The Future of Work

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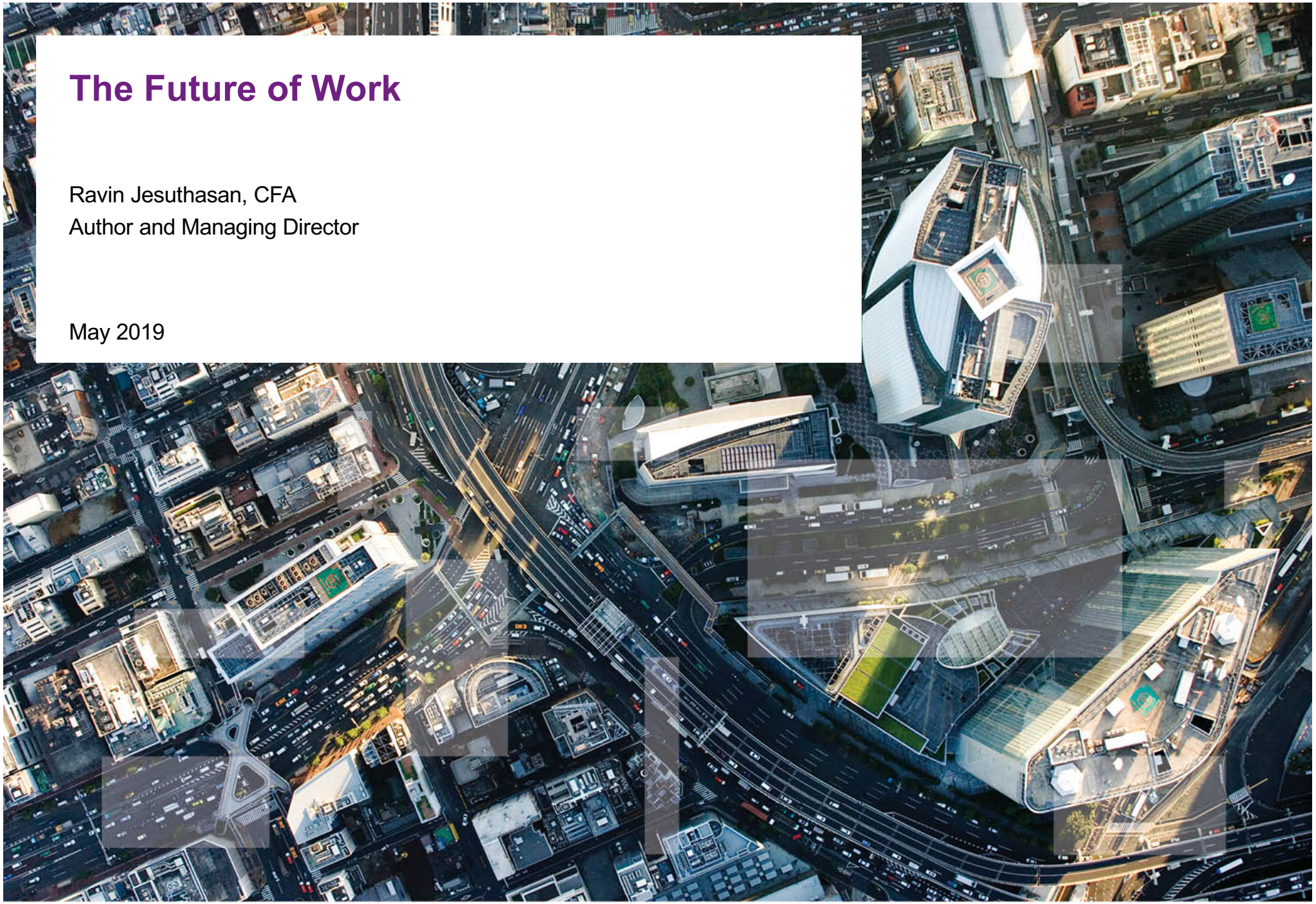
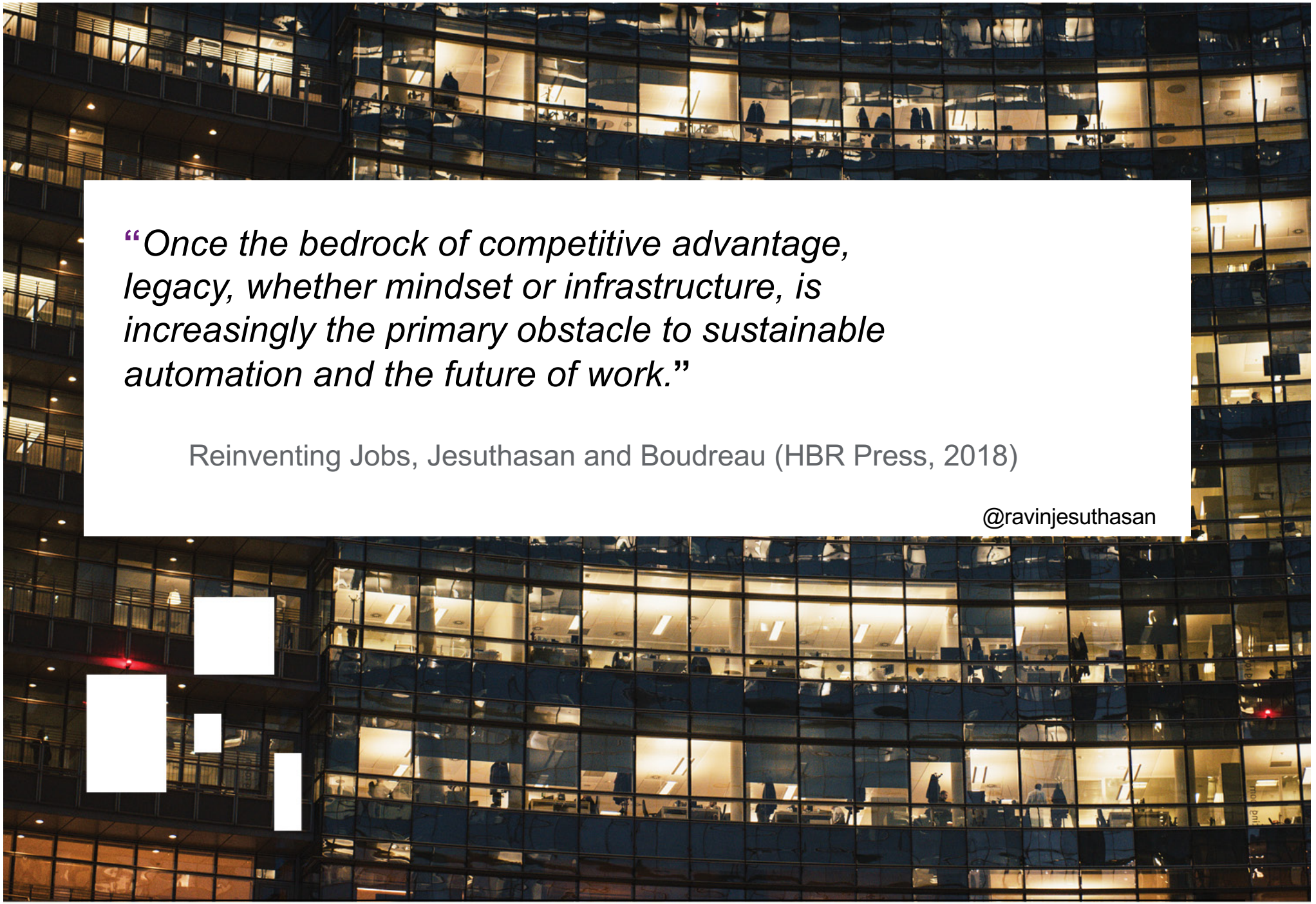


Willis Towers Watson



"Once the bedrock of competitive advantage, legacy, whether mindset or infrastructure, is increasingly the primary obstacle to sustainable automation and the future of work."

Reinventing Jobs, Jesuthasan and Boudreau (HBR Press, 2018)

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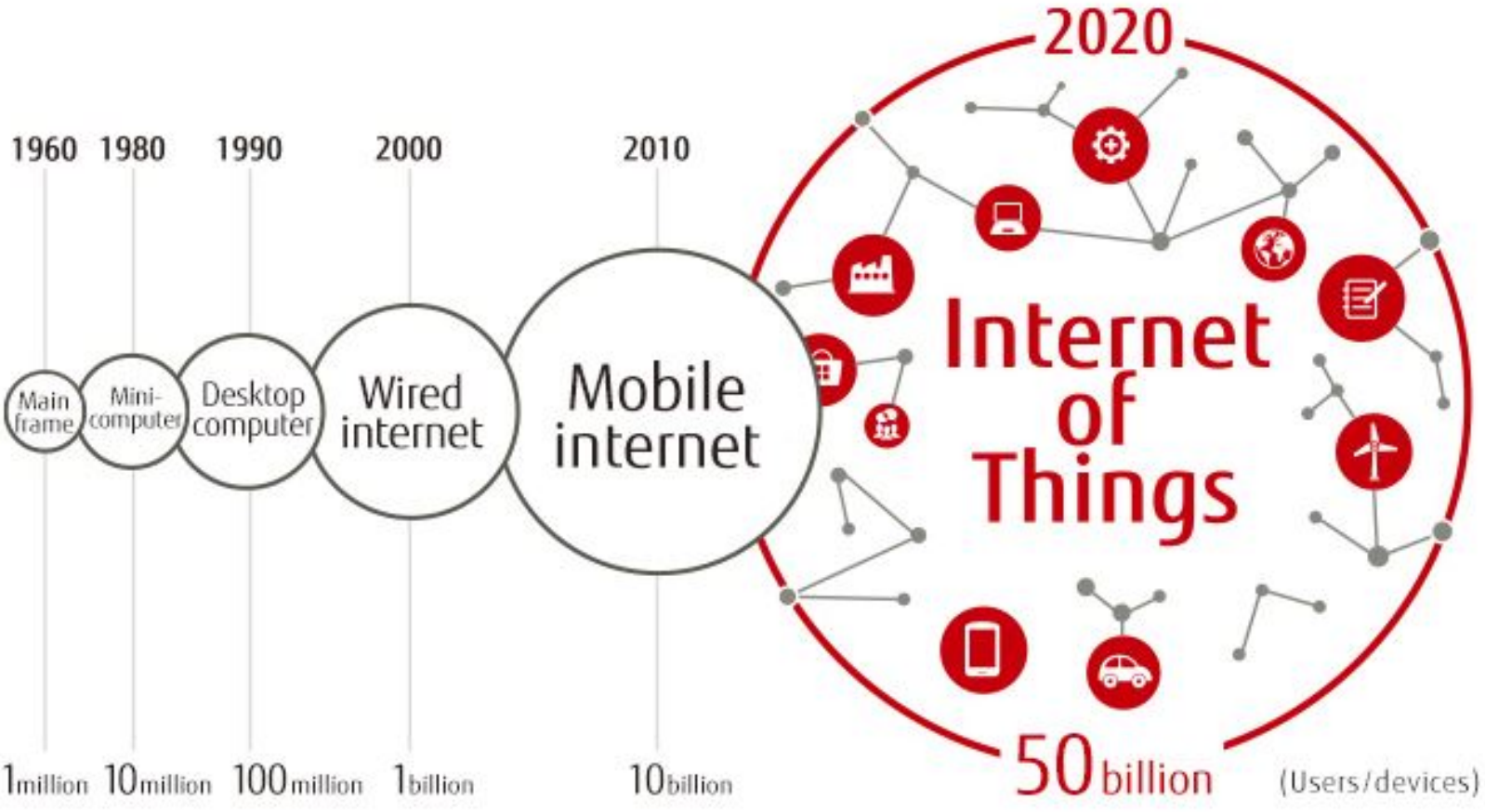
Exponential advances in technology's capabilities, reshaping the ecosystem of the workplace



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Industrial revolutions and work

Second Industrial Revolution

Late 19th – early 20th century –
"The assembly line" – amplification of labor

Features:

- Companies as social institutions
- Organization of work into jobs
- Jobs as careers

Fourth Industrial Revolution / Second Machine Age

2000s – "Uberization" – *The democratization of work*

Features:

- Mobile, sensors, AI and machine learning
- Companies as platforms
- Disaggregation of work into activities
- Talent on demand

Third Industrial Revolution / First Machine Age

1960s – 1990s – "Nikefication" and core competencies –
The democratization of information

Features:

- Technology enablement and the web
- Companies as the nexus of contracts
- Streamlining of jobs to enable outsourcing

Source: Willis Towers Watson

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Two Potential Scenarios

Human Work Becomes Obsolete

Human work is limited to envisioning demand/innovating and orchestrating automation options.

- Humans become primarily “consumers” of output produced by automation
- Social and economic support such as universal basic income (UBI) become necessary to ensure continued demand for output and a sustainable society

Human Work Is Constantly Reinvented

Work evolves continuously and rapidly as automation substitutes, augments and creates work.

- Work involves many different arrangements beyond regular traditional employment, such as gigs, projects, tasks, etc.
- Human work remains vital and often even more valuable to economic productivity, but workers must constantly evolve to meet changing requirements
- Reskilling and reinvention are the key determinant of social and economic status and progress
- “Frictionless” access to reskilling opportunities becomes a basic social need and expectation
- Learning increasingly occurs through mechanisms that are just-in-time, bite-sized, consumer-driven, and tech-enabled

Source: Ravin Jesuthasan and John Boudreau

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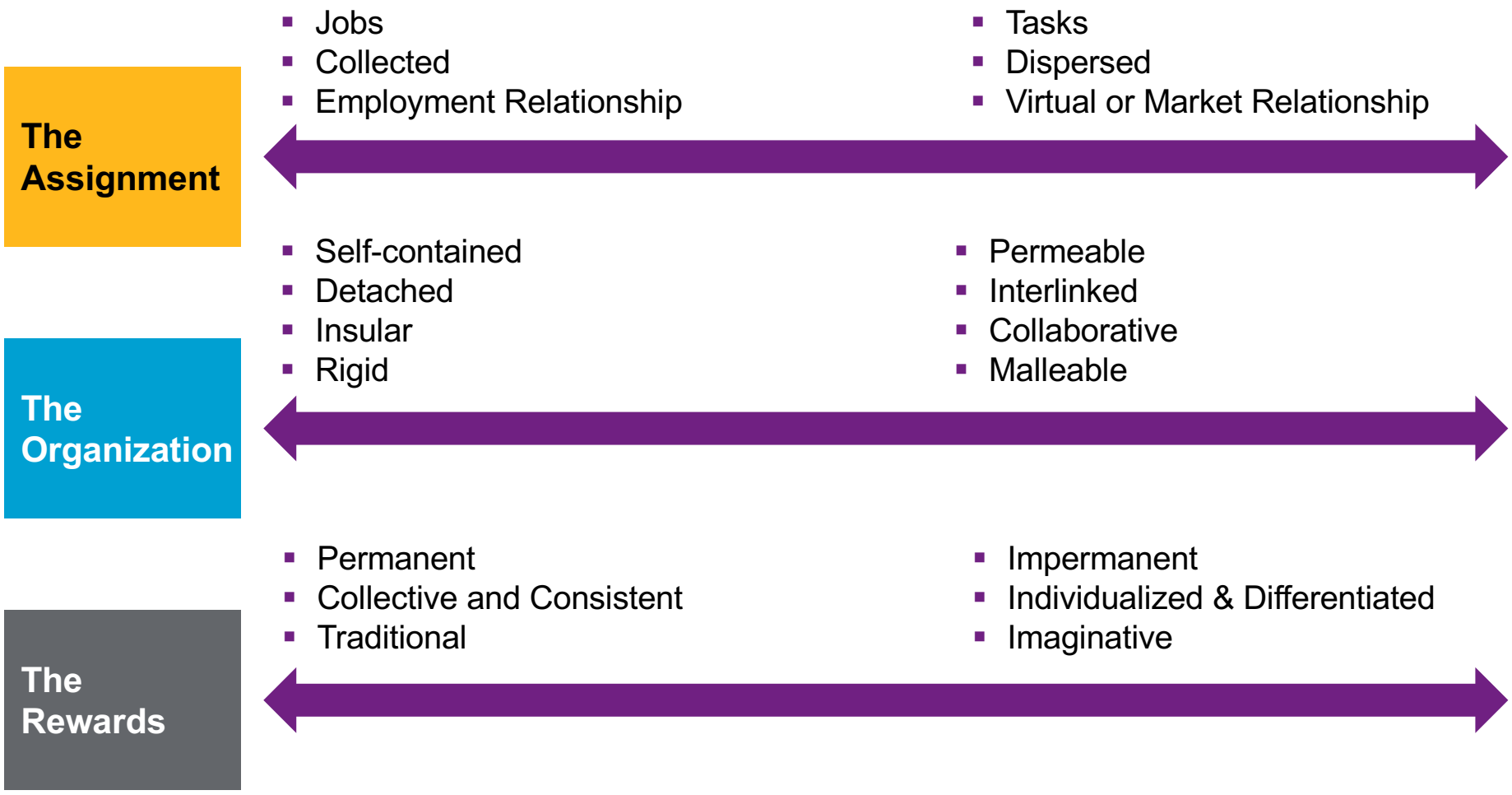
Lead the Work Map



Source: John Boudreau, Ravin Jesuthasan and David Creelman

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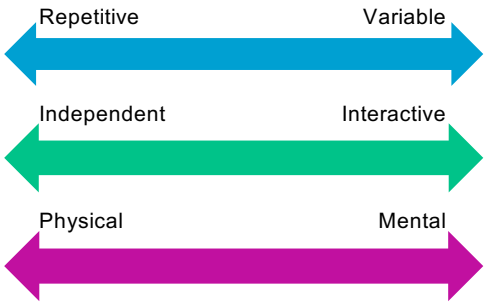
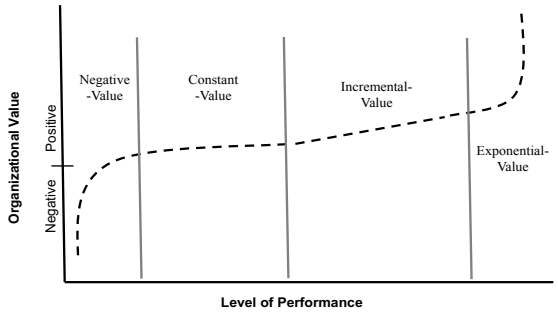
Optimizing work + automation

Deconstruct the Work

Step 1 Automation Compatibility

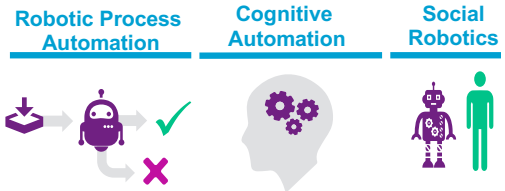


Step 2 Return on Improved Performance



Automate the Work

Step 3: Automation Type



Step 4: Automation Role

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
- Social robotics creates new variable, interactive, physical work to exponentially improve performance
- Etc. …

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

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Case study: Major Oil and Gas Company

The Future of Work in Oil and Gas

About the company

The company is one of the largest drillers in the world, active across every major oil and gas market with differentiated automation and drilling service features, with over 15,000 employees globally and over 400 active oil rigs

Business context

In 2016, the company started the technological transformation of its oil rigs. Traditionally the oil rigs had analogue gauges and drillers which relied on brake "feel" to perform tasks. Rig specifications varied significantly and the equipment was not integrated. The rigs provided limited services and relied on support from the remote operations centre as and when needed and if available. Through the introduction of performance drilling tools and integrated technology that was both developed internally and acquired, the company transformed their rigs into a platform for multiple services and moved to a 24/7 centrally controlled centre to manage the performance of their oil rigs, reducing operating variance and enhancing preventative maintenance, through the use of sensors and AI.

HR Challenges

- Determining the level of expertise of current talent and their development needs
- Attracting skilled local talent around the world to access hydrocarbons
- Engaging and retaining a diverse workforce
- Competing as an industry with emerging energy technologies
- Transforming skills to align with the new vision
- Aligning processes and skills with emerging automation and technology

The opportunity for HR and our approach

1. Reinvent jobs: deconstruct existing jobs, redeploy/automate tasks and reconstruct remaining/new tasks into redefined jobs/roles
2. Identify potential talent pools and feeder roles/career pathways (including talent from the current role that is evolving)
3. Build development and training plan
4. Deploy tools
   - Fit for role/pathway assessment
   - Talent platform
   - Reskilling tools (e.g., training curriculum)

From	To
Analog gauges and operator expertise	Digital, interactive "cockpits" with automated functions
Primarily physical work	Primarily mental work that is augmented with automation
Focus on rig-centric control	Shared control with centralized operations center
High labor intensity, low skill premiums	Lower labor intensity, Higher skill premiums
Significant variation in operating performance and predictability of maintenance	Greater predictability of maintenance events and much lower performance variation through sensors, AI and analytics

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Reinventing Jobs through deconstruction, redeployment of tasks and reconstruction of new jobs

- Activities centralized (through the use of sensors and AI)
- Activities shifted to other roles (e.g., maintenance shared services teams)
- Activities augmented by automation (e.g., monitoring, directional drilling)
- Activities eliminated due to automation (e.g., pipe running and other dirty, dangerous work)
- New activities created due to automation (e.g., electrical/mechanical engineering, data analytics)

	Current State	Future State
Project Return on Investment		
Average rig revenue		
Avg. annual revenue, Core Rig Services	$7,701,500	$7,701,500
Avg. annual revenue, Additional Services 1		$420,222
Avg. annual revenue, Additional Services 2		$2,946,786
Total	*$7,701,500*	*$11,068,508*
Average expenditures		
Avg. annual labor cost	($2,038,374)	($2,565,968)
Avg. other expenditures	($2,153,500)	($2,728,500)
Total	*($4,191,874)*	*($5,294,468)*
Average gross margin per rig		
Avg. rig revenue – Avg. expenditures	**$3,509,626**	**$5,774,040**
Avg. revenue per headcount	**$350,068**	**$425,712**

Note: The projected ROI reflects increased wage premiums of between 7-13% as a result of higher skill premiums for the reinvented jobs on the rigs, that in turn enabled the provision of the additional services referenced above. There were no projected headcount reductions

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The emerging pivotal skills

- **Orchestrating** a new ecosystem of work where every enterprise is a distributed one and leadership is from the edges
- **Curating** of the optimal set of experiences (rewards, development, engagement, etc.) for all types of talent
- Recognizing the need for **ambidexterity** in today's complex and fast-paced environment
- Enabling **culture** to be the new structure*

* Leena Nair, CHRO Unilever

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Agile means perpetual obsolescence

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