The Future of Work

Ravin Jesuthasan, CFA
Author and Managing Director
Industrial Revolutions and Work

Second Industrial Revolution
Late 19th – early 20th century – “The assembly line”
Features:
- Companies as social institutions
- Organization of work into jobs
- Jobs as careers

Third Industrial Revolution / First Machine Age
1960s – 1990s – “Nikefication” and core competencies
Features:
- Technology enablement and the web
- Companies as the nexus of contracts
- Streamlining of jobs to enable outsourcing

Fourth Industrial Revolution / Second Machine Age
2000s – “Uberization”
Features:
- Mobile, sensors, AI and machine learning
- Companies as platforms
- Disaggregation of work into activities
- Talent on demand

The Assembly Line

“Nikefication”

“Uberization”

Source: Willis Towers Watson
Emerging wave: Automating work now has a more transformative role as it augments human capability and creates new work, an evolution from pure labor substitution. However for Canada, there is still an emphasis on reducing costs.

Note: Percentages may not add up to 100% due to rounding

Source: 2017 – 2018 Willis Towers Watson FOW Global Survey, Canada
Use of automation will continue to expand: It is expected to nearly double over the next three years.

<table>
<thead>
<tr>
<th></th>
<th>3 years ago…</th>
<th>Currently…</th>
<th>In 3 years…</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Humans</td>
<td>Automation</td>
<td>Humans</td>
</tr>
<tr>
<td><strong>Canada</strong></td>
<td>95%</td>
<td>5%</td>
<td>90%</td>
</tr>
<tr>
<td></td>
<td>93%</td>
<td>7%</td>
<td>88%</td>
</tr>
<tr>
<td><strong>Global</strong></td>
<td>100%</td>
<td>14%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>17%</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Global</strong></td>
<td>100%</td>
<td>14%</td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td>17%</td>
<td>12%</td>
</tr>
<tr>
<td><strong>Canada</strong></td>
<td>83%</td>
<td>17%</td>
<td>83%</td>
</tr>
<tr>
<td></td>
<td>78%</td>
<td>22%</td>
<td>78%</td>
</tr>
</tbody>
</table>

**100% of work done by Humans**

**Automation% exc. 100% Humans**

*Source: 2017 – 2018 Willis Towers Watson FOW Global Survey, Canada*
Early actions being taken: HR functions have started to take actions to prepare for organizational change, but are unprepared for deconstructing and reconstructing jobs and identifying the new reskilling pathways required for the business with automation.

- Engaging a more diverse workforce
- Assessing talent to identify "skill and will" gaps
- Addressing talent deficits through workforce planning and actions
- Identifying the emerging skills required for the business
- Enabling careers based on a more agile and flattened structure
- Matching talent to the new work requirements
- Reconfiguring total rewards and benefits
- Aligning executive compensation to the new business realities
- Identifying reskilling pathways for talent whose work is being subsumed by automation
- Deconstructing jobs and identifying which tasks can best be performed by automation (AI, robotics, etc.)

Note: Percentages may not add up to 100% due to rounding

Source: 2017 – 2018 Willis Towers Watson FOW Global Survey, Canada
Skills dichotomy: As jobs are deconstructed and certain tasks automated, new types of work will be required. Skill premiums at both the high and low end will shift.

Successful re-construction of jobs matches skills and activities, and also takes into account motives and attributes.

Impact of Automation

<table>
<thead>
<tr>
<th></th>
<th>Canada</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>Today</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$</td>
<td>73%</td>
<td>62%</td>
</tr>
<tr>
<td></td>
<td>49%</td>
<td>59%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>+</td>
<td>49%</td>
<td>45%</td>
</tr>
<tr>
<td></td>
<td>22%</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>−</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>32%</td>
<td>42%</td>
</tr>
<tr>
<td></td>
<td>22%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Requiring us to pay more for employees with certain skill sets
Changing the way we design jobs so they can be done by employees with more skills
Changing the way we design jobs so they can be done by employees with lower skills

Source: 2017 – 2018 Willis Towers Watson FOW Global Survey, Canada
Five Forces of Change

1. Social & Organizational reconfiguration
2. All inclusive, global talent market
3. A truly connected world
4. Exponential pattern of technology change
5. Human & machine collaboration

Two Core Themes

**Democratization of Work**
A more highly democratized future is characterized by new “employment” relationships shorter in duration and more company/individual balanced. A shift toward a more agile and responsive view of work will deliver results by activating purpose built networks.

**Technological Empowerment**
Technology is transforming the way we live and work. Machine learning, 3D printing, mobile, wearables, and algorithmic analytics are some of the many technologies that promise to improve individual empowerment.

Four Potential Future Scenarios

1. Current State
2. Today Turbo-Charged
3. Work Reimagined
4. “Uber” Empowered

Source: CHREATE
The Emerging “Robo-gig” Economy
Technology, Digital Media and Robotics are Transforming Work and Jobs

A truly connected world

$2.7BN GDP boost by talent platforms in < 10 years

850,000 Technologists on TopCoder.com (from 6k 10 years ago)

Virtual personal assistants

Social & Organization

77% of organizations list missing skills as the single biggest impediment to digital transformation

Reconfiguration

38-40 Million Skilled Worker Deficit 90-95 Million Low-Skilled Worker Surplus

Human & machine collaboration …

69% Use of digital media for work

Global Talent Market

All inclusive

41% of companies have contingent employees

Mobile Users

Sources: Digital Media & Society, World Economic Forum in collaboration with Willis Towers Watson; Willis Towers Watson Research; also reference McKinsey & Co

willistowerswatson.com © 2017 Willis Towers Watson. All rights reserved. Proprietary and Confidential. For Willis Towers Watson and Willis Towers Watson client use only.

@ravinjesuthasan
Enablers of work automation

<table>
<thead>
<tr>
<th>Robotic Process Automation</th>
<th>Cognitive Automation</th>
<th>Social Robotics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tasks</strong></td>
<td><strong>Routine</strong></td>
<td><strong>Non-routine</strong></td>
</tr>
<tr>
<td></td>
<td><strong>High-volume</strong></td>
<td><strong>creative</strong></td>
</tr>
<tr>
<td><strong>Maturity</strong></td>
<td>High</td>
<td>Emerging</td>
</tr>
<tr>
<td><strong>Impact</strong></td>
<td>Medium</td>
<td>High</td>
</tr>
</tbody>
</table>

The Three things Cognitive Automation can do

1. Automate & re-engineer tasks and processes

2. Develop new products & services

3. Gain new Data insights

@ravinjesuthasan
What We Know
Business leaders to rethink how they execute their business models

Of specific concern are:

- Optimizing **speed to capability** in an environment when competitive advantage can be quickly diminished

- A **cost structure** that is sustainable over the long-term (i.e., an optimal mix of fixed and variable cost)

- A **risk profile** that ensures sustainability. This has a number of elements to it:
  - As organizations move work outside the organization, what are the risks associated with the potential “lack of control” of the workforce (e.g., liability, loss of IP, etc.). Alternatively, is risk mitigated by having a more variable cost structure through use of a more “on-demand” workforce
  - Reducing the risk of obsolescence. As the half life of skills continues to shrink, the growing premium on reskilling is causing many organizations to rethink the risks associated with full-time employment
What Does This Mean for the Future of Work?
Changing Requirements of Work

Humans vs. machines – the skills that will differentiate us

The top 10 skills that will be in demand by all employers by 2020

1. Complex problem solving
2. Critical thinking
3. Creativity
4. People management
5. Coordinating with others
6. Emotional intelligence
7. Judgment and decision making
8. Service orientation skills
9. Negotiation skills
10. Cognitive flexibility

Not “binary” anymore: the employment relationship is changing
A plurality of work is already here…
Lead the Work Map

The Assignment
- Jobs
- Collected
- Employment Relationship
- Tasks
- Dispersed
- Virtual or Market Relationship
- Self-contained
- Detached
- Insular
- Rigid
- Permeable
- Interlinked
- Collaborative
- Malleable

The Organization
- Permanent
- Collective and Consistent
- Traditional
- Impermanent
- Individualized & Differentiated
- Imaginative

Source: John Boudreau, Ravin Jesuthasan and David Creelman
@ravinjesuthasan
Agile Means Perpetual Obsolescence

Why?