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Erasmus+ Programme
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PENS

Pathway in Enterprise Systems Engineering

Pathway in Enterprise Systems Engineering (PENS)

Digital Business Transformation

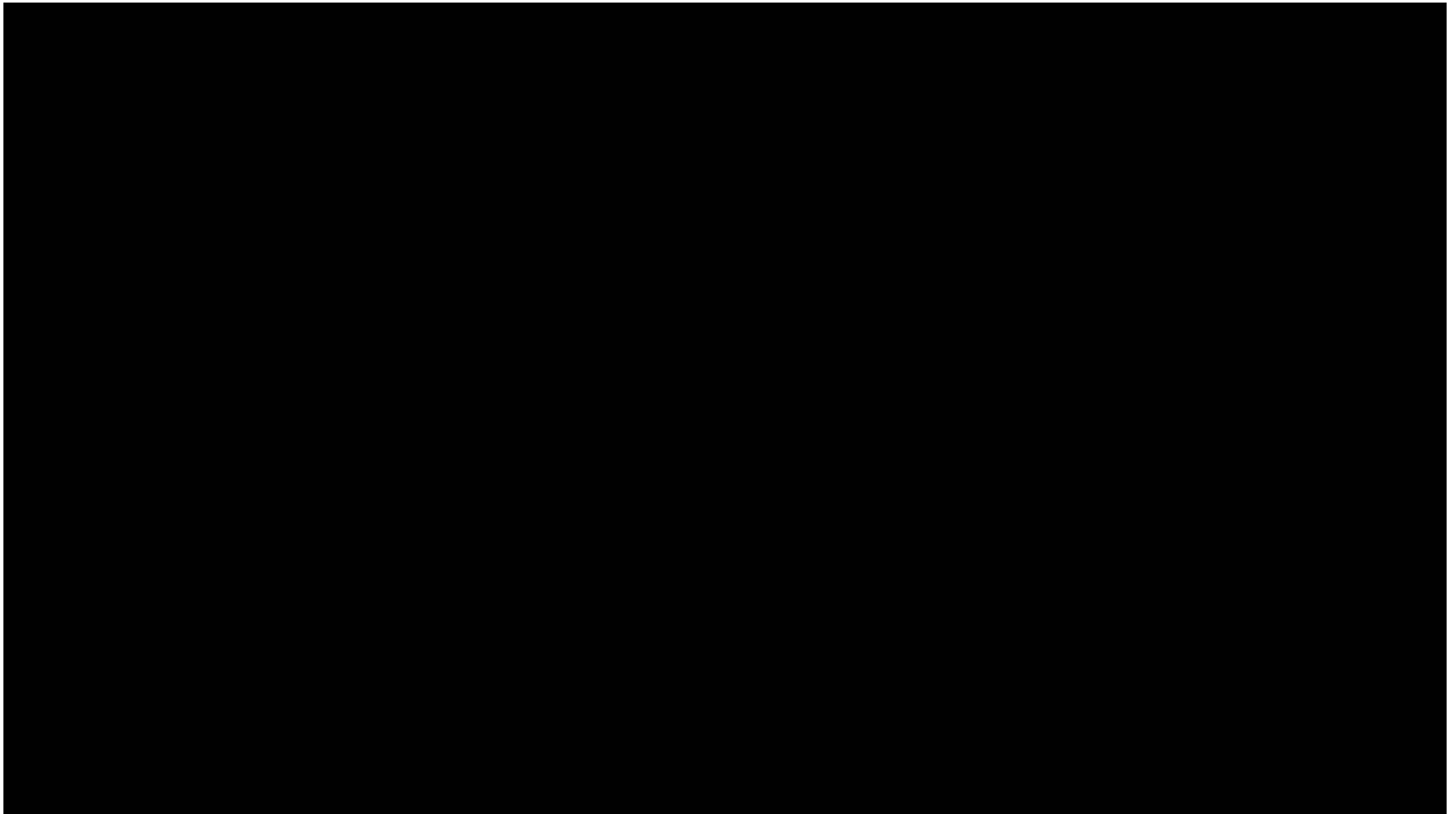
Soulef Khalfallah

1 June 2022

Sousse University



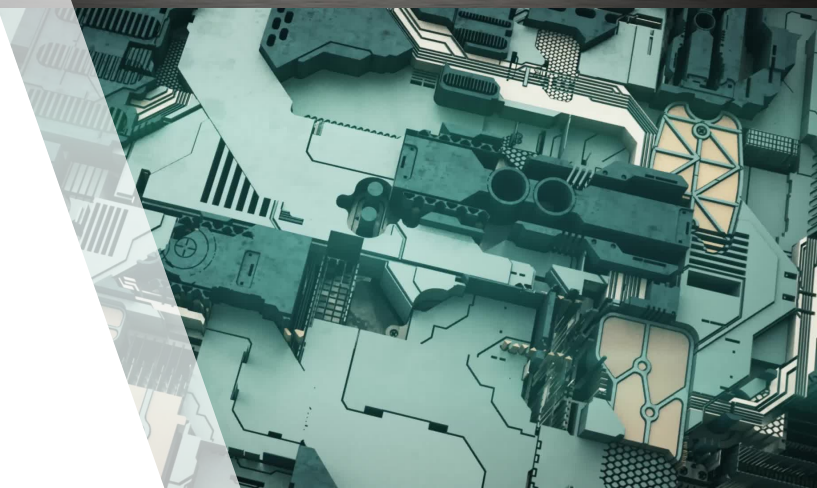
Its all about your preferred Cartoon



Characteristics of these transformers

Agile

Full of technologies



Presentation Plan

Problematic: We never Know Enough

Continuous Transformation

- The Human Story
- The Technological Story

What is DBT ?

- Basic définitions
- Drivers, Objects and Impact of Digitization
- Digital Business Transformation and its success factors

DBT Threats

- Security and Ethics
- Employment
- Sustainability

Problematic

The World is Changing

Big data is mainly on the cloud and known for its five V's :

volume, value, variety, velocity, veracity

Let's test our Knowledge

AI

IoT

Cloud

BIG Data

Blockchain

CryptoCurrency

Analytics

Problematic

The World is Changing

Helps us see insights and meaningful data that we might not otherwise detect.

Let's test our Knowledge

AI

IoT

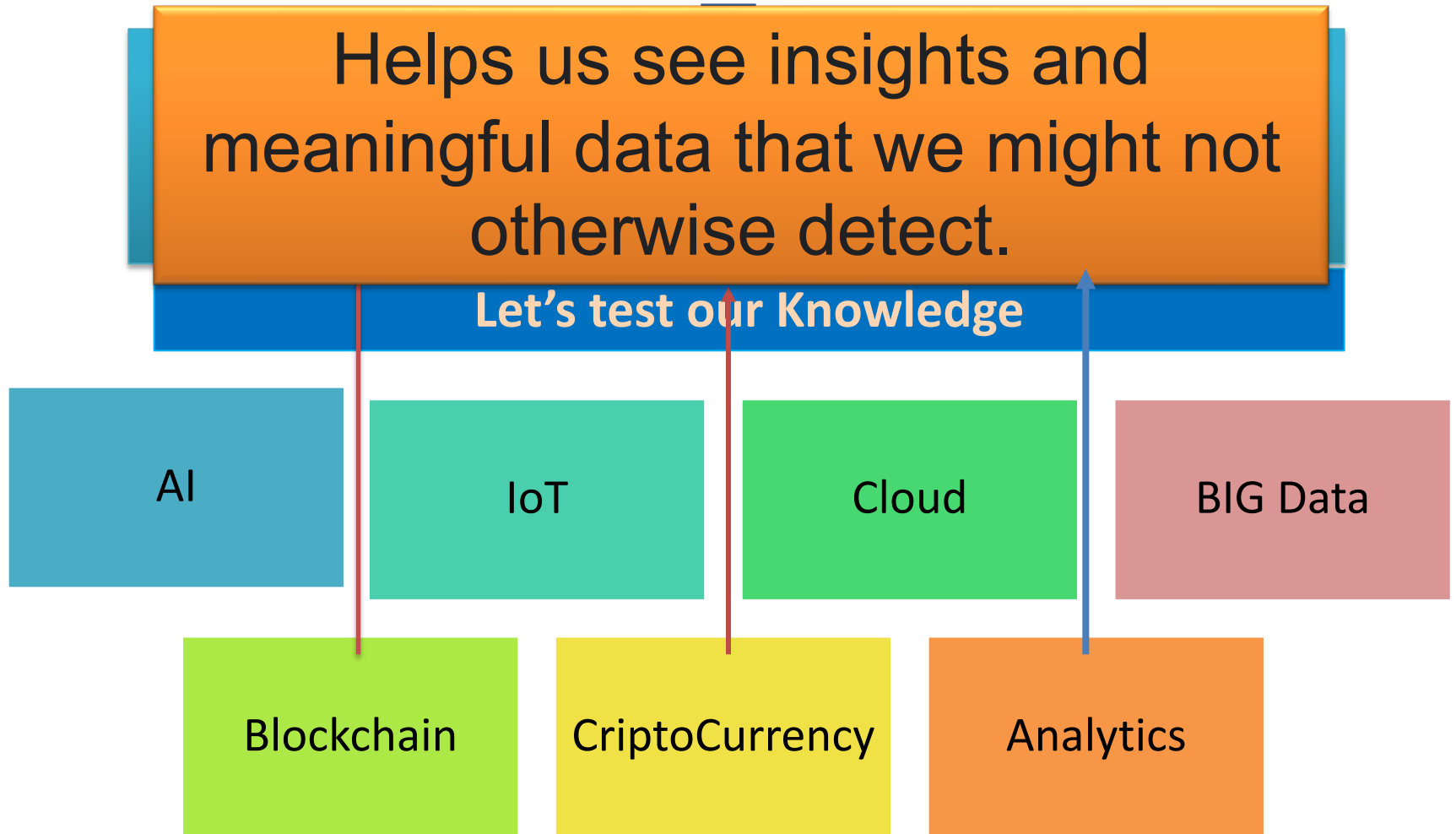
Cloud

BIG Data

Blockchain

CryptoCurrency

Analytics



Understand the new world: **Not only Technology**

The World is Changing

David L. Rogers defines digital disruption as:
disruption happens when an existing industry faces a challenger that offers greater value to the customer in a way that existing firms cannot compete with directly

Angels

Crowd
Sourcing

Value

Fintech

Biotech

Ventech

Disruption
management

Privacy ,
Ethics, security,
sustainability

The Pionniers of 21st century



Let's test our Knowledge



G



A



F



A

Su



T



berg



Presentation Plan

Continuous Transformation

- **The Human Story**
- **The Technological Story**

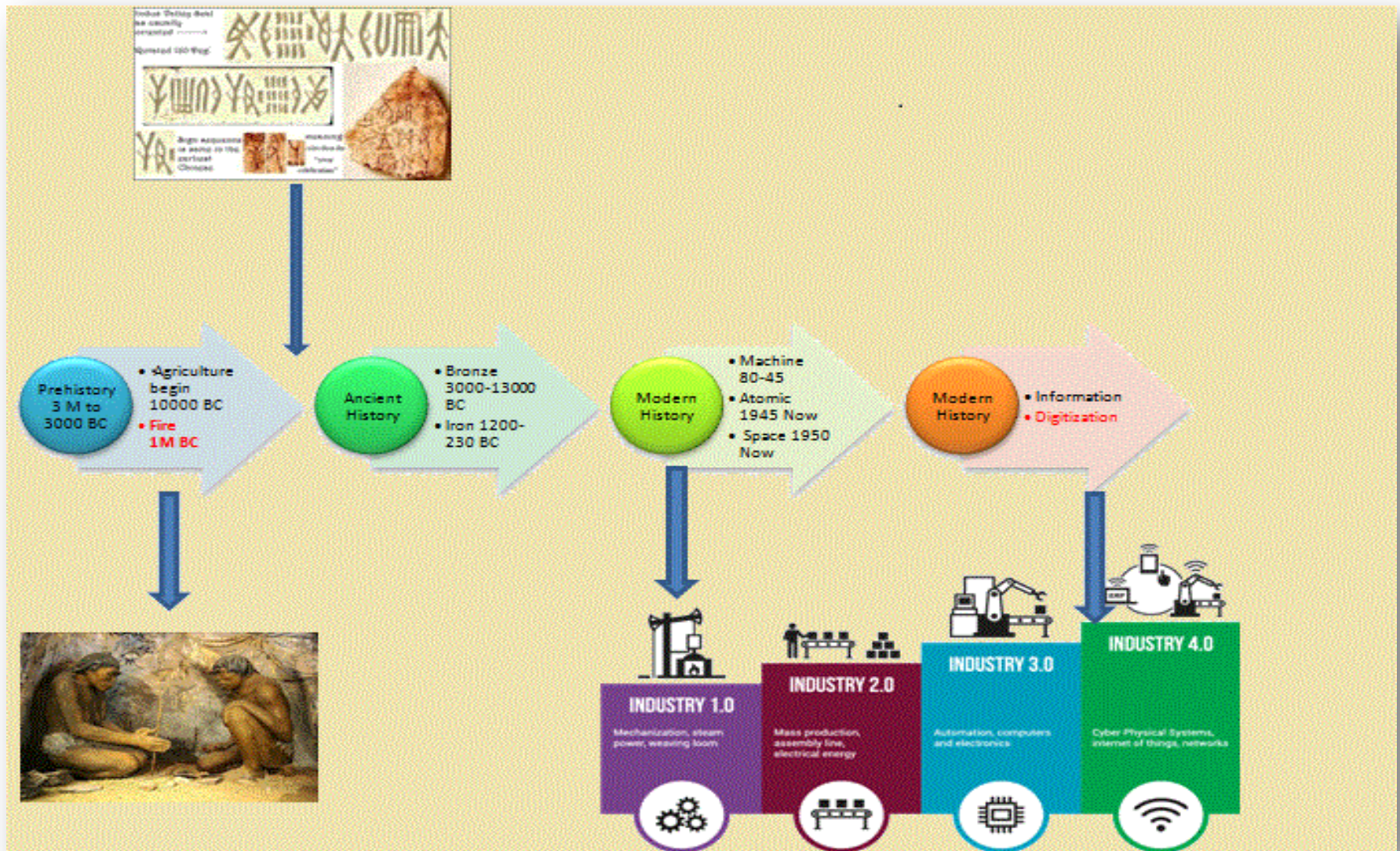
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History of Transformations



Technological Evolution

Computers

Internet

Money

Technological Transformation 1

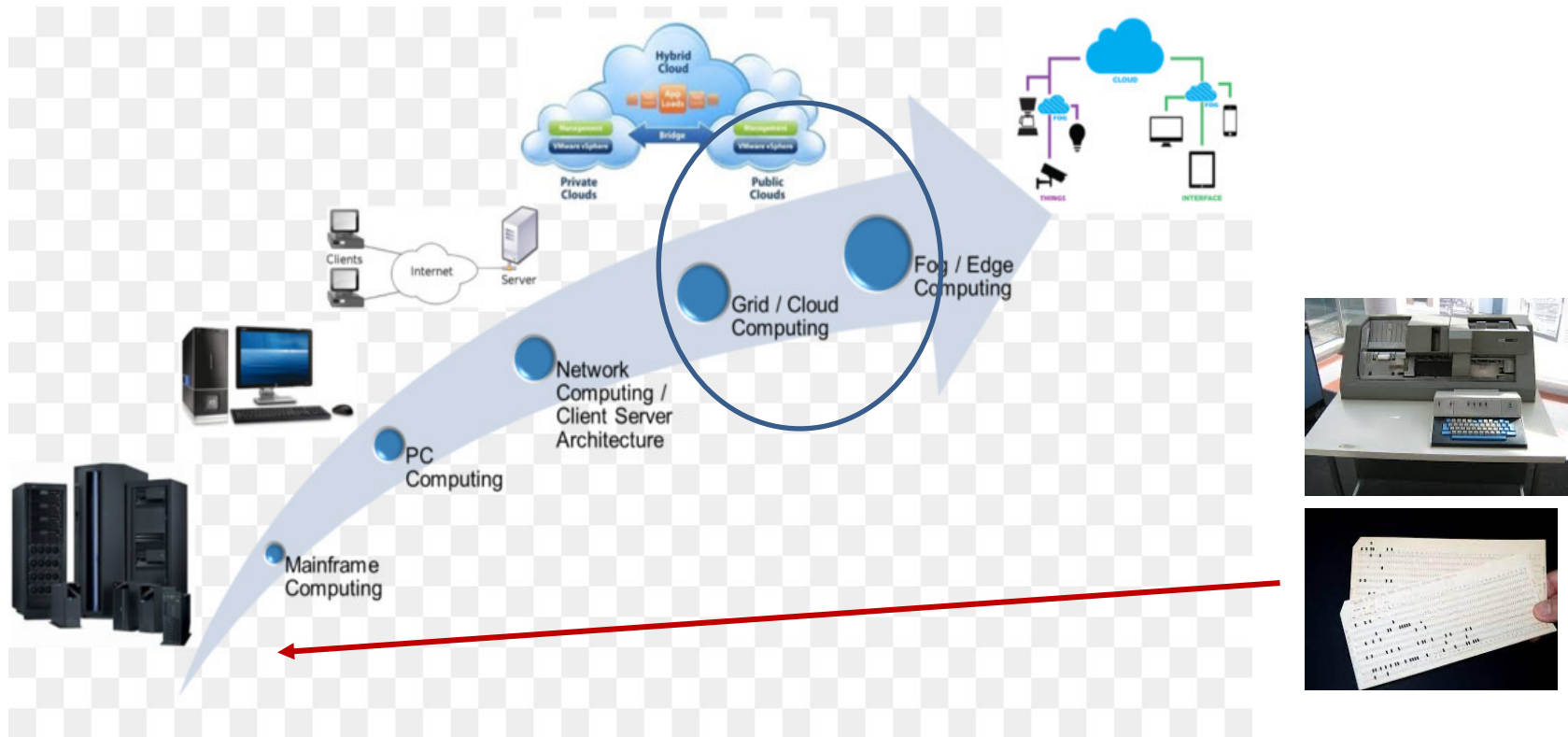


Figure 3 - Evolution of Computing: from the mainframe to the cloud

<https://www.kisspng.com/png-edge-computing-cloud-computing-fog-computing-inter-2730676/>

Technological Transformation 2

Evolution of Internet of Things

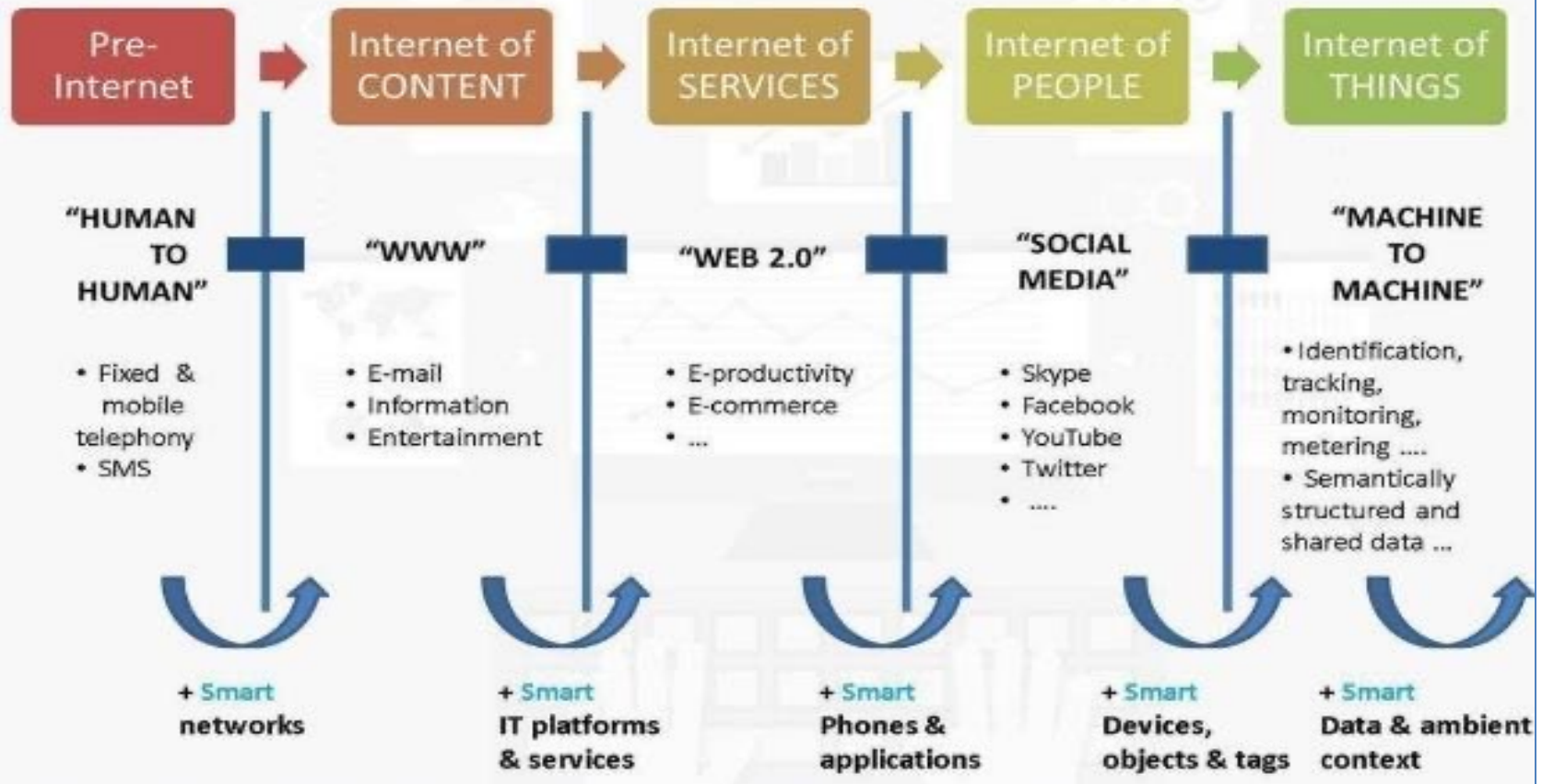


Figure 2 – Evolution of the IoT

<https://twitter.com/alicevachet/status/994139767712501760>

Technological Transformation 3

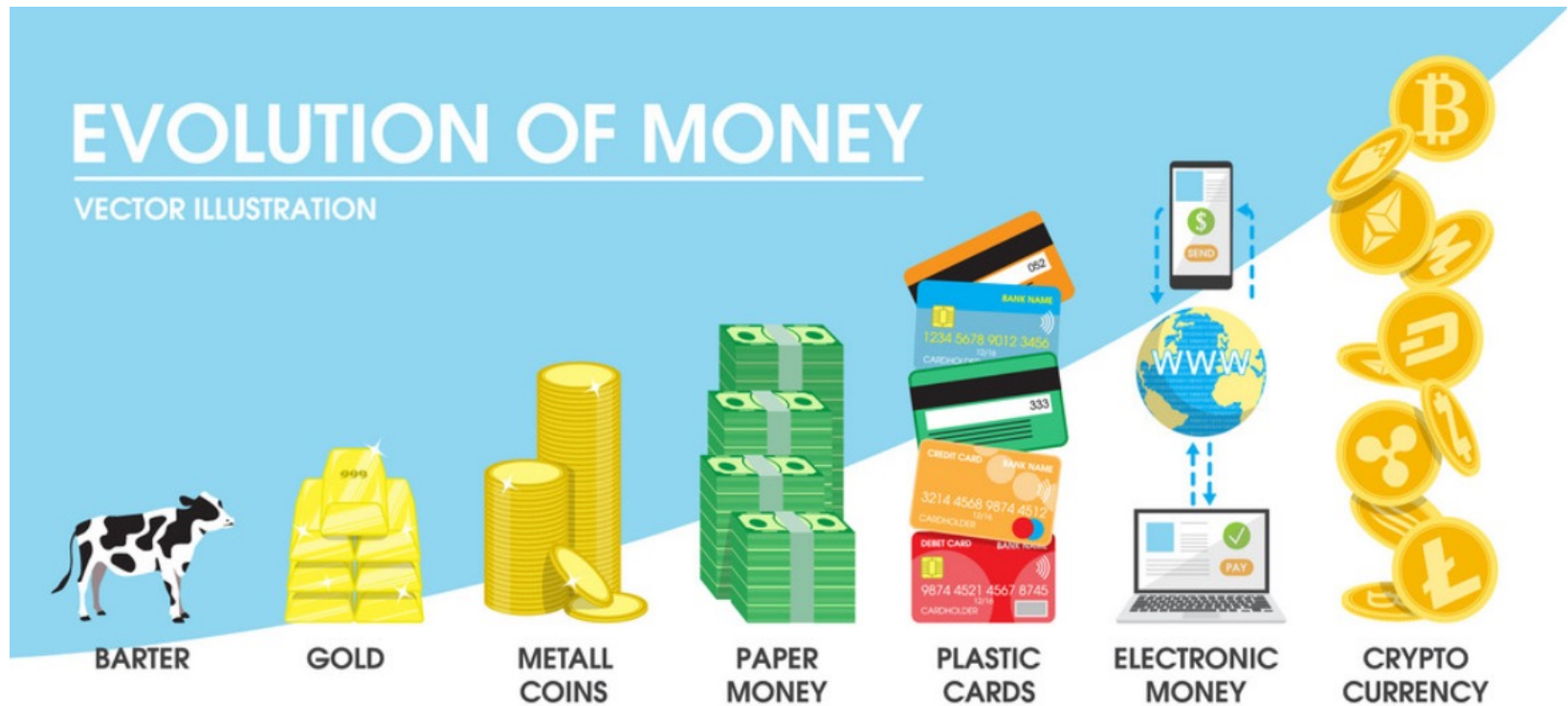
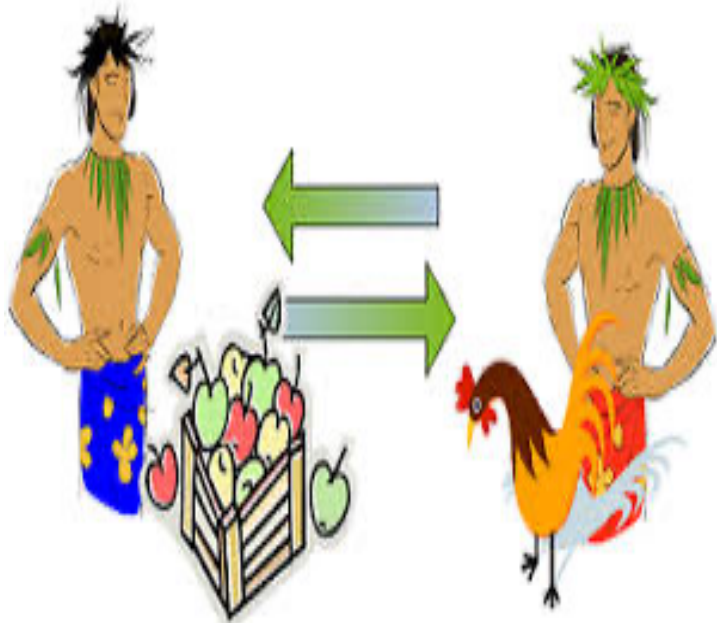


Figure 4 – The Evolution of Money

<https://www.vectorstock.com/royalty-free-vector/evolution-of-money-concept-vector-18603854>

Object Oriented

Barter



Crypto currency



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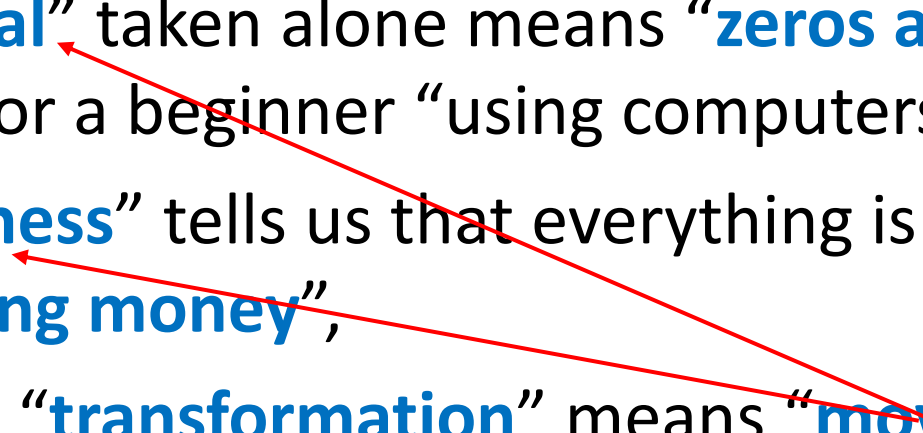
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DBT ?

- **DBT** is an acronym for **D**igital **B**usiness **T**ransformation.
 - The word “**Digital**” taken alone means “**zeros and ones**” which is for a beginner “using computers”.
 - The word “**Business**” tells us that everything is driven by “**making money**”,
 - finally, the word “**transformation**” means “**moving from one state to another**”
- 

Job Offers



Google Search



Environ
243 000 000 résultats

What is DBT ?

Examples of analog technology:
photocopiers.
old land-line telephones.



model.

Drivers, Objects and Impacts of Digitization

- The drivers are :
 - *Technology breakthroughs,*
 - *Changes in people's behavior,*
 - *Relatively low barriers to entries,*
 - *and The availability of huge amounts of venture capital.*

Drivers, Objects and Impacts of Digitization

- The objects of digitization are:
 - *process and work,*
 - *products and services,*
 - *and business models.*

Drivers, Objects and Impacts of Digitization



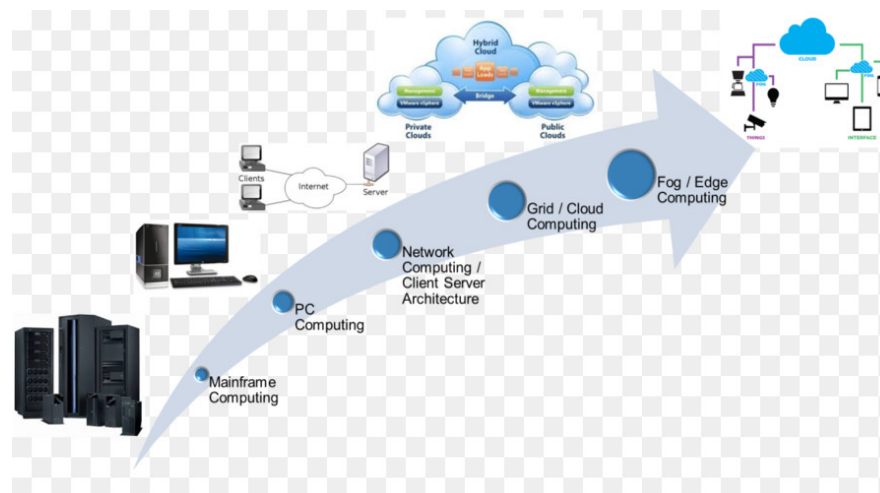
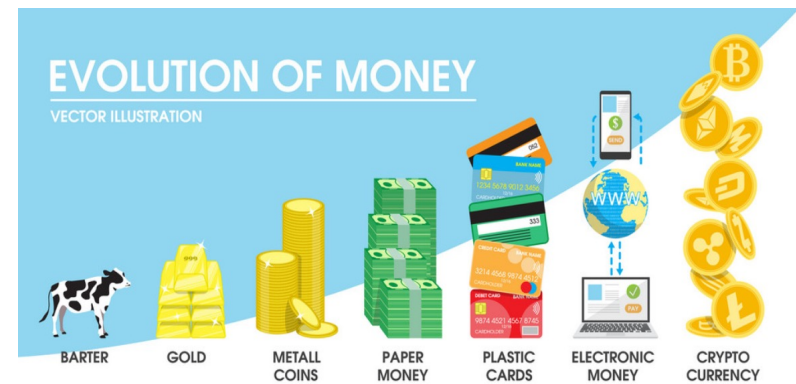
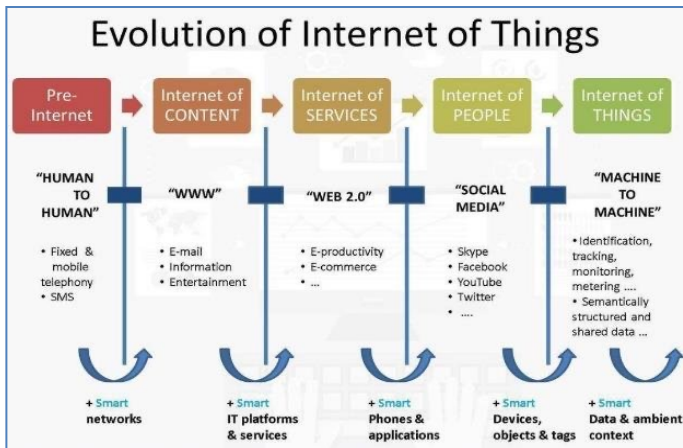
*DBT is Impacting
both society and
economy.*



*DBT is creating
opportunities and
challenges for
businesses.*

Drivers, Objects and Impacts of Digitization

Technological Breakthrough



Drivers, Objects and Impacts of Digitization

Changes in people's behavior

Gen Z	Gen Y	Gen X	Boomers	Silent
Social natives	Book smart & savvy	Street smart & skeptical	Education generation	Educational divides
Fun and frugal	Fun first, hard work next	Get it done	Break the mold – be me	Do what's right
Connected	Confidence	No drama	Agelessness	Integrity
Global minder	"Both/And" stress	Balance	Do it all – or die trying	Under control
Friends = family	Close to doting parents	Prepared, rule-setting parents	My self = my kids	Disciplined to do what's right

Source: GfK Consumer Trends, 2013



NOTES

Gen Z: Born after 1990

Gen Y: Born 1980-90

Gen X: Born 1965-79

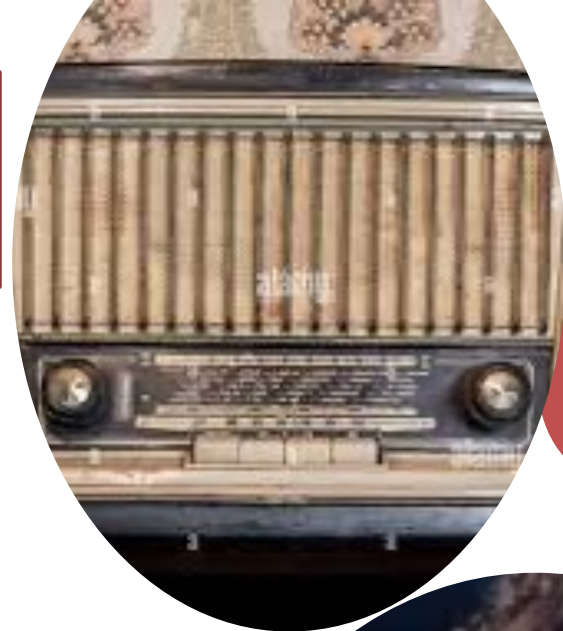
Boomers: Born 1946-64

Silent & GI Generation:
Born pre-1946

Changes in people's behavior

- It took **38 years** for the radio (1899) to reach **50 millions**
- WhatsApp (2009) gained more followers (**700 millions**) in its **6 years** of existence .

Observation: The world population was about 1,6 billion in 1899 and 6,9 billions in 2015.



What is the question ?



Technological
Breakthrough
Or
people's behavior?

Drivers, Objects and Impacts of Digitization

Barriers to Entry



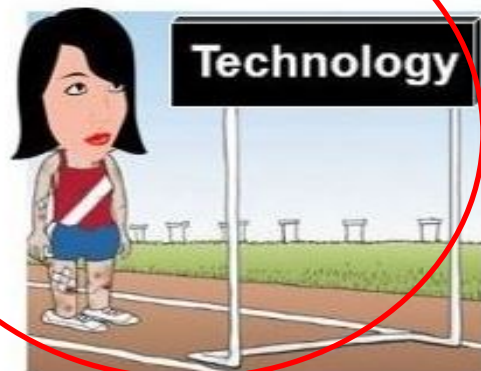
Competitive Response



Price



Patent



Technology



Product Differentiation



Government Regulation

Start a Bank Vs Fintech

Steps to create a Fintech

- Know the Regulations
- Identify Your Niche
- Get to Know Your Competitors
- Build a Team
- Choose Your Funding Options
- Build and Improve

Steps to create a Bank

- Determine a need
- **Appoint a board of directors**
- Make sure you have the starting capital
- Hire a legal team
- Establish a risk management infrastructure
- **Hire a public face**
- Apply for all charters
- **Find a place**
- **Purchase the space**

<https://startup.info/a-complete-guide-on-how-to-start-a-fintech-startup-in-2021/>

<https://spdload.com/blog/fintech-app-development/>

Start a Bank Vs Fintech

- The average cost of developing a FinTech app varies from **\$50,000 to \$300,000**. However, the exact figure depends on a broad range of factors

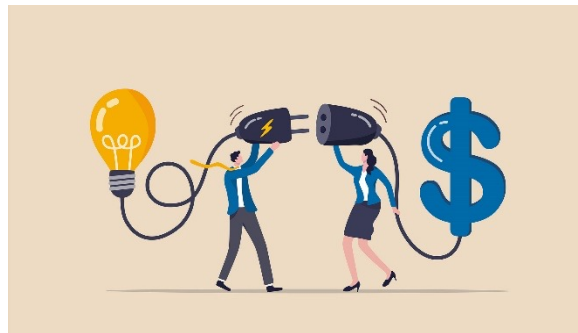
- Starting a bank in the **United States costs between \$500,000 to \$1 million**. You will need a group of experienced bankers that pass an FBI background check and finally you will need to show that you have **\$10 to \$30 million in capital** to get your bank underway

<https://www.offshorecompany.com/banking/start-a-bank/your-own/>

<https://www.wikihow.com/Open-a-Bank>

Drivers, Objects and Impacts of Digitization

The drivers are :
*The availability of
huge amounts of
venture capital.*

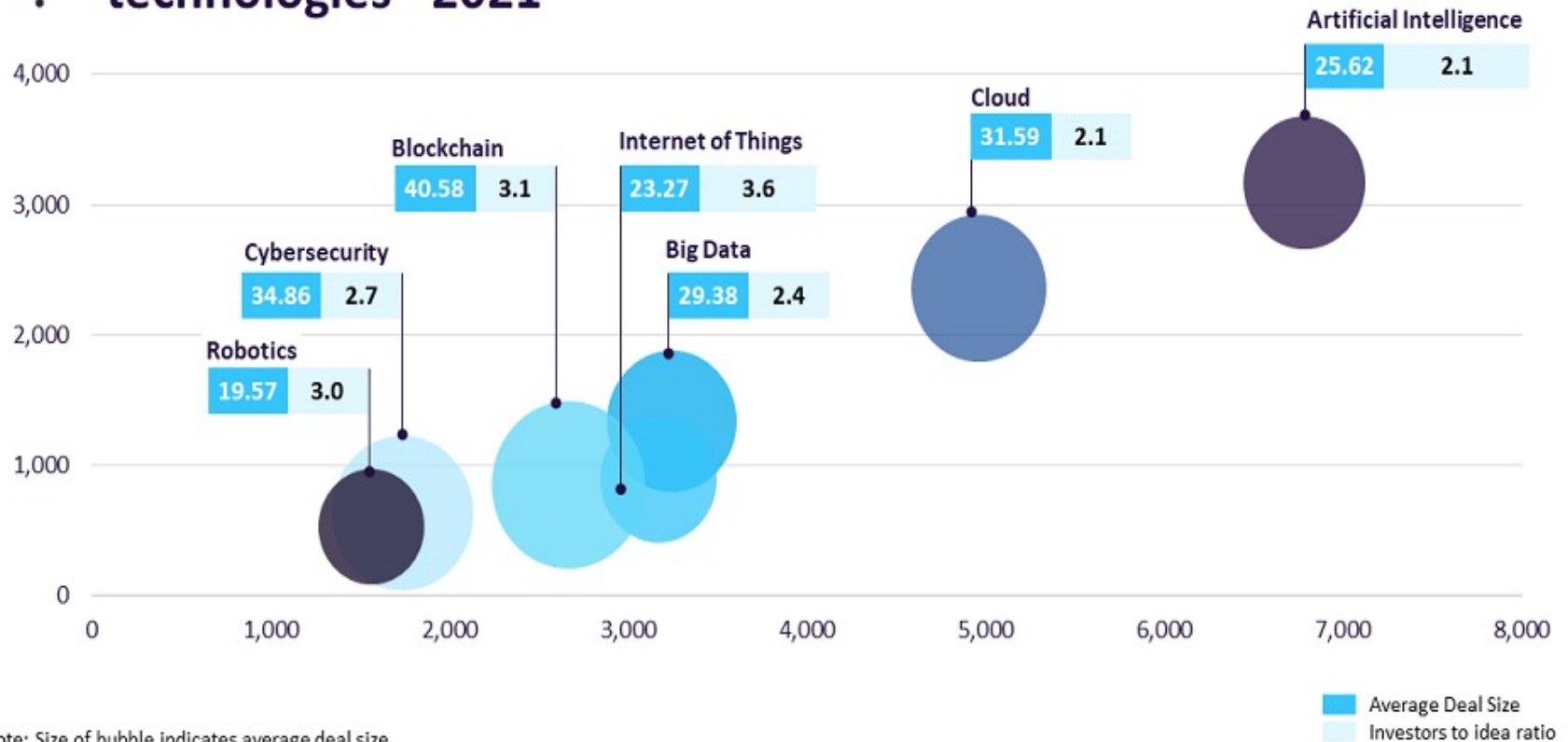


**capital invested
in a project in
which there is a
substantial
element of risk,
typically a new
or expanding
business.**

Venture capital in the digital economy



Global venture funding landscape for select disruptive technologies - 2021



Source: GlobalData Financial Deals Database



Drivers, Objects and **Impacts of Digitization**

The Impact is: It is also creating opportunities and challenges for businesses.

Opportunities for businesses:

- Including improved customer experience,
- improved decision-making,
- improved innovation,
- improved business processes,
- improved collaboration with employees, suppliers, and business partners

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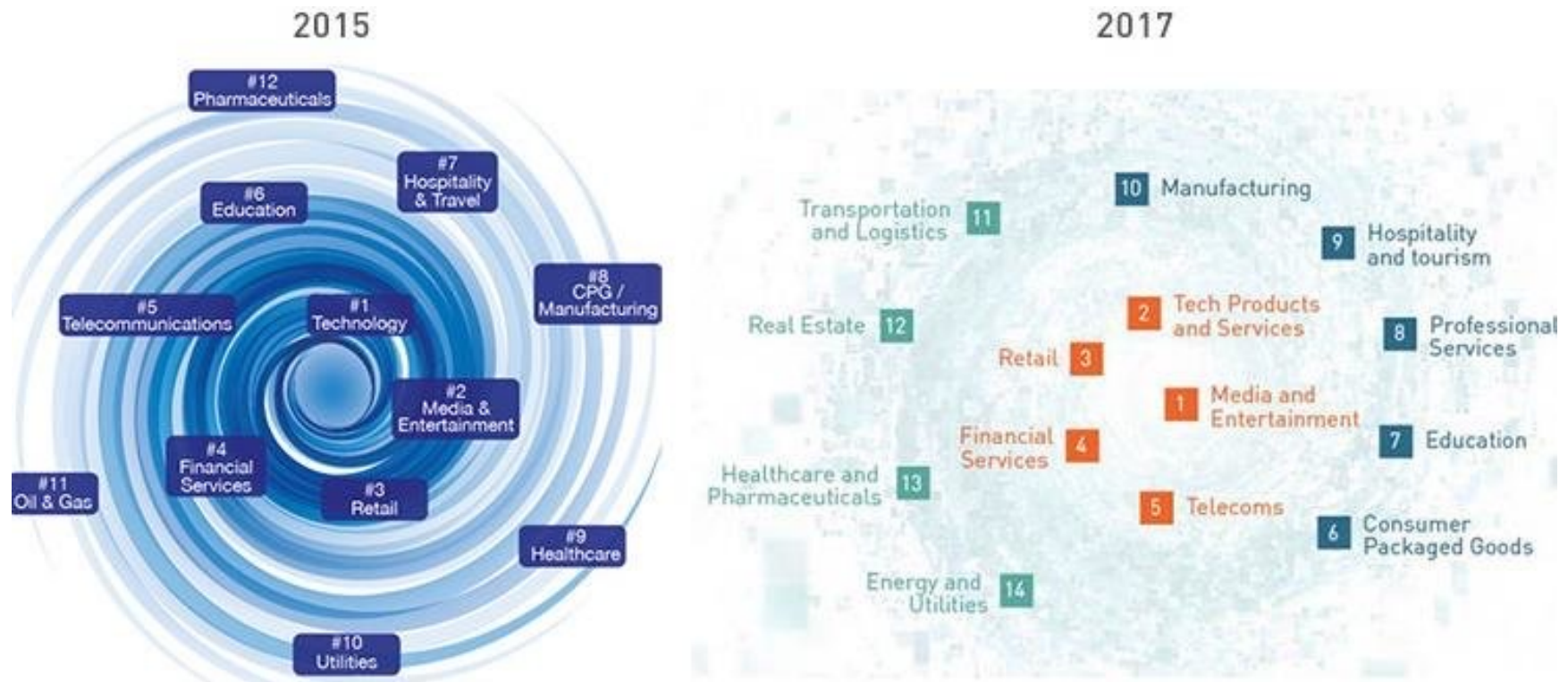
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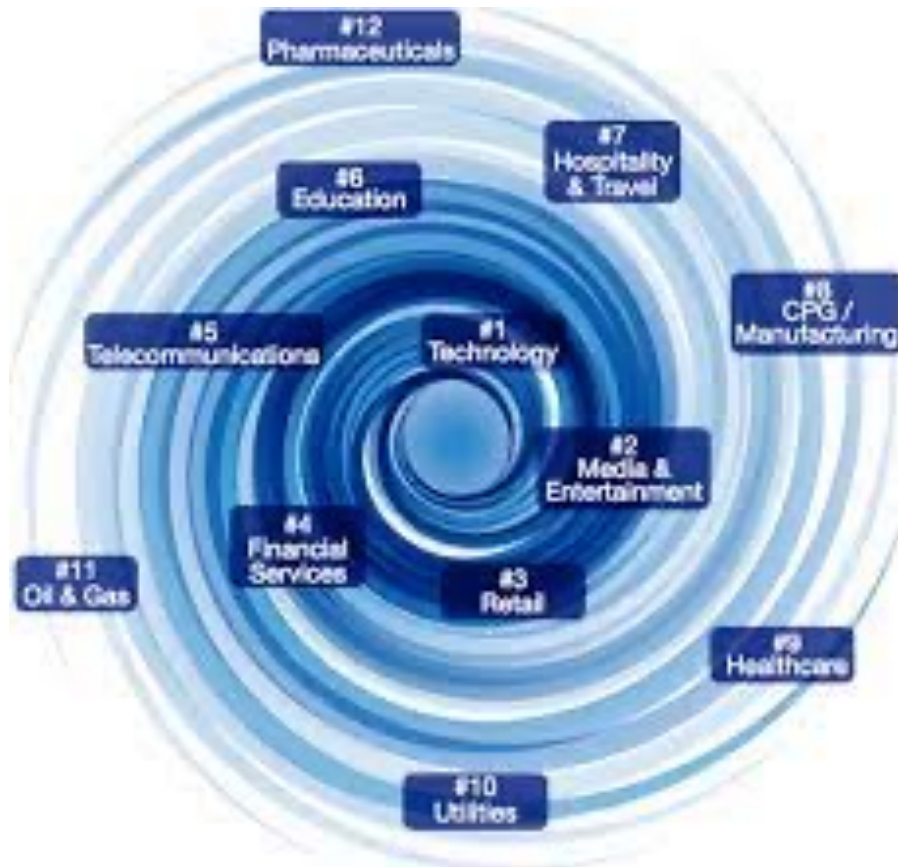
- Basic définitions
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- **Digital Business Transformation and its success factors**

DBT Threats

- Security and Ethics
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Success Factor: An industry's ranking (and its position in the **Digital Vortex**) represents the extent of potential competitive disruption within five years as a result of digital technologies and business models





“The center of the Digital Vortex symbolizes a “new normal” characterized by rapid and constant change as industries become increasingly digital.”

“An industry’s position relative to the center of the Digital Vortex reflects the state of competition a firm in that industry will face, rather than its own digital capabilities per se. “

Failure Story: Eastman Kodak

- Created film cameras in 1888. With the slogan “**you press the button, we do the rest**”,
- Developed a business model **where families could buy a simple** and non expensive camera and use film rolls to take pictures, which had to be revealed afterwards.
- **This was a huge disruption** for the time, transforming photography from a professional activity to something everyone could do at home.

Failure Story: **Eastman Kodak**

- This photo empire fell with the disruption of digital cameras of the 90s.



Eastman CEO had not believed in the behavior of the Z generation



Some success Stories

185 warehouses

amazon

has almost no stores.

facebook

creates no content.

airbnb

owns no real estate.

Uber

owns almost no cars.

Alibaba.com

has no inventory.

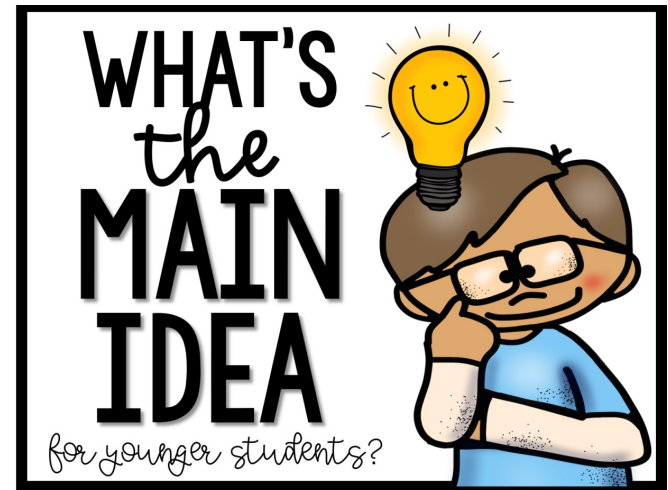
bitcoin

has no physical coins.

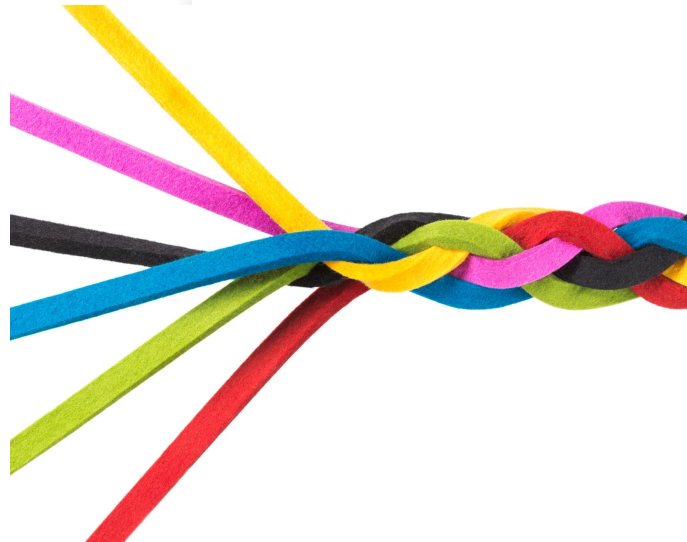
NETFLIX

is not a TV channel.

INTERNET IS CHANGING THE GAME.



Strategy Not
Technologie
Drives DBT





The factor of success

DBT: MIT Study

a clear strategy supported by the leadership,

the existence of employees who want to work for digital leaders,

the existence of a culture of taking risk,

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- **Employment**
- **Sustainability**

The threats of DBT



Security and Ethics



Pollution and sustainable development



Unemployment

security and ethics

- A **digital security risk** is any event or action that could cause a loss of or damage to a computer or mobile device hardware, software, data, information, or processing capability
- Any illegal act involving the use of a computer or related devices generally is referred to as a **computer crime**
- A **cybercrime** is an online or Internet-based illegal act

Pickpockets Digital Transformation



Contactless Payment



Before

Petty crooks now manage to discreetly steal the money of many people, simply by physically **approaching a small box near the famous bank card**

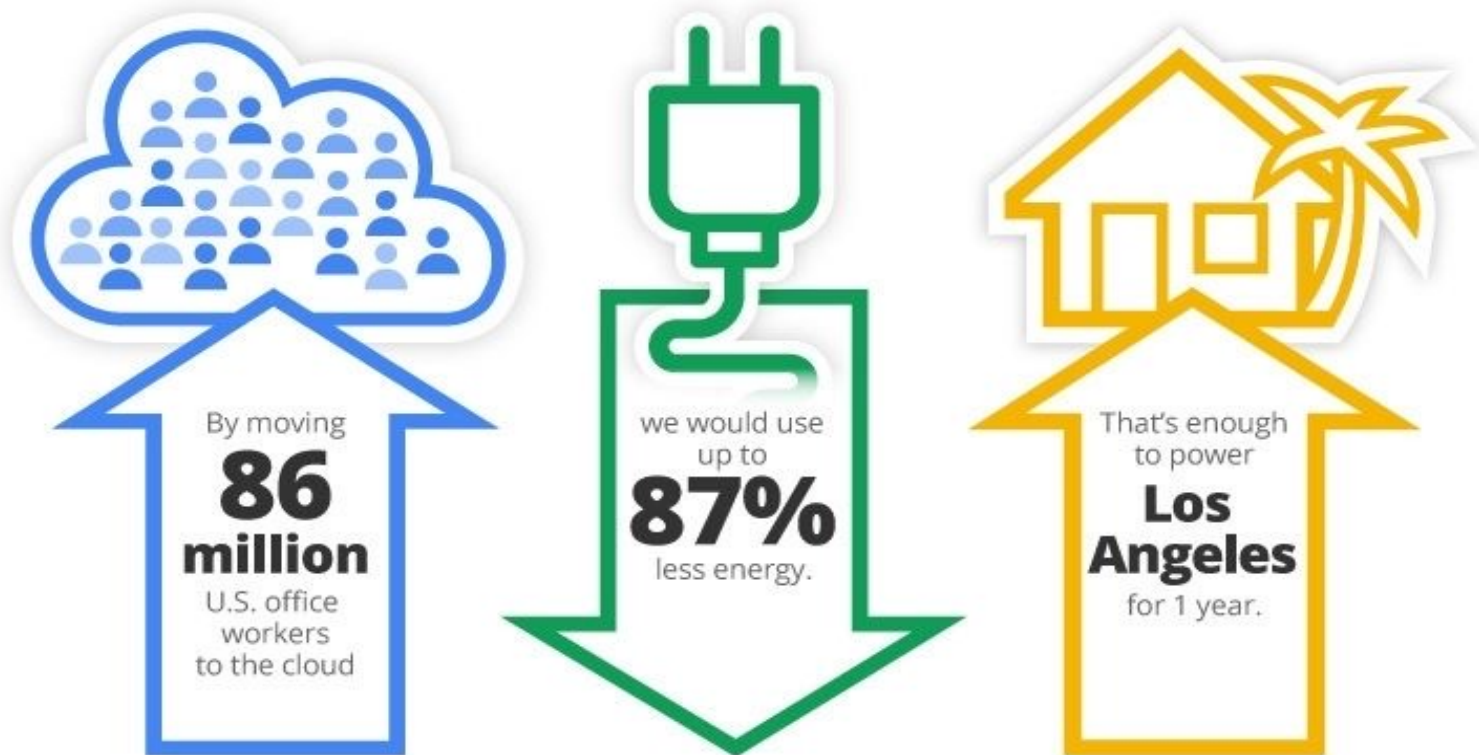
Digital Ethics

- **Digital ethics** is the field of study concerned with the way technology is shaping and will shape our :
 - political,**
 - social, and**
 - moral existence.**

It is more and more difficult to have fair political elections: Ex: Cambridge Analytica

DBT Pollution footprint

Moving to the cloud can save
up to 87% of IT energy



Waterlogged

A midsize data center uses roughly as much water as about 100 acres of almond trees or three average hospitals, and more than two 18-hole golf courses.

Approximate annual water usage, in gallons*



Data Center
(15 megawatt)

130M



Hospital
(3 buildings)

130M



Almond orchard
(100 acres)

115M



Golf Courses
(2 18-hole courses)

100M

*Use varies depending on climate and other factors

Sources: California Department of Water Resources (orchards); James Hamilton (data centers); U.S. Department of Energy (hospitals); Golf Course Superintendents Association of America (golf courses)

THE WALL STREET JOURNAL.

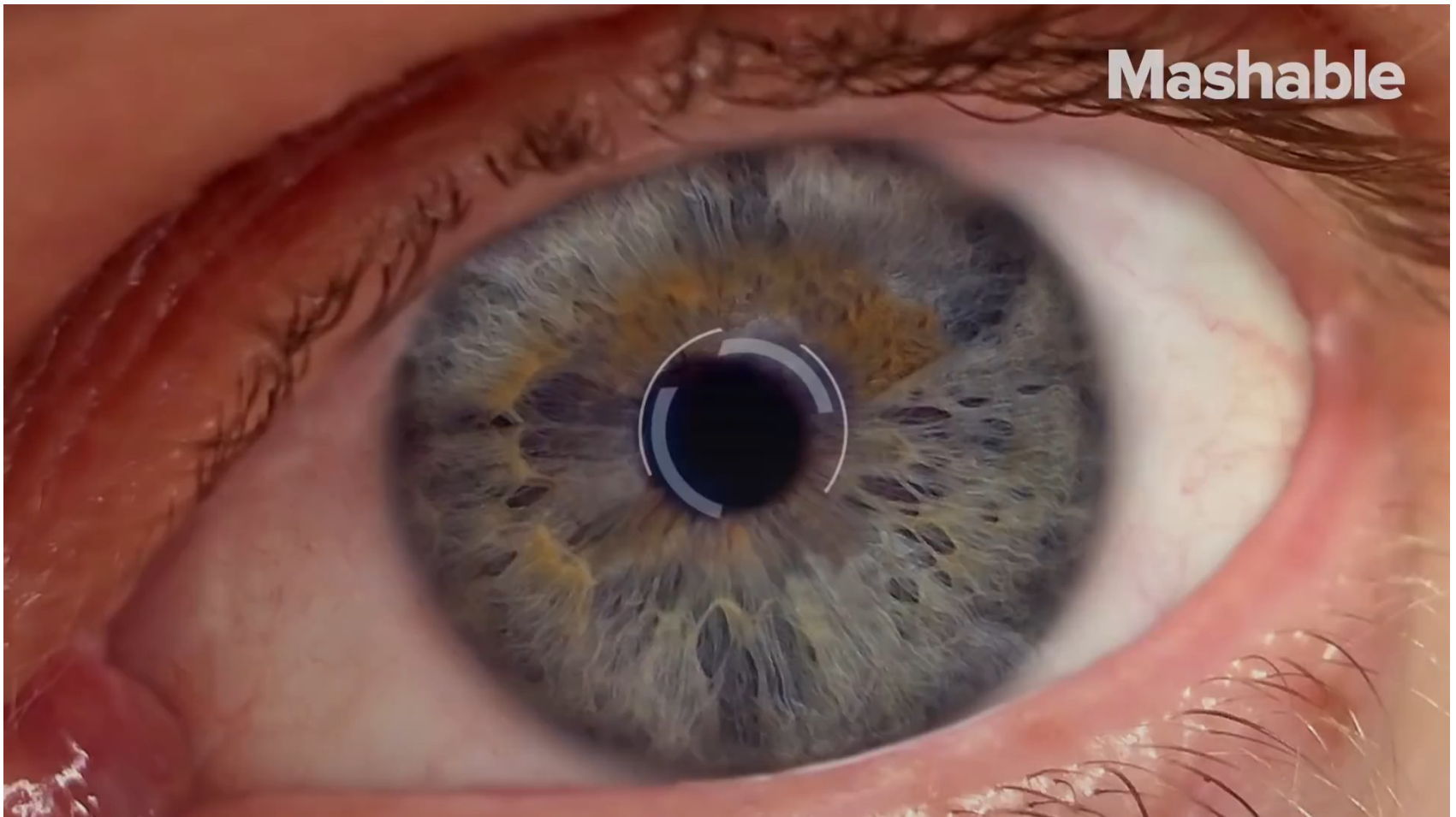
The future of work according to WEF

**Those that will disappear (lost the race against the machine).
For example, clerks and administrative staff, or truck drivers.**

Those that are in collaboration with machines / algorithms (run with the machine). For example, those professions that rely on cognitive and social capabilities, such as doctors / surgeons.

Those jobs that are completely new or remain largely untouched (running faster than the machine or running a different race). For example, roles in the creative arts are unlikely to be automated, as are new roles that involve managing data and machines.

Privacy: Its all about your favorite actor





Thank you for your
Attention