



*Industrial Revolution in the
digital era:
The Economy of things*

Kyriacos Kokkinos

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A man in a light blue shirt and dark pants is sitting in a blue office chair, wearing a white VR headset. He is looking forward, seemingly immersed in a virtual environment. In the background, there is a desk with two computer monitors, a keyboard, and a mouse. The office has large windows with a view of greenery outside. The scene is brightly lit, suggesting a sunny day.

The world is changing

Are You ready?

2017: In an Internet minute...



Digital decade



2006

Launch of
Twitter

Google became
a verb



2007

Apple launched
iPhone

Facebook
became
mainstream



2008

Airbnb
launched

Lehman
Brothers filed
for bankruptcy



2009

Launch of Uber
Urban dwellers
became majority
of earth's
population

Google
prototype of
driverless car



2010

China overtook
US as largest
manufacturing
nation



2011

Global
population
passed 7 billion
Borders
bookstores shut
up shop

Digital decade



2012

Kodak files for bankruptcy



2013

More mobile devices and connections than people on the earth

Blockbuster closed for good



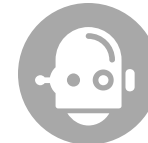
2014

64 billion WhatsApp messages sent in a single day



2015

Amazon and Alibaba rule e-commerce



2016

Personal data, psychology and bots influence voting in elections

Google's DeepMind beats 'Go' champion



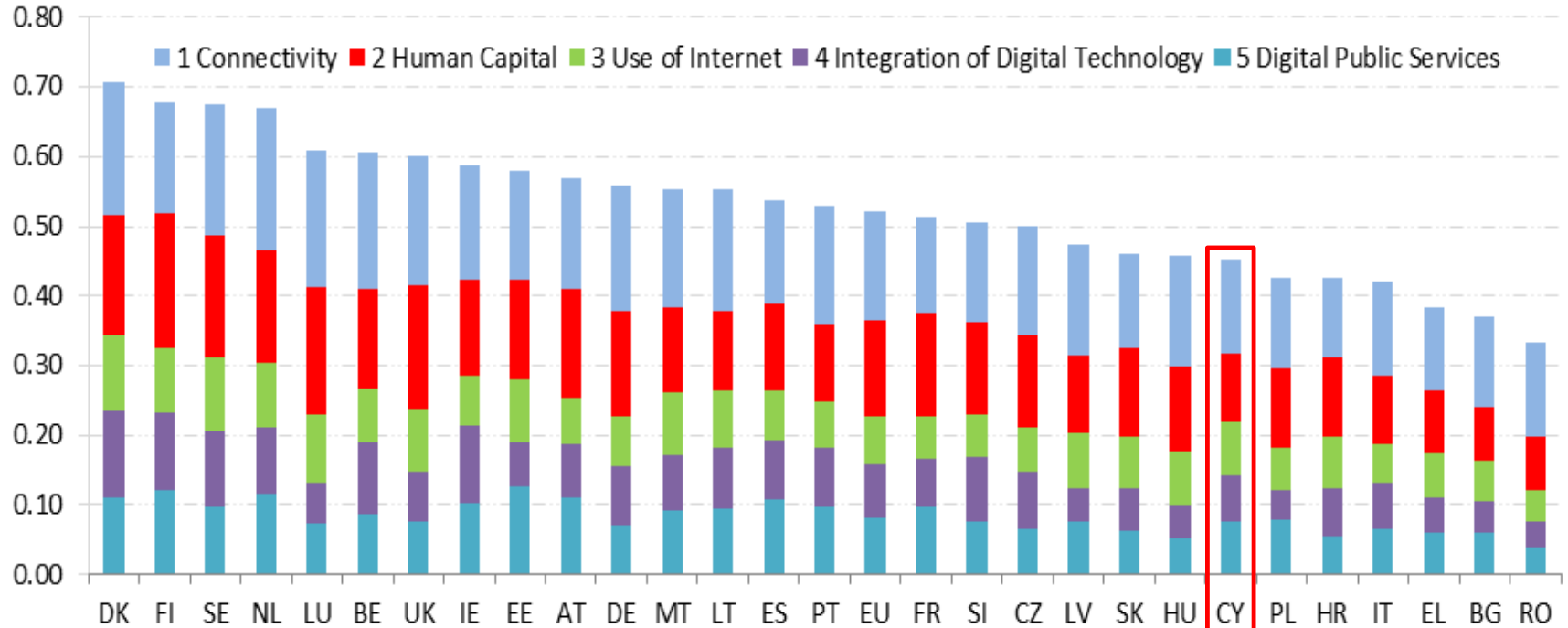
2017

Facebook goes to war on 'Fake news'

314 million search results for 'Future of work'

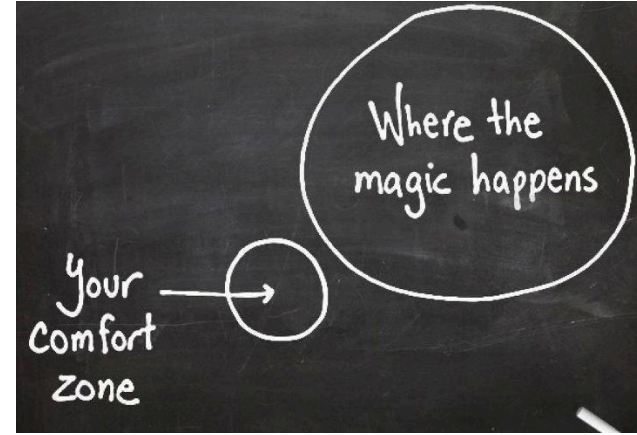
Digital Economy and Social Index

Digital Economy and Society Index (DESI) 2017 ranking



Personal shifts

FUTURE PROOF

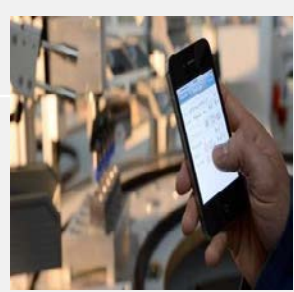
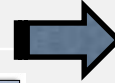
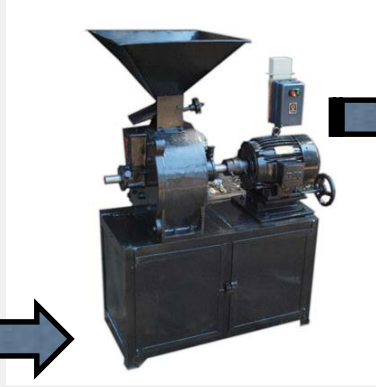
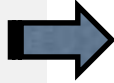
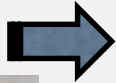




Industry 4.0 Revolution

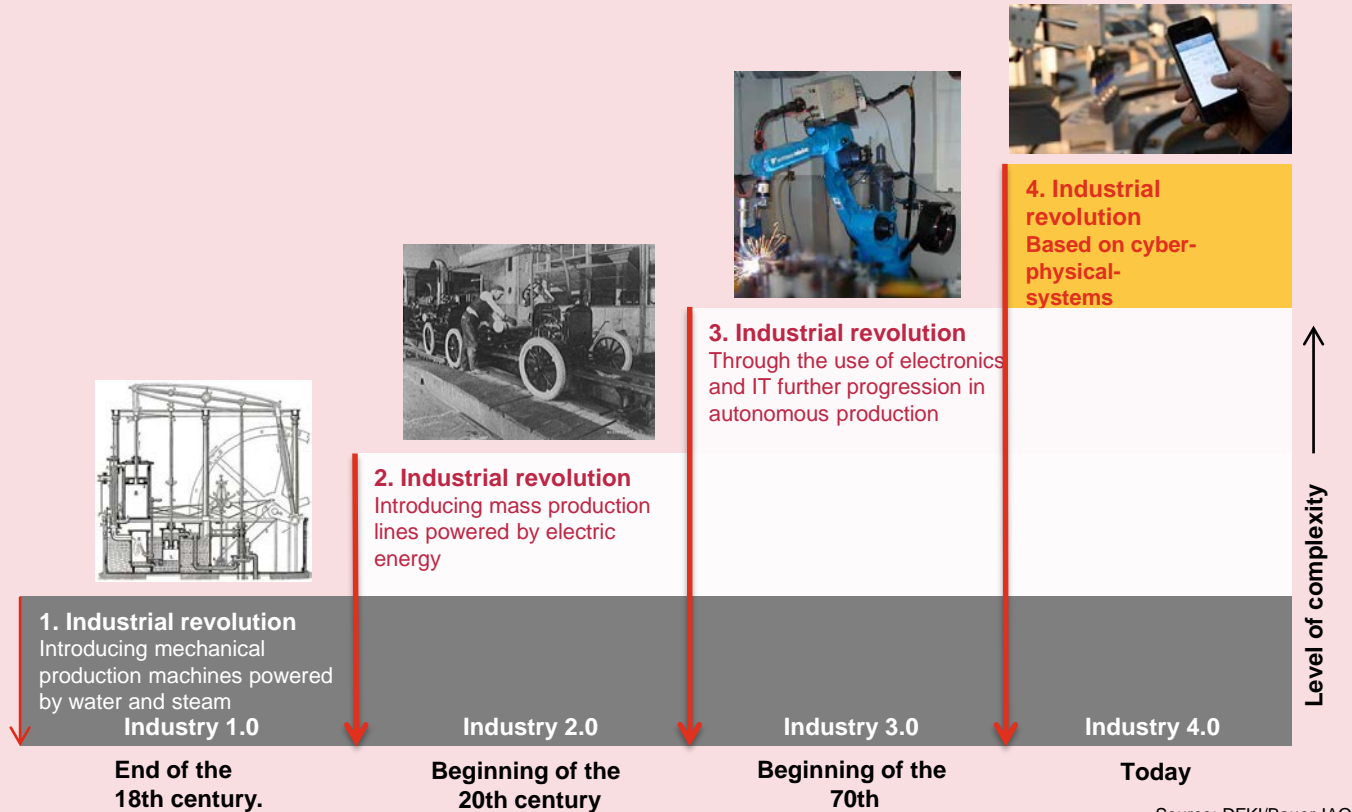
The Economy of Things

History on the move...

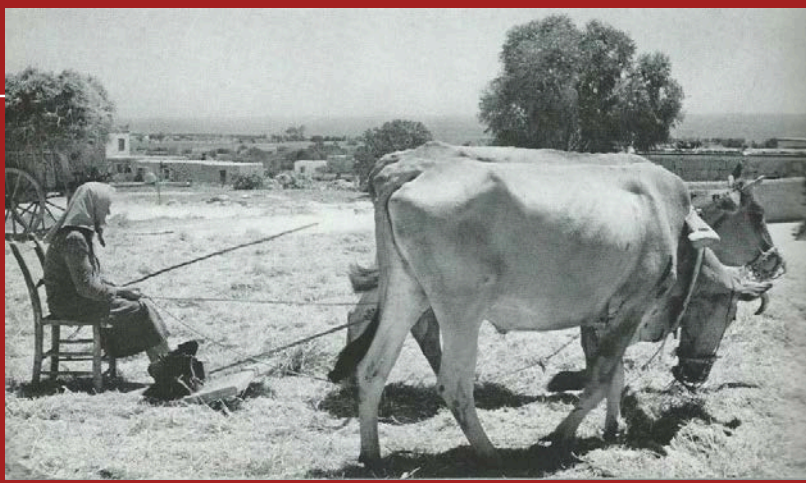


Industrial Revolutions...

Industrial Evolution



Source: DFKI/Bauer IAO



LOADING FAMAGUSTA ORANGES ON THE DECK OF A SMALL GREEK STEAMER



A SMILE LIGHTENS A HEAVY LOAD

Cyprus in pre industrial period

Under such conditions of back-breaking toil from sunrise to dark, it is little wonder that few Cypriote women can keep alive the Aphrodite tradition.



TRAMPLING OUT THE DIRT

Cyprus in the industrial Era!



Plate 24. The 'Emmett' Railway, Cyprus—13 June 1951.

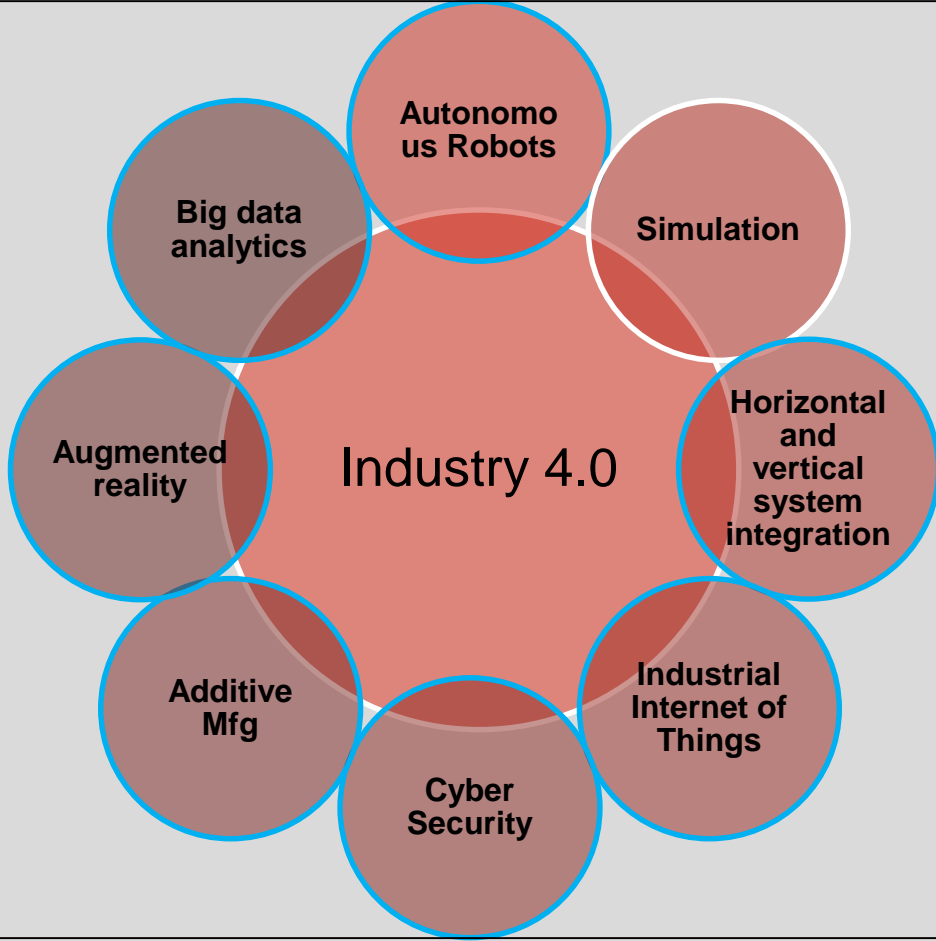
Taken the day after the Squadron had disembarked from 'HMS Triumph' at Famagusta and showing the Squadron disembarking from the train which had taken them from Famagusta to Waynes Keep Camp, Nicosia.

Squadron Records.

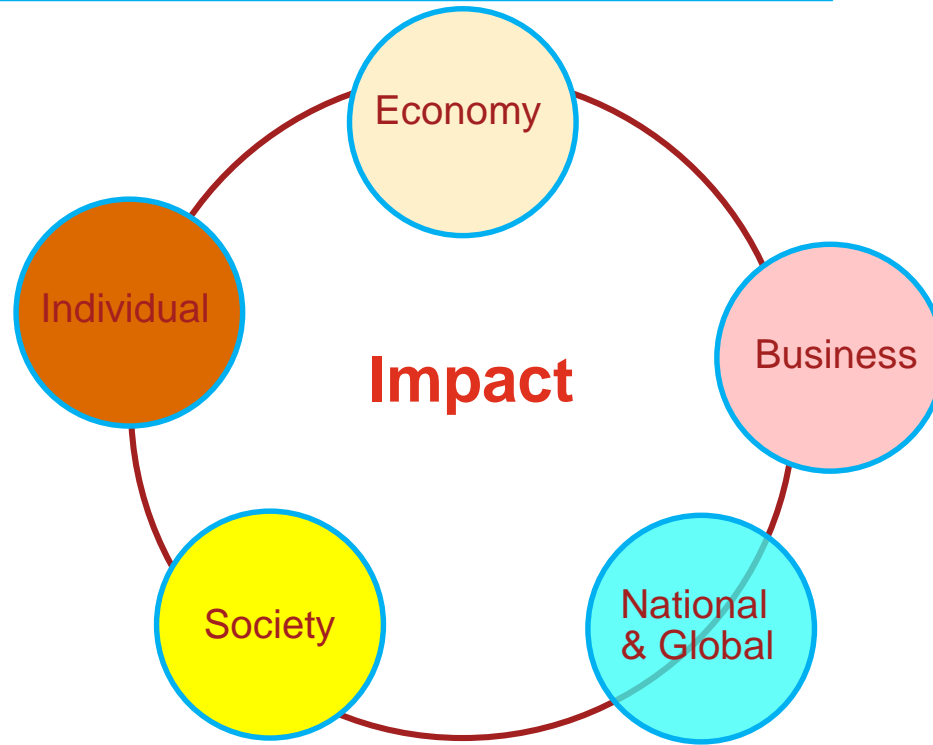


CyHPC

Building blocks of Industry 4.0



Impact of Industry 4.0





Millennials—as digital natives—bring vital value to a work environment in the midst of a digital revolution



By 2020, Millennials will be roughly 50% of the U.S. workforce, and 75% of the global workforce by 2030.¹



By sheer numbers alone, Millennials have become the catalyst for accelerated change in the workplace.

They are the first wave of digital natives to enter the workforce, and this does distinguish them.

Organizations that have embarked on their own transformation urgently need this digital capital.

¹["Three Reasons You Need To Adopt A Millennial Mindset Regardless of Your Age."](#) Forbes. October 5, 2012.

Global megatrends



Technological breakthroughs

Rapid advances in technological innovation



Demographic shifts

The changing size, distribution and age profile of the world's population



Shifts in global economic power

Power shifting between developed and developing countries



Rapid urbanisation

Significant increase in the world's population moving to live in cities



Resource scarcity and climate change

Depleted fossil fuels, extreme weather, rising sea levels and water shortages



What does it all mean for jobs?

A new balance.

Automation will not only alter the types of jobs available but **their number and perceived value.**

Pivotal talent – the ultimate prize.

Those workers performing tasks which automation can't yet crack, become more pivotal – and this **means creativity, innovation, imagination, and design skills will be prioritised** by employers.

Adaptability – the key to the future.

One clear lesson arises from our analysis: adaptability – in **organisations, individuals and society** – is essential for navigating the changes ahead.

CEOs agree.

Human talent is a top 3 business issue for CEOs





What CEOs are saying...

52%

of CEOs plan to increase headcount in the coming 12 months.

52%

say they're already exploring the benefits of humans and machines working together

77%

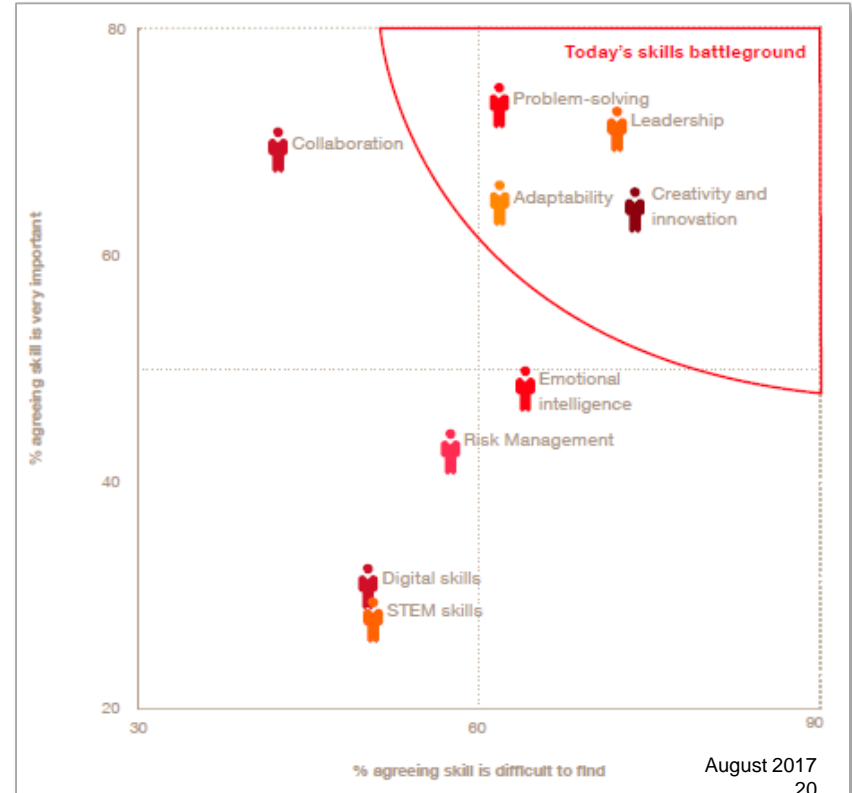
of CEOs find it difficult to get the creativity and innovation skills they need.

60%

of CEOs are rethinking the HR function

What CEOs are saying...

- CEOs still need people
- 77% are worried about key skills
- Very human skills top of the list
- 58% are concerned about the impact of automation on trust
- 1 in 8 is reducing headcount due to automation





*Workforces are changing.
How are you planning for the
Future*

Workforce of the future



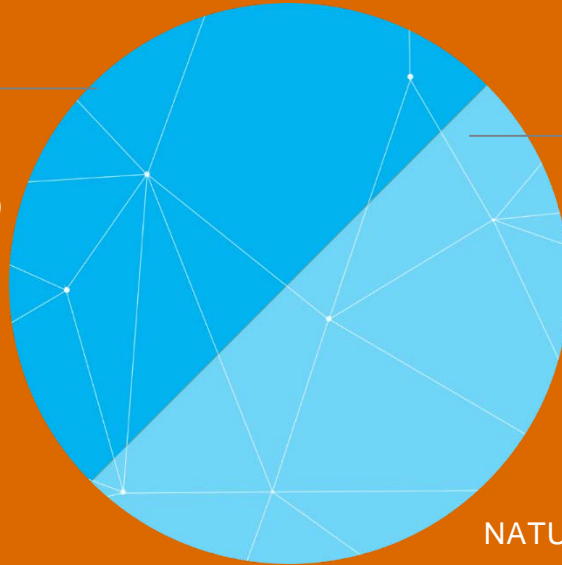
Workforces are changing

Purpose
 Ageing
 Talent mix
 Diversity
 Generations
 Soft skills
 Flexibility
 Work/life
 Global
 Discretionary effort
 Brains+bots

AI & Cognitive systems are *creating a new partnership* between humans and technology

Humans excel at

- COMMON SENSE (but with many biases)
- MORALS
- IMAGINATION
- COMPASSION
- DILEMMAS
- ABSTRACTION
- DREAMING
- GENERALIZATION



Cognitive Systems excel at

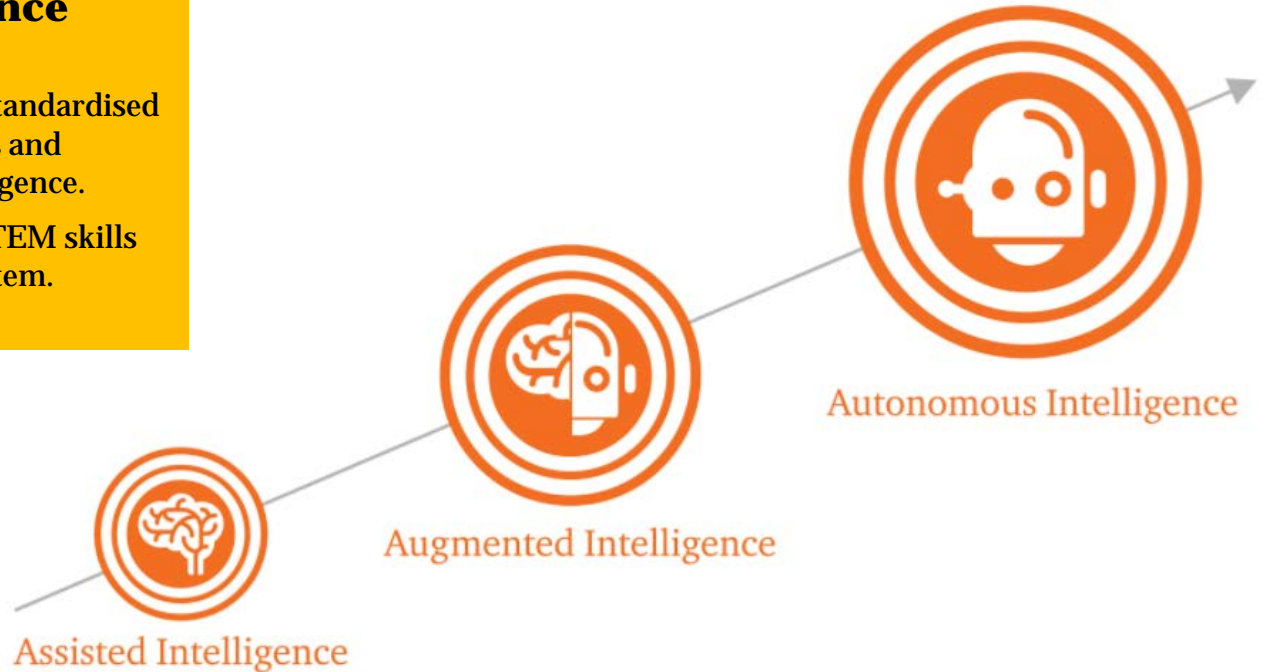
- LOCATING KNOWLEDGE
- ELIMINATING BIASES
- PATTERN IDENTIFICATION
- MACHINE LEARNING
- NATURAL LANGUAGE PROCESSING AT SCALE
- PROVIDING ENDLESS CAPACITY

Artificial intelligence

Assisted Intelligence

Today

- Automating repetitive, standardised or time-consuming tasks and providing assisted intelligence.
- Increased demand for STEM skills to build new tech ecosystem.

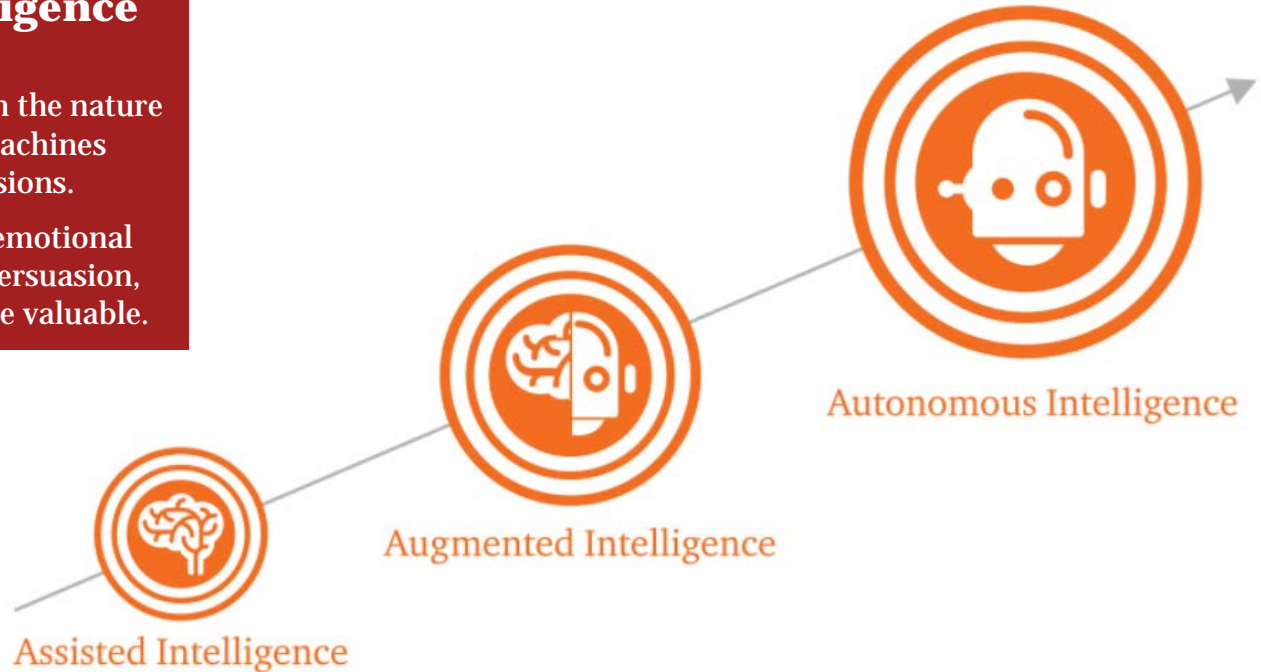


Artificial intelligence

Augmented Intelligence

Emerging

- Fundamentally change in the nature of work. Humans and machines collaborate to make decisions.
- Uniquely human traits (emotional intelligence, creativity, persuasion, innovation) become more valuable.

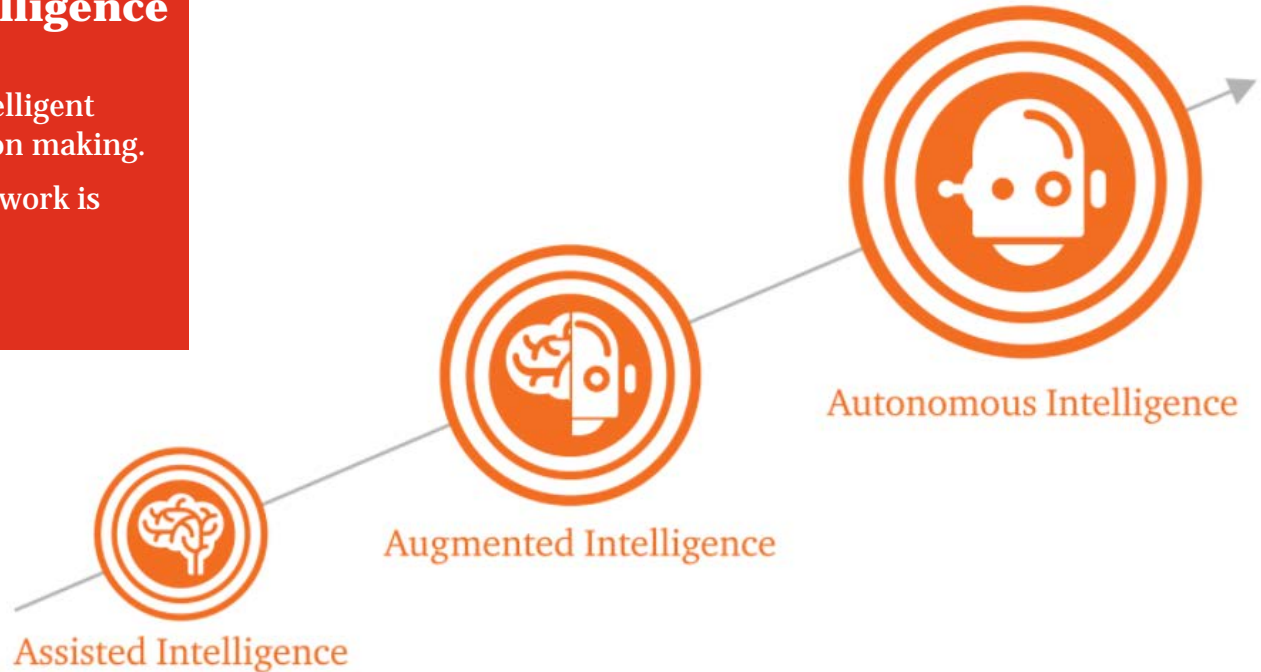


Artificial intelligence

Autonomous Intelligence

Future

- Adaptive continuous intelligent systems take over decision making.
- The future of humans at work is questioned.





Where do we need humans in an AI world?

Making AI work

- Developing
- Training and testing
- Assuring and explaining
- Sustaining
- Identify and explain new uses for AI

e.g. A financial services organisation rolling out new robo-adviser

Augmenting AI

- Human face of technology
- Providing leadership
- Persuading
- Creativity and innovation
- Using empathy
- Sense checking

e.g. High-touch customer experience – making technology human

Going where AI isn't

- Uneconomic-to-automate niches
- Unpredictable manual tasks
- Artists, artisans and craftspeople
- Where human service is already chosen over tech

e.g. Personal trainer, dry-stone wall builder, organic baker

How Will AI Systems Be Realized?

2015

Until
Now

von Neumann/Traditional
Computing Systems



Parallel Processing
Systems

Application-specific ML
Algorithms

Cloud-based Intelligence



Cognitive Apps

2016–2030

Near
Future

Neuromorphic Processing
Systems and Chips

Deep Learning Algorithms

Hybrid Intelligence
(both cloud and on-device)



Autonomous Cars

Beyond 2030

Distant
Future

Quantum Computing
Systems

Quantum AI Algorithms

Pure on-device intelligence



Humanized Independent Robots

Source: Frost & Sullivan

What will the AI/human mix look like in your Future?



Workforce Domains

The BXT Equation

Balanced and Holistic

Skills, Capabilities, Competencies



***“If everything seems under control,
you're not going fast enough.”***



Break it
til you
make it

Thank You!!!!

Find out more... www.pwc.com/futureworkforce

