labor costs.
5. Strategies to address skills gap vary widely: hiring new staff with required skills; automate work tasks; retrain workers; use contractors.
6. Staff most **at risk of being displaced** are less likely to be offered training.

WEF Global Findings: Division of Labor as Share of Work Hours (%)

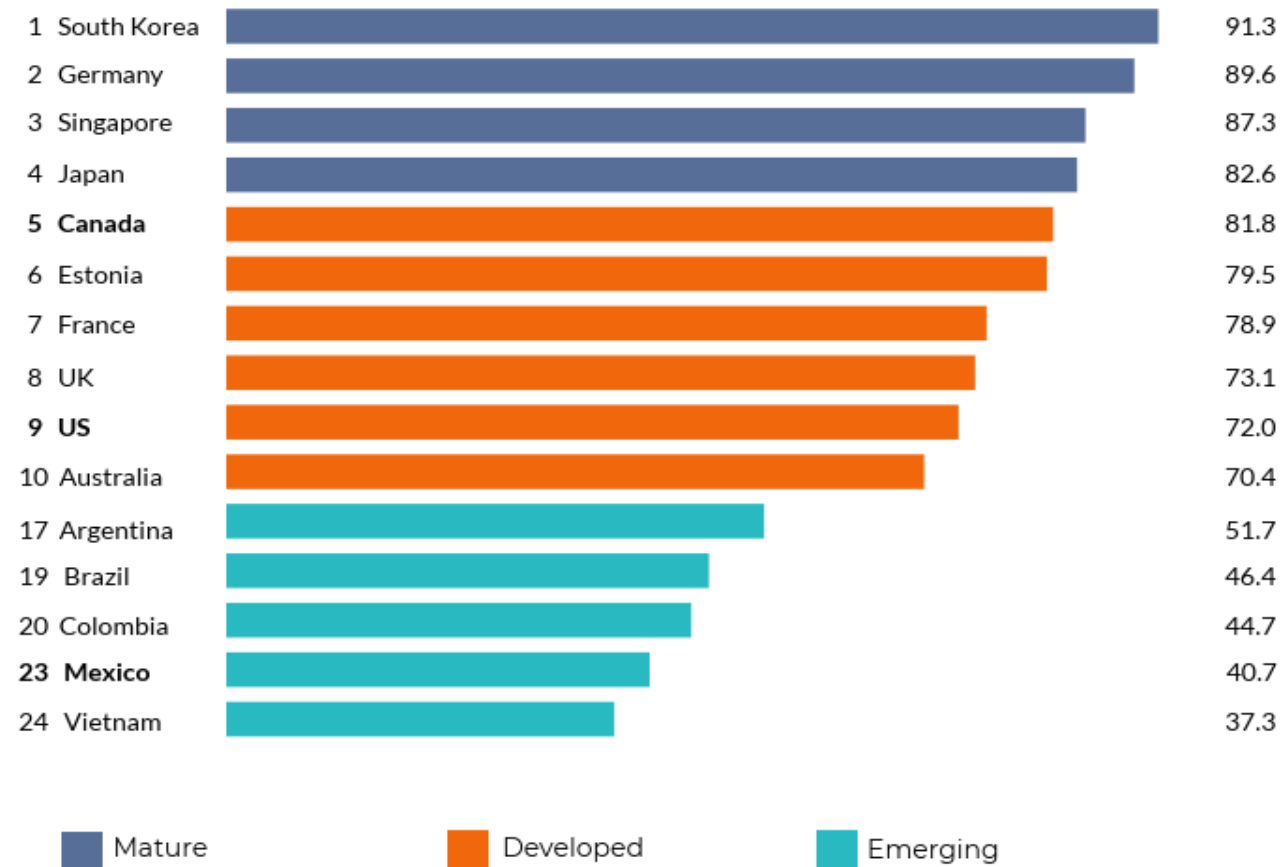
Future of Jobs Report – WEF 2018

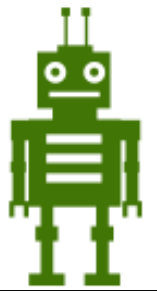


Source: Future of Jobs Report 2018, World Economic Forum

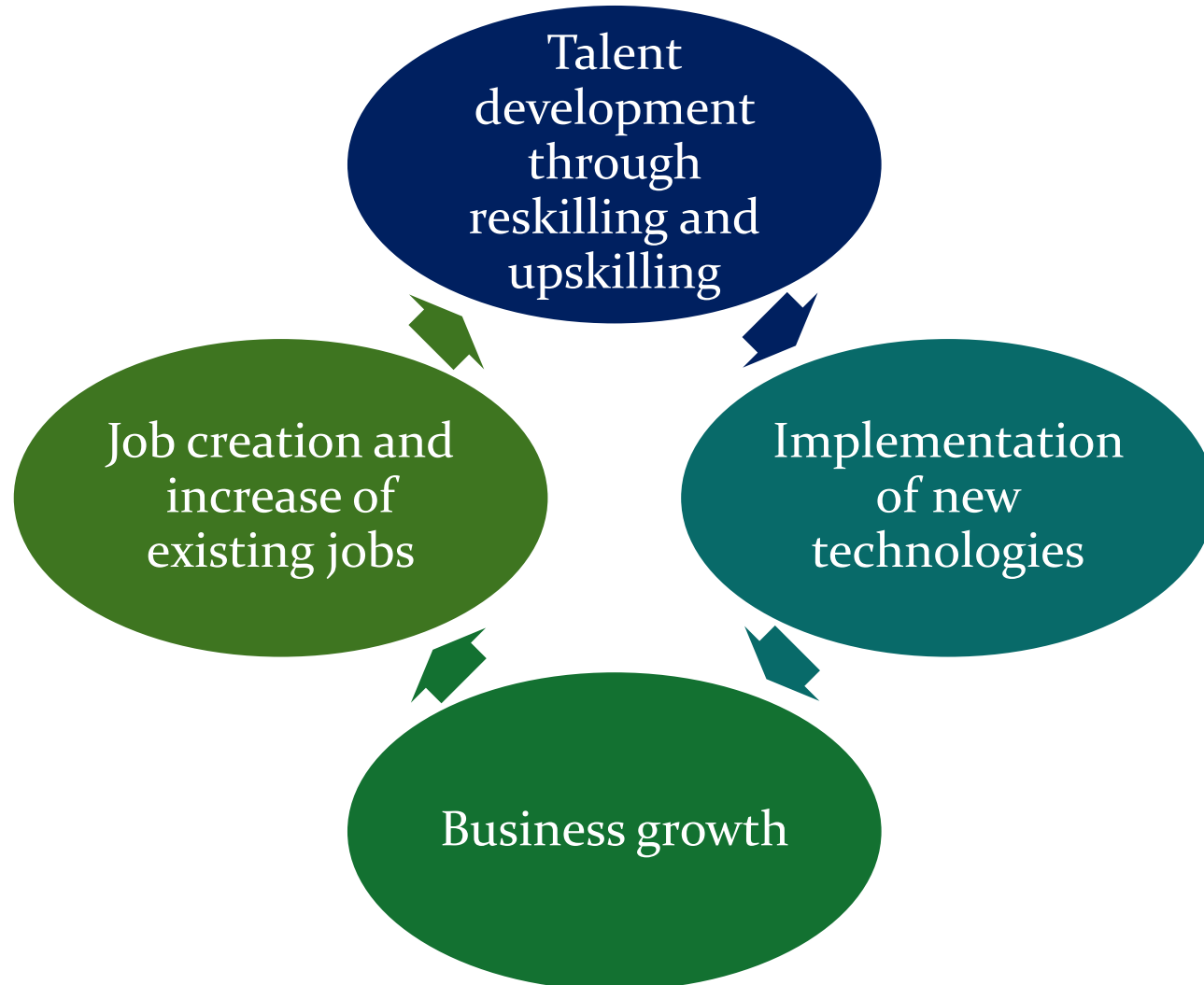
Who is ready for the coming wave of automation?

The Automation Readiness Index





WEF: A Virtuous Cycle of Technology and Upskilling



- Skills gaps can hamper the incorporation of new technology and business growth.
- **Human capital investment** can **maximize** use of new technology & business **growth**.
- **Reskilling & upskilling** should be in business models: **“augmentation strategy.”**
- **Governments should foster and support** such trends with policies, programs and investments.

WEF: Factors determining job location in North America

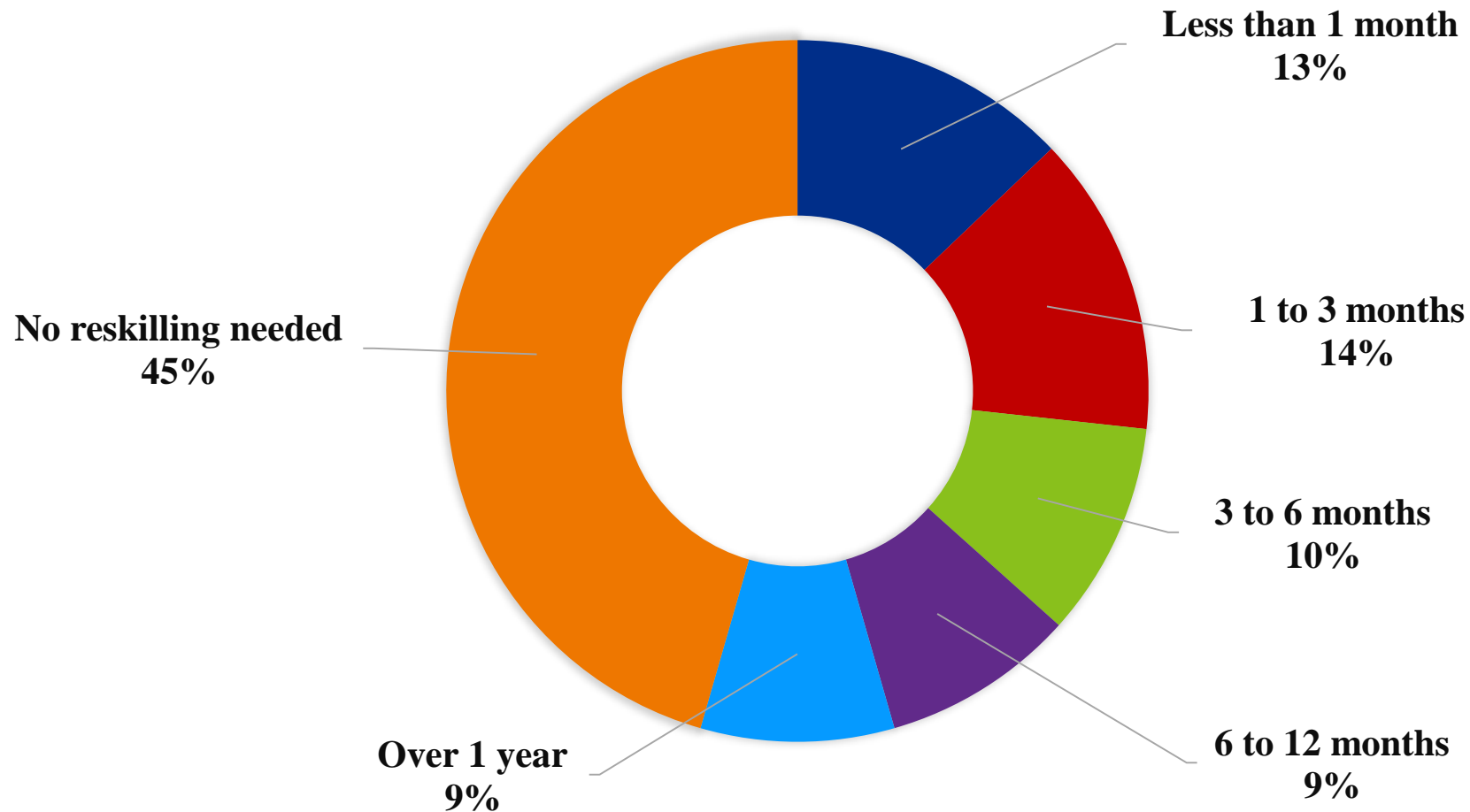


Industry	Primary	Secondary	Tertiary
Automotive, Aerospace, Supply Chain & Transport	Talent availability	Quality of the supply chain	Labour cost
Aviation, Travel & Tourism	Talent availability	Organization HQ	Ease of importing talent
Chemistry, Advanced Materials & Biotechnology	Talent availability	Labour cost	Production cost
Consumer	Talent availability	Labour cost	Quality of the supply chain
Energy Utilities & Technologies	Labour cost	Production cost	Talent availability
Financial Services & Investors	Talent availability	Organization HQ	Geographic concentration
Global Health & Healthcare	Talent availability	Labour cost	Production cost
Information & Communication Technologies	Talent availability	Labour cost	Geographic concentration
Infrastructure	Talent availability	Labour cost	Geographic concentration
Oil & Gas	Talent availability	Production cost	Labour cost
Professional Services	Talent availability	Labour cost	Strong local ed. provision

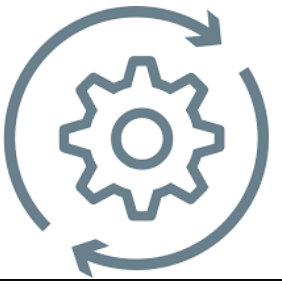
Range of options: Flexibility of labour laws, Geographic spread, Quality of the supply chain, Ease of importing talent, Labour cost, Location of raw materials, Organization HQ, Production cost, Strong local education provision, Talent availability.



WEF North America: Average reskilling needs (*share of workforce*)



Towards a U.S. Reskilling Revolution



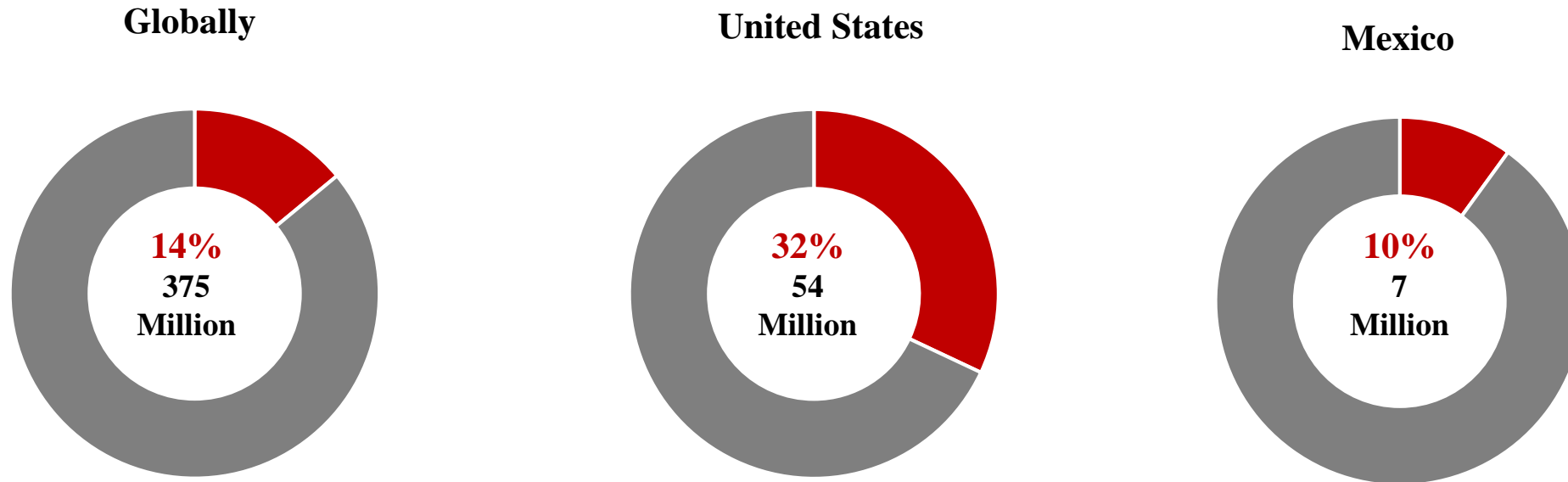
- The U.S. Bureau of Labor Statistics predicts that **1.37 million U.S. workers will be displaced** from their roles in the next decade
- The **reskilling cost** is estimated to be **\$34 billion dollars**

On average, the costs of reskilling would be **\$24,800** per displaced worker



Reskilling on a North American Scale

- McKinsey Global Institute argues that by 2030, **375 million workers globally** will need to **change occupations or undergo reskilling**.



Workforce Development: North American Cooperation



- **North American dialogue can help** create jobs, and boost competitiveness.
- Wilson Center proposal: a **tri-lateral task force provides an umbrella for public-private, federal-sub-federal working groups to identify best practices and develop proposals for cooperation across the three countries. Four Working groups:**
 - 1) **Apprenticeships** & other **work-based learning** and technical education;
 - 2) **Certifications** and related issues;
 - 3) **Data** collection and transparency;
 - 4) **Best practices** to manage for the **Fourth Industrial Revolution**.

Implementing the North American Agenda



- The overarching tri-national task force and the four working groups could be **incorporated into or synced with the USMCA**.
- The successful implementation will depend on **collaboration of governments, private sector, educational institutions, and unions**, among other stakeholders, from all three countries.
- **Dangers of inaction includes social and political disruption.**
- **Workforce Development will help strengthen competitiveness and managing tumult of technological change.**

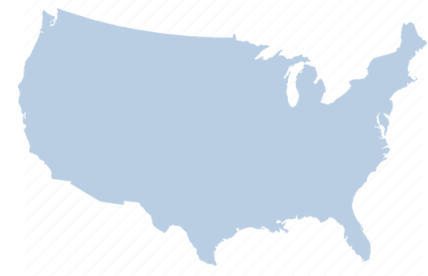
Mexico Workforce Development Proposals:

AMLO's Program: "Youth Building the Future"



- **Objectives:**
 - Increase job/training opportunities for **2.6 million young Mexicans** aged 18-29 that are not studying or in employment.
 - Reduce youth involvement in **criminal activity**, and **increase productivity** levels and **economic growth**.
- **Two Parts:**
 - 2.3 million **scholarships for work** training in the private, not-for-profit and public sectors.
 - 300,000 annual **scholarships for college**.
- **1-year mentorship programs** aimed at training young people with relevant work skills
 - Programs created individually by companies, NGOs or the Labor Ministry; at least **one tutor** per firm.
 - 70% of programs in private sector, 20% in public sector, 10% in civil society sector.
- **Critics:**
 - **Insufficient skill based curriculum or measuring of results.**
 - Need major upgrades of Mexico's education system at all levels.

US Workforce Development Proposals



- **July 2017 executive order: Expanding Apprenticeships in America**
 - Provide more affordable pathways to good paying jobs by promoting apprenticeships.
 - **June 2019** Labor Dept. proposed industry-recognized apprenticeship programs, plus \$183 million in grants to support them.
- **July 2018 executive order: Creates of the President's National Council for the American Worker**
 - Objective: produce a **national strategy** to assure workers and students are job ready for today's economy and develop recommendations on policy and strategy related to **workforce development**.
 - Council met for in March 2019. Established **four working groups** on 1) promoting multiple pathways to careers; 2) increasing data transparency; 3) modernizing candidate recruitment: and 4) encouraging employer-led training. **Recommendations expected in September 2019.**
- **Pledge to America's Workers:**
 - Facilitate creation of at least **6 million training opportunities for American students and workers.**
 - **200 companies and associations pledged** to create new opportunities over **five years**, including apprenticeships & work-based learning, continuing education, on-the-job training, and reskilling.
How will results be measured?

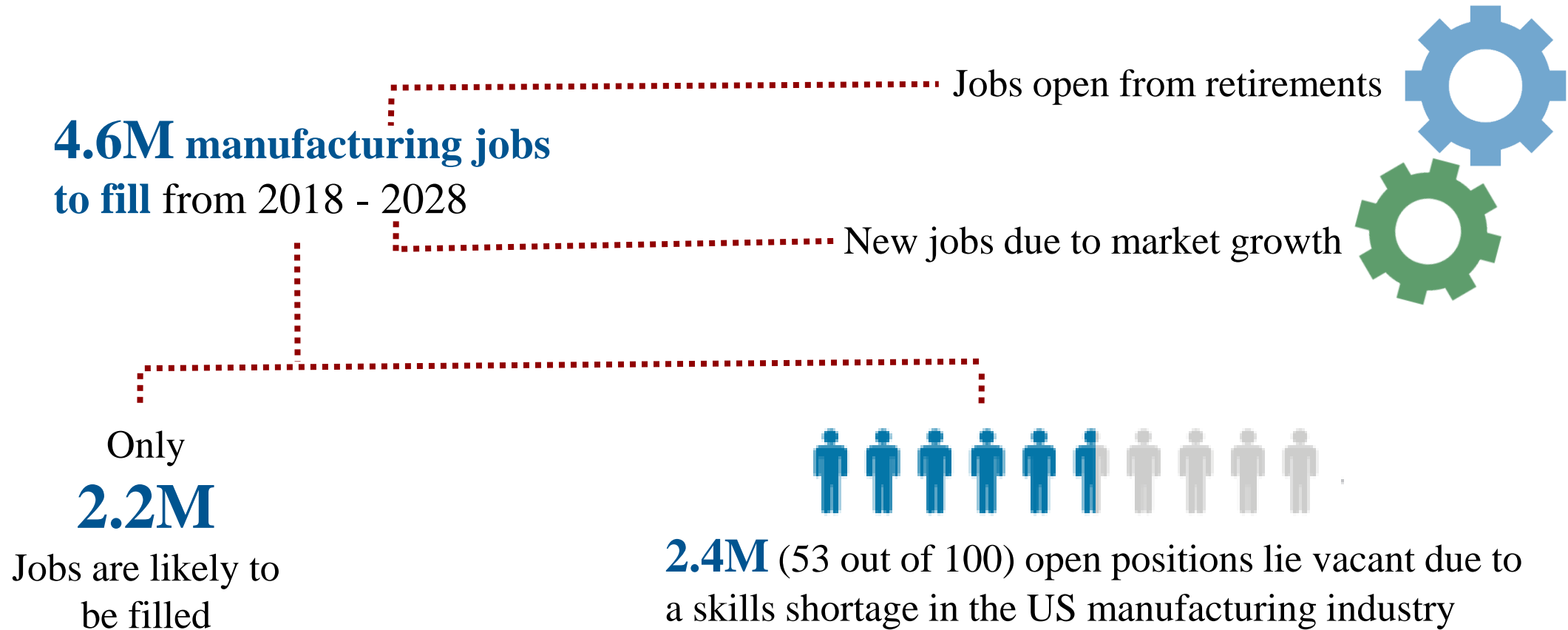


Canada Workforce Development Proposals

- **Established Workforce Development Agreements (WDA's) with provincial and territorial governments.**
 - The agreements provide **\$722 million annually**, as well as an **additional \$900 million** from 2017-18 to 2022-23, for the development of programs to help Canadians get training and develop their skills.
- **In May 2018 the Minister of Employment & Workforce Development requested [proposals](#) for a new Future Skills Center and applications for a Future Skills Council. Objectives:**
 - **Explore innovative approaches** to skills development.
 - **Identify the skills employers will need** now and in the future.
 - **Share information and best practices** to inform future investments and programming.
 - **Invest \$225 million** over 4 years and \$75 million per year thereafter.
- **Government investing \$11 million in the 2018 Flexibility and Innovation in Apprenticeship Technical Training pilot program**
 - Will fund third-party organizations to **test approaches on how to improve access to apprenticeships**.
 - Currently, there are over 400 apprenticeship programs available across Canada.



United States: Specific Challenges – skilled workers



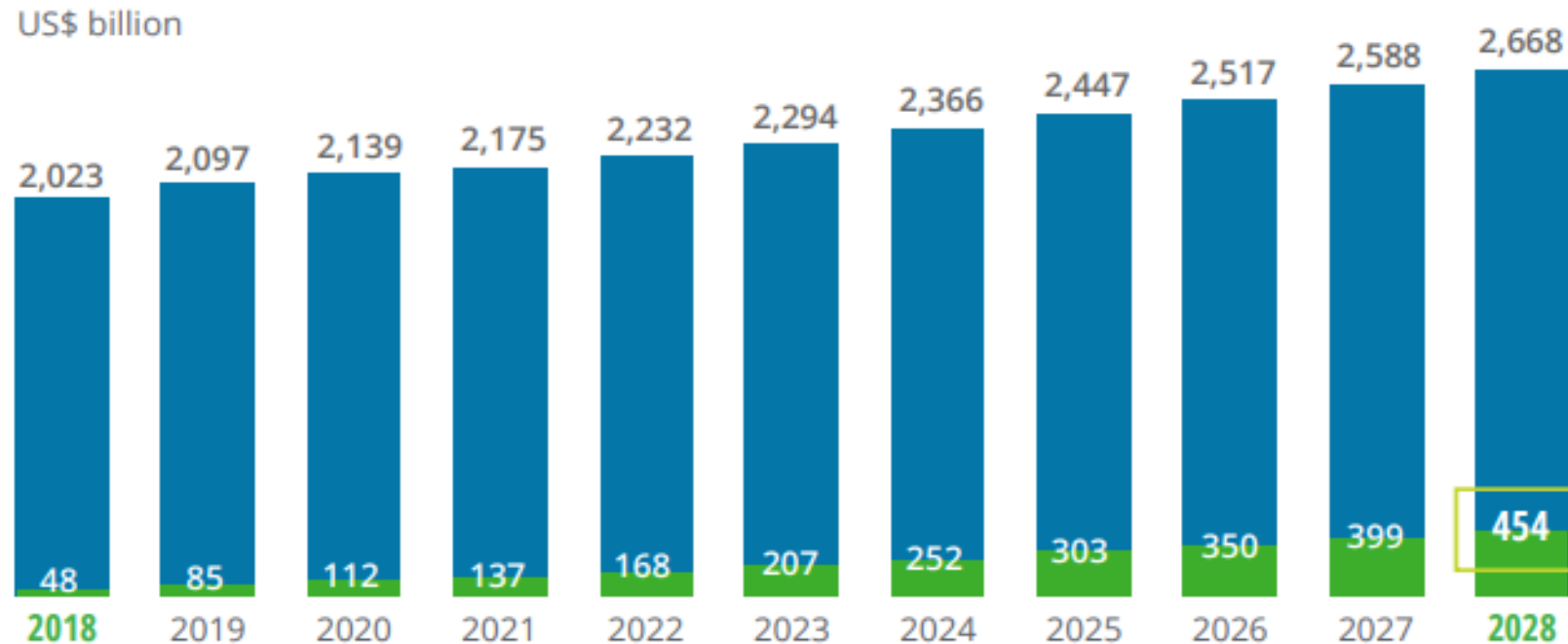
The skills gaps and mismatches could leave 2.4 million positions unfilled, says Deloitte



Shortages of skilled people will harm U.S. Manufacturing

Skills shortage could put US\$454 billion of manufacturing GDP at risk in 2028 alone

■ US manufacturing output/GDP ■ Manufacturing output/GDP at risk due to skills shortage



Persistent skills shortage could risk **US\$2.5 trillion** economic output over the next decade



Deloitte: 2018 Findings regarding the U.S.

- **Job openings** in manufacturing industry **growing** at **double-digit rates** since 2017
- **47%** of today's jobs might be gone in the next 10 years.
 - Including **20%** of assembler jobs in manufacturing.
- **Overall headcount, however, is expected to increase:** these jobs would transition into other skills, likely **infused with technology**.
- **89%** of executives see **skills/talent shortages** in U.S. manufacturing (5% more than in 2015).
- **15%** increase in the number of companies **offering higher pay to skilled** workers vice 2015.
- Companies **expect** the number of job **categories** with “**very high**” **shortages to triple** by 2021.

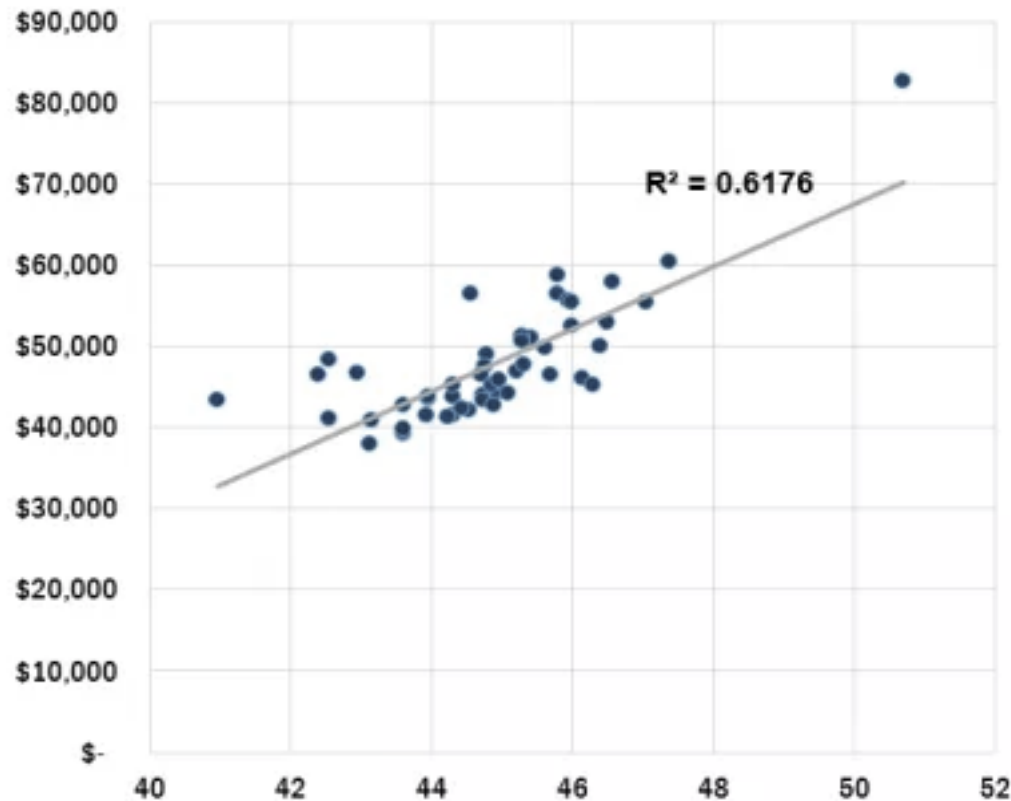
Digitally skilled U.S. workers:

Higher skilled workforce using digital technology = higher wages

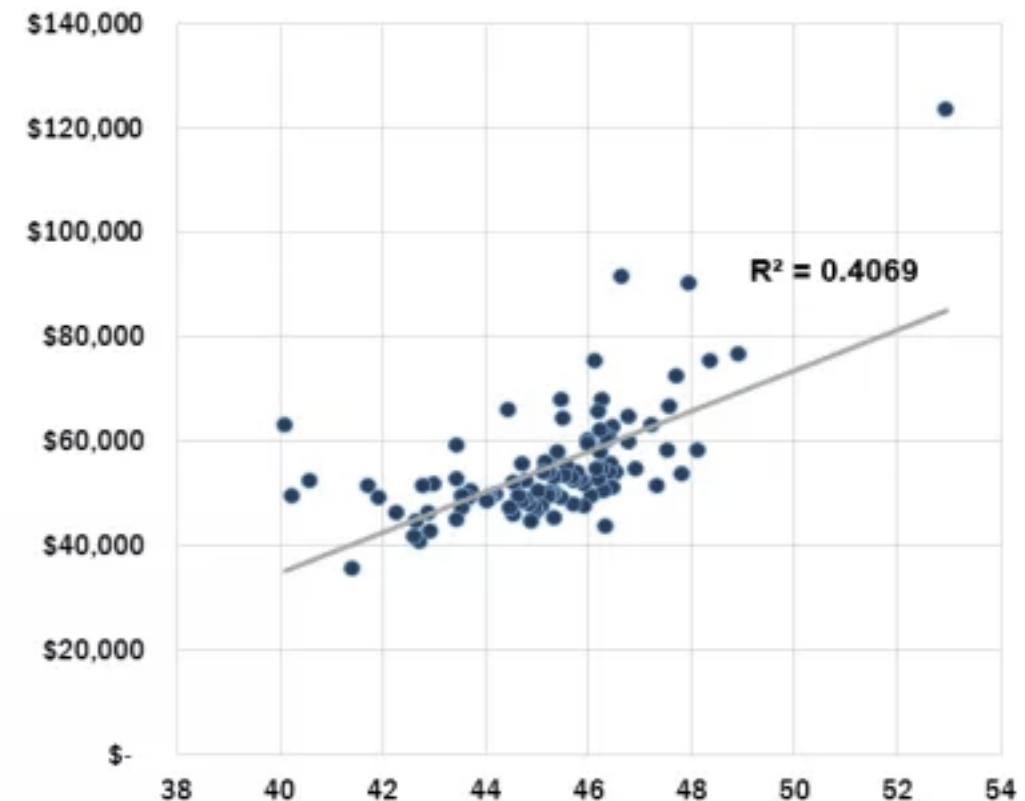


Digitalized places are pulling away from less digitally skilled places.

States, 2016



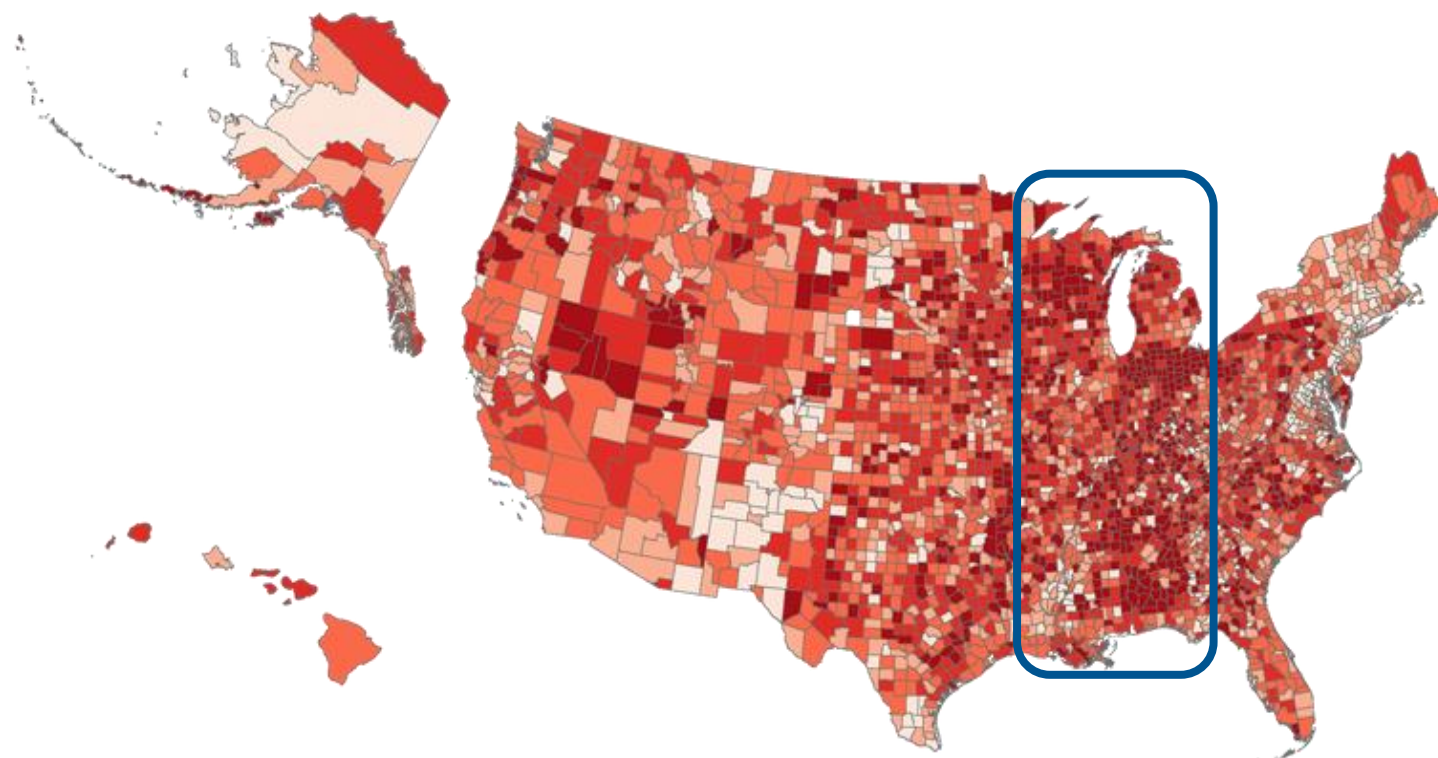
100 largest metros, 2016



Average automation potential by county, 2016



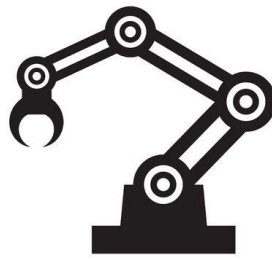
- Jobs in “heartland” states & counties, specialized in manufacturing with low-skilled workers, will be hard-hit by automation and Artificial Intelligence (AI).
- The more educated and skilled counties along the Boston-Washington Corridor and on the West Coast appear less exposed to job losses because of AI automation.
- Larger and better educated cities will experience less disruption; less educated and smaller communities will encounter greater difficulties.



Automation potential
2016



BROOKINGS



Occupations at Risk Across OECD countries

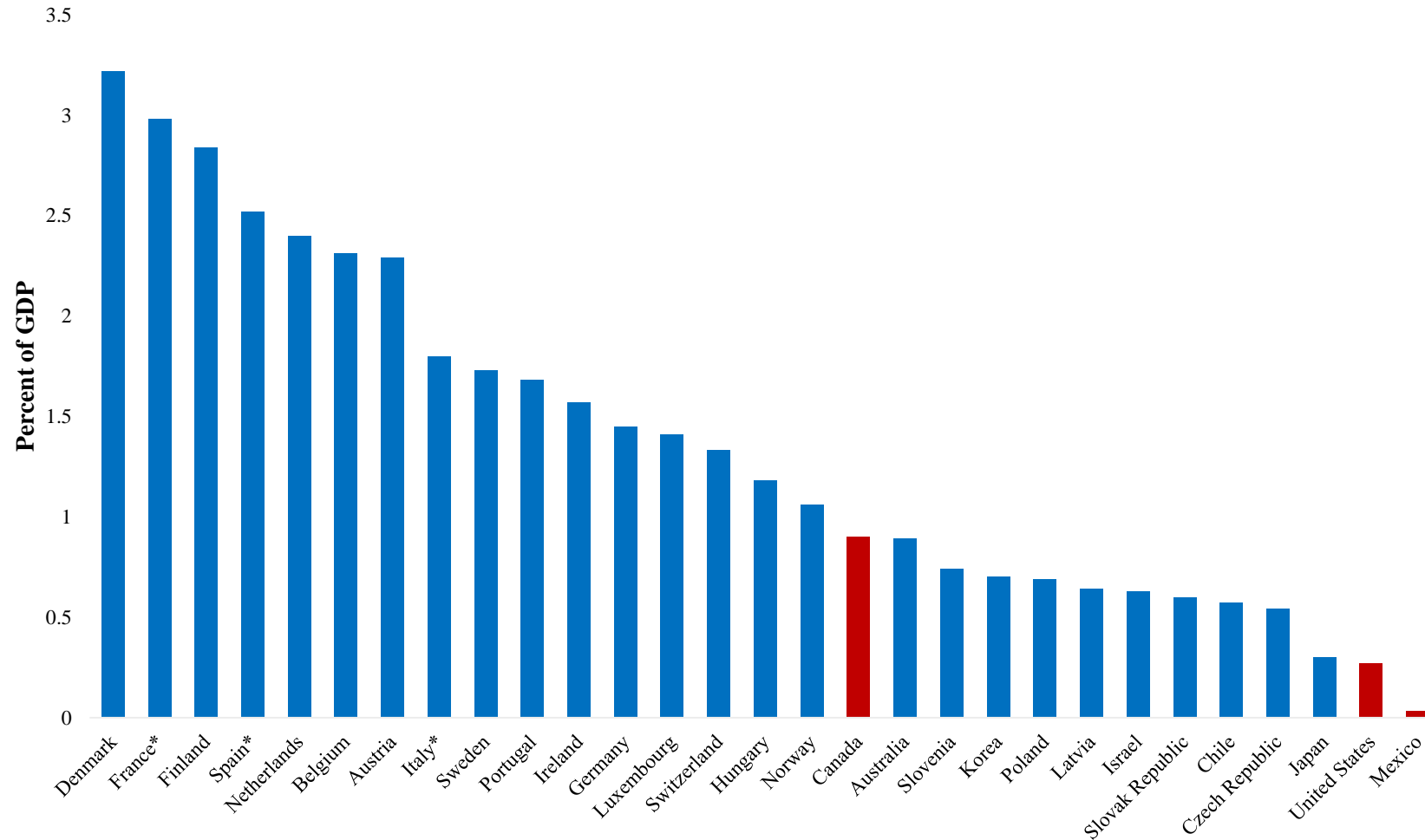
Occupations	Risk of automation
1 Keyboard operators	91.3
2 Street vendors (excluding food)	89.6
3 Metal processing and finishing plant operators	87.3
4 Subsistence livestock farmers	87.0
5 Rubber, plastic and paper products machine operators	86.7
6 Chemical and photographic products plant machine operators	85.0
7 Blacksmiths, toolmakers and related trades workers	84.8
8 Wood processing and papermaking plant operators	80.4
9 Mining and mineral processing plant operators	72.0
10 Mining and construction workers	80.0
11 Medical and pharmaceutical technicians	78.8

The OECD estimates that **10.2% of jobs in the U.S.** and **8.5% of Canadian jobs** have a high risk of automation, and that these workers need training to avoid this risk.

Mexico ranks in the **bottom 20%** on most measures of skills development. Has recommended major education system upgrades to prepare for job skills.



Insufficient Workforce Development Budgets



Note: * Only 2015 data available.

Source: OECD Stat, 2019

Economist Intelligence Unit study shows a ranking of who is ready for the coming wave of automation, **the U.S. ranked 9, Canada ranked 5, and Mexico ranked 23** out of 25 countries.

The North American countries are **behind** in terms of **investment in workforce development**.

WEF Recommendations:

Strategies for building a skilled-based market



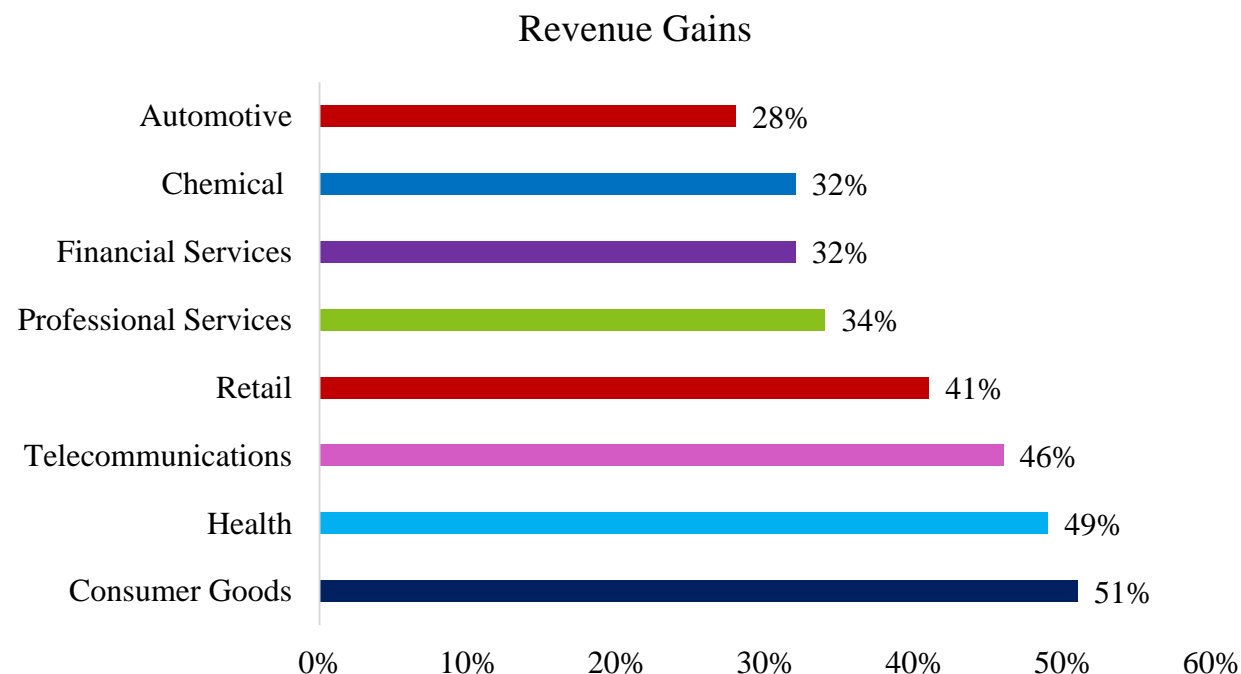
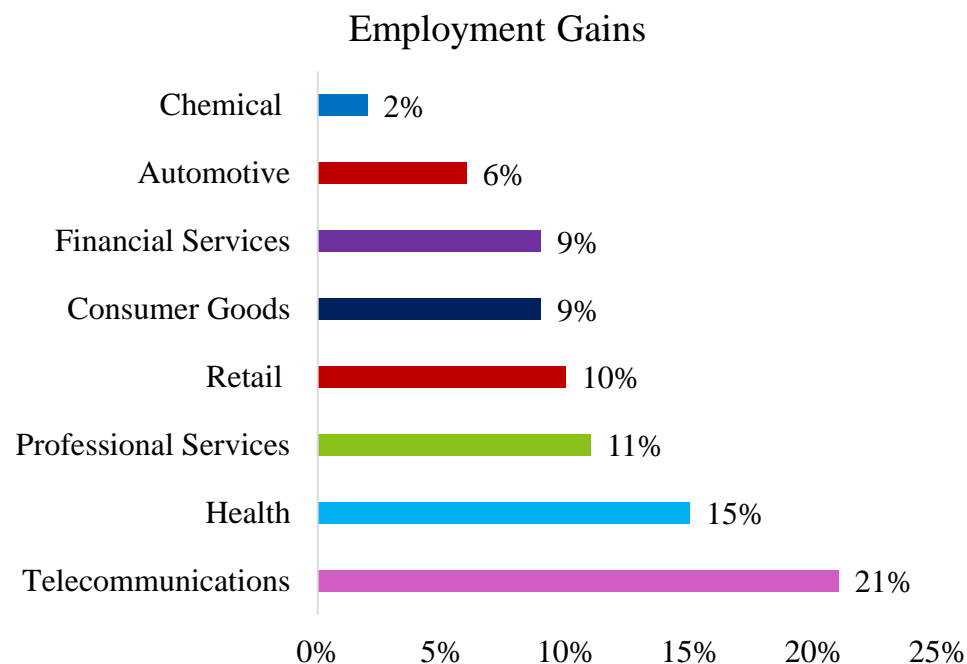
- **Learning ecosystem strategies**
 1. Build, adapt and certify **foundational skills**
 2. Build, adapt and certify **advanced skills**
 3. Build, adapt and certify **skills among the adult workforce**
 4. Realize the potential of educational technology **training and personalized learning**
- **Workforce ecosystem strategies**
 5. **Map the skills** content of jobs
 6. Design **coherent and portable certifications**
 7. **Rethink** organization and **talent management** processes
- **Enabling environment strategies**
 8. **Drive** momentum around the concept of **skills**
 9. **Align skills taxonomies**
 10. Shape culture, mindsets and mechanisms for **lifelong learning**





Accenture: Employment Gains and Revenue Gains

Companies that succeed in the **integration of technology and human capital** could **increase profits by 38%** and **employment by 10%** by 2022.





Recommendations

National and State/Provincial governments can act now to reorient workforces to in-demand skills:

1. Create **multi-actor forums** to identify, share and build on **best practices**.
2. Incentivize ways to **align education, training, credentials and relevant economic development systems with the employers' needs**; recognize importance of higher-order **soft skills & technical**.
3. Look for ways to **help accelerate the adoption of intelligent technology** in economies and firms more likely to be left behind. Encourage evolution from front-loaded education to **ongoing learning**.
4. Federal and state policymakers, governments, private sector and academia coordinate to **channel job-creating investment to help places likely to face the most negative impacts of automation**.
 - Could focus on areas as regional “growth poles” serving as anchors to enhance high-value employment growth in the larger region.
 - Policy tools: research, tax, infrastructure and economic development benefits including targeted hiring credits, job subsidies or job guarantees.

States and other sub-federal entities are vital for Innovation: Need to Share Best Practices

93% of U.S. voters support investment in skills training, according to the National Skills Coalition. The NSC's 2017 review of U.S. states' skills-related programs found:

- 1) 18 states had integrated their education and training policies;
- 2) 19 states had policies to encourage “stackable” credentials;
- 3) 23 states have established job-driven financial aid policies for training/education;
- 4) 12 states have aligned policies to give low skill and income individuals pathways to attain post-secondary credentials and higher levels of employment.

According to the NSC, 9 states do all of the above: Arkansas, Colorado, Iowa, Kansas, Minnesota, Oregon, Texas, Virginia and Washington.

There would be great benefit for national and continental forums to share lessons.



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Better Jobs for a More Competitive Region

Full study available at:
<https://www.wilsoncenter.org/publication/north-american-workforce-development-agenda>

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WILSON CENTER
RECOMMENDATIONS:
Four North American Working Groups
Under a Public-Private Task Force



Working Group #1: Apprenticeships and other types of work-based learning and technical education

1. Agree **trilaterally on a definition of apprenticeships**, and a minimum set of criteria and quality standards.
2. Agree on **broad guidelines on assigning responsibilities to governments, industry and intermediaries** regarding the development, implementation and funding of apprenticeships.
3. Agree on building a **tri-national Career and Technical Education and apprenticeships taskforce** to identify best practices to promote apprenticeships and other types of work-based learning programs.

Working Group #1: Apprenticeships and other types of work-based learning and technical education



4. Agree on core elements of a **marketing strategy to increase public awareness** of the benefits and advantages of work-based learning.
5. Agree on building **tri-national spaces to foster on-going dialogue between stakeholders across the region** to share best practices on work-based learning and to strengthen public-private partnerships.
6. Agree among the three countries on promising means to **incentivize and support companies, including SMEs**, to develop training and learning programs for reskilling and “upskilling” their workforces.



Working Group #2: Certifications and related issues

1. Agree at federal and sub-national levels on a **common terminology about credentials and competencies** to facilitate broader understanding, transferability and recognition of credentials.
2. Agree on **developing or strengthening national competency frameworks** and aligning them to the tri-national common terminology for credentials and competencies.
3. Agree tri-nationally on a set of **guidelines to assess and validate informal learning and professional experience**, and to identify skills associated with such experience.

Working Group #3: Data Collection & Transparency



1. Agree on a **tri-national set of norms to collect real time labor market data and information** in a consistent and homogeneous way, so it is understandable and comparable across the region.
2. Agree on the development of a **tri-national online platform** (linked to national platforms) that can serve as a hub of the **real-time labor market data** collected by the three countries. It can also serve as a **hub of best practices** from across the region.
3. Agree on guidelines to make the **tri-national platform and data tools openly available** to all stakeholders, while allowing space for the development of private sector initiatives.

Working Group #4: Best Practices to prepare for the “Fourth Industrial Revolution”



1. Agree on key steps and tools to incentivize companies to invest in reskilling and “upskilling” of their workers, to provide mid-career training and learning opportunities, and to develop short-term, agile training and learning programs to ease the transitions needed with the technological changes expected with the Fourth Industrial Revolution.
2. Agree on building tri-national spaces to share best practices on the implementation of “Industry 4.0”, including on the roles of governments, the private sector, educational institutions and workers.
3. Agree tri-nationally on best practices to support SMEs in keeping up with technological changes, innovation and talent creation.

Working Group #4: Best Practices to Approach/Prepare for the Fourth Industrial Revolution

4. Agree tri-nationally on approaches and strategies to encourage companies to collaborate with educational institutions, unions and other interested parties in order to
 - better align curricula with the labor market needs,
 - better connect students to the labor market and workers with up-skilling and re-training programs,
 - and foster the ongoing modernization of academic spaces.
5. Establish trilateral research and innovation projects in strategic economic areas through grants and scholarships.

APPENDIX



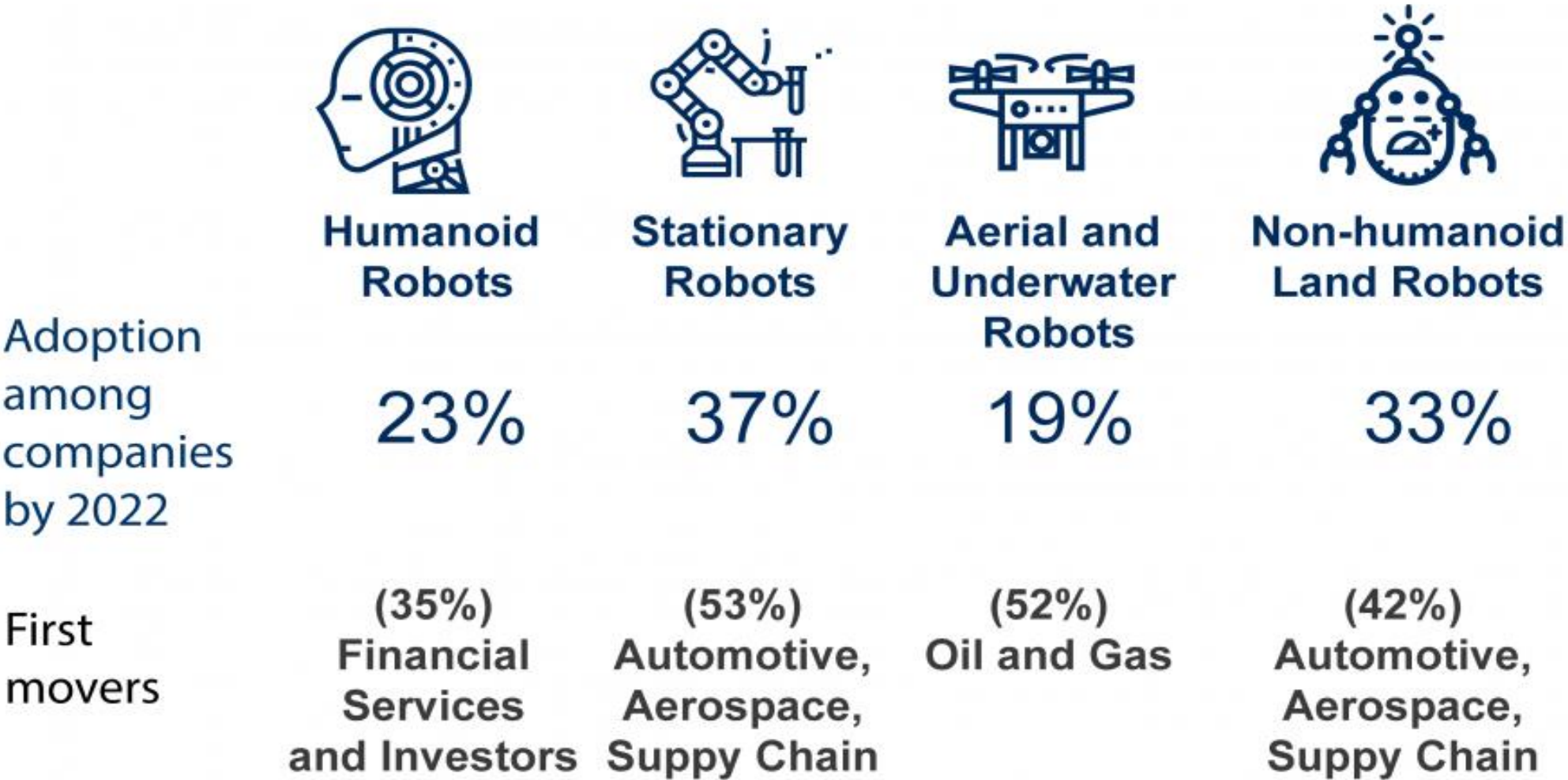
WEF Global Findings: Emerging and Declining Jobs in 2022

2018 Future of Jobs Report

Top 10 Emerging	Top 10 Declining
Data Analyst & Scientists	Data Entry Clerks
AI and Machine Learning Specialists	Accounting, Bookkeeping & Payroll Clerks
General & Operations Managers	Administrative & Executive Secretaries
Software & Applications Developers & Analysts	Assembly & Factory Workers
Sales and Marketing Professionals	Client Information & Customer Service Workers
Big Data Specialists	Business Services & Administration Managers
Digital Transformation Specialists	Accountants & Auditors
New Technology Specialists	Material-Recording & Stock-Keeping Clerks
Organizational Development Specialists	General & Operations Managers
Information Technology Services	Postal Service Clerks

WEF Global Findings: Adoption of Robots 2022

2018 Future of Jobs Report



WEF Recommendations for Governments

2018 Future of Jobs Report



- Upgrade educational policies to raise education and skills levels of people of all ages:
 - Adapt/update school curricula
 - Train teachers
 - Offer vocational training
 - Develop better social safety net programs to support reskilling/transition
- Complement educational and skills development with job creation through public investments.
- Use increased tax revenues from technology-enhanced productivity to fund social safety nets programs for at-risk workers.

WEF Recommendations for Businesses

2018 Future of Jobs Report



- Need for a **comprehensive augmentation strategy** in which businesses use automation to complement the human workforce and enable workers to better use their full potential.
- Develop **lifelong learning** systems in companies and in societies.
- Invest in **human capital** and establish **marketable credentials**; would increase labor market flexibility & reduce hiring time and costs.
- **Businesses, Governments, Educational institutions and workers/unions need to collaborate on workforce strategy.**

2018 WEF FINDINGS: NORTH AMERICA





Expanding job roles

Software and Applications Developers and Analysts

Data Analysts and Scientists

Managing Directors and Chief Executives

General and Operations Managers

Sales and Marketing Professionals

Sales Representatives, Wholesale and Manufacturing,

Technical and Scientific Products

Human Resources Specialists

Financial Analysts

Electrotechnology Engineers

Financial and Investment Advisers



Emerging Skills Needed

Analytical thinking and innovation

Creativity, originality and initiative

Active learning and learning strategies

Technology design and programming

Critical thinking and analysis

Complex problem-solving

Leadership and social influence

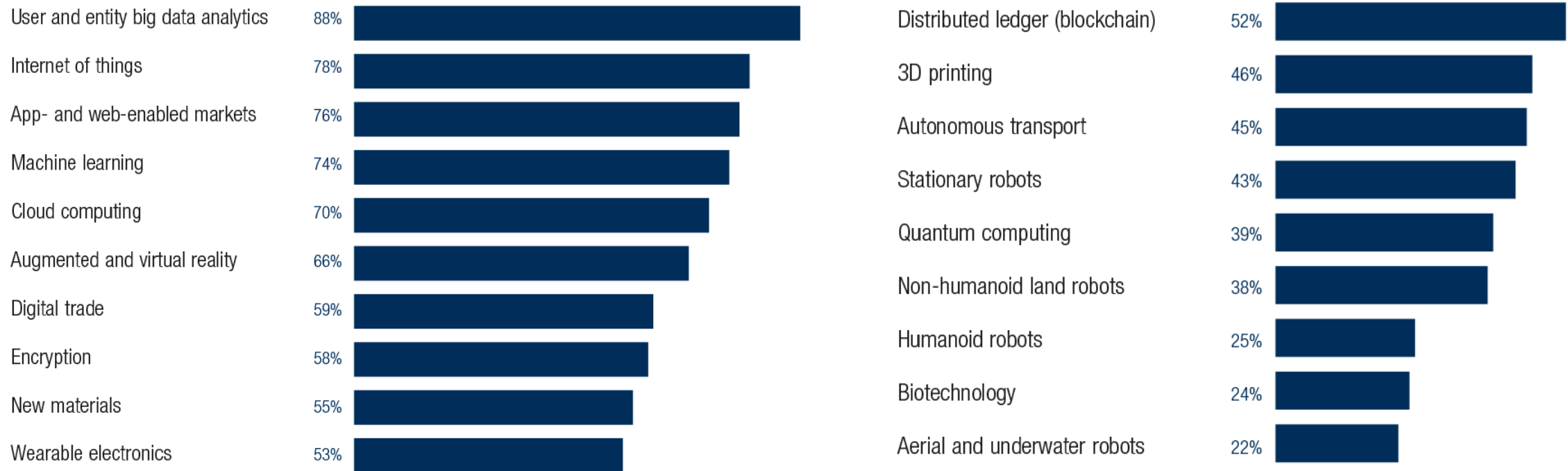
Reasoning, problem-solving and ideation

Emotional intelligence

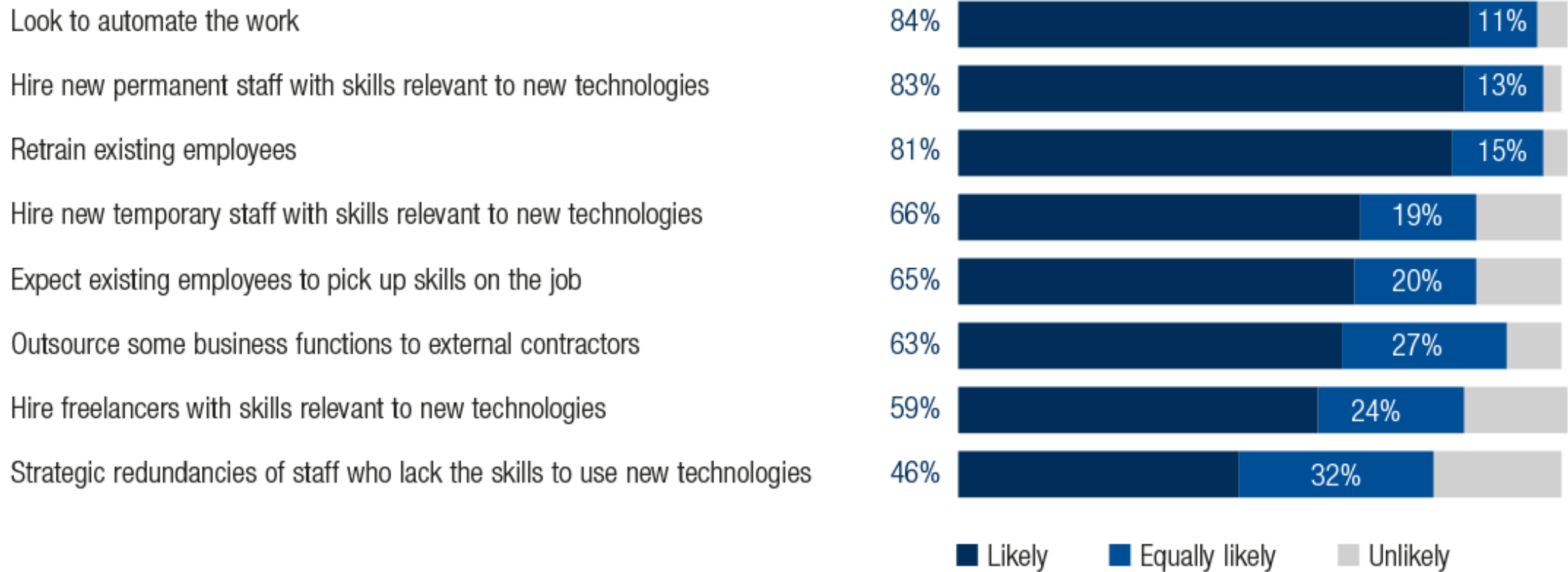
Systems analysis and evaluation



Technology adoption (*share of companies surveyed*)



Responses to shifting skill needs (*shared of companies surveyed*)



Projected use of training providers (*share of training*)

