

A photograph of a diverse group of students sitting at wooden desks in a classroom. A young woman with blonde hair is in the foreground on the left, looking at a laptop. Other students are visible in the background, some looking towards the camera and others looking down at their work. The scene is brightly lit, suggesting a modern educational environment.

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



A long, empty hallway with wooden floors and large windows, overlaid with a blue tint and white text. The hallway is perspective-oriented, leading the eye towards the far end. The text is centered and reads: "IN A WORLD THAT IS CHANGING FASTER THAN EVER BEFORE, IF YOU'RE NOT MOVING FORWARD YOU ARE FALLING FURTHER BEHIND".

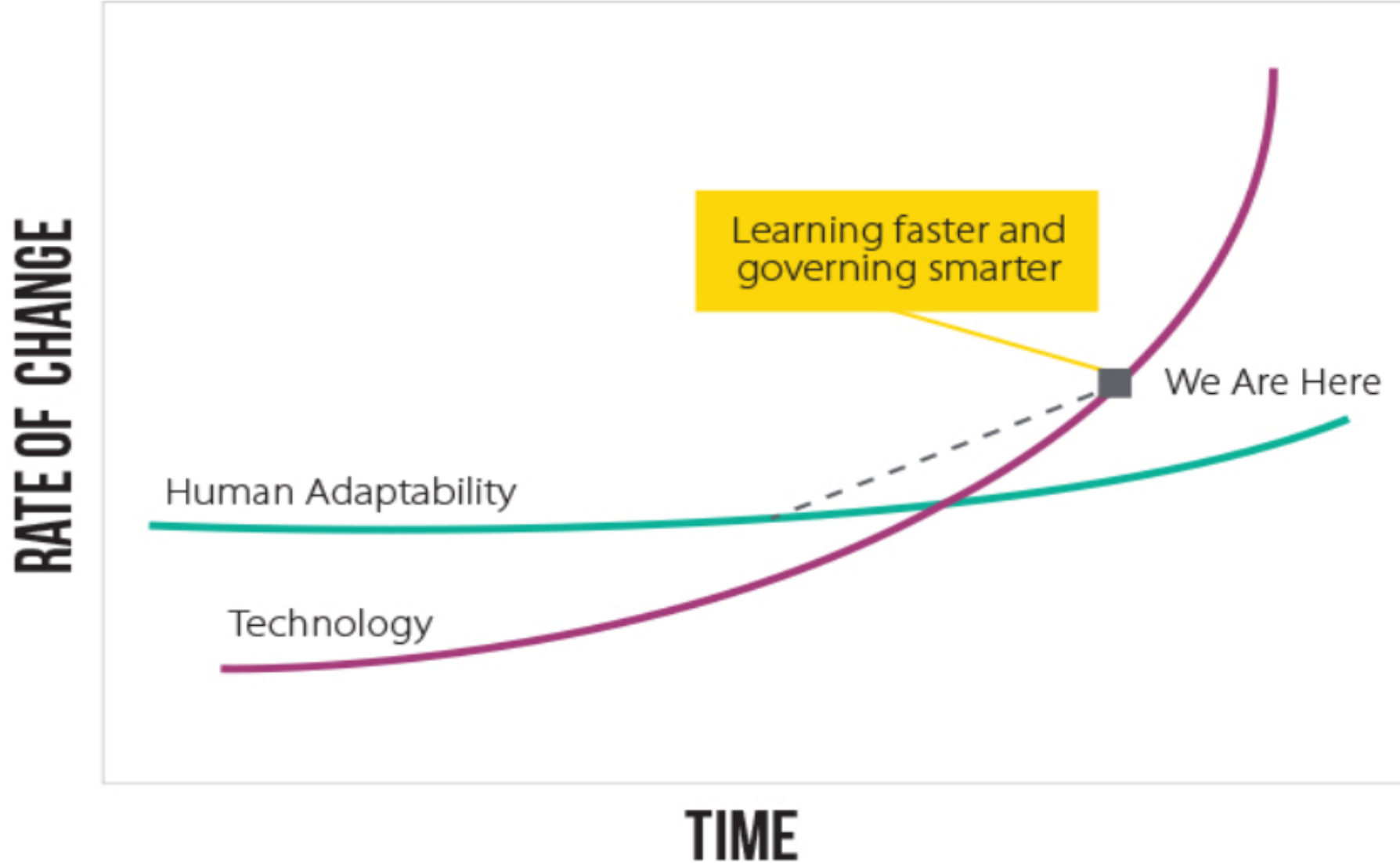
IN A WORLD THAT IS CHANGING FASTER THAN
EVER BEFORE, IF YOU'RE NOT MOVING
FORWARD YOU ARE FALLING FURTHER BEHIND



“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.”

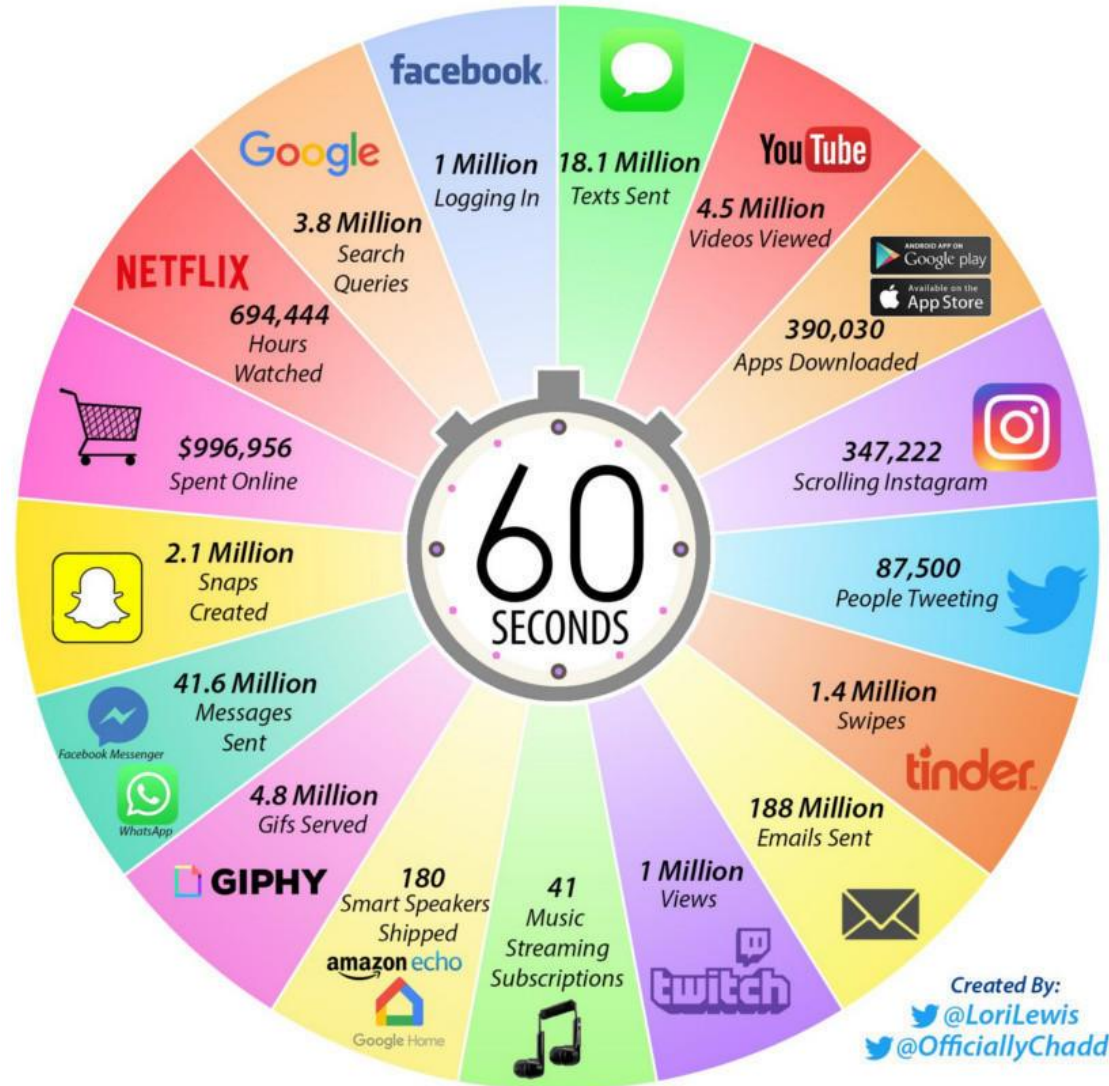
-- Satya Nadella, CEO, author
Hit Refresh, 2017

“Thank you for being late”

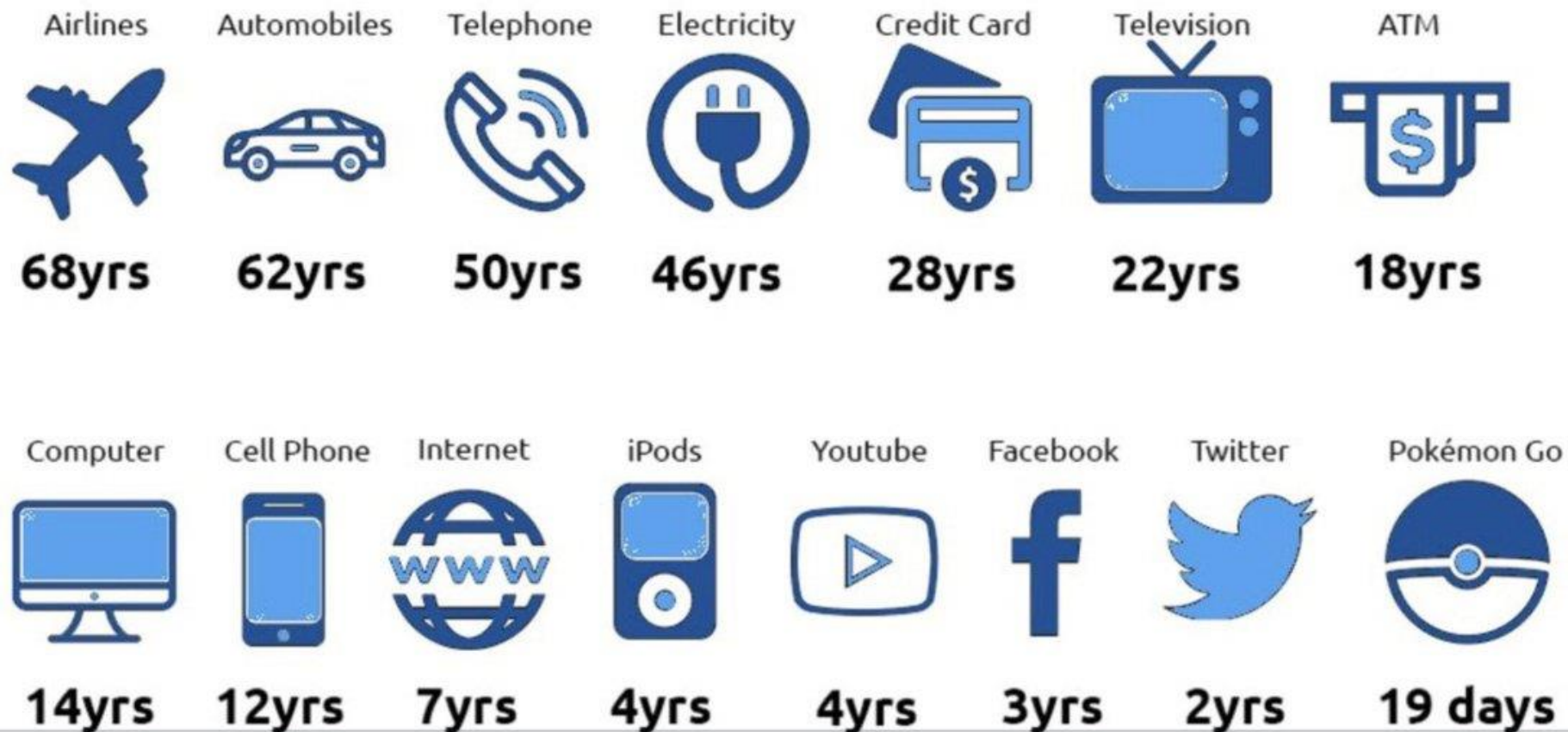


Just a minute...

2019 *This Is What Happens In An Internet Minute*

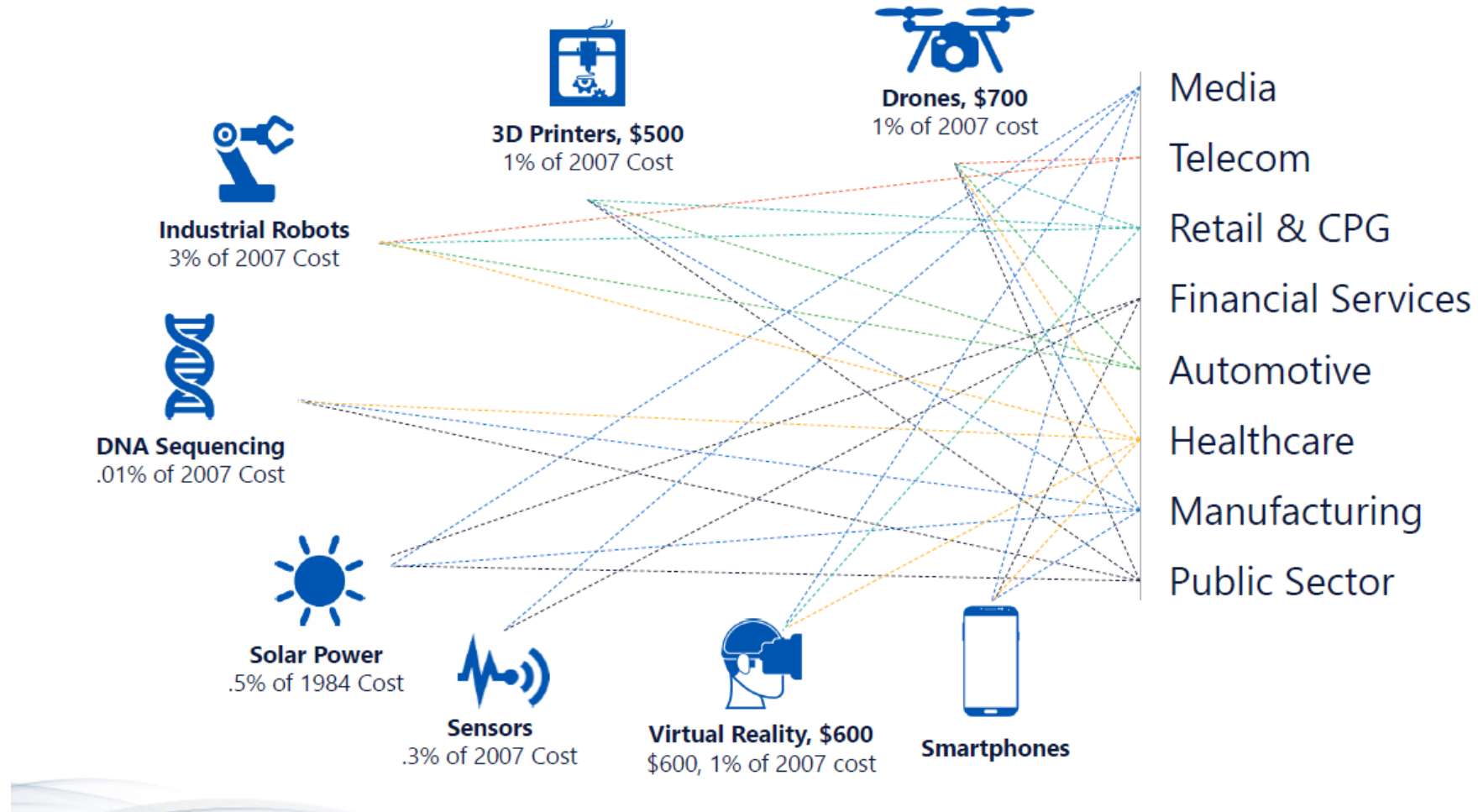


NUMBER OF YEARS IT TOOK FOR EACH PRODUCT TO GAIN 50 MILLION USERS:



Technology drives costs down

Affordable Transformative Technology
Connecting Physical and Digital

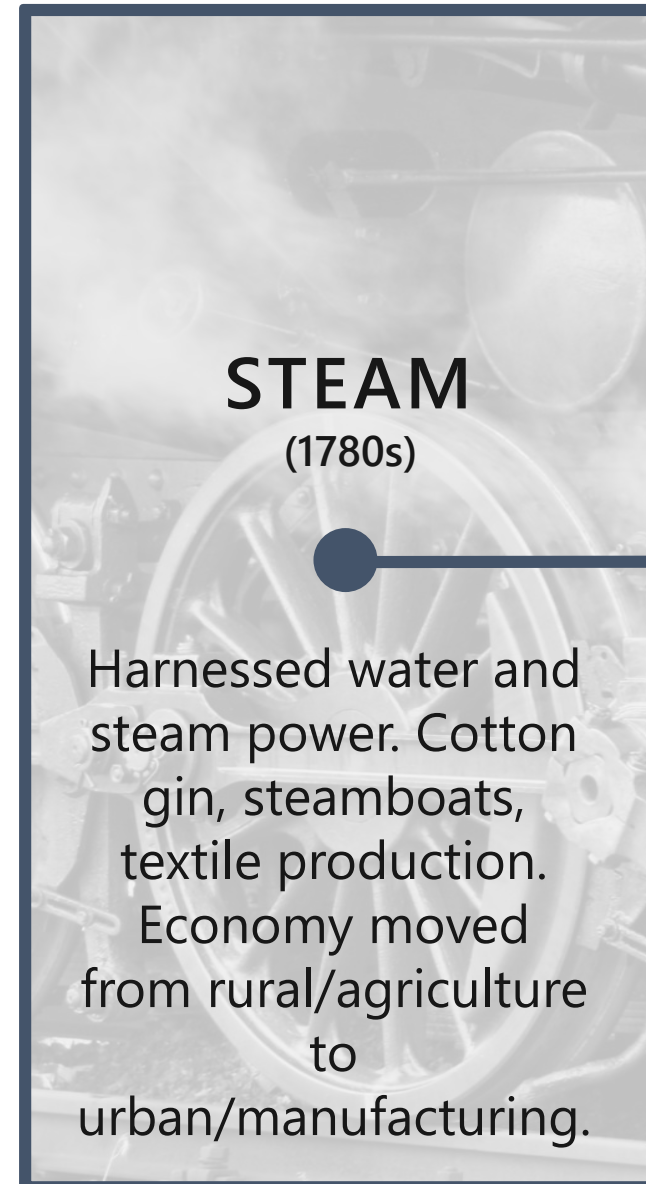


EDUCATION

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.



STEAM
(1780s)

Harnessed water and steam power. Cotton gin, steamboats, textile production. Economy moved from rural/agriculture to urban/manufacturing.



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.



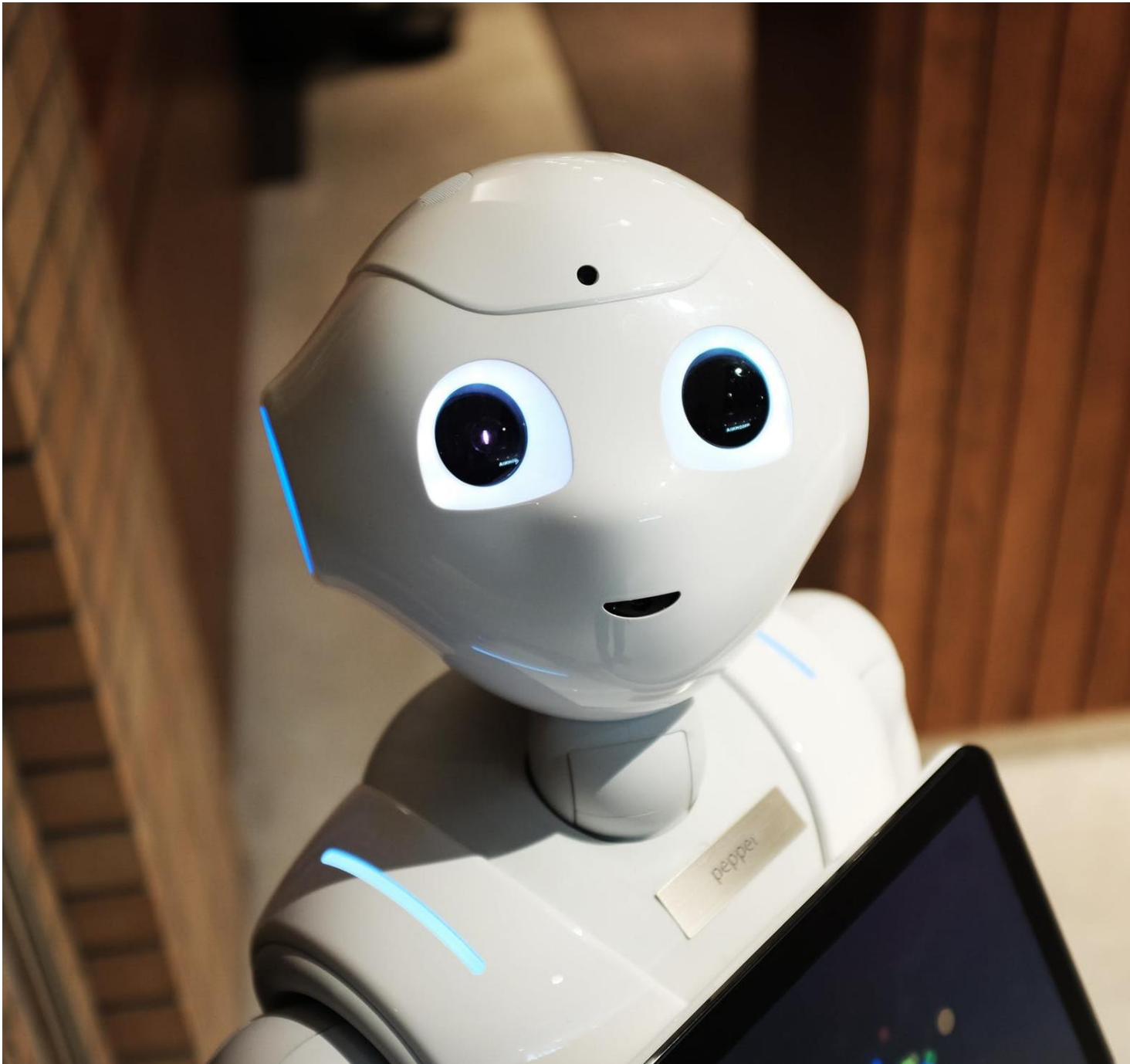
**DIGITAL /
AI**
(2000s)

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

	 Baby boomer 1940–59	 Gen X 1960–79	 Gen Y (millennial) 1980–94	 Gen Z 1995–2010
Context	<ul style="list-style-type: none">• Postwar• Dictatorship and repression in Brazil	<ul style="list-style-type: none">• Political transition• Capitalism and meritocracy dominate	<ul style="list-style-type: none">• Globalization• Economic stability• Emergence of internet	<ul style="list-style-type: none">• Mobility and multiple realities• Social networks• Digital natives
Behavior	<ul style="list-style-type: none">• Idealism• Revolutionary• Collectivist	<ul style="list-style-type: none">• Materialistic• Competitive• Individualistic	<ul style="list-style-type: none">• Globalist• Questioning• Oriented to self	<ul style="list-style-type: none">• Undefined ID• “Communaholic”• “Dialoguer”• Realistic
Consumption	<ul style="list-style-type: none">• Ideology• Vinyl and movies	<ul style="list-style-type: none">• Status• Brands and cars• Luxury articles	<ul style="list-style-type: none">• Experience• Festivals and travel• Flagships	<ul style="list-style-type: none">• 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

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

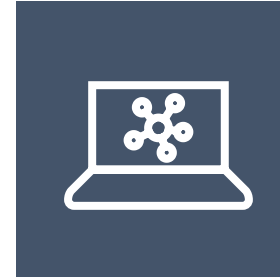
TRANSFORMATION FRAMEWORK

TEACHER-LED CLASSROOMS



PROJECT-BASED LEARNING

TRADITIONAL CLASSROOMS



FLIPPED CLASSROOMS

INDEPENDENT LEARNING



COLLABORATIVE LEARNING

INDIVIDUALIZED LEARNING



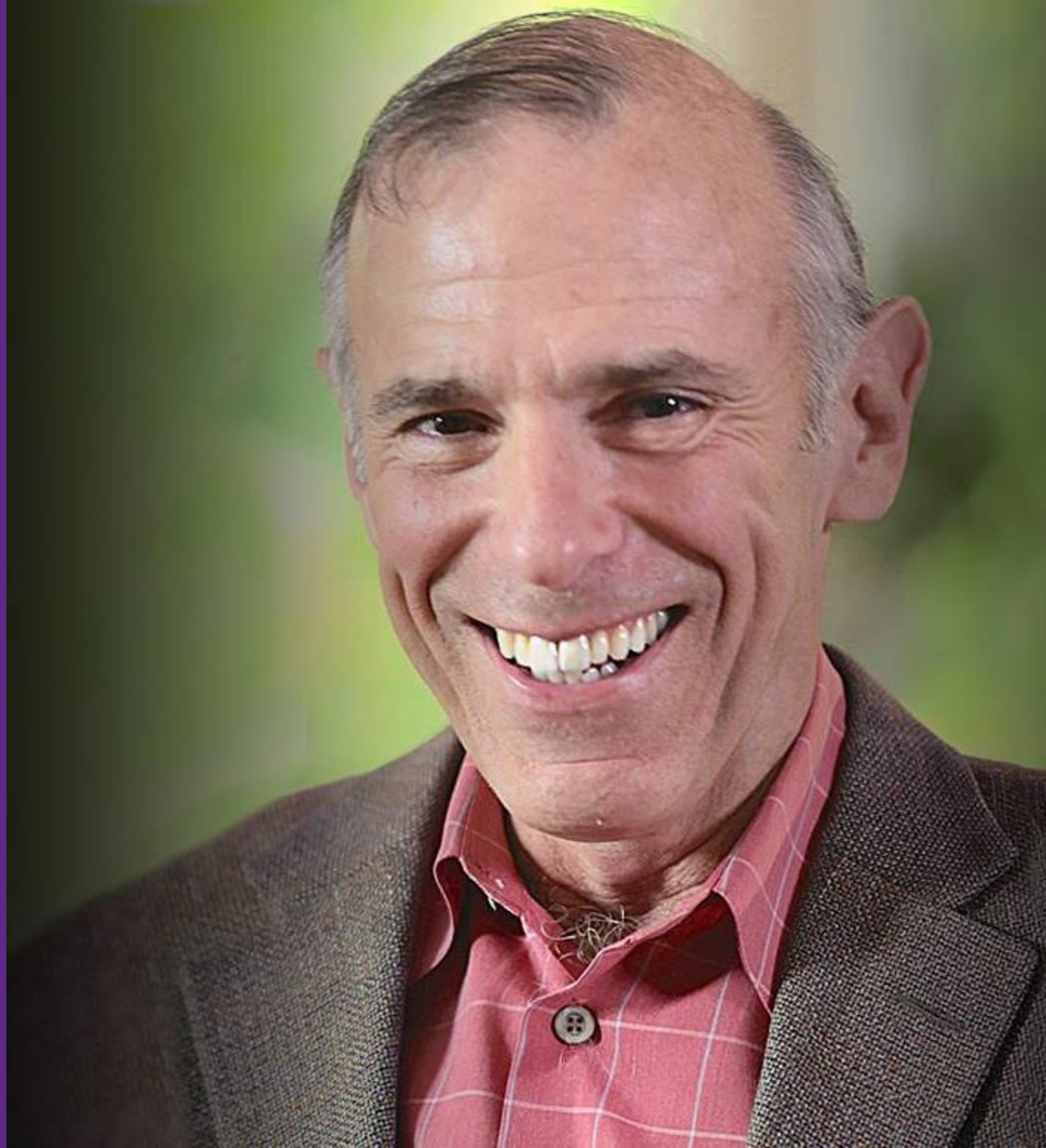
STUDENT-CENTERED LEARNING



The world doesn't
care about what you
know.

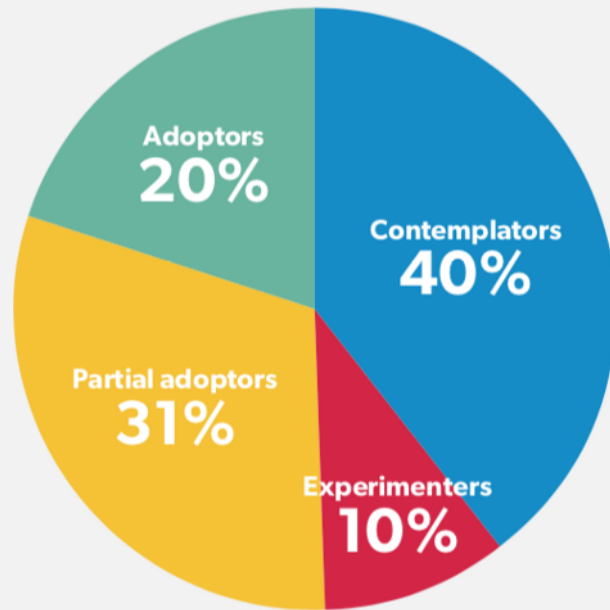
What the world cares
about is **what you do
with what you
know."**

- Tony Wagner, Author, *Creating Innovators*



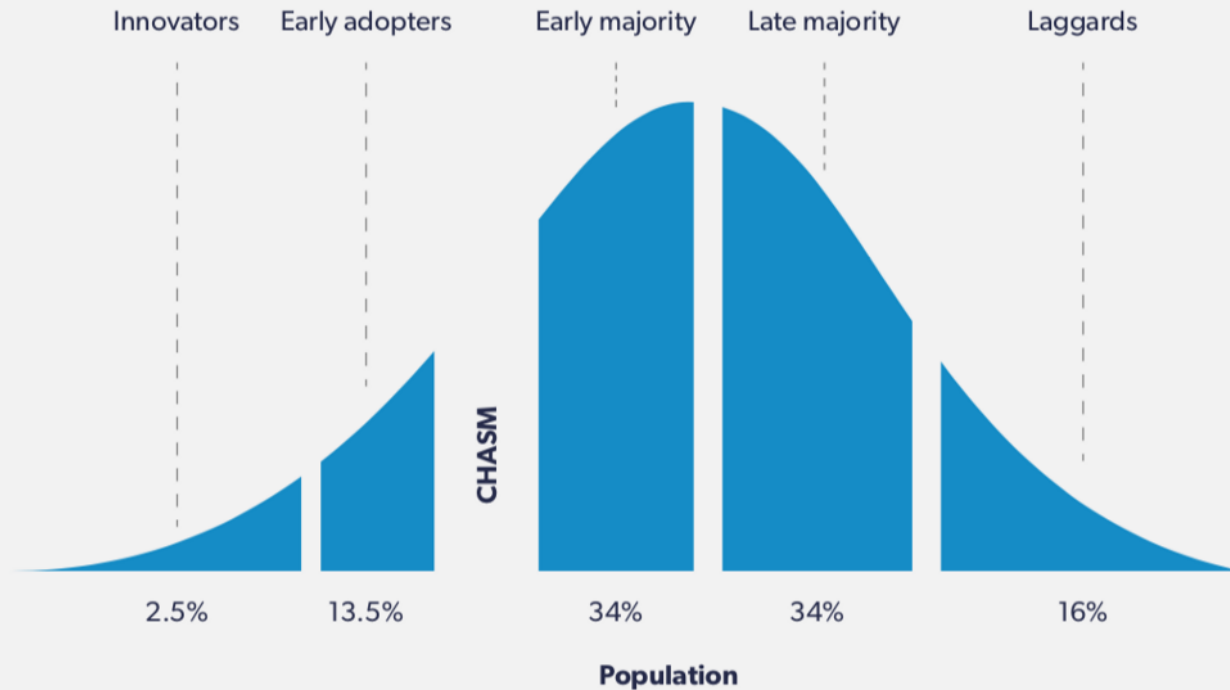
AI is crossing the chasm... Adoption has tripled in the last 12 months!

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



OVERCOMING BARRIERS IN
ACCESS TO LEARNING



INDIVIDUAL
CURRICULUM



PERSONALIZED
LEARNING



VIRTUAL ENVIRONMENTS



TEACH AND ENHANCE
FUTURE-READY SKILLS



AI-ASSISTED TEACHER



IDENTIFYING UNIQUE SOCIAL
OR PHYSICAL NEEDS



BETTER INSTITUTIONAL
MANAGEMENT

CHANGE IS THE NEW NORMAL ...

THE WORLD'S LARGEST
HOTEL COMPANY OWNS
NO PROPERTY



 **airbnb**

3 BILLION MINUTES
OF CALLS PER DAY
WITH NO TELCO
INFRASTRUCTURE



 **skype™**

THE WORLD'S LARGEST
SOCIAL MEDIA OWNER
**CREATES NO
CONTENT**



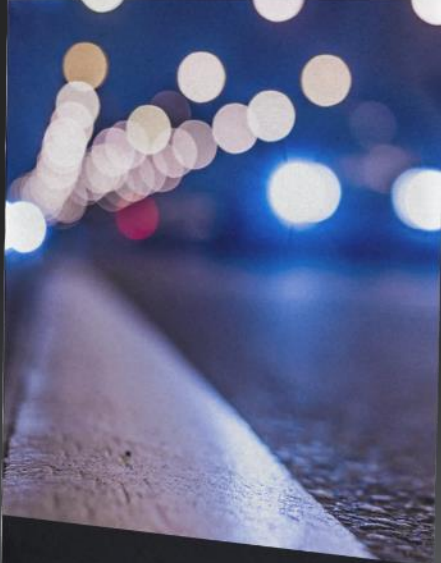
facebook


THE WORLD'S LARGEST
MOVIE PROVIDER OWNS
NO CINEMAS



NETFLIX

THE WORLD'S LARGEST
TAXI COMPANY OWNS
NO CARS



 **UBER**


... TRANSFORMING THE WAY WE LEARN ...

THE WORLD'S LARGEST
LEARNING PLATFORM HAS
NO TEACHERS

Home Videos Playlists Channels

Learn English with BBC Learnin...


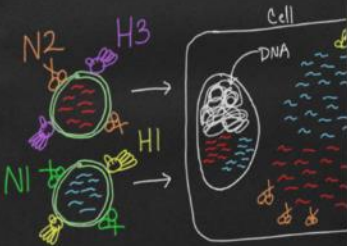
0.00 / 1.26



A vertical banner for YouTube. The top section is white with bold black text. Below the text is a navigation bar with 'Home', 'Videos', 'Playlists', and 'Channels'. Underneath is a video player showing a man speaking, with a progress bar at the bottom. The bottom section is a red bar with the white YouTube logo.

THE WORLD'S LARGEST
LESSON PROVIDER HAS
NO CLASSROOMS

Once in a while...





A vertical banner for Khan Academy. The top section is white with bold black text. Below is a black background with white handwritten text 'Once in a while...'. Underneath is a hand-drawn diagram of a cell with labels 'N2', 'H3', 'HI', 'DNA', and 'Cell'. The bottom section is a dark blue bar with the Khan Academy logo, which consists of a green tree icon and the text 'KHAN ACADEMY'.

THE WORLD'S LARGEST
NON-PROFIT REGISTERED
COURSE PROVIDER HAS
NO REGISTRAR





A vertical banner for edX. The top section is white with bold black text. Below is a photograph of a woman with long hair looking at a laptop, with blue digital numbers floating around her. The bottom section is a purple bar with the white edX logo.

THE WORLD'S LARGEST
FOR-PROFIT ONLINE
CERTIFICATION PROVIDER IS
NOT ACCREDITED



A vertical banner for Coursera. The top section is white with bold black text. Below is a photograph of a man sitting at a desk working on a laptop. The bottom section is a blue bar with the white Coursera logo.

THE WORLD'S FASTEST
GROWING STUDENT LOAN
REFINANCING GROUP IS
NOT A BANK



A vertical banner for SoFi. The top section is white with bold black text. Below is a photograph of a smiling woman with curly hair. The bottom section is a dark grey bar with the white SoFi logo, which consists of the text 'SoFi' and a blue grid of circles.

Work is a thing, not a place...

PwC's NextGen: A global generational study

Evolving talent strategy to match
the new workforce reality

Summary and compendium of findings

Page 8...



The New York Times

SUBSCRIBE NOW

THE OFFICE: AN ANALYSIS

Young People Are Going to Save Us All From Office Life

Gen Z-ers and millennials have been called lazy and entitled. Could they, instead, be among the first to understand the proper role of work in life?

The image shows a screenshot of a New York Times article cover. It features three women in professional attire, each holding a mobile phone to her ear. The background is a light blue gradient. The text is in a serif font, and there is a search icon in the top left corner.

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



The Jobs Landscape in 2022

emerging
roles,
global
change
by 2022



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

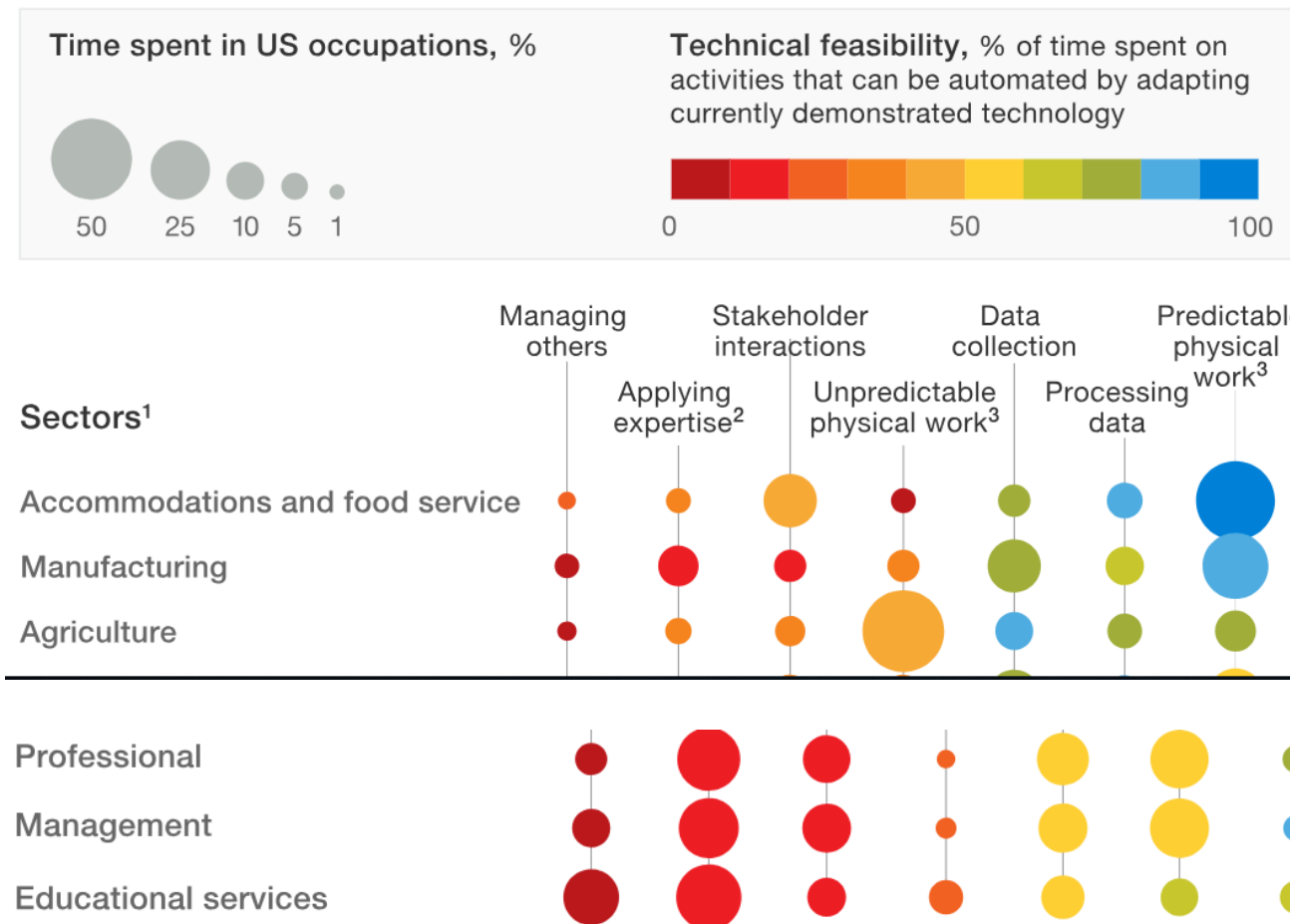


Top 10 Declining

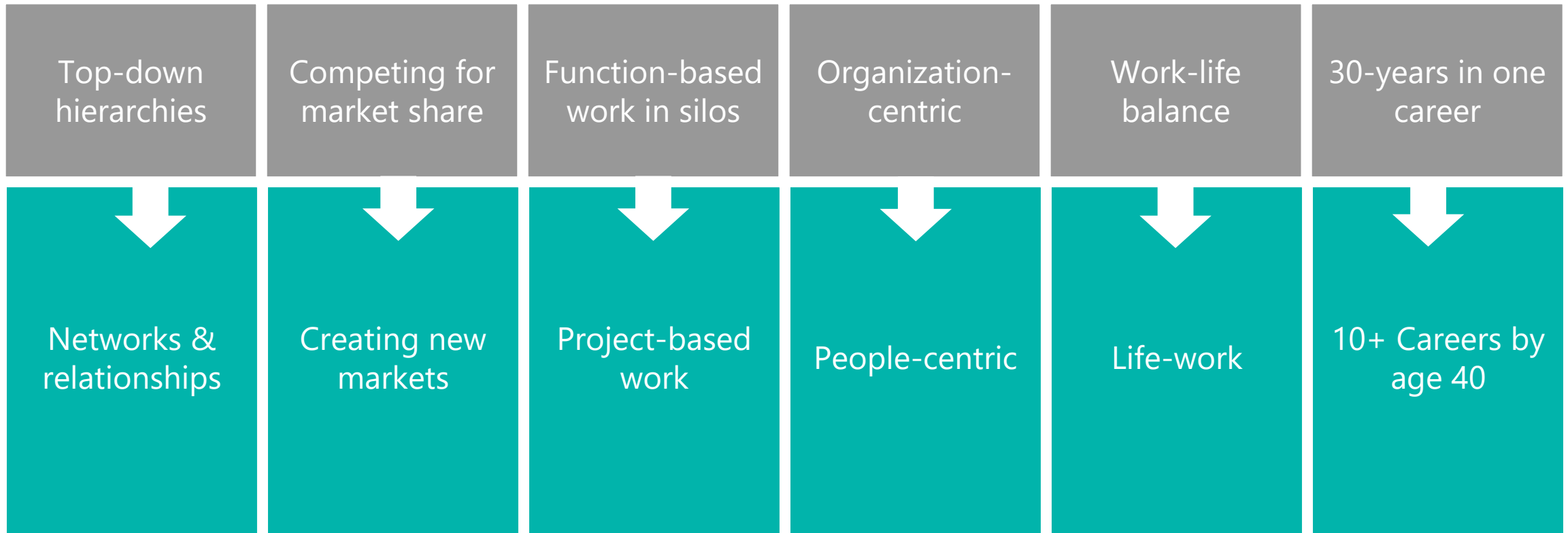
1. Data Entry Clerks
2. Accounting, Bookkeeping and Payroll Clerks
3. Administrative and Executive Secretaries
4. Assembly and Factory Workers
5. Client Information and Customer Service Workers
6. Business Services and Administration Managers
7. Accountants and Auditors
8. Material-Recording and Stock-Keeping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

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
ASSISTANCE
GUID

Thank You!