A North American Workforce Development Agenda
Better Jobs for a More Competitive Region

E. Anthony Wayne
Career Ambassador (ret.)
Public Policy Fellow at the Wilson Center

wayneea@gmail.com
@EAnthonyWayne

North American Forum, October 2018
North American Challenges

• The United States, Mexico and Canada face **alarming skills gaps** that negatively affect their competitiveness and economic performance.

• The continent’s skills gap is likely to grow and change in composition given the **technological transformations and global competition** ahead.

• North America’s highly integrated production and commercial networks mean that **regional collaboration on workforce development** can be vital.

• Now is the time for companies, governments and others to focus on support for **investment in the development of the continent’s workforces**.

• **AMLO has a focus on youth employment**. Canada and Mexico have national programs. **USMCA opens opportunities for tri-lateral dialogue on workforce issues and a forward looking competitiveness agenda**.
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 will be determined by the availability of skilled local talent say 74% of companies surveyed. 64% highlight labor costs.

5. Current strategies to address skills gap vary widely: hiring new staff with required skills; automate work tasks; retrain workers; use contractors.

6. Workers most at risk of being displaced are less likely to be offered training.
Global Findings: Division of Labor as Share of Hours Spent (%)
Future of Jobs Report – WEF 2018

<table>
<thead>
<tr>
<th>Year</th>
<th>Human</th>
<th>Machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>71</td>
<td>29</td>
</tr>
<tr>
<td>2022</td>
<td>58</td>
<td>42</td>
</tr>
<tr>
<td>2025</td>
<td>48</td>
<td>52</td>
</tr>
</tbody>
</table>

WEF: A Virtuous Cycle of Technology and Upskilling

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

## Factors determining job location in North America

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

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.

North America: Average reskilling needs (share of workforce)

Workforce Development: North American Cooperation

- Can help create jobs, boost productivity, and strengthen the region’s competitiveness. Each government has national initiatives/programs.

- Wilson Center proposal: a tri-lateral task force, established by the three governments, to provide an umbrella for public-private, federal-sub-federal working groups to identify best practices and develop proposals for cooperation in strengthening workforce development efforts across the three countries. USMCA opens a window for cooperation.

- Working groups focus in four areas: 1) Apprenticeships and other types of work-based learning and technical education; 2) Certifications and related issues; 3) Data collection and transparency; 4) Best practices to prepare for the Fourth Industrial Revolution. (Have detailed proposals for each group.)
Implementing the North American Agenda

• The overarching tri-national task force and the four working groups could be usefully incorporated into or synced with the USMCA.

• The successful implementation will depend on joint collaboration that includes governments, private sector, educational institutions, and unions, among other stakeholders, from all three countries.

• The WEF’s 2018 Jobs report is the latest study to highlight the dangers of inaction.

• Workforce Development can be a vital part of reviving a North American competitiveness agenda.
AMLO’S PROGRAM “YOUTH BUILDING THE FUTURE”
An Opening for the U.S. & Mexican Private Sectors

• Objectives:
  – Increase job and training opportunities for **2.6 million young Mexicans** of 18-29 years old 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.

• Participating companies will be recognized as socially responsible organizations.

Source: “Jovenes Construyendo Futuro” Website, 2018
US Workforce Development Proposals

• **July 2017 executive order**: Expanding Apprenticeships in America
  – Provide more affordable pathways to secure, high paying jobs by promoting apprenticeships and effective workforce development programs.
  – Ease regulatory burden on such programs and reduce or eliminate taxpayer support for ineffective programs.
  – Expand access to and participation in apprenticeships for secondary and post secondary students.
  – Establish the Task Force on Apprenticeship Expansion: will identify means to promote apprenticeships.

• **July 2018 executive order**: Establishing of the President’s National Council for the American Worker; within 180 days the council will:
  – Develop recommendations for the President on policy and strategy related to workforce development.
  – Develop a national campaign to raise awareness of the skills crisis.
  – Examine how government can better work with private employers and educational institutions.
  – Propose how to increase apprenticeship, earn-and-learn, and work-based learning opportunities.
  – Suggest ways to increase partnerships between companies, educational institutions and local governments.
Canada Workforce Development Proposals

• Government of Canada has 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 the new Future Skills Center and applications for the Future Skills Council. The Center will be tasked with:
  – Exploring new and innovative approaches to skills development.
  – Identifying the skills employers will need now and in the future.
  – Sharing information and best practices to inform future investments and programming.
  – Investing $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
  – Funds third-party organizations to test approaches to improve access to apprenticeships.
  – Currently, there are over 400 apprenticeship programs available across Canada.
A North American Workforce Development Agenda
Better Jobs for a More Competitive Region

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

E. Anthony Wayne
Career Ambassador (ret.)
Public Policy Fellow at the Wilson Center
wayneea@gmail.com
www.eawayne.com
APPENDIX
WILSON CENTER

RECOMMENDATIONS:

Four North American Working Groups
Under a Public-Private Task Force
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.
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.
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.
WEF Global Findings: Emerging and Declining Jobs in 2022
2018 Future of Jobs Report

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

### WEF Global Findings: Adoption of Robots 2022

#### 2018 Future of Jobs Report

<table>
<thead>
<tr>
<th>Type of Robot</th>
<th>Adoption among Companies by 2022</th>
<th>First Movers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanoid Robots</td>
<td>23%</td>
<td>(35%) Financial Services and Investors</td>
</tr>
<tr>
<td>Stationary Robots</td>
<td>37%</td>
<td>(53%) Automotive, Aerospace, Supply Chain</td>
</tr>
<tr>
<td>Aerial and Underwater Robots</td>
<td>19%</td>
<td>(52%) Oil and Gas</td>
</tr>
<tr>
<td>Non-humanoid Land Robots</td>
<td>33%</td>
<td>(42%) Automotive, Aerospace, Supply Chain</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Technology</th>
<th>Share (2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>User and entity big data analytics</td>
<td>68%</td>
</tr>
<tr>
<td>Internet of things</td>
<td>78%</td>
</tr>
<tr>
<td>App- and web-enabled markets</td>
<td>76%</td>
</tr>
<tr>
<td>Machine learning</td>
<td>74%</td>
</tr>
<tr>
<td>Cloud computing</td>
<td>70%</td>
</tr>
<tr>
<td>Augmented and virtual reality</td>
<td>66%</td>
</tr>
<tr>
<td>Digital trade</td>
<td>59%</td>
</tr>
<tr>
<td>Encryption</td>
<td>58%</td>
</tr>
<tr>
<td>New materials</td>
<td>55%</td>
</tr>
<tr>
<td>Wearable electronics</td>
<td>53%</td>
</tr>
<tr>
<td>Distributed ledger (blockchain)</td>
<td>52%</td>
</tr>
<tr>
<td>3D printing</td>
<td>46%</td>
</tr>
<tr>
<td>Autonomous transport</td>
<td>45%</td>
</tr>
<tr>
<td>Stationary robots</td>
<td>43%</td>
</tr>
<tr>
<td>Quantum computing</td>
<td>39%</td>
</tr>
<tr>
<td>Non-humanoid land robots</td>
<td>38%</td>
</tr>
<tr>
<td>Humanoid robots</td>
<td>25%</td>
</tr>
<tr>
<td>Biotechnology</td>
<td>24%</td>
</tr>
<tr>
<td>Aerial and underwater robots</td>
<td>22%</td>
</tr>
</tbody>
</table>

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

- Look to automate the work: 84% Likely, 11% Equally likely, 11% Unlikely
- Hire new permanent staff with skills relevant to new technologies: 83% Likely, 13% Equally likely, 14% Unlikely
- Retrain existing employees: 81% Likely, 15% Equally likely, 14% Unlikely
- Hire new temporary staff with skills relevant to new technologies: 66% Likely, 19% Equally likely, 15% Unlikely
- Expect existing employees to pick up skills on the job: 65% Likely, 20% Equally likely, 15% Unlikely
- Outsource some business functions to external contractors: 63% Likely, 27% Equally likely, 10% Unlikely
- Hire freelancers with skills relevant to new technologies: 59% Likely, 24% Equally likely, 17% Unlikely
- Strategic redundancies of staff who lack the skills to use new technologies: 46% Likely, 32% Equally likely, 22% Unlikely

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

<table>
<thead>
<tr>
<th>Provider</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal department</td>
<td>52%</td>
</tr>
<tr>
<td>Private training providers</td>
<td>27%</td>
</tr>
<tr>
<td>Private educational institutions</td>
<td>21%</td>
</tr>
<tr>
<td>Public educational institutions</td>
<td>17%</td>
</tr>
<tr>
<td>Public training provider</td>
<td>15%</td>
</tr>
</tbody>
</table>