

The Fourth Industrial Revolution

The Future of Work in an Era of Rapid Digitalization

Ravin Jesuthasan, CFA, Managing Director

@ravinjesuthasan

2017

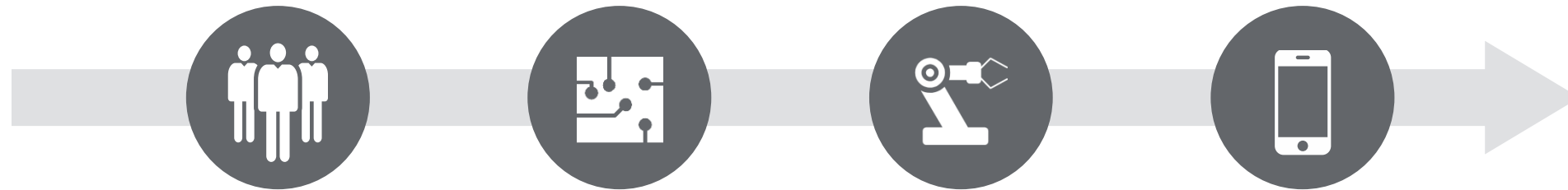


The Fourth Industrial Revolution

- We are today at the beginning of a Fourth Industrial Revolution**
 - Digital revolution
 - Fusion of technologies blurring lines between the physical, digital, and biological spheres.
 - Technological breakthroughs – e.g., Artificial intelligence, robotics, the Internet of Things
- When compared with previous industrial revolutions**
 - Disrupting almost every industry in every country
 - Significant impact on jobs
 - Significant job creation to job displacement
 - Heightened labor productivity to widening skills gaps
- In many industries and countries**
 - The most in-demand occupations or specialties did not exist 10 or even five years ago
 - 65% of children entering primary school today will ultimately end up working in completely new job types that don't yet exist

@ravinjesuthasan

Industrial revolutions and work



1ST INDUSTRIAL REVOLUTION

Late 19th – early 20th century
“The assembly line”

Features:

- Underpinning for Coase’s theory of the firm
- Companies as social institutions
- Organization of work into jobs
- Jobs as careers

2ND INDUSTRIAL REVOLUTION: FIRST MACHINE AGE

1960s – 1990s
“Nikefication” and core competencies

Features:

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

3RD INDUSTRIAL REVOLUTION: SECOND MACHINE AGE

2000s –
“Uberization”

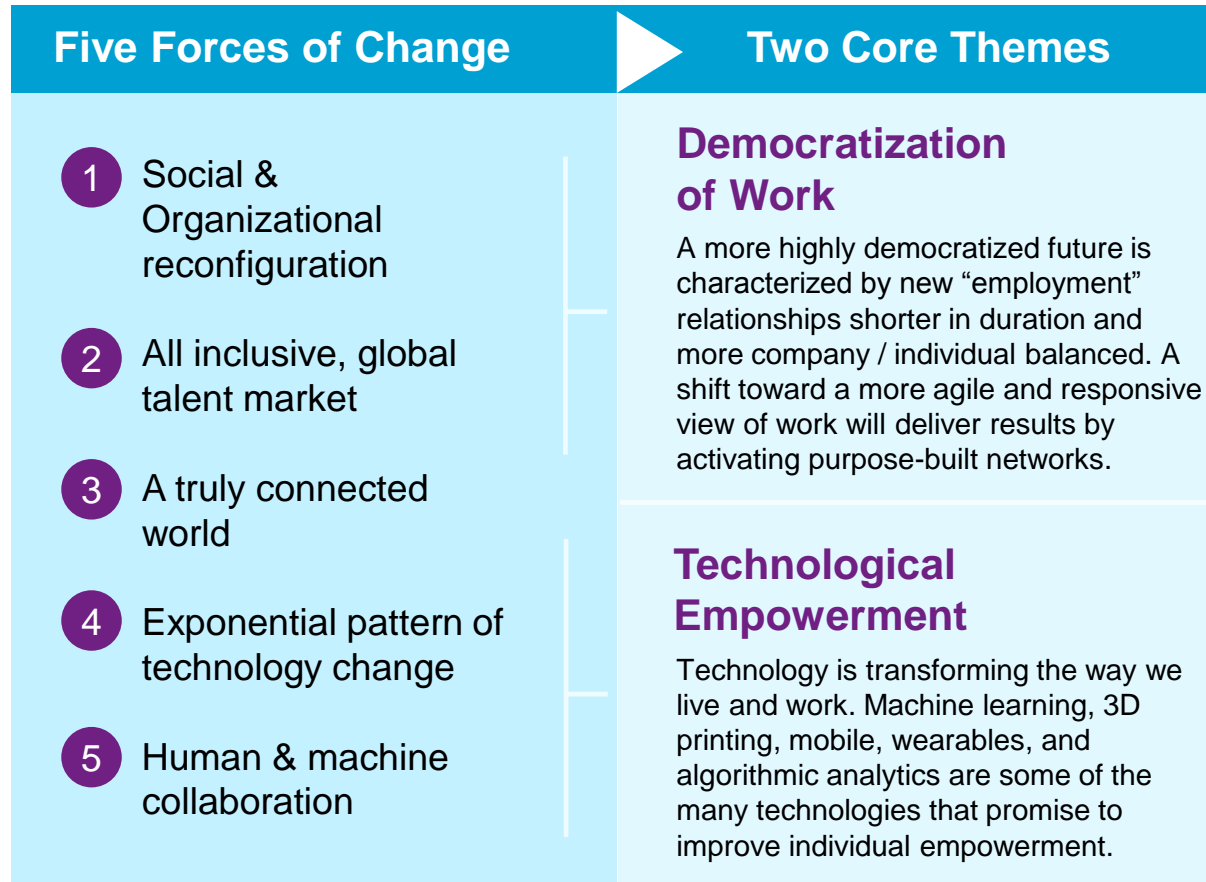
Features:

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

@ravinjesuthasan

Forces of Change

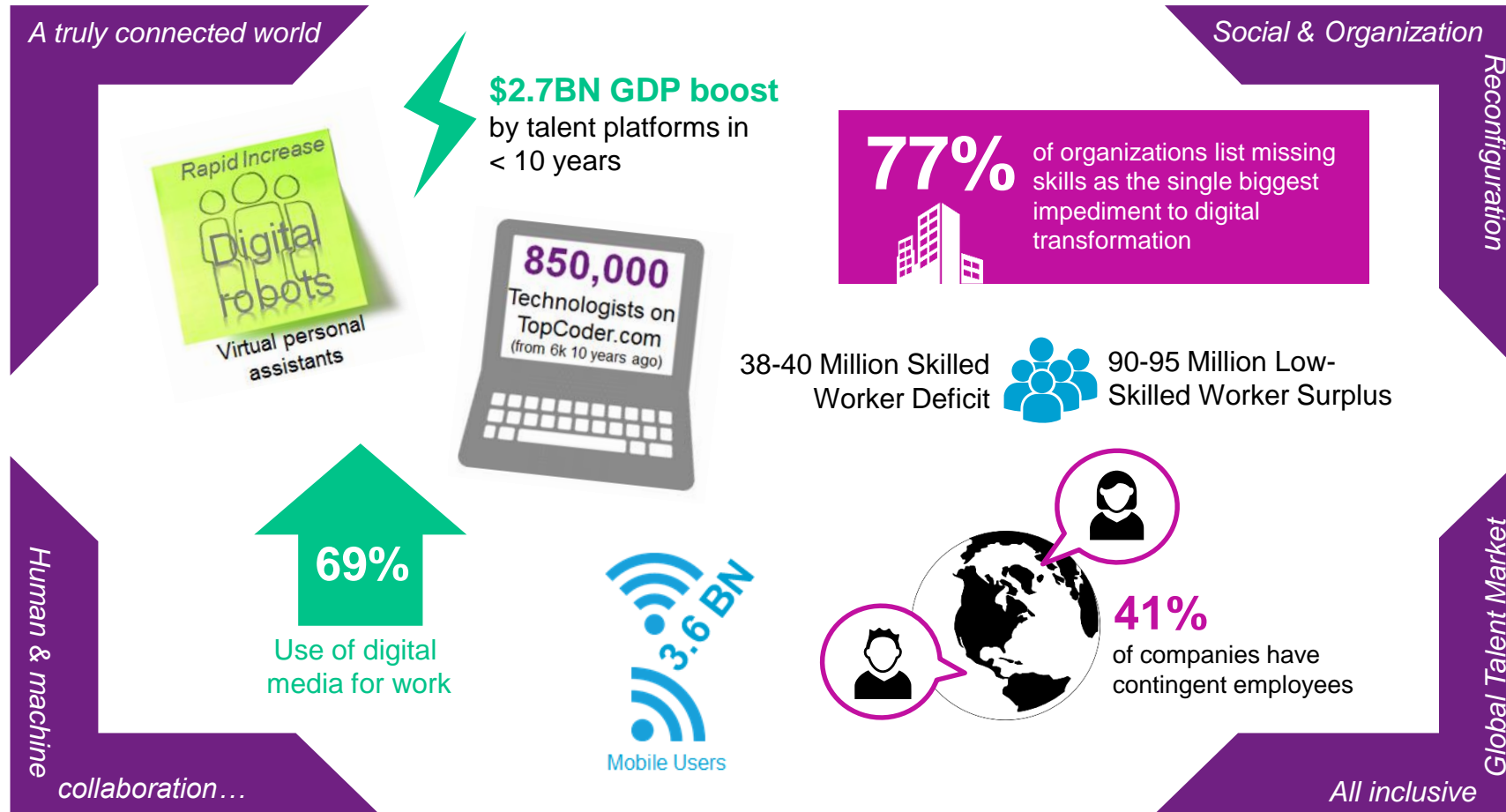
The Five Forces of Change can be captured in two core themes – Democratization of Work and new level of Technological Empowerment.



@ravinjesuthasan

The emerging “Robo-gig” economy

Technology, digital media and robotics are transforming Work and Jobs



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

Digital platforms open up access to work opportunities

Use of Digital Resources, by Generation and Country

% claiming to use resource at least once per week	% , by Generation			% , by Country					% of total
	Millen- nials	Genera- tion X	Baby Boomers	South Africa	Germany	USA	Brazil	China	
Talent platforms	41	36	27	24	21	23	45	44	36
Job networking sites	51	51	44	48	32	38	63	51	49
Online job portals	46	44	35	44	28	32	59	42	43

Question: About how often do you use the following digital resources to access work/job opportunities?

Source: Implications of Digital Media Survey, 2015, World Economic Forum

The transformative impact of talent platforms

By 2025, online talent platforms could boost global GDP by \$2.7 trillion.

Share of GDP increase
by source, \$ trillion

\$2.7 trillion¹

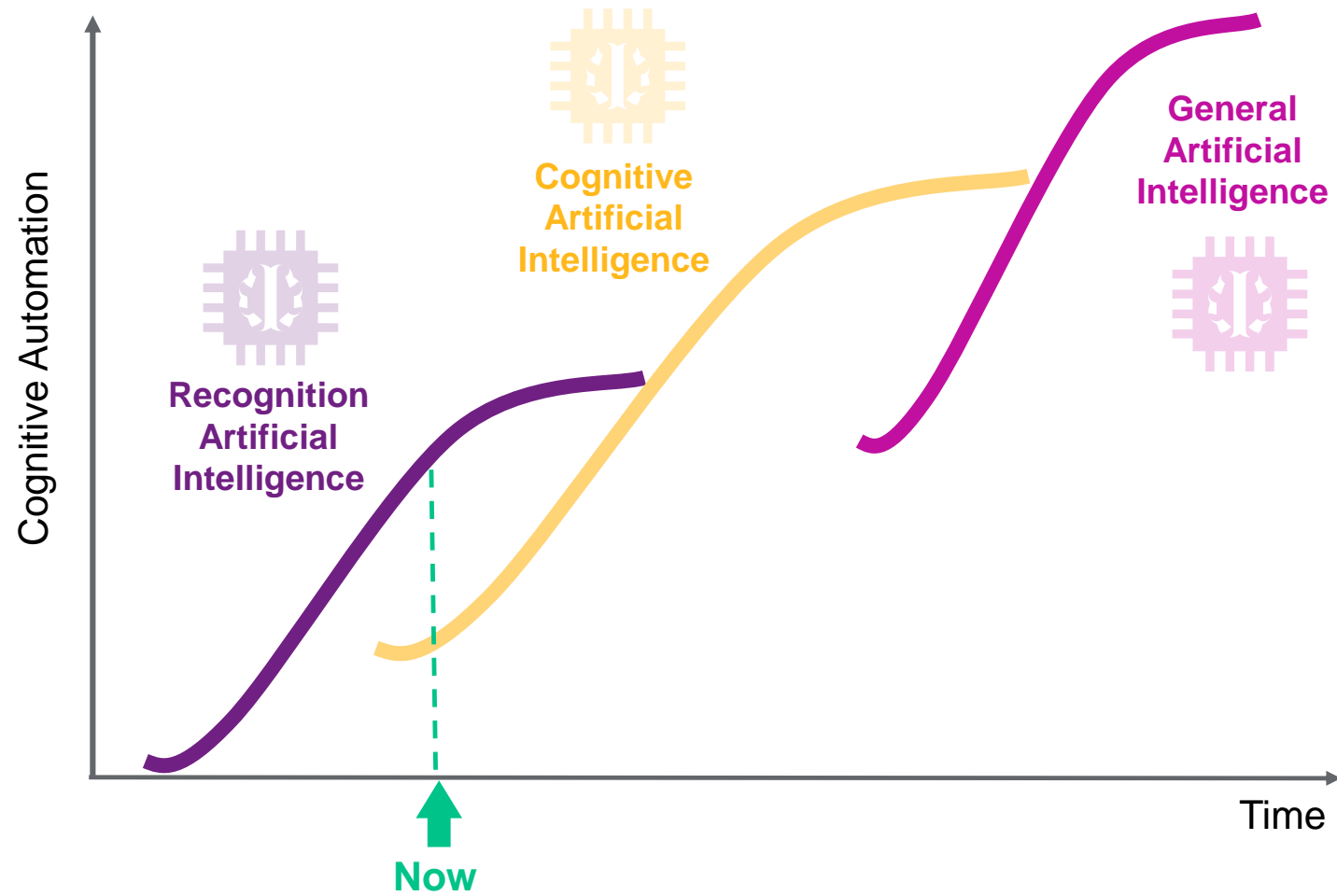
Improved productivity	0.34	Better matches
	0.29	Reduced informality
Greater employment, 25 million additional FTEs ²	0.70	Faster matches
	0.11	New matches
Higher labor-force participation, 47 million additional FTEs	1.27	Work for currently inactive people and increased hours for current part-timers

¹ Figures do not sum to total, because of rounding.

² Full-time equivalent.

McKinsey&Company

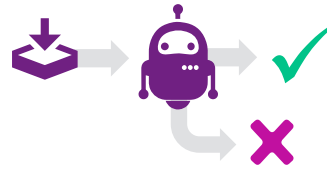
The evolution of AI



@ravinjesuthasan

Enablers of work automation

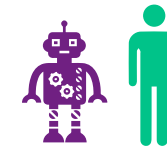
Robotic Process Automation



Cognitive Automation AI, ML



Social Robotics



TASKS	Routine, High-volume	Non-routine, creative	Routine, collaborative
MATURITY	HIGH	EMERGING	MEDIUM
IMPACT	MEDIUM	HIGH	HIGH

@ravinjesuthasan

What can AI do for your business

The 3 things that Cognitive Automation can do for business

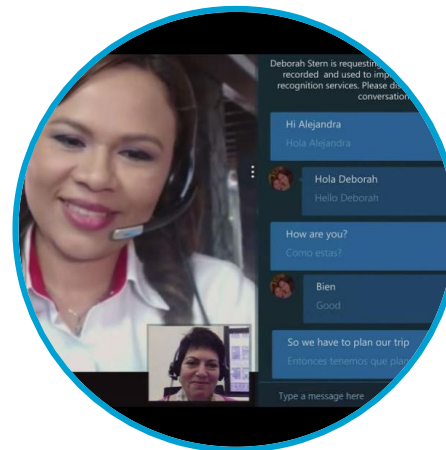
1

Automate & re-engineer tasks and processes



2

Develop new products & services



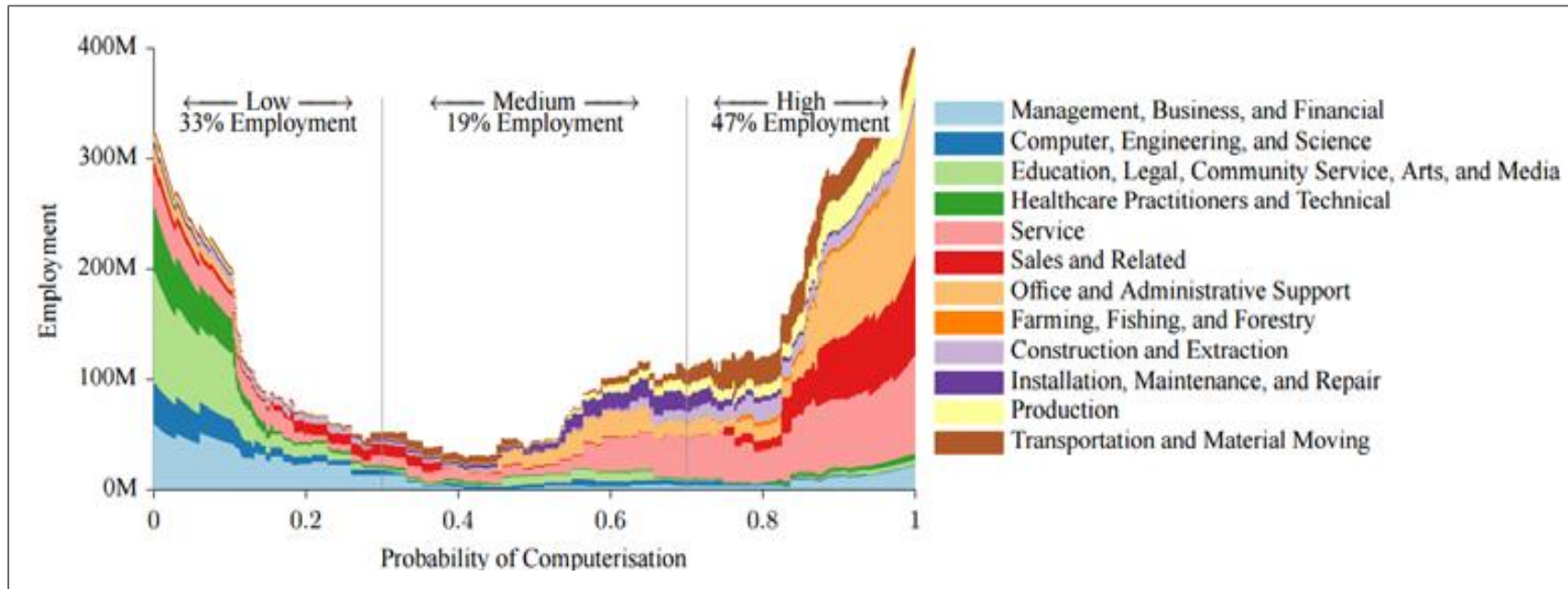
3

Gain new Data insights



@ravinjesuthasan

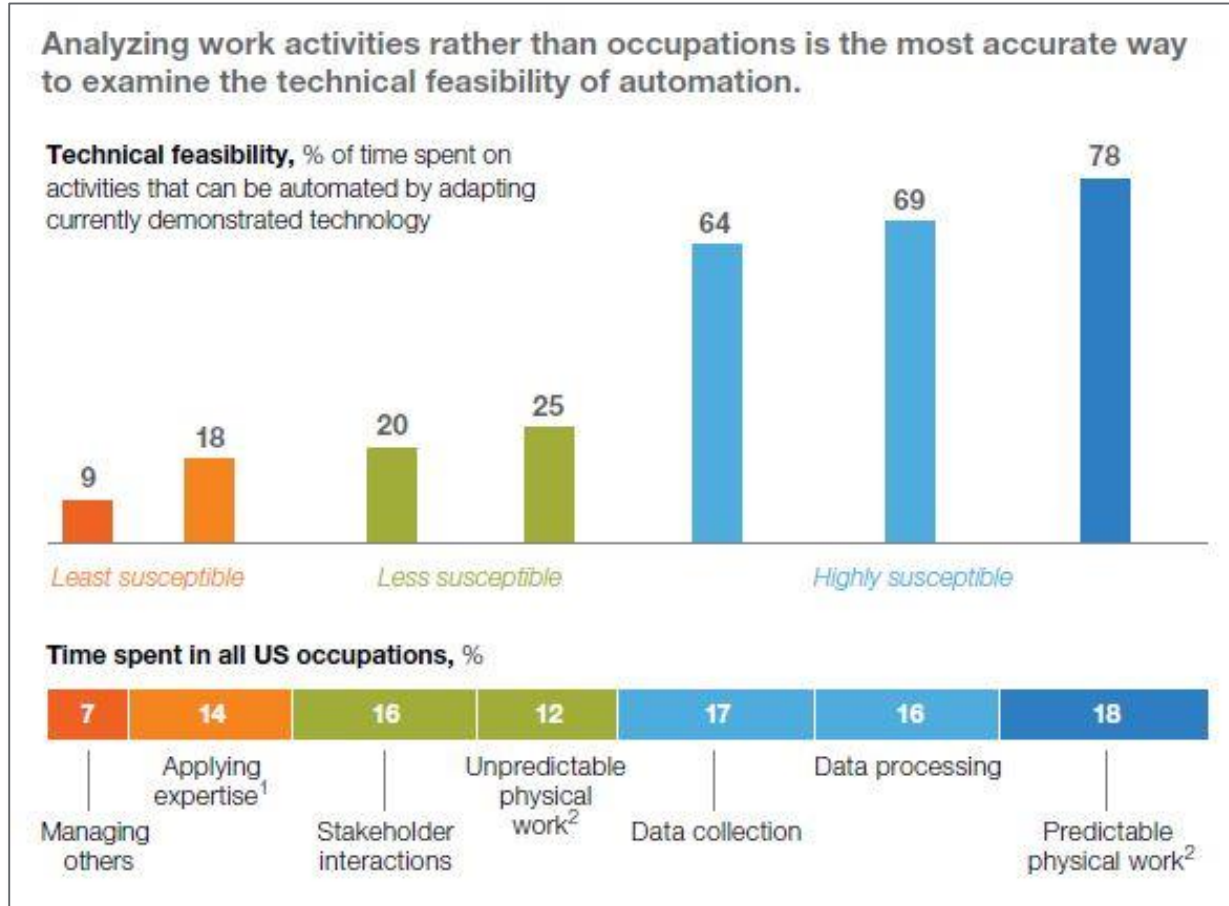
Technology is transforming work and jobs



Source: Frey, C.B. and M.A. Osborne, "The Future of Employment: How Susceptible Are Jobs to Computerisation?", 17 September 2013

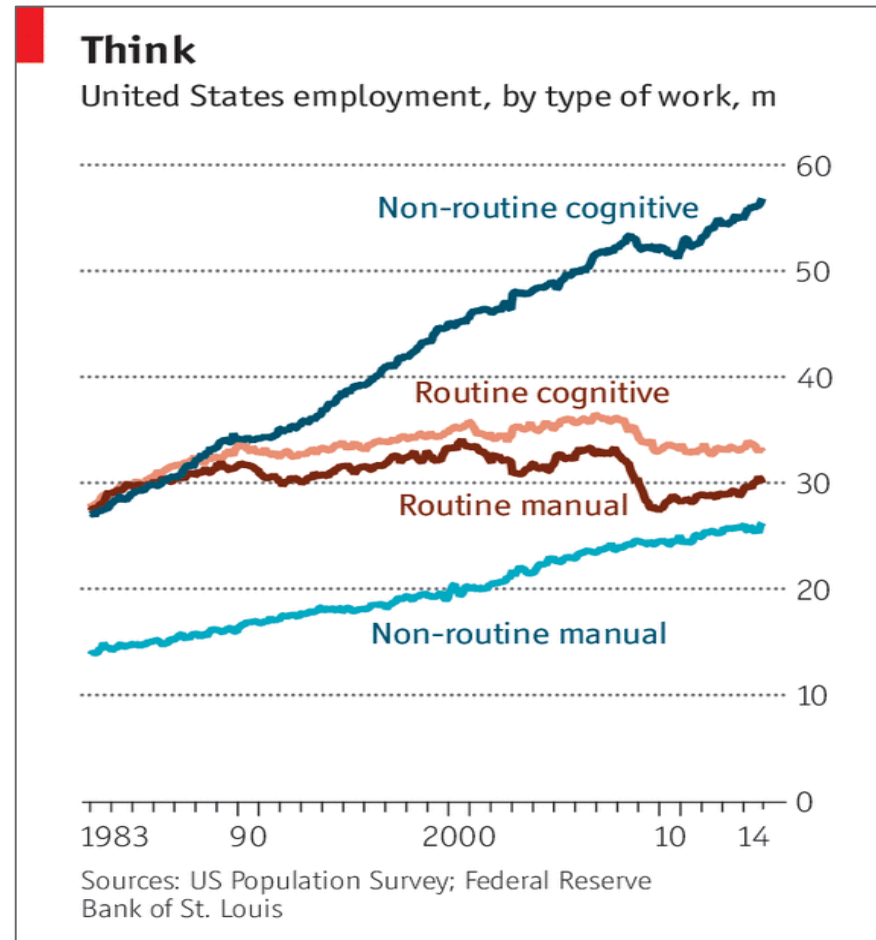
@ravinjesuthasan

Certain activities are more susceptible to automation



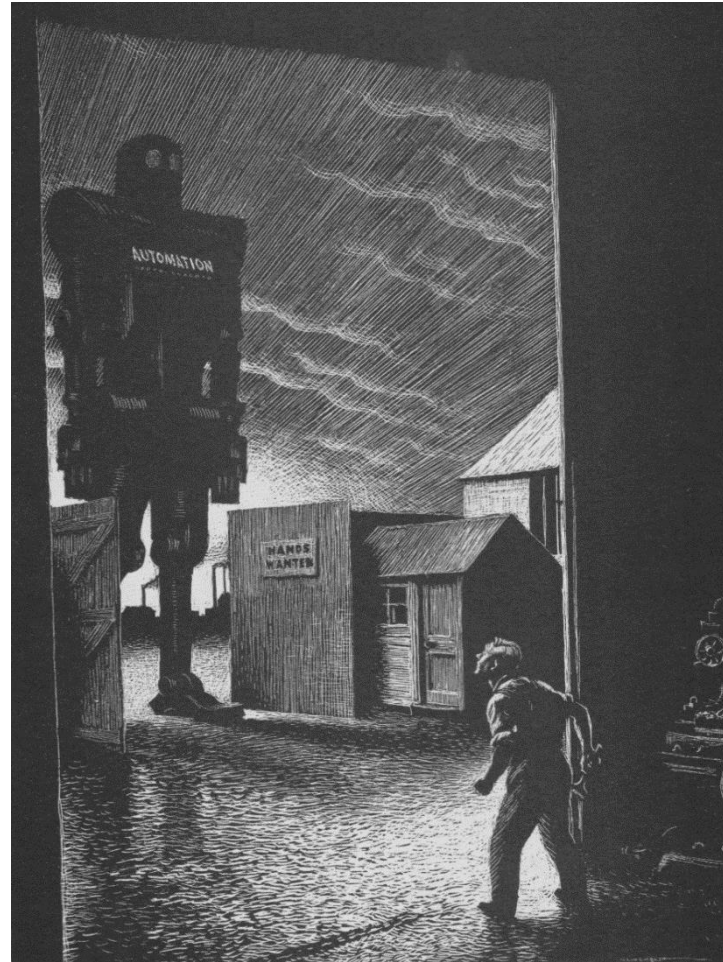
@ravinjesuthasan

As such, the nature of work is evolving



@ravinjesuthasan

Fear of job automation is not new



June 29, 1955,
Punch Magazine

@ravinjesuthasan

Jobs most impacted by changing technology...



Sources: <http://www.investors.com/news/the-top-10-jobs-robots-could-steal-from-humans-by-2025/> / <http://www.zdnet.com/article/the-first-10-jobs-that-will-be-automated-by-ai-and-robots/>

“Uber empowered” scenario: New jobs



AI Ethics Evaluator



Robot Trainer



Virtual Culture Architect



Data, Talent & AI integrator



Cyber Ecosystem Designer

@ravinjesuthasan

Are we approaching “peak human”?

Machine Learning and AI have come of age, and scale thanks to the cloud



More affordable and better care – but fewer doctors?

IBM Watson successful diagnosis rate for lung cancer is 90% compared to 50% for human doctors.

Robo-advisers replace humans in banking

RBS announces the shedding of 550 jobs, to be replaced by roboadvisers in order to cut costs.



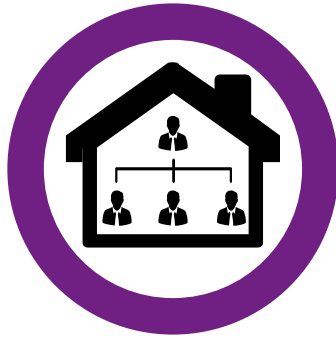
AlphaGo beats world champion at Go

Self-learning algorithms can improve their performance over time – and be applied to any complex cognitive problem (e.g., language translation)

@ravinjesuthasan

Not “binary” anymore: the employment relationship is changing

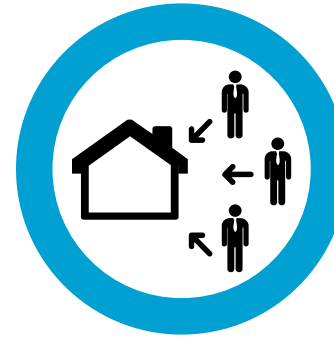
A plurality of work is already here...



Traditional employees



Outsourcing



Free agents



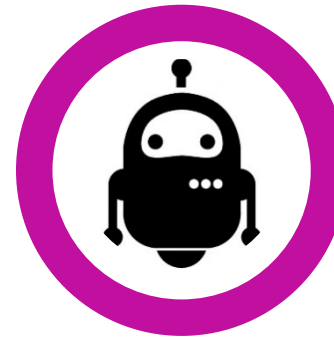
Alliances



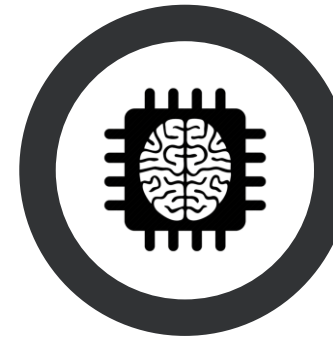
Talent platforms



Volunteers

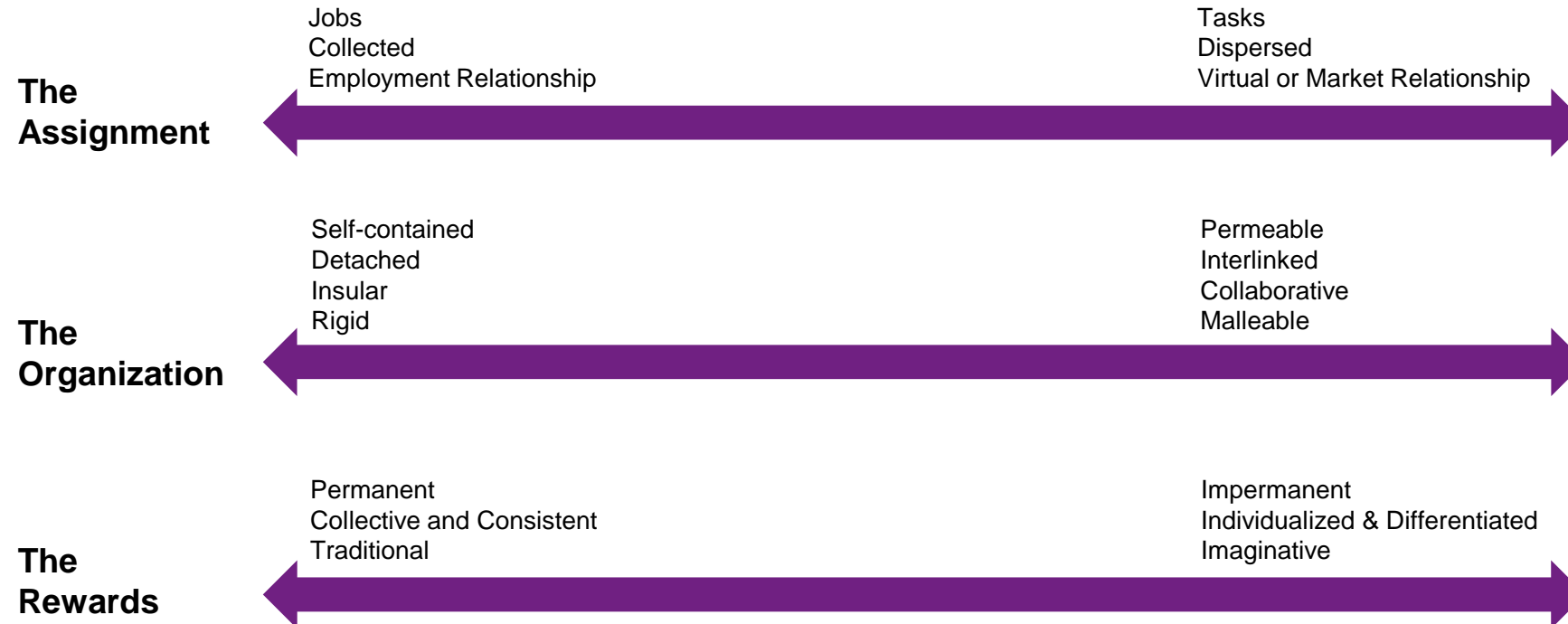


Robotics



Artificial Intelligence

Lead the Work Map

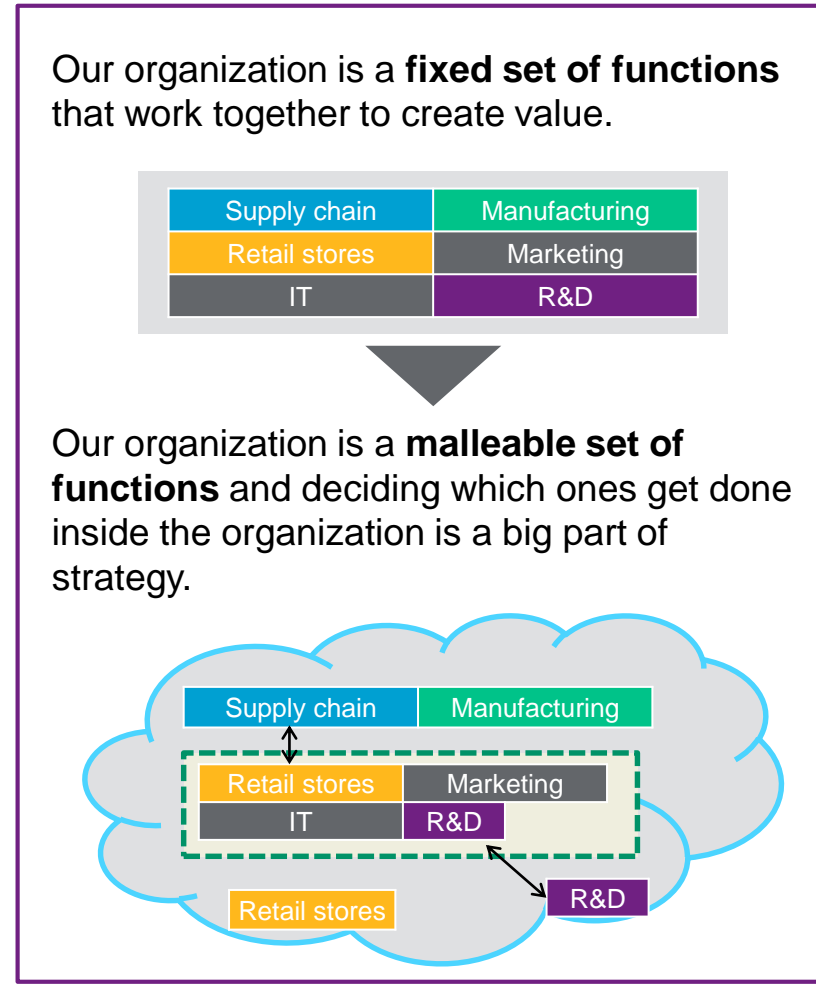


Source: John Boudreau, Ravin Jesuthasan and David Creelman

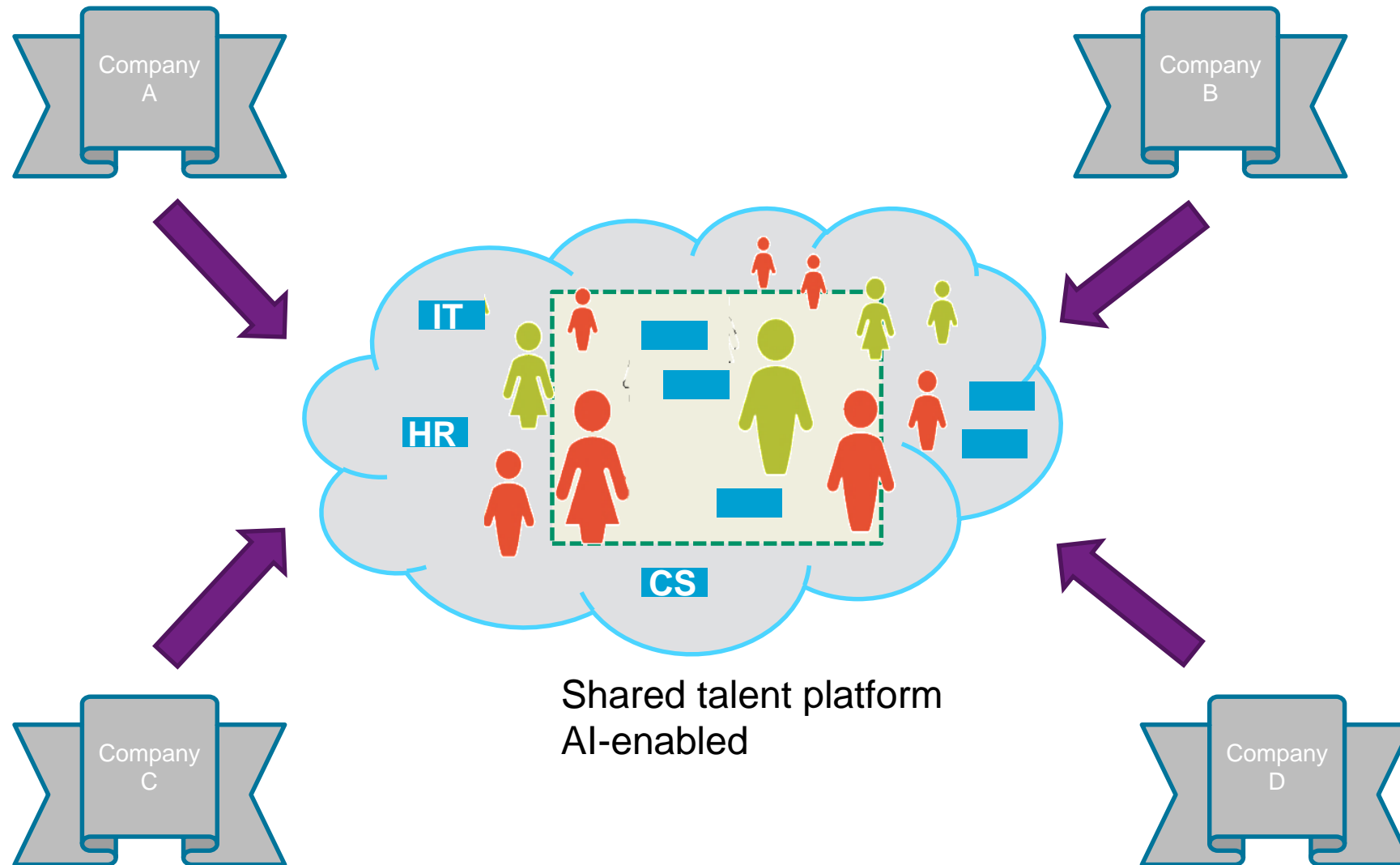
This will require a fundamental paradigm shift in how work and our organizations are organized



@ravinjesuthasan

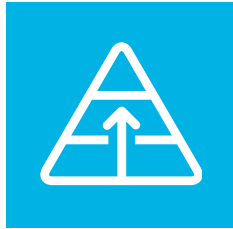


Future scenario (“Uber-empowered”): a shared economy for talent



What this means for society: Two choices

The basic income movement has steadily gathered steam. Why?



Social justice –
recognition that
wealth is built of
generations



Enhance republican
freedom – freedom
from authority
figures



Basic
security



@ravinjesuthasan



Follow me
@ravinjesuthasan
#WTWforTalent



The Future of Work
willistowerswatson.com