



SOUTH AFRICAN COLLIERIES HUMAN RESOURCES ASSOCIATION

GENERAL MEETING

EMBRACING THE FOURTH INDUSTRIAL REVOLUTION

17 April 2019

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Keynote Speaker

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**Change
Metrics**

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Agenda

HR and Change Management in the 4th Industrial Revolution (IR)

Session 1: Strategic Overview

- What is the 4th IR
- How does this relate to mining and HR
- Learning and skills required in the 4th IR



Latest Trends – The “Now Factor”

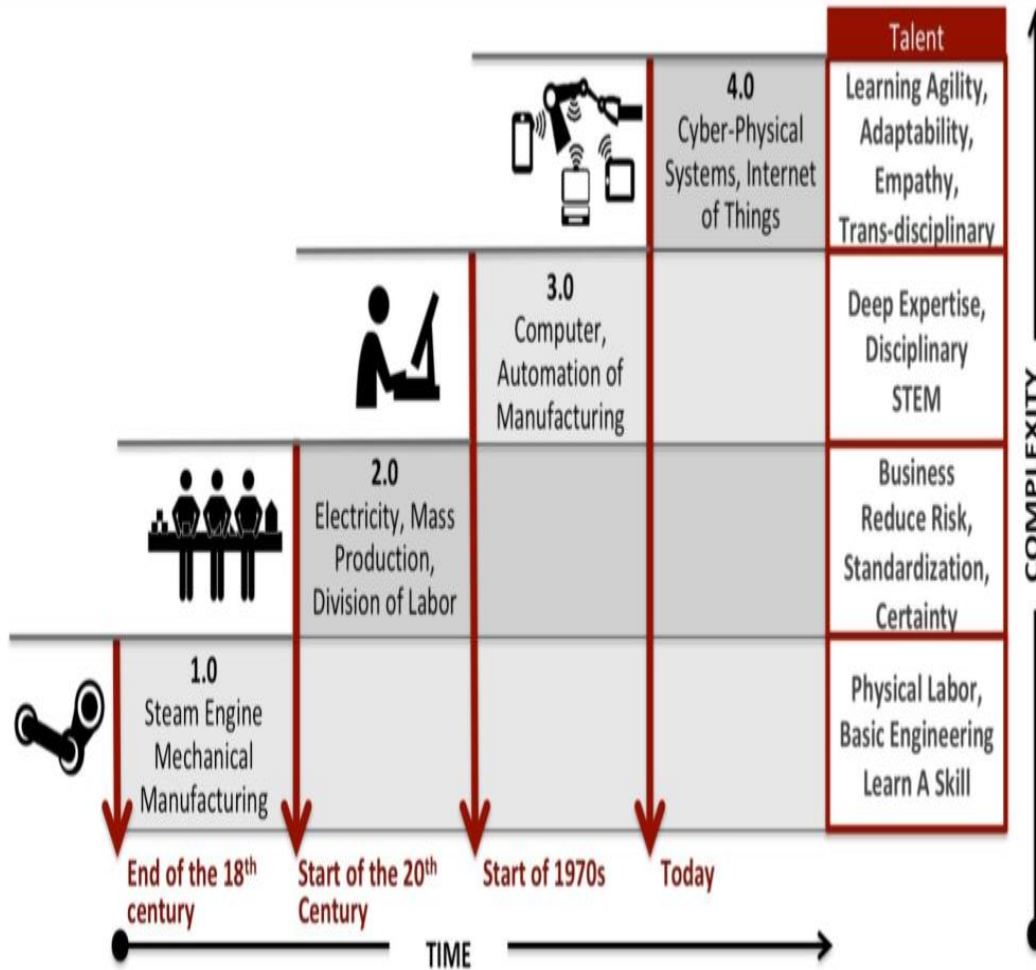


What is the Fourth Industrial Revolution?



Context: Next Industrial Revolution (World Economic Forum 4th)

Mining

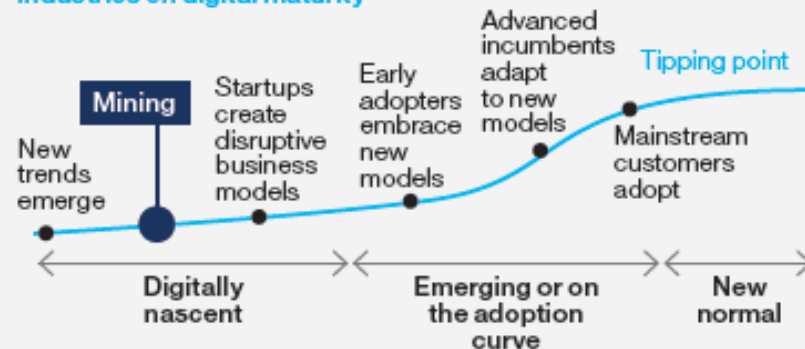


Challenging Mining Environment– Global Trends & Local Factors

Global trends

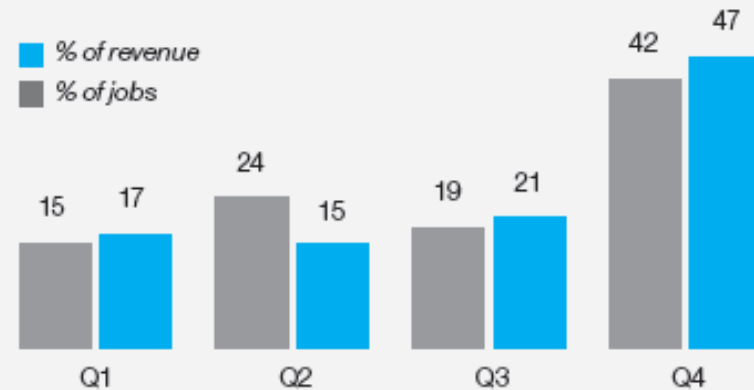
-  **Clean energy scale-up** impacts demand for commodities, e.g., coal and platinum
-  **Changing investor profile** favours new commodity mix
-  **China's changing economic focus** impacts demand for, e.g., iron ore
-  **Technology advances** about to scale – can SA mining keep up?

Mining lags well behind other industries on digital maturity

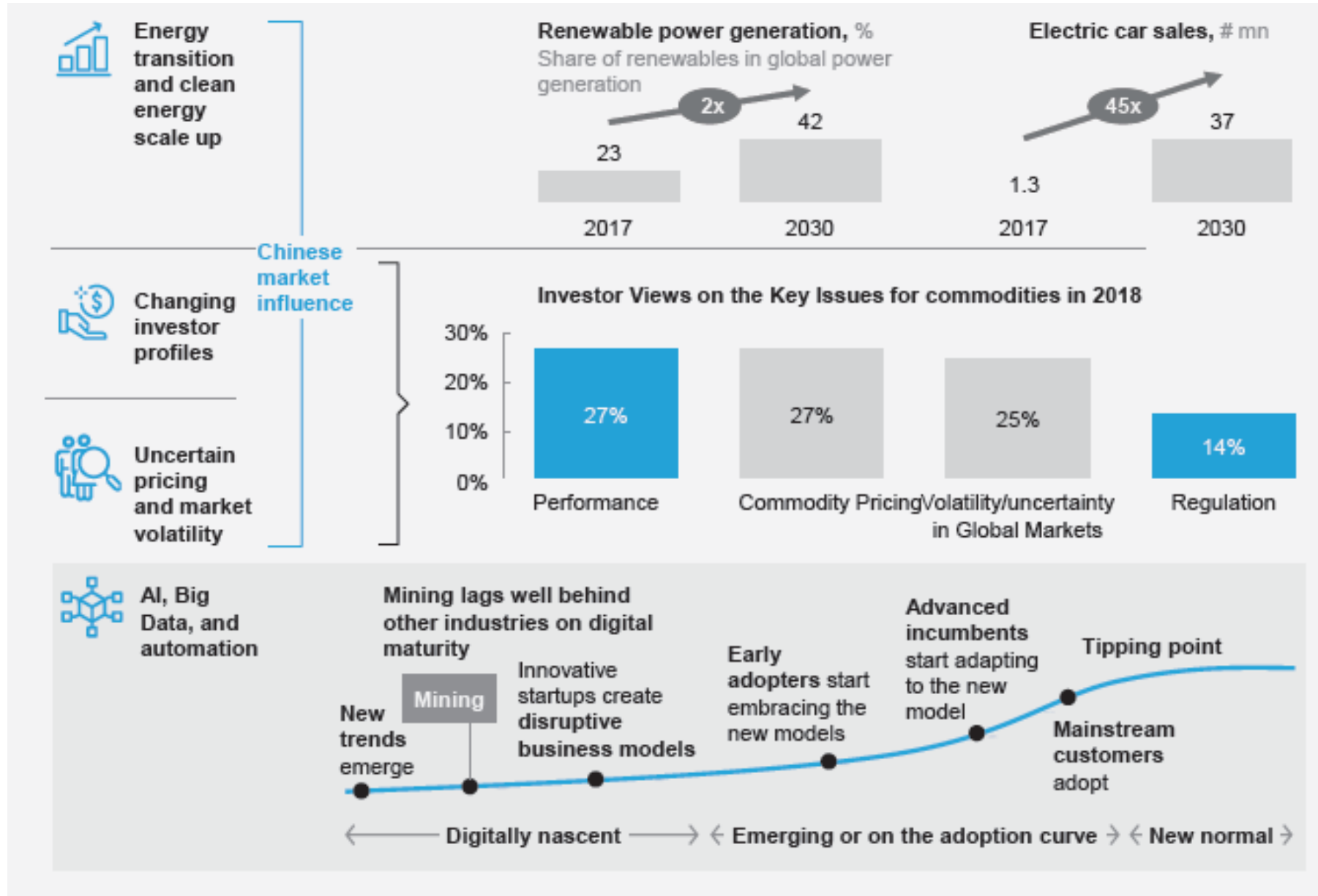


Local factors

-  **High volatility exposure** – both currency and commodity mix
-  **Declining productivity** – while all other regions are improving
-  **Risky cost position** – 42% of SA mining revenue and 47% of jobs in bottom quartile of global cost-competitiveness



SHIFT HAPPENS : Global disruptions are changing the face of the mining industry



Digital initiatives could drive significant improvements across all types of South African Mines

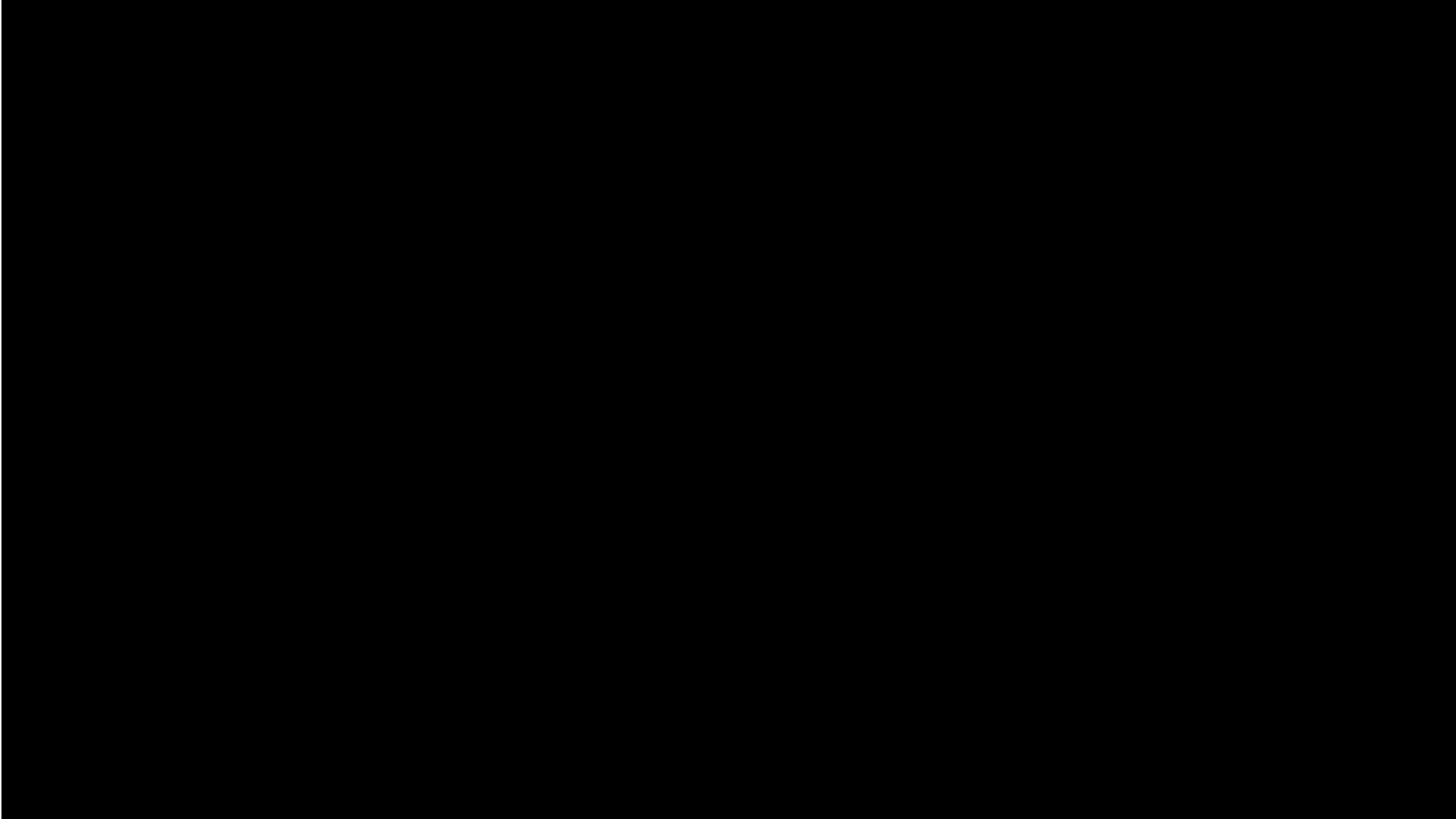
✓ Relevant ⚡ Partially applicable ✗ Not applicable							
	How digital can improve operations	Examples of impact cases applicable to South African Mines	Relevant for (mining method) ¹ :				Potential impact on margin
			Underground Conv	Mechanized	Open cast	Plant	
A. Enable frontline with technology	Increase worker safety and productivity	Drone technology can shorten surveying time, improve accuracy and enable access to restricted areas	⚡	⚡	✓	✗	1-3
	Improve performance management and help workers to do their job better	Connected mobile and AR ² devices (e.g. smart helmets) can improve maintenance productivity and performance management by providing real-time access to guides / work plans	⚡	✓	✓	✓	
	Improve equipment maintenance and reduce costs	Internet of Things (sensors) can better monitor equipment condition to reduce maintenance demand and consumable cost	⚡	✓	✓	✓	
B. Data-driven decision making	Optimize mine planning	AA ³ can optimise mine planning by reflecting dynamic medium /long-term views, linked to processing and logistics capacities	✓	✓	✓	✗	6-12
	Reduce operating costs	Equipment on-board computing data can improve fleet productivity and reduce cost by enabling routing, reducing idle times and fuel consumption	✗	⚡	✓	✗	
	Improve plant throughput and yield	Applying AA in the plant can increase throughput and yield by optimizing process parameters	✗	✗	✗	✓	
	Avoid equipment downtime	Applying statistical analysis can reduce down-time and maintenance costs by enabling maintenance only when necessary and optimising scheduling	⚡	✓	✓	✓	
Total potential from digital for SA Mining							7-15

1 Cov = conventional; UG = underground; Plant = processing plant

2 Augmented Reality

3 Advanced Analytics

Example : Advances in Mining Industry – 4IR



On quadrant, rate where your company is?
Place a sticker note on your selection with a company name?



1st Industrial Revolution

2nd Industrial Revolution

3rd Industrial Revolution

4th Industrial Revolution

The BIG HR Question

How do these changes
impact HR?

Video McKinsey – The Digital Future of Work, What Skills are Needed



Summary – Skills Needed

1. Learn to Learn (Lifelong learning)
2. Develop core skills (hard & soft digital skills)
3. Agility (Self preparedness)
4. Human Machine Interface (Working closely with machines)
5. Analytical Skills
6. Creative Skills
7. Flexibility – Say yes to any opportunity
8. Try new things, new talents



The Digital Talent Gap

Are Companies Doing Enough?

The digital talent gap is widening

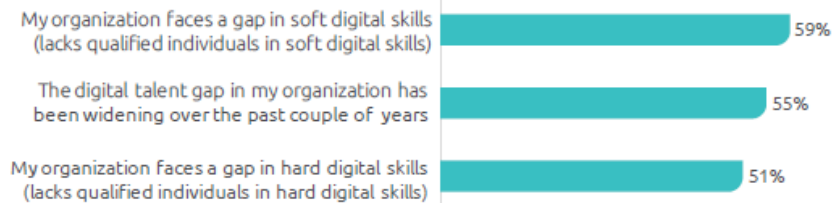
55% Percentage of organizations who acknowledge that the digital talent gap is widening

Every second organization we surveyed acknowledged that the digital gap is widening. Moreover, over half (54%) of the organizations agreed that the digital talent gap is

hampering their digital transformation programs and that their organization has lost competitive advantage because of a shortage of digital talent (see Figure 1).

Figure 1. More than half of organizations still face a shortage of digital talent and say it affects their competitiveness

Percentage of organizations that acknowledge the shortage of digital talent



Percentage of organizations that acknowledge the impact of the digital talent gap



Source: Capgemini Research Institute survey, Digital Talent Gap, June–July 2017, N=501 employers.

Top digital roles in the next 2–3 years

We asked employers which digital roles will be more prominent in the near future. As highlighted in Figure 5, security and data roles top the list.

Figure 5. Top 10 digital roles of the next 2–3 years

- | | |
|--|--|
| 1. Information security/Privacy consultant | 6. Chief customer officer |
| 2. Chief digital officer/Chief digital information officer | 7. Personal web manager |
| 3. Data architect | 8. Chief internet of things officer |
| 4. Digital project manager | 9. Data scientist |
| 5. Data engineer | 10. Chief analytics officer/Chief data officer |

Source: Capgemini Research Institute survey, June–July 2017, N=501 employers.

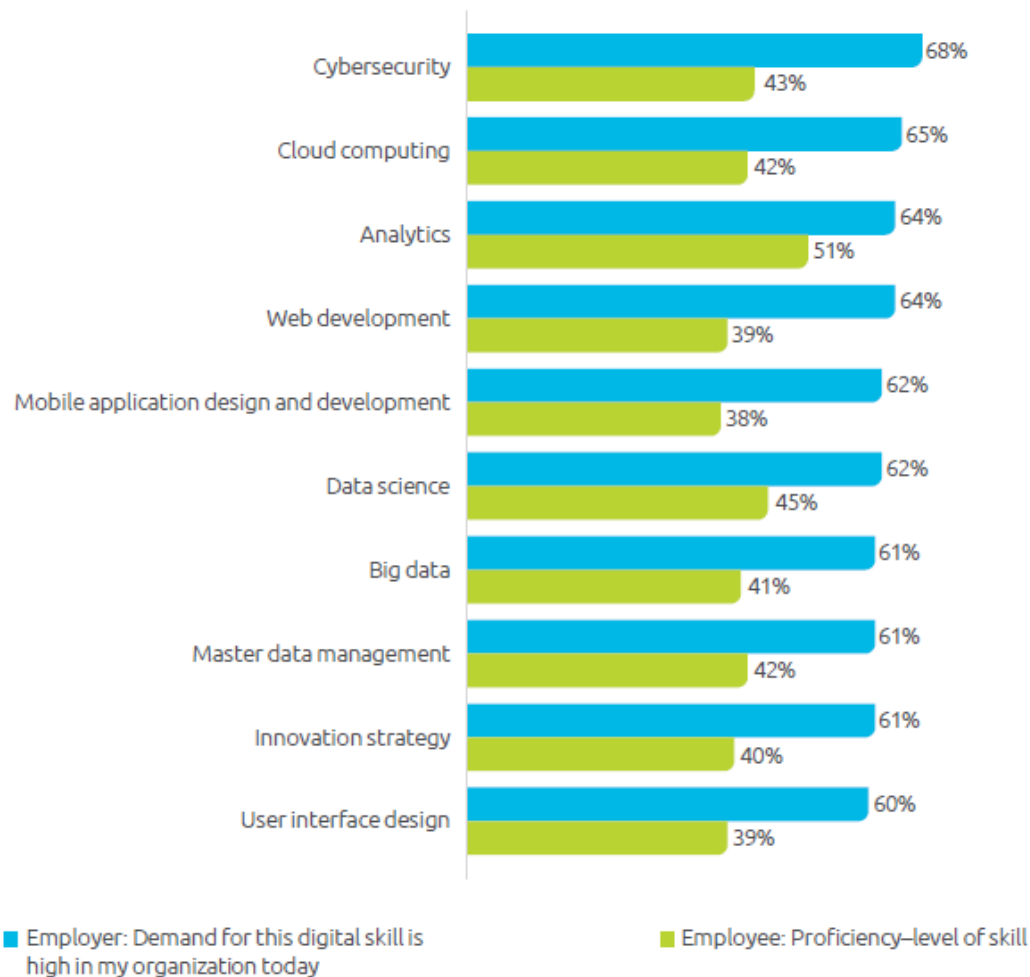
Demand for hard digital skills still outpaces supply

As Figure 1 shows, more than half of organizations face a talent gap in hard digital skills. The two skills in most demand,

cybersecurity and cloud computing, are also those with the greatest talent gap (see Figure 4).

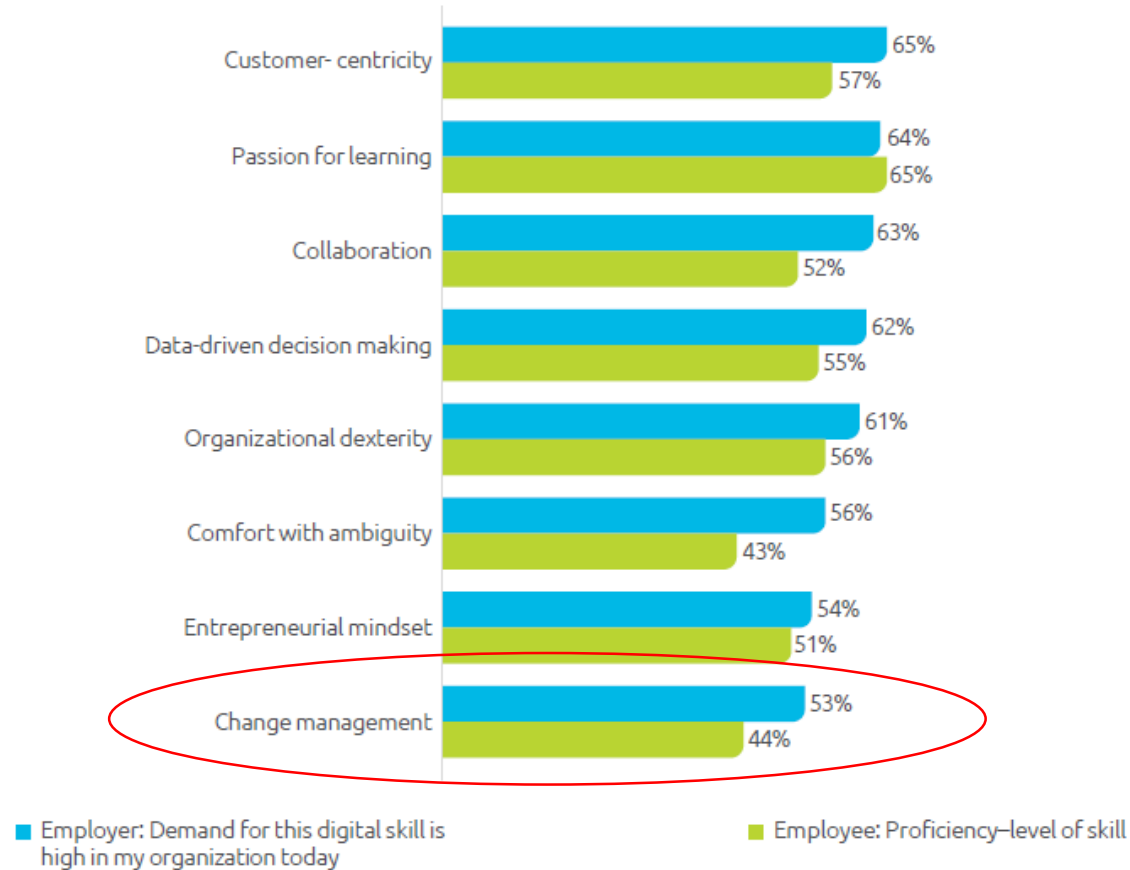
Figure 4. A stark gap exists between organizations' requirements and employee proficiency for hard digital skills

Percentage of organizations that acknowledge that demand for a hard digital skill is high in their organization today and percentage of employees who are proficient in that hard digital skill



Source: Capgemini Research Institute survey, June–July 2017, N=501 employers; N=753 employees; ranked by employer demand.

Percentage of organizations that acknowledge that demand for a soft digital skill is high in their organization today and percentage of employees who are proficient in that soft digital skill



Source: Capgemini Research Institute survey, June–July 2017, N=501 employers; N=753 employees; ranked by employer demand.



I think that the world is focused very heavily on hard skills like computer science, data science, and artificial intelligence. Let us be clear those skills are very important. However, the combination of hard skills and power skills, like communications, critical thinking, and teamwork, is most vital. These skills are required in every job and are critical for professional success across all industries."

Anant Agarwal, Founder and CEO of eDX, a massive open online course (MOOC) provider

How ready are you?

A long-exposure photograph of a multi-lane highway at night. The image shows bright, curved light trails from vehicles, creating a sense of motion and speed. The background is dark, with some distant lights visible.

76%

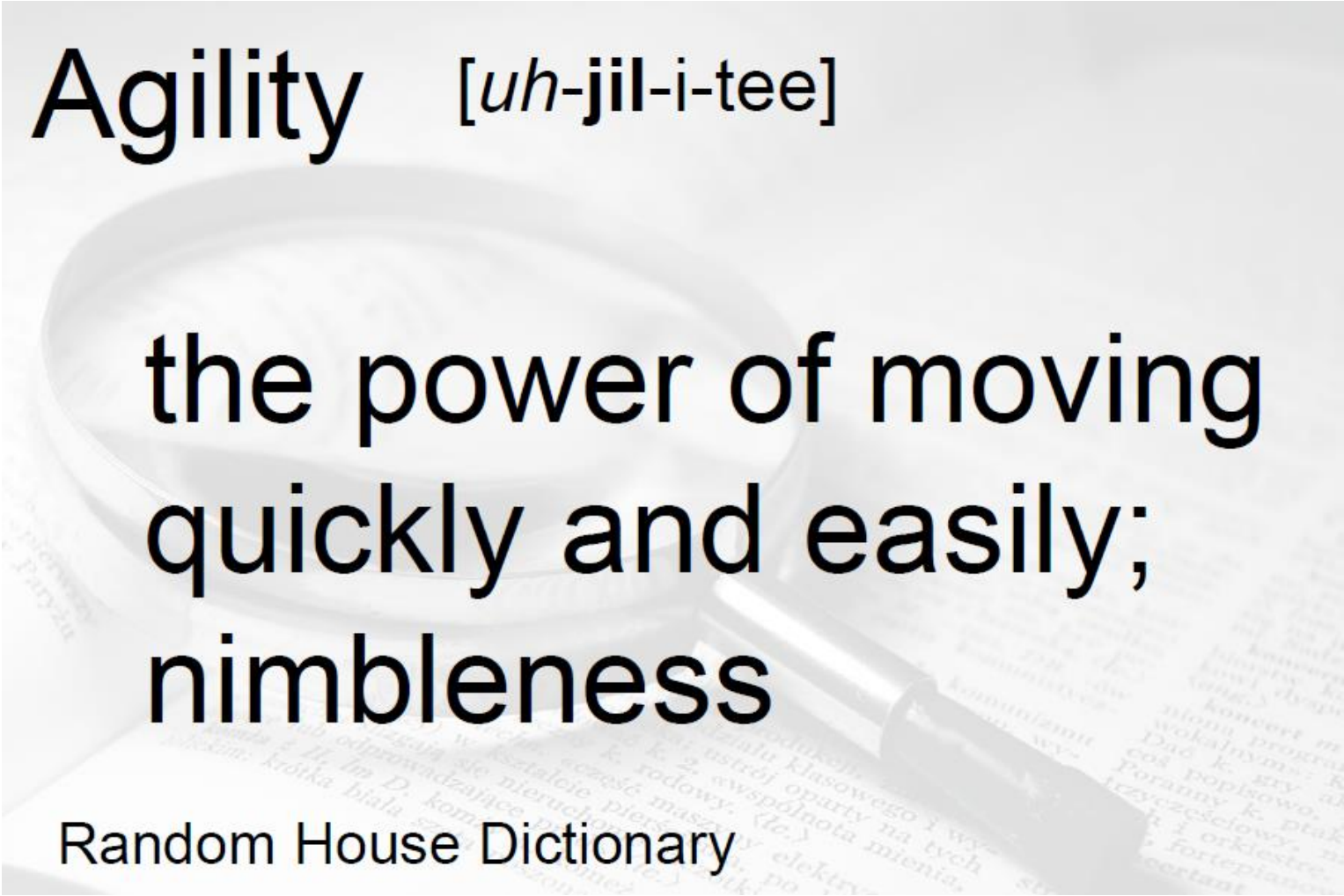
CEOs said that their ability to
adapt to change will be a key
source of competitive advantage

PWC survey of 1150 CEOs



Greater
Org
Agility = Better
Performance = Improved
Competitive
Advantage

From the PMI® 2012 *Pulse of the Profession™*
In-Depth Report: Organizational Agility

A magnifying glass is positioned over an open dictionary. The lens of the magnifying glass is focused on the word 'nimbleness' in the dictionary's text. The background is a light gray, and the text is in a serif font.

Agility [uh-jil-i-tee]

the power of moving
quickly and easily;
nimbleness

Random House Dictionary

We can partner with you in this journey

Change Capability Services

- Build individual change competencies
- Apply change management on initiatives
- Embed organizational change agility

Upcoming : Digital Skills Services

- Newly established NPO, 3Bridges
- Rollout of Digital Skills Labs at communities & schools (to formulate partnerships with other NGO's; Corporates & Mining companies)
- Focus on soft & hard digital skills



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obrigado

Dank U

Merci

mahalo

Köszí

спасибо

Grazie

Thank
you

mauruuru

Takk

Gracias

Dziękuję

Děkuju

danke

Kiitos