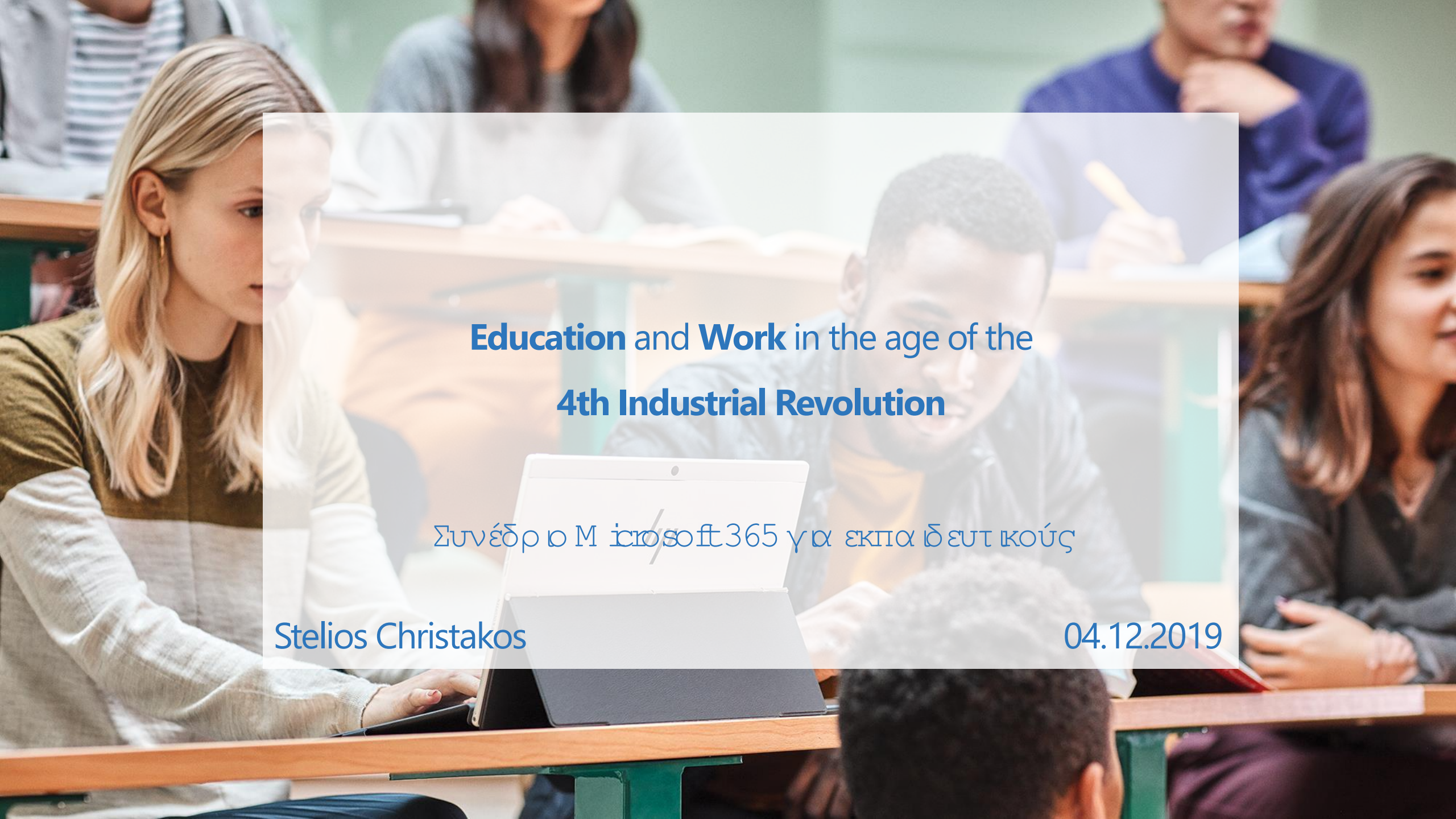


Education and **Work** in the age of the **4th Industrial Revolution**

Συνέδριο Microsoft 365 για εκπαιδευτικούς

Stelios Christakos

04.12.2019

The future is here. It’s just not widely distributed yet.

William Ford **Gibson**

The future is here. It’s just not widely distributed yet.

William Ford **Gibson**

“The mind, once stretched by a new idea, never returns to its original dimensions.”

Ralph Waldo Emerson.

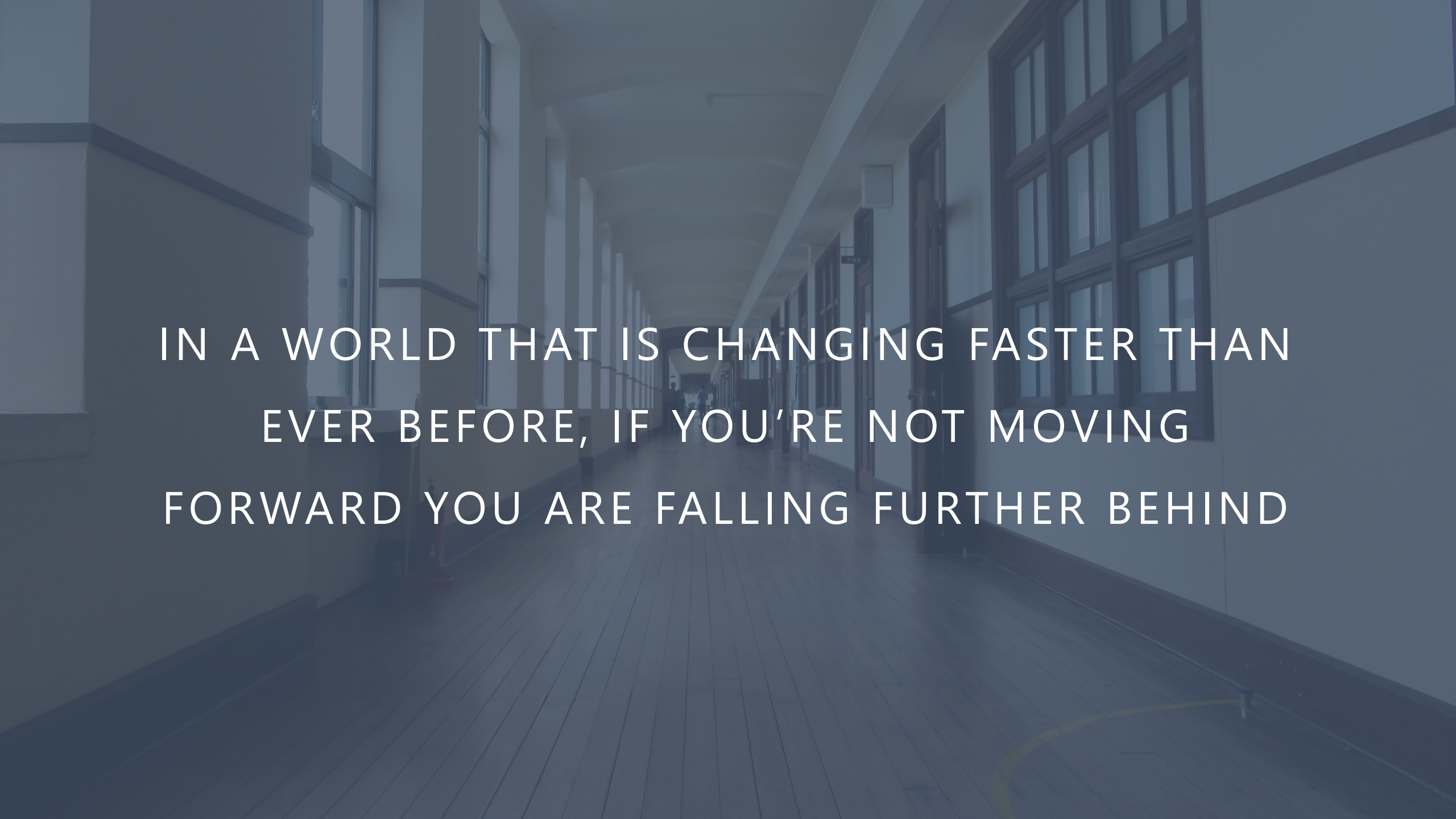
EDUCATION

Why Transformation?

TRANSFORMATION FRAMEWORK

"Education is the most powerful weapon you can use to change the world."

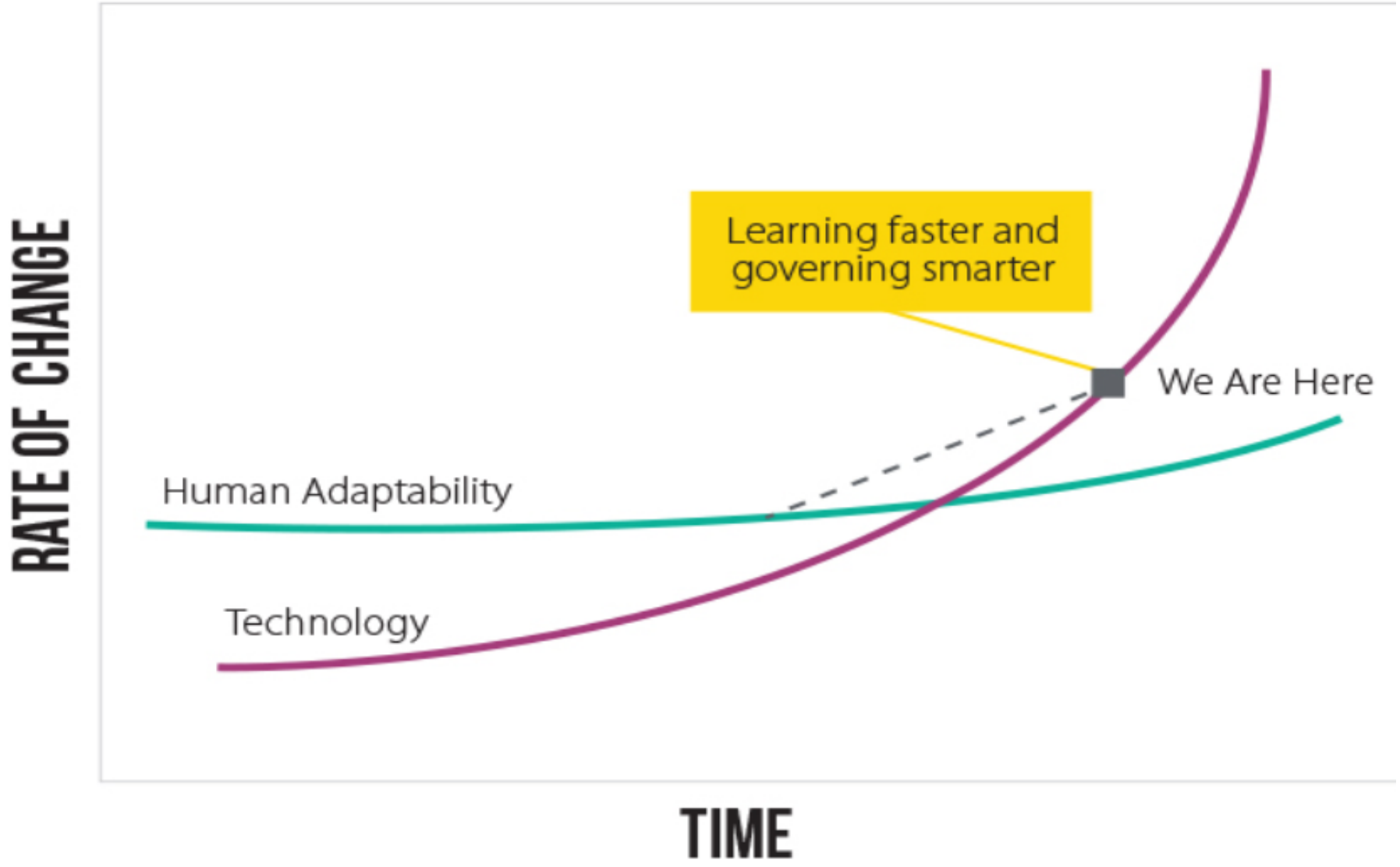
- Nelson Mandela


IN A WORLD THAT IS CHANGING FASTER THAN
EVER BEFORE, IF YOU’RE NOT MOVING
FORWARD YOU ARE FALLING FURTHER BEHIND

"The pathway to new technologies requires a parallel investment in skills development – making sure people have the requisite skills to participate in an increasingly digital society."

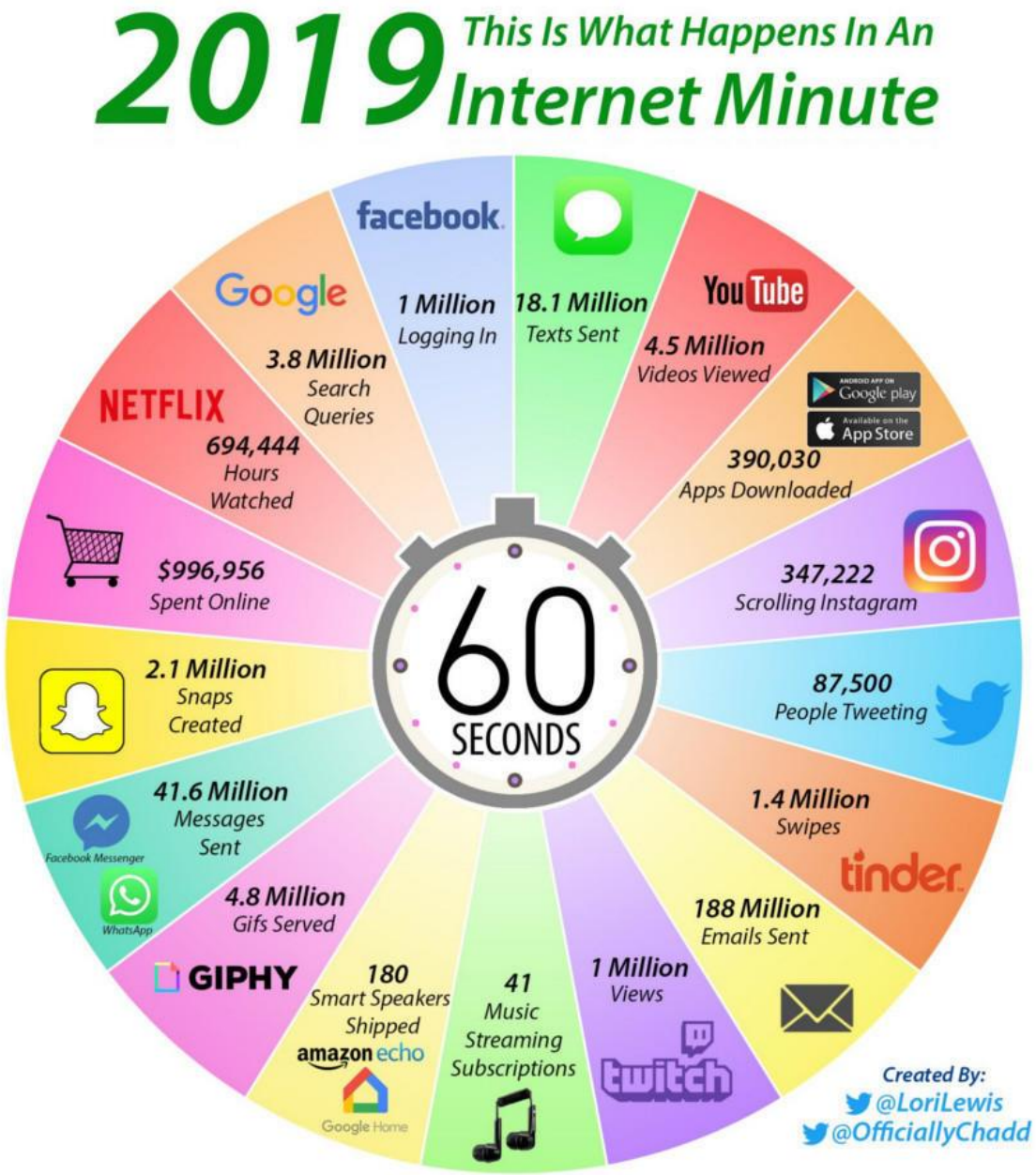
-- Satya Nadella, CEO, author
Hit Refresh, 2017

“Thank you for being late”

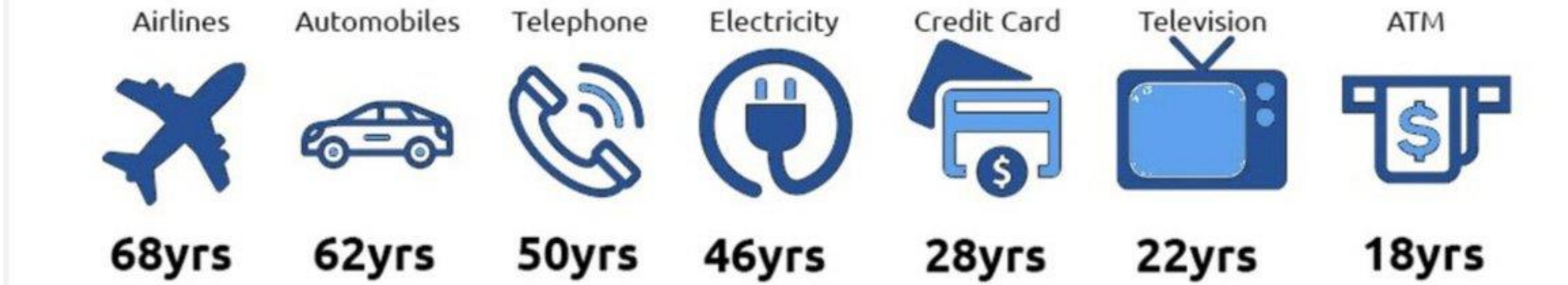


Source: Thomas Friedman book “Thank you for Being Late: an Optimist's Guide to Thriving in the Age of Accelerations”

Just a minute…

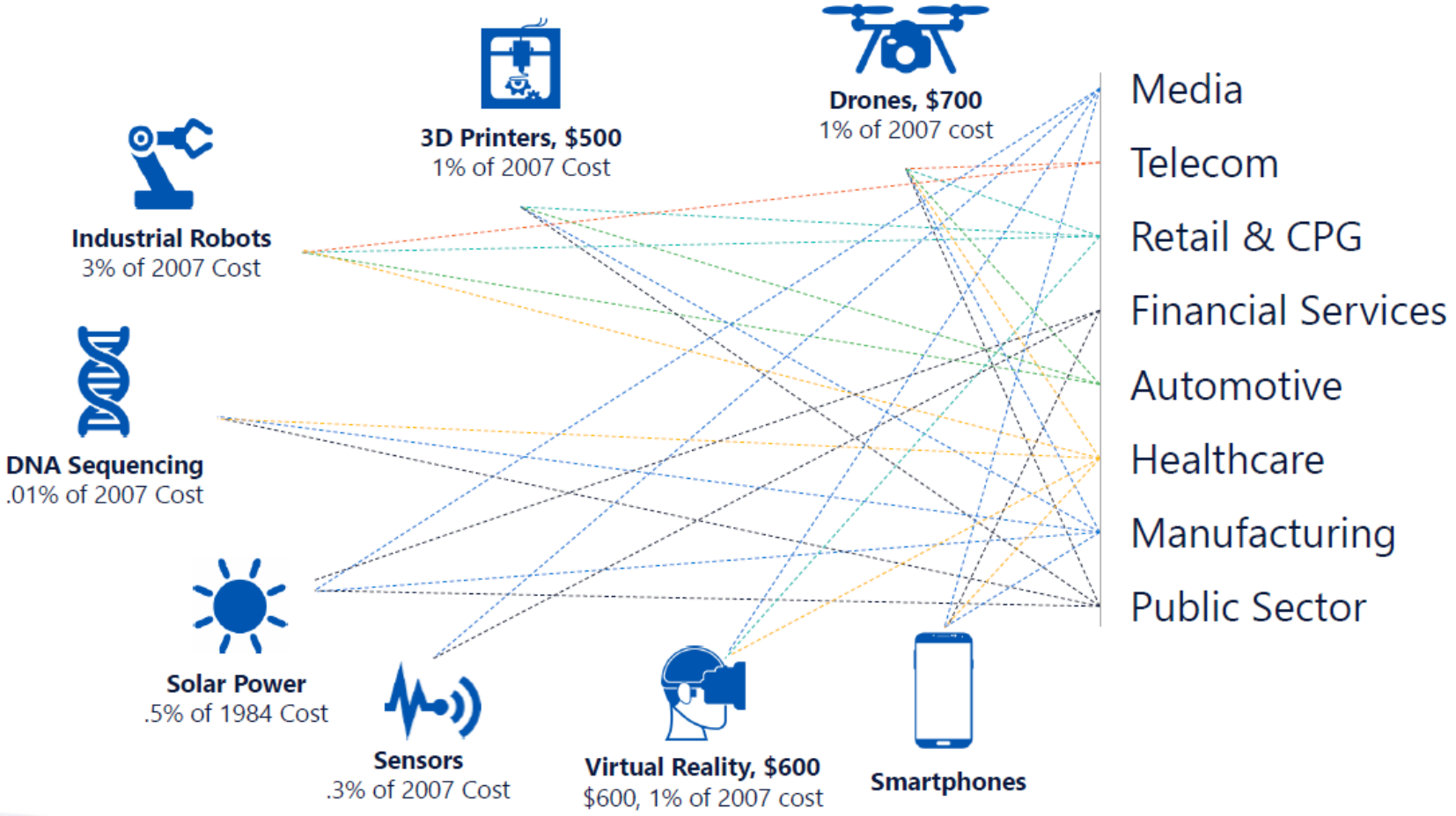


NUMBER OF YEARS IT TOOK FOR EACH PRODUCT TO GAIN 50 MILLION USERS:



Technology drives costs down

Affordable Transformative Technology
Connecting Physical and Digital

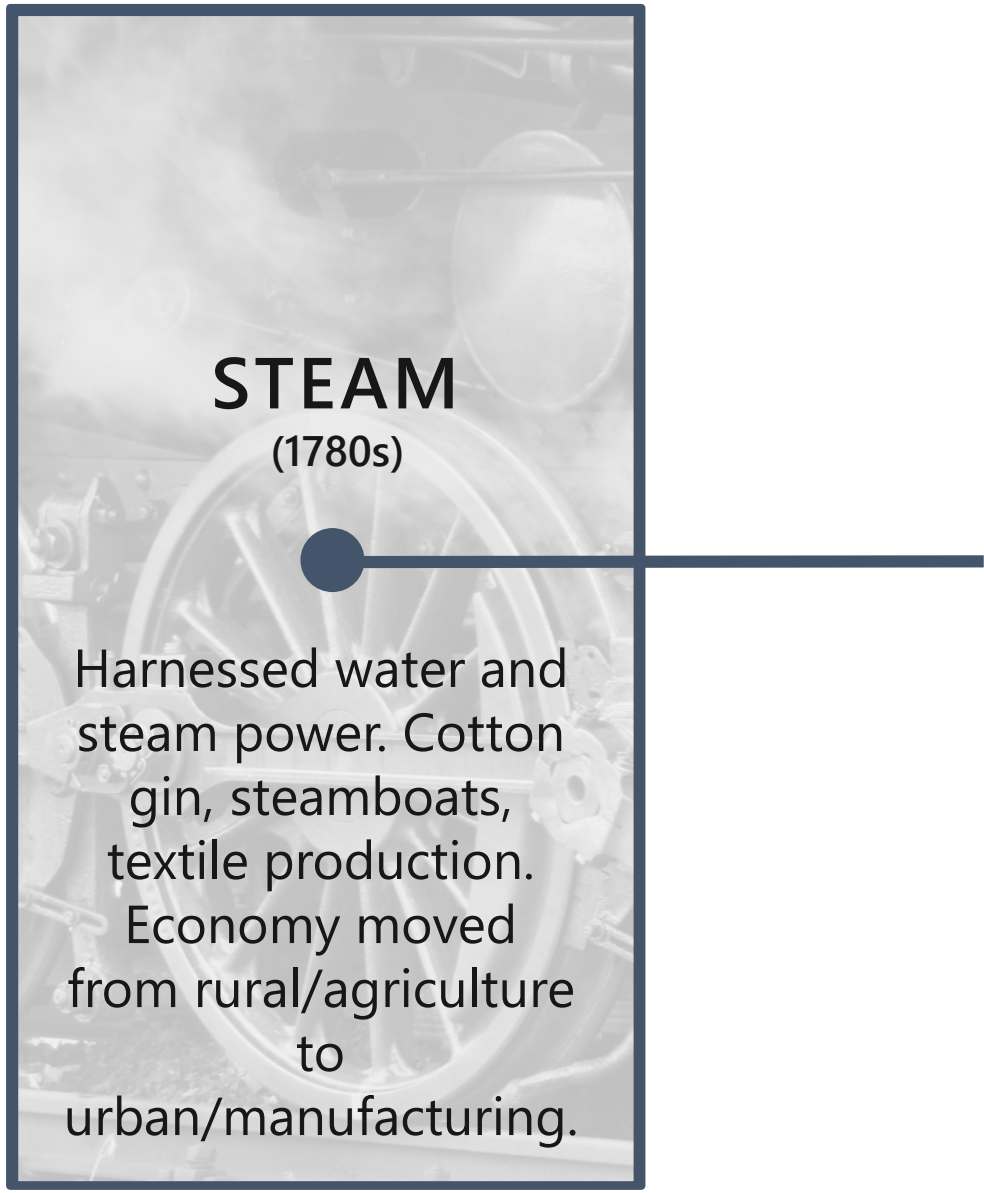


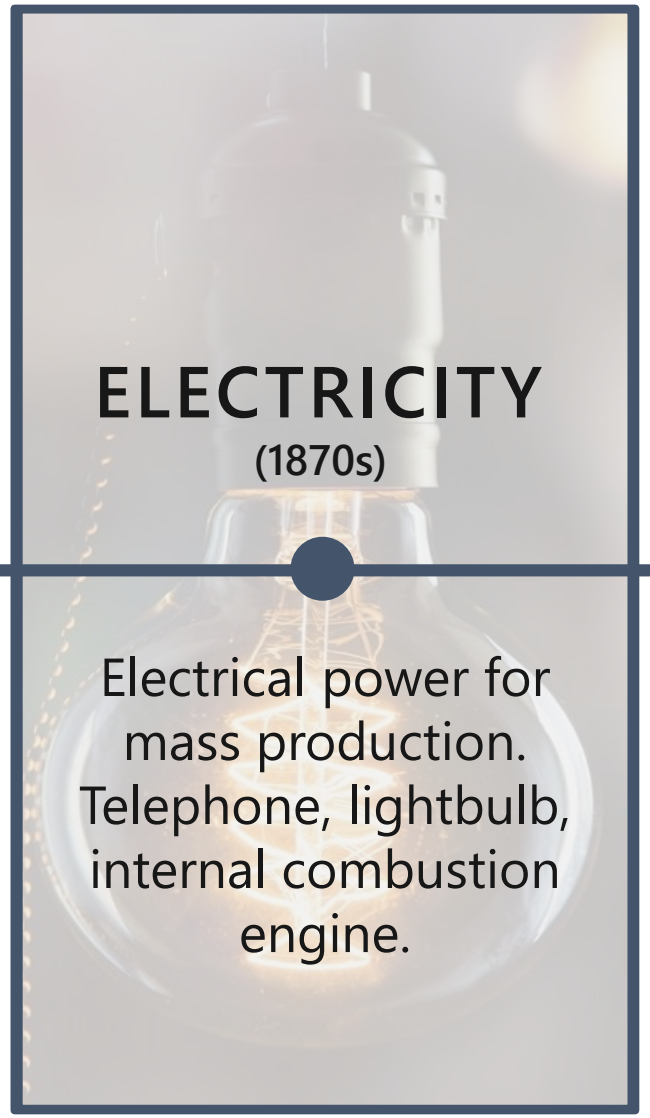
EDUCATION

The Fourth Industrial Revolution (4IR)

TRANSFORMATION FRAMEWORK

The Fourth Industrial Revolution is the current and developing environment in which disruptive technologies and trends such as the Internet of Things (IoT), robotics, virtual reality (VR) and artificial intelligence (AI) are changing the way we live and work.

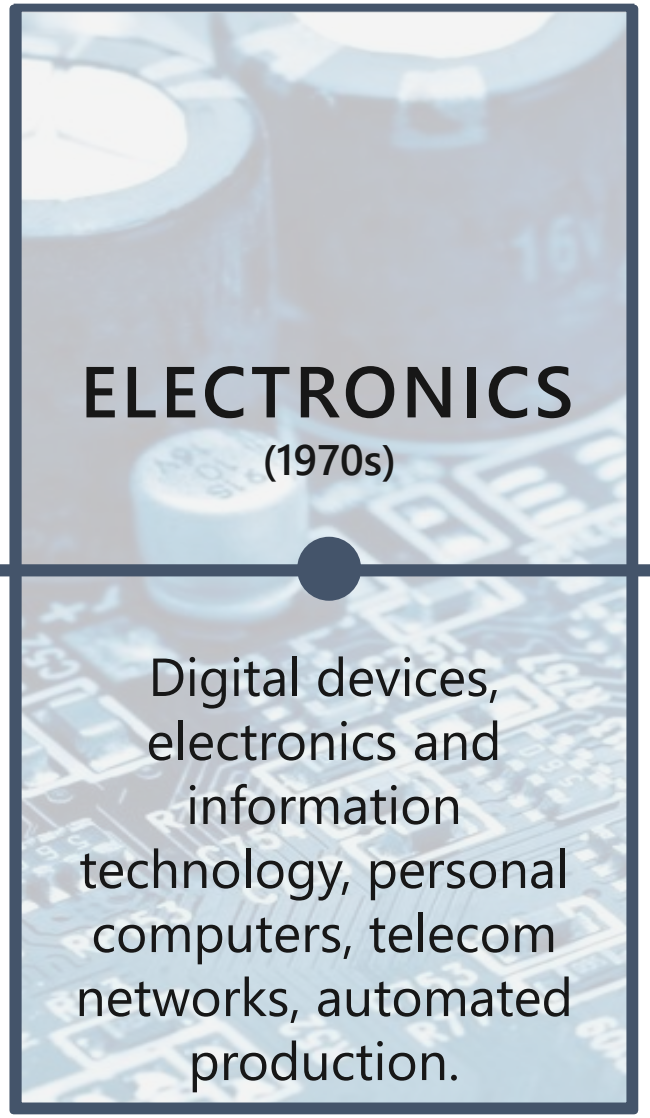




ELECTRICITY

(1870s)

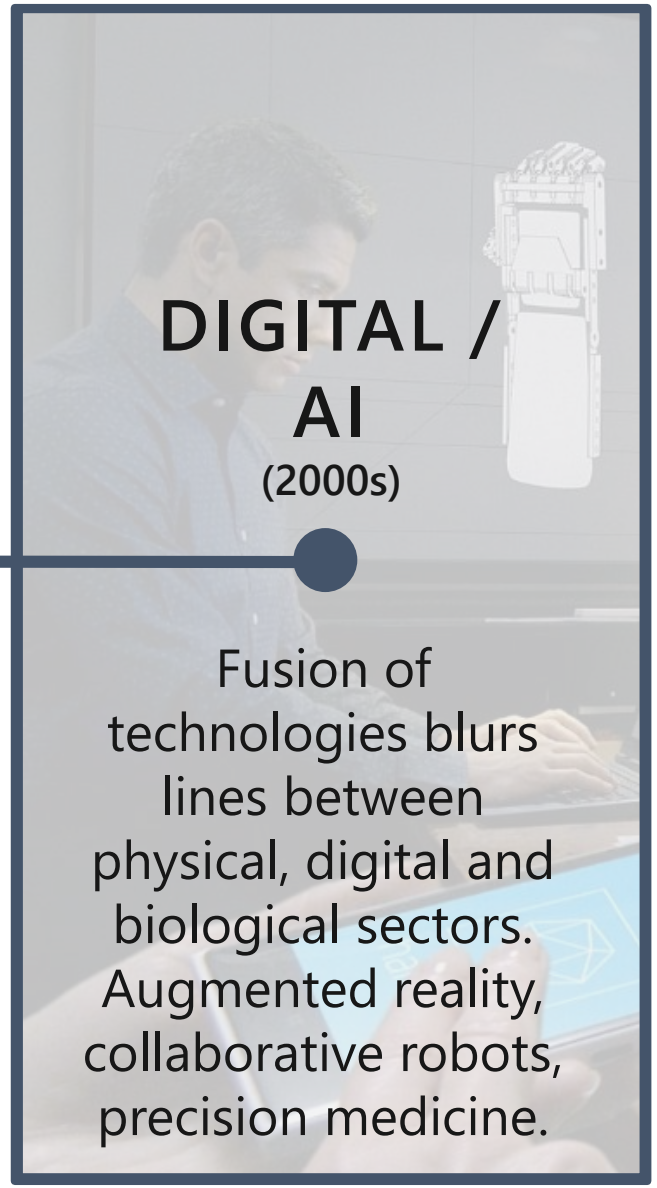
Electrical power for mass production. Telephone, lightbulb, internal combustion engine.



ELECTRONICS

(1970s)

Digital devices, electronics and information technology, personal computers, telecom networks, automated production.



DIGITAL / AI

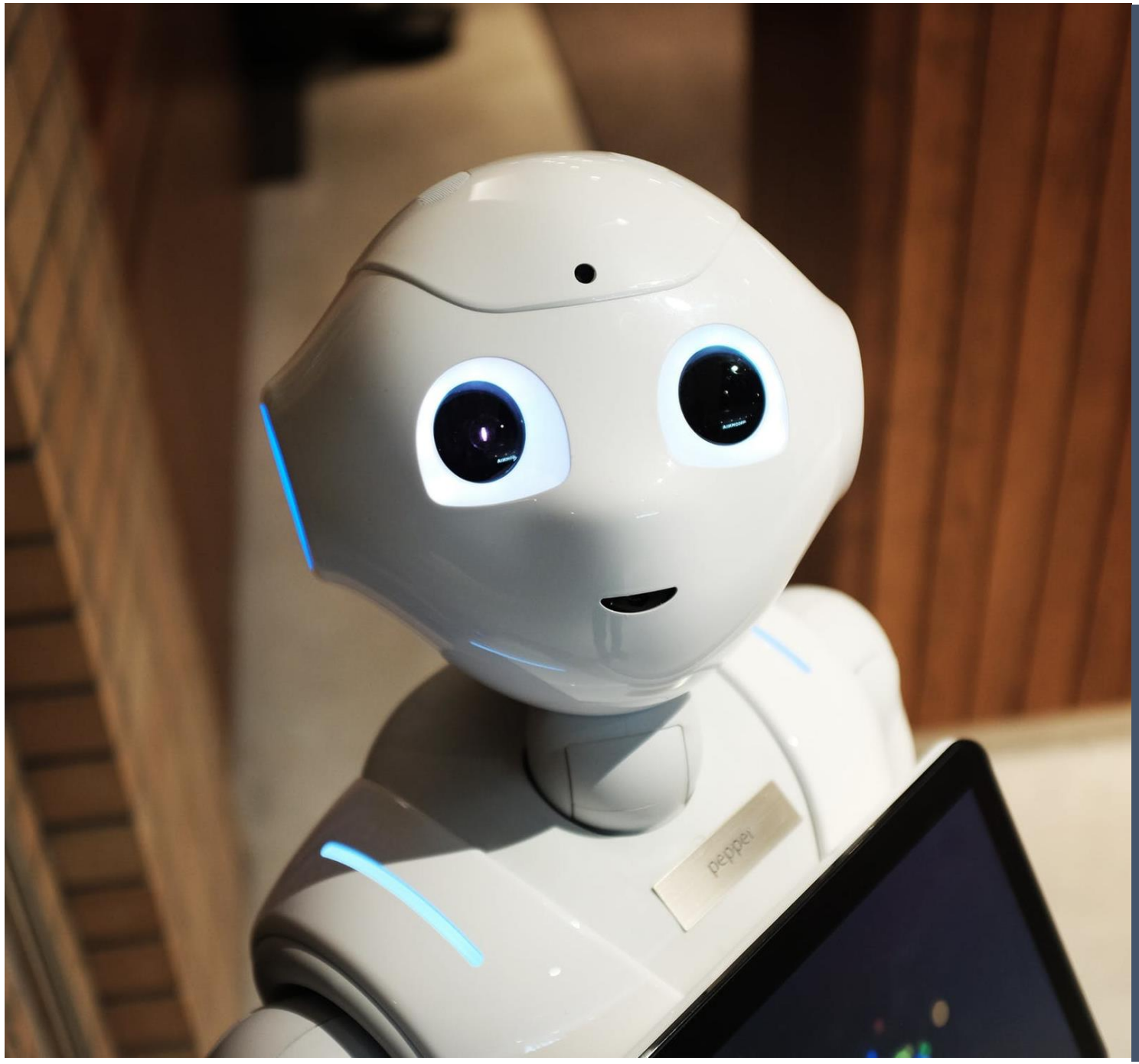
(2000s)

Fusion of technologies blurs lines between physical, digital and biological sectors. Augmented reality, collaborative robots, precision medicine.

What's Next?

"While the Fourth Industrial Revolution is in many ways coming right on the heels of the digital revolution, it will continue to evolve as new technologies develop and mature."

- **Robert D. Atkinson**, President of the Information Technology and Innovation Foundation



EDUCATION

Artificial Intelligence

TRANSFORMATION FRAMEWORK

Artificial Intelligence (AI) is the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.[1]

Through AI, machines can analyze images, comprehend speech, interact in natural ways and make predictions using data. Support personalized learning at scale by implementing easy-to-manage AI applications.

EDUCATION

Predictive Analytics

TRANSFORMATION FRAMEWORK

Predictive Analytics is a method of data analysis techniques that predicts trends and finds useful patterns. It is a branch of artificial intelligence based on the idea that systems can learn from data, identify patterns, and make recommendations and sometimes- decisions with minimal human intervention.

Focus your energy on teaching by allowing adaptive learning platforms to focus on autonomously flagging student learning difficulties and dynamically notifying teachers to determine necessary learning interventions.

Today's young people differ from yesterday's

	B Baby boomer 1940–59	X Gen X 1960–79	Y Gen Y (millennial) 1980–94	Z Gen Z 1995–2010
Context	• Postwar • Dictatorship and repression in Brazil	• Political transition • Capitalism and meritocracy dominate	• Globalization • Economic stability • Emergence of internet	• Mobility and multiple realities • Social networks • Digital natives
Behavior	• Idealism • Revolutionary • Collectivist	• Materialistic • Competitive • Individualistic	• Globalist • Questioning • Oriented to self	• Undefined ID • "Communaholic" • "Dialoguer" • Realistic
Consumption	• Ideology • Vinyl and movies	• Status • Brands and cars • Luxury articles	• Experience • Festivals and travel • Flagships	• Uniqueness • Unlimited • Ethical

McKinsey&Company

The core of Gen Z is the idea of manifesting individual identity.

The search for truth….

The search for the truth is at the root of all Generation Z's behavior.

'Undefined ID'
"Don't define yourself in only one way"

Expressing individual truth

'Communaholic'
"Be radically inclusive"

Connecting through different truths

'Dialoguer'
"Have fewer confrontations and more dialogue"

Understanding different truths

Realistic
"Live life pragmatically"

Unveiling the truth behind all things

McKinsey&Company

Communication Channels

Generation Z: What % prefers text chat over talking on the phone?

Communication Channels

- In a LivePerson survey investigating the **"digital lives of Millennials and Gen Z,"** nearly **75 percent of respondents told researchers that they're rather text than talk on the phone**.
- But **don't assume that digital means impersonal**. While the majority may prefer texting, plenty of them - 39 percent, according to data from LeadSquared - say that **one-on-one communication** is the most effective way to reach them.
- Gen Z expert and co-writer of Generation Z Goes to College Corey Seemiller told immersive technology company YouVisit,
  "I think in a world where we envision Generation Z being **digital natives**, **we also envision them only being digitally competent and only preferring digital methods of communication**….. remember that the **face-to-face thing is still very important to them–probably, more important than people are giving it credit for."**

EDUCATION

The Learning Shift is Happening Now

TRANSFORMATION FRAMEWORK

TEACHER- LED CLASSROOMS

PROJECT-BASED LEARNING

TRADITIONAL CLASSROOMS

FLIPPED CLASSROOMS

INDEPENDENT LEARNING

COLLABORATIVE LEARNING

INDIVIDUALIZED LEARNING

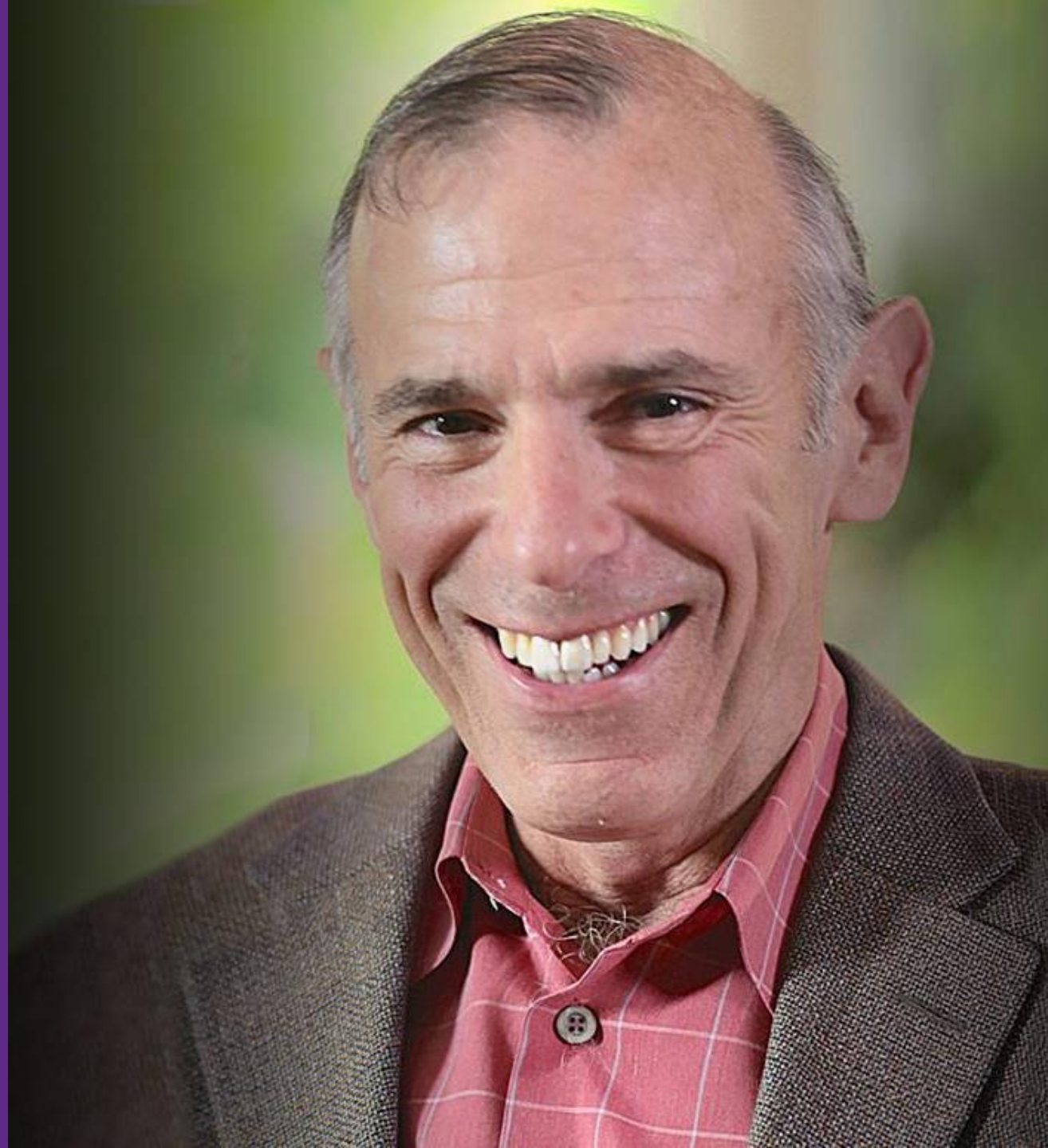
STUDENT-CENTERED LEARNING

“

The world doesn’t care about what you know.

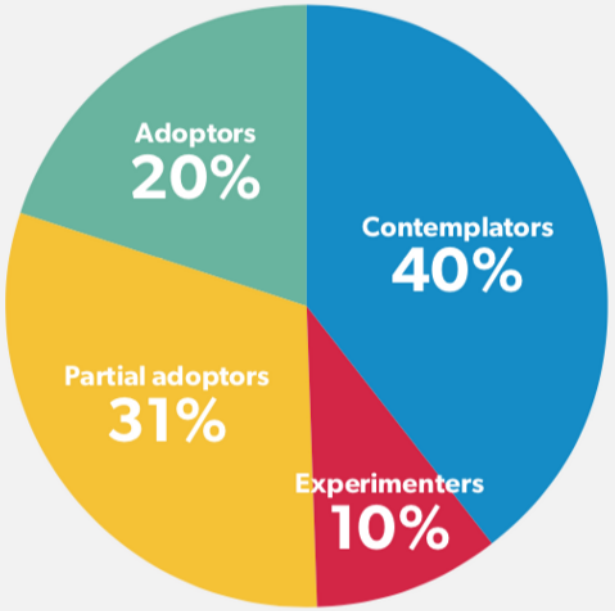
What the world cares about is **what you do with what you know**.”

- **Tony Wagner**, Author, *Creating Innovators*



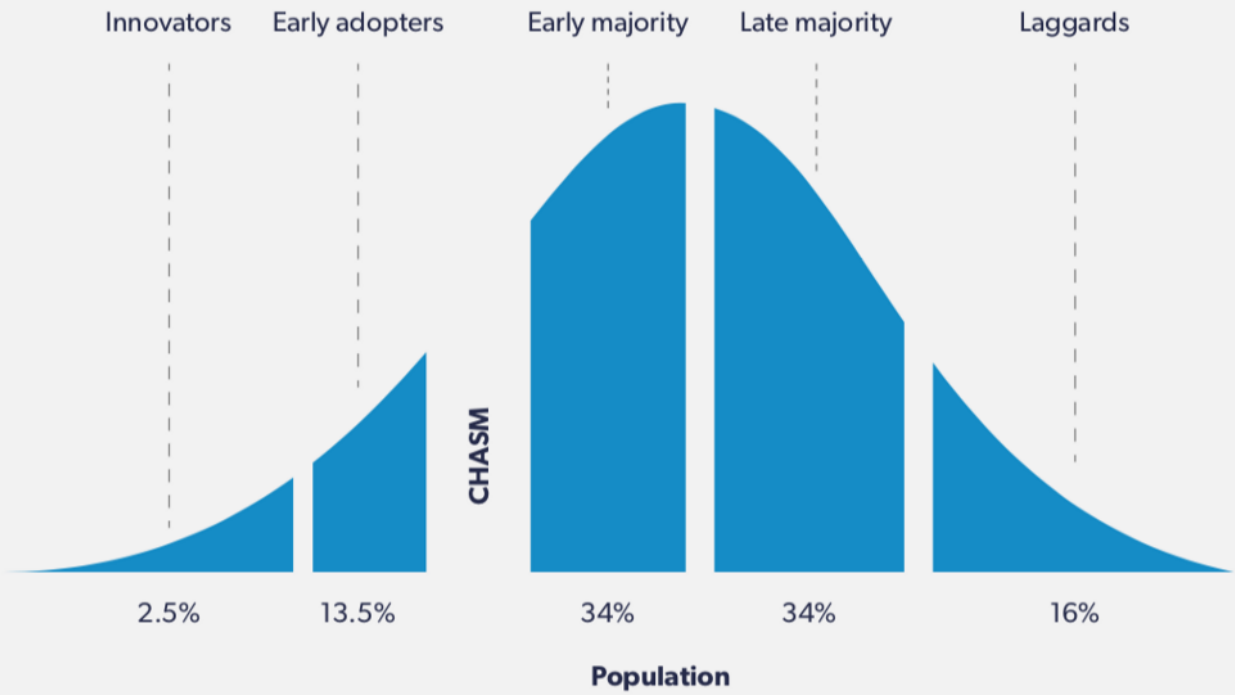
AI is crossing the chasm… Adoption has tripled in the last 12 months!

Fig. 28. 20% of AI-aware companies have begun adoption



Source: McKinsey Global Institute

Fig. 29. AI adoption is 'crossing the chasm' to the early majority

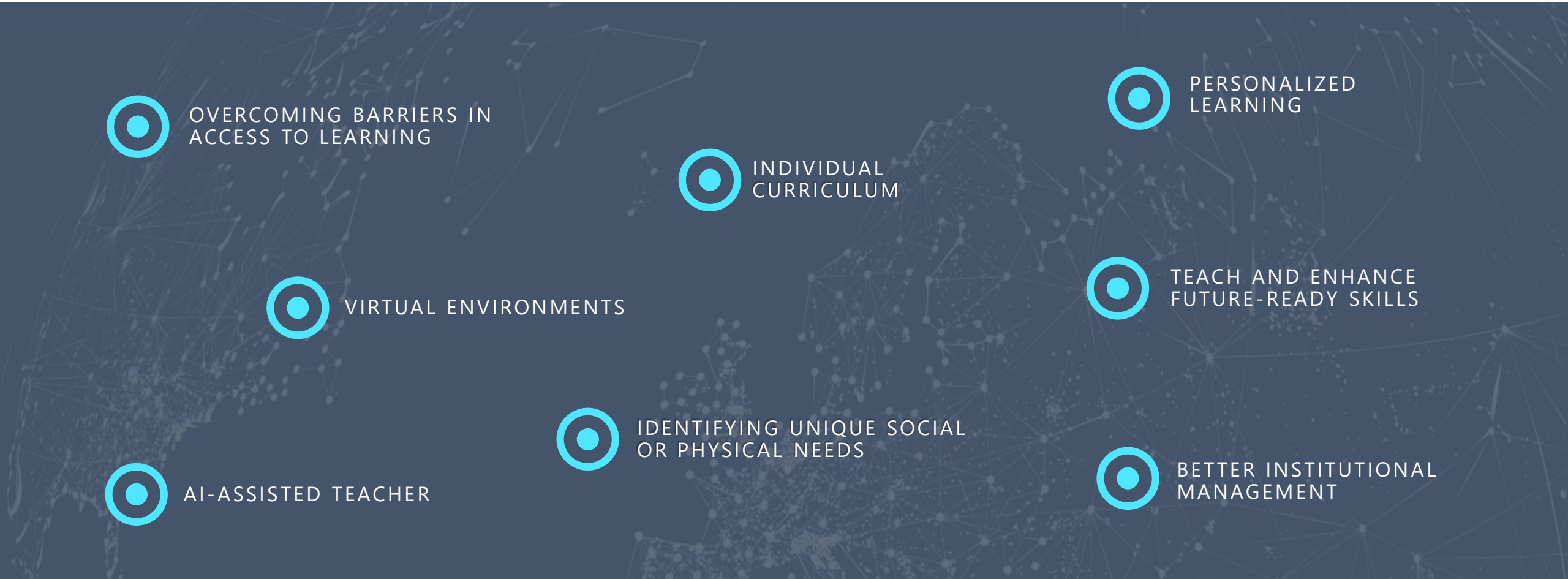


Source: Everett Rogers, Geoffrey Moore

EDUCATION

Future of the Classroom with AI

TRANSFORMATION FRAMEWORK



CHANGE IS THE NEW NORMAL …

… TRANSFORMING THE WAY WE LEARN …

Work is a thing, not a place…

Page 8…

The world of the future looks very different for the students

65% of students in grade school will perform jobs that have not been invented yet!

47% of current jobs are expected to be taken over by machines during the next two decades

6.5 million new IT jobs by 2022, most in cloud-related technology fields

Only **33%** of the world's demand for employees with technology skills is being met

Percentage of jobs requiring technology skills will **increase to 77%** in less than a decade

WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

The Jobs Landscape in 2022

emerging roles, global change by 2022

133 Million

Top 10 Emerging

1. Data Analysts and Scientists
2. AI and Machine Learning Specialists
3. General and Operations Managers
4. Software and Applications Developers and Analysts
5. Sales and Marketing Professionals
6. Big Data Specialists
7. Digital Transformation Specialists
8. New Technology Specialists
9. Organisational Development Specialists
10. Information Technology Services

declining roles, global change by 2022

75 Million

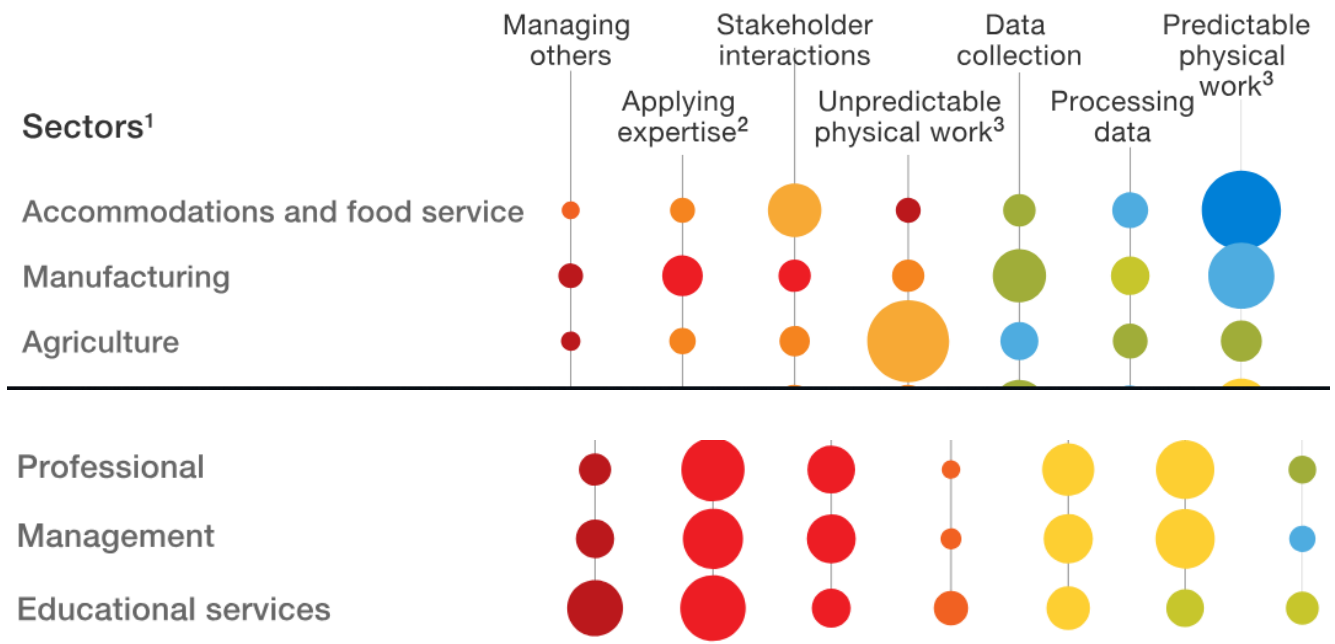
Top 10 Declining

1. Data Entry Clerks
2. Accounting, Bookkeeping and Payroll Clerks
3. Administrative and Executive Secretaries
4. Assembly and Factory Workers
5. Client Information and Customer Service Workers
6. Business Services and Administration Managers
7. Accountants and Auditors
8. Material-Recording and Stock-Keeping Clerks
9. General and Operations Managers
10. Postal Service Clerks

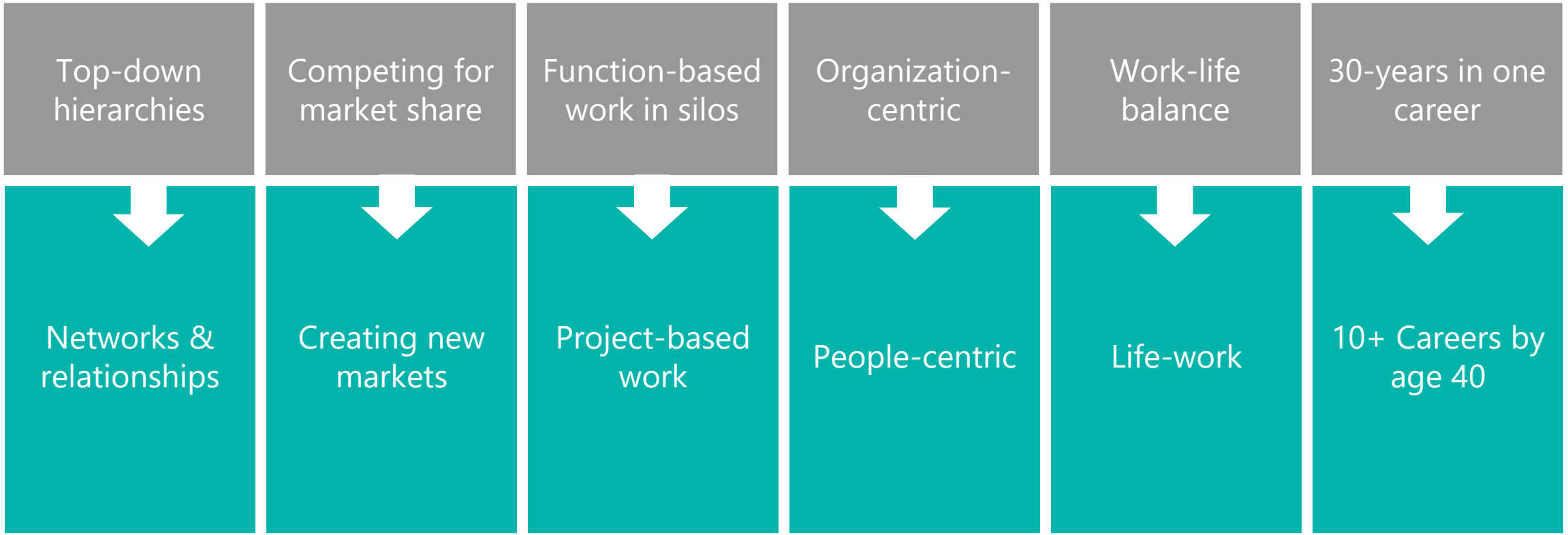
Source: Future of Jobs Report 2018, World Economic Forum

Could a machine do your job?

Automation is technically feasible for many types of activities in industry sectors, but some activities can be more affected than others.



From 20th century jobs to 21st century work



ADVICE
HELP
TIPS
SUPP
SSISTANCE
GUID
Thank You!