TWIN GLOBAL 2018
SEPTEMBER 25TH, 2018 | CHICAGO CONNECTORY

Automation and Future of Work Challenge Session

SUMMARY

The session brought together 40-plus participants from a wide array of sectors to discuss the impact of automation on the future of work. Attendees spanned both higher ed and K-12 educational sectors, non-profits, the department of defense, and senior executives from global companies such as IBM. What was immediately apparent from the vibrant and wide-ranging discussion was that the topic extends far beyond the impact of automation on a set of "jobs". Instead, there was a clear desire to consider "work" from a much a higher level, from the meaning and purpose it gives people to how we think of 'compensation' to the very nature of the corporation and the definition of capitalism. Underlying much of the discussion was the rapid increase in the rate of change, and the clear sense that AI will accelerate this change. In the end there was enthusiastic support and interest by many in being a part of an ongoing dialogue/community of interest on the future of work as an umbrella topic.

KEY TAKEAWAYS

The session sought to not just discuss "human vs. machine" but to delve into underlying principles and consider "work"—defined as a "productive, compensated endeavor"—in the context of the communities and countries in which businesses operate. For instance, Mr. Ravin Jesuthasan started the session by with a chart depicting the evolution of work over the course of the last three industrial revolutions (IRs).

Industrial Revolutions and Work ▶ ▶ ▶

The Assembly Line	**"Nike-fication"**	**"Uber-ization"**
Second Industrial Revolution	**Third Industrial Revolution/ First Machine Age**	**Fourth Industrial Revolution/ Second Machine Age**
(Late 19th–Early 20th Century)	*(1960s–1990s)*	*(2000s)*
"The assembly line"– amplification of labor	"Nikefication" and core competencies – The democratization of information	"Uberization" – The democratization of work
■ Companies as social institutions	■ Technology enablement and the web	■ Mobile, sensors, AI and machine learning
■ Organization of work into jobs	■ Companies as the nexus of contracts	■ Companies as platforms
■ Jobs as careers	■ Streaming of jobs to enable outsourcing	■ Disaggregation of work into activities
		■ Talent on demand

Source: Willis Towers Watson, @ravinJesuthasan

At the heart of the change is the shift from all work being contained within a job in a company in the 2nd IR to the shift to embrace outsourcing in the 3rd IR to the opportunity to deconstruct jobs and redistribute the work to the most optimal means for performing them (AI, free agents, online talent marketplaces, etc.) in the 4th IR. One vision of the future is that it will be driven by small teams that form and evolve. There are companies already developing software in a circular fashion, where Asian employees hand off their work product to their European colleagues at the end of their day (morning in Europe), who then turn the work product over to US-based workers at the end of the day in Europe.

It will be important not to fall into the "basket of work" idea: that there is a fixed number of jobs that, when certain parts are automated, puts people out of work. The World Economic Forum projected that 52% of work will be done by machines by 2025, eliminating 75 million roles but creating 133 million new ones. The right way to think about the future of work, however, is in terms of tasks and not jobs. Work is about solving problems by undertaking tasks (aggregated into processes) using skills. Machines do not do jobs; they substitute, augment and create human work.

The new work, however, will require ~100 days per year of learning according to the World Economic Forum, which caused some in the group to wonder how to prevent a "rich-get-richer, poor-get-poorer" dynamic. What do you do with the person who is three years from retirement and does not want to learn a new job? One participant brought up an example of an Indiana manufacturing plant that offered its workers free training, and got zero

participation. This poses a question: What causes some people to have a learning/growth mindset and others a fixed mindset?

In the future, learning will be pervasive. The pattern of one's working life will no longer be Learn-Do-Retire but rather a continuous learning/doing loop. The current educational system needs to adapt in order to prepare students for this "continuous loop" of learning. There has been a proliferation of new technology in education (Edtech) to meet this need. These new solutions can provide talent with continuous access to learning in bite-sized chunks that can support the sustained incremental adjustment that will be asked of current workers.

It is important to involve workers and shift the conversation from "jobs" to "value-creation." That conversation can be less threatening and, more importantly, affirm the value of workers as human beings. Employees need to be involved in defining the vision and role for optimally combining humans and machines in work, not just be presented with it, in order to engender motivation and intrinsically embrace the organizational mission. This includes bringing an ethical lens to the adoption of new technologies. Technology is supposed to be of service to us, not a vehicle for driving inequality and harming large swathes of society. We need a more "conscious capitalism" whereby we wake up and put humans back in charge vs. allowing Google/Facebook/Amazon to set the rules. There was also some discussion about ethics training needed for engineers and technology professions. They have to understand the implications of what they're building and the impact on society.

Returning to the macro perspective, the group discussed four frames for considering the future of work:

- **Individuals:** How can I have meaningful paid work today and tomorrow?
- **Organizations:** How can we have the talented workers we need today and tomorrow?
- **Communities:** How do all constituents of our ecosystem thrive?[1]
- **Countries:** How can we build more inclusive economies?[2]

Indeed, the core of a "job" should be purpose/meaning. We are Tribal, hard-wired to work in groups (evolutionary advantage) and we find joy and purpose in it. Much of today's work environments do not engender such purpose. Purposefulness derives out of autonomy (personalization) and mastery (opportunities to learn), along with an inspiring story. E.g., Being an actuary for a retirement services provider is a "job" but could also be viewed as helping the company provide a vital social service.

The group split into several breakout groups, addressing core questions that impact the future of work. How do we make learning a core competency? What is the new role/purpose of education to reinforce that ultimate skill of lifelong learning? How do you ensure better cohesion between a corporation's innovation efforts and the reskilling of its workforce? How do we reward or motivate employees to attach to our purpose?

The groups discussed amongst themselves and came together to share potential solutions. As a large group, we identified factors critical to the future of work and crafted a vision statement. The future of work will:

- Foster and nurture our individual gifts
- Have a universal education platform
- Allow people to be curious, experiment and learn
- Add clear value to the individual and to the company
- Enable adaptive and resilient employees
- Foster safe spaces for messy discussions
- Enable global connectivity, equity and prosperity

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1   This is a common problem for mayors, who have to consider employment, housing, transportation and safety concurrently, in all their interactions.

2   Today we see great disparities within small regions. E.g., the San Francisco bay area would be the richest country in the world per capita, while the Central Valley just over the hills would be the poorest.
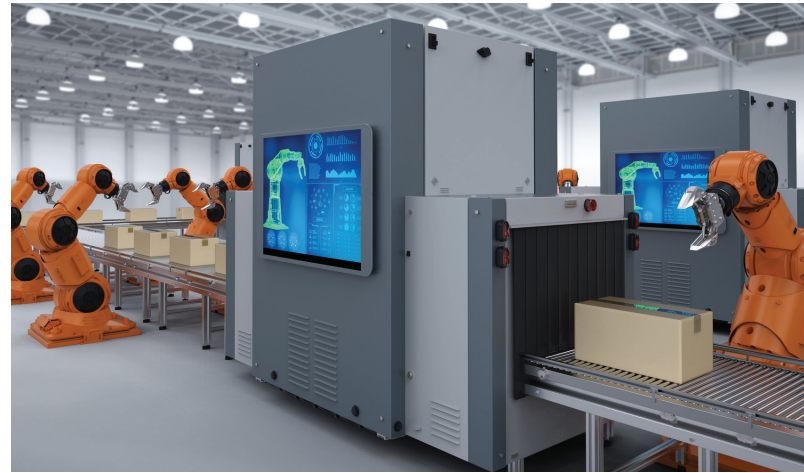
- Provide work that is challenging and adventurous
- Maximize innovation and productivity across all generational demographics (reverse mentorship, diversity of thought)
- Foster a mindset/toolset for optimally and sustainably combining humans and machines (humachines)

Closing Thoughts ▶▶▶

Some ideas stand out as worthy of note and perhaps as points of departure for future discussions/sessions:

"Work", as an idea, is part of a collective social narrative, one that has evolved dramatically and repeatedly over the IRs. Our collective narrative of what makes up a "productive life" is changing-- is always changing-- and this narrative both reflects and shapes what we define as work, the meaning it provides to individuals, and public policies relating to it. The momentum is towards increasingly fluid relationships between employer and employee, but the systems and structures—including the mindset and collective narrative—are not only lagging this trend, they are friction-inducing legacy.
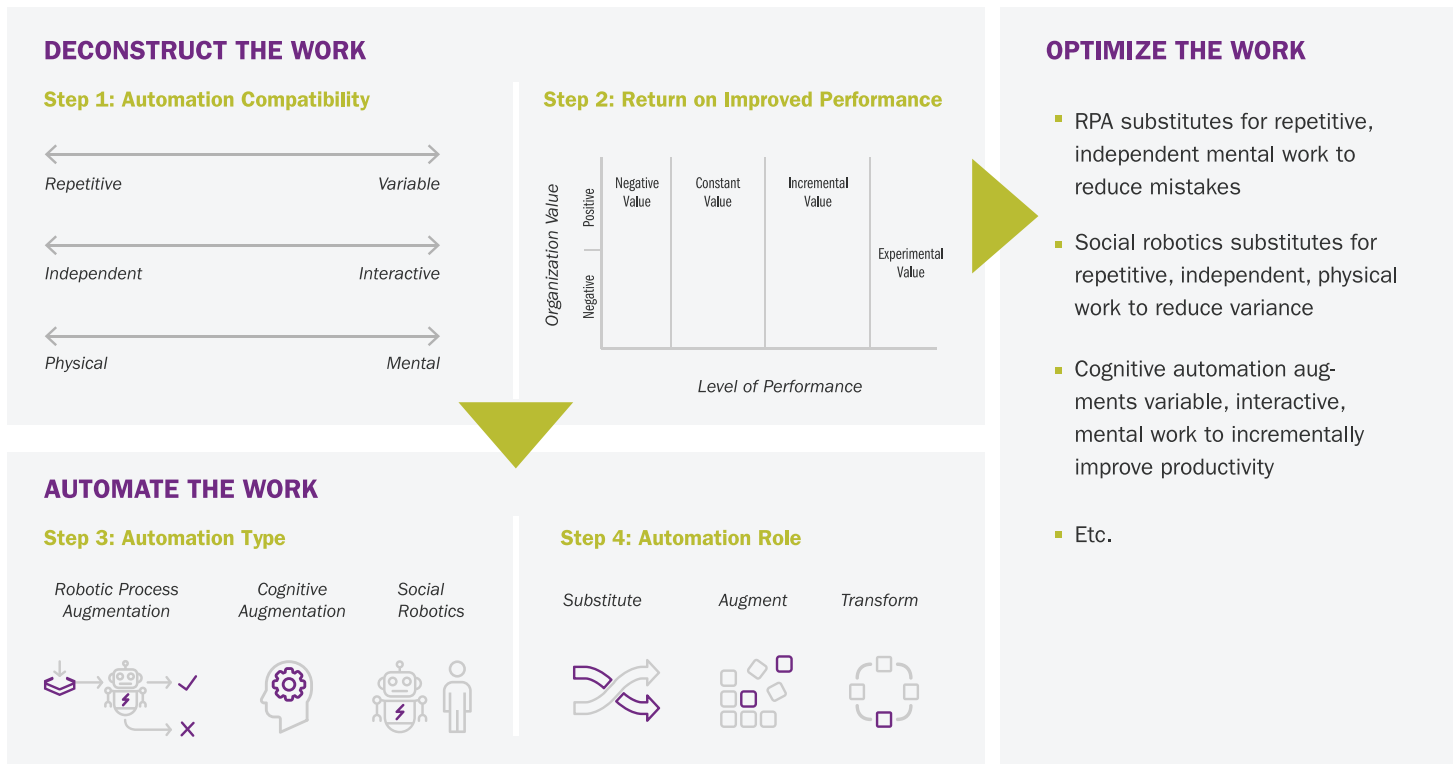
It is difficult for the media, and thus our collective narrative, to focus on "what's to come" vs "what is lost" because the future is neither concrete nor certain. It is much easier for politicians to play to what's being lost—and for media to cover what is lost—since humans are finely attuned to avoiding loss. But this retrospective focus makes it difficult to highlight pathways to future opportunities, and means public policy is always lagging.

We are just on the cusp of the integration of technology into the biological, what Martin Wezowski terms the age of the "HuMachine". How will this impact our thinking about the value of an individual and their efforts? The following visual illustrates how we can achieve the optimal combinations of human and machines.

Automation can "humanize" work in three ways. The first is to free up time from low-value tasks - substituting repetitive, mundane, time-consuming and boring tasks. Automation is a chief framework for liberating ourselves from this work.

Optimizing Work + Automation ▶▶▶

DECONSTRUCT THE WORK

Step 1: Automation Compatibility

⟵─────────────⟶
Repetitive   Variable

⟵─────────────⟶
Independent   Interactive

⟵─────────────⟶
Physical   Mental

Step 2: Return on Improved Performance

Organization Value (Positive / Negative) vs Level of Performance

Negative Value | Constant Value | Incremental Value | Experimental Value

OPTIMIZE THE WORK

- RPA substitutes for repetitive, independent mental work to reduce mistakes

- Social robotics substitutes for repetitive, independent, physical work to reduce variance

- Cognitive automation augments variable, interactive, mental work to incrementally improve productivity

- Etc.

AUTOMATE THE WORK

Step 3: Automation Type

Robotic Process Augmentation | Cognitive Augmentation | Social Robotics

Step 4: Automation Role

Substitute | Augment | Transform

Reinventing Jobs, Jesuthasan and Boudreau, Harvard Business Review Press, 2018

Second is the augmentation of variable human work, assisting us with things like complex calculations, pattern finding, unlikely and complex casualties, human bias detection and reflection, sensorial extensions with machine vision and hearing, and the like. This will propel "high value" work higher. These systems could be augmented with human preferences, biases, ambitions and plans – systems will learn from humans and humans will learn how the system helps them to grow, learn, and do better next time. This positive learning spiral is a key element of the HuMachine.

The HuMachine concept serves as a forward-looking design and engineering brief for those that feel accountable for the future, and as inspiration to be accountable for those who feel that they are not. We most focus on gains over losses. As we redefine what human work is or used to be, we are optimistically welcoming that transformation and redefinition of human and work. And finally, as illustrated above, we must not ignore the significant amount of human work that will be created as a result of automation. ▶▶▶

About The World Innovation Network

The World Innovation Network (TWIN) is an invitation-only community of innovation and growth leaders from across sectors and geographies. In addition to other activities, TWIN convenes annually for a summit in Chicago from 25 countries and all sectors: business, government, non-profit, the arts, academia, defense. Our group includes leaders at the most senior levels of their organizations, as well as select individuals making differentiated impact around the world.
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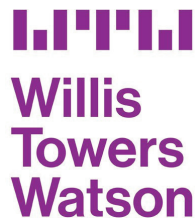
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