

Telefonica

Preparing Spain for the digital transformation

OECD and Fundación Ramón Areces workshop

Setting the Scene: The Digital Economy and the Next Production Revolution

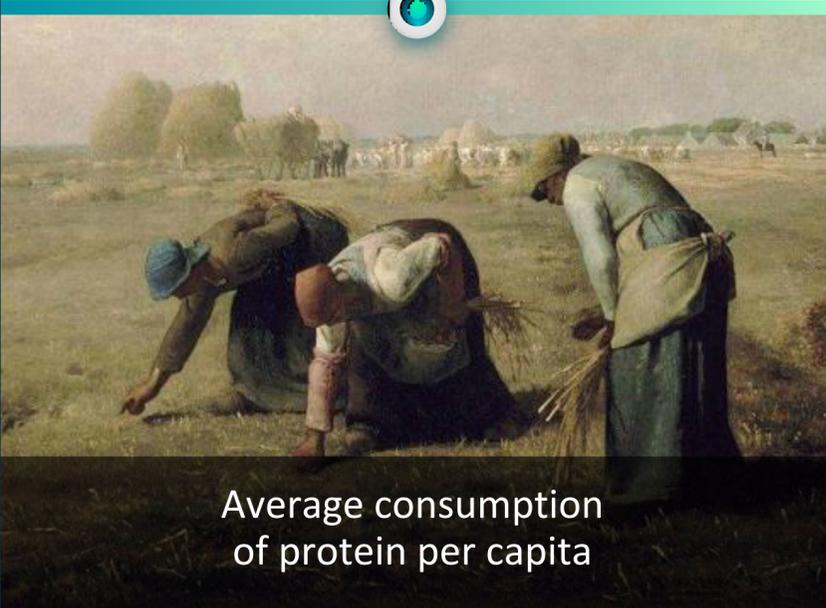
Carlos López Blanco
Telefónica S.A.
14th March 2017



Are we at the beginning of a new society?

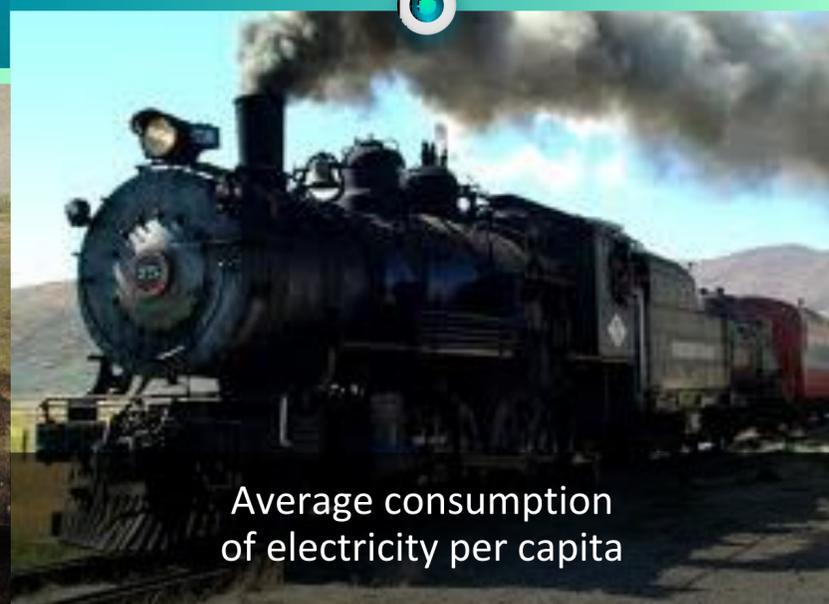
Agricultural Society

4000 BC ~ 1763



Industrial Society

1764 ~ 1970

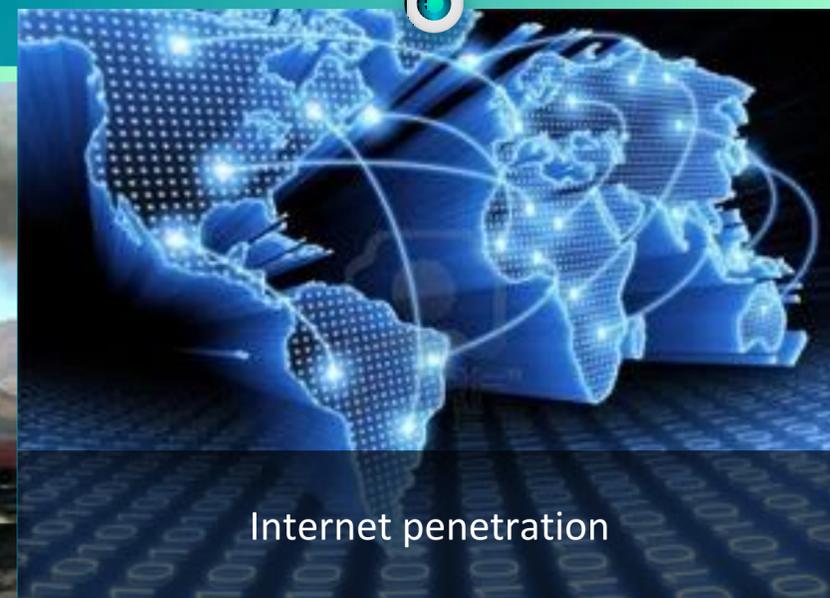


1st & 2nd Industrial Revolution

- New energy sources
- Transport revolution
- Mass production

@ Internet Society

1971 ~ 2014



3rd Industrial Revolution

- Manufacturing automation: microelectronics and robotics
- An increasingly connected world and the beginnings of e-Commerce

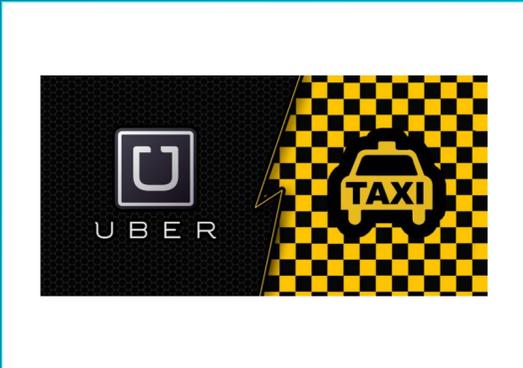
Is this a true revolution?

It is a revolution: the way of doing things is changing and the essence of this change is not the technology

New ways to meet demands of consumers in the digital economy

A challenge for all

Transport



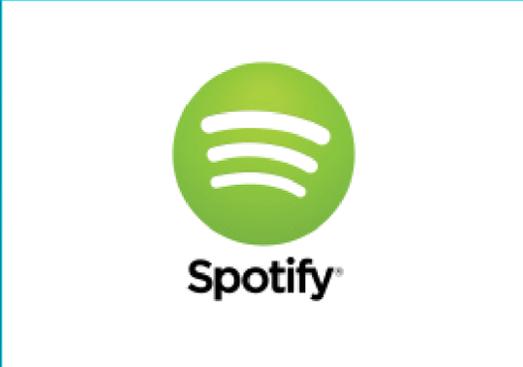
Hospitality



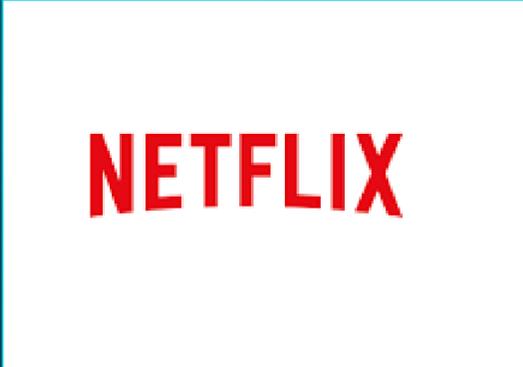
Telcos



Entertainment



Media



Finance



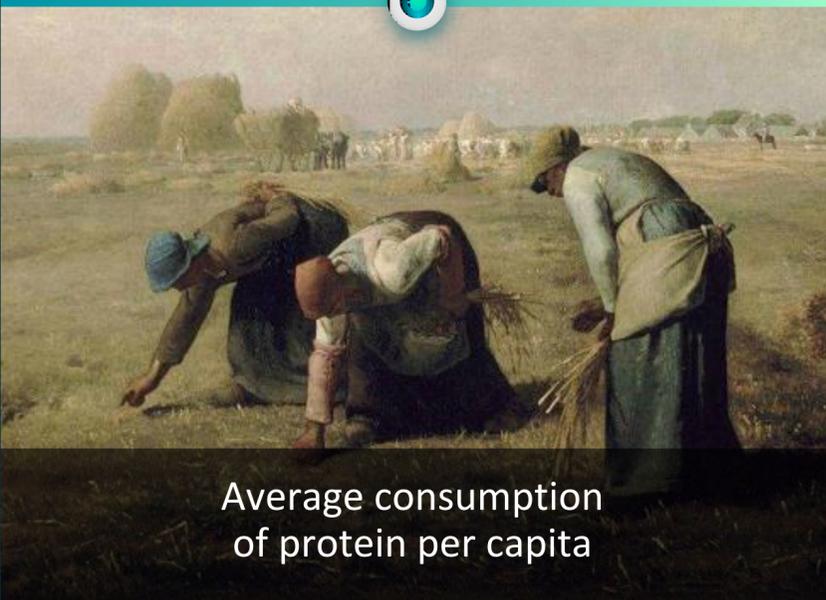
- Technology sectors
- Traditional sectors
- Developed countries
- Emerging countries
- Growing Economies
- Economies in crisis

It is a true revolution

The disruption leads to a new digital society in the 4th industrial revolution era

Agricultural Society

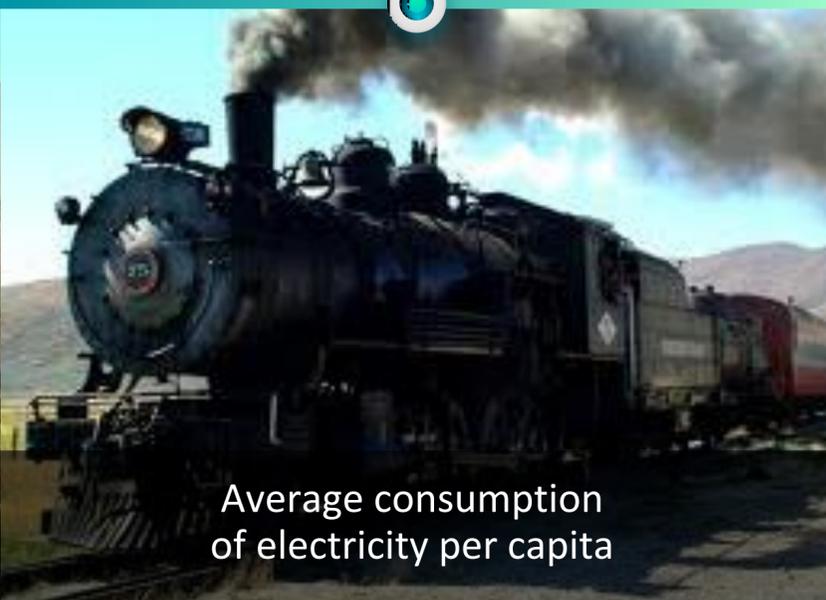
4000 BC ~ 1763



Average consumption of protein per capita

Industrial Society

1764 ~ 1970



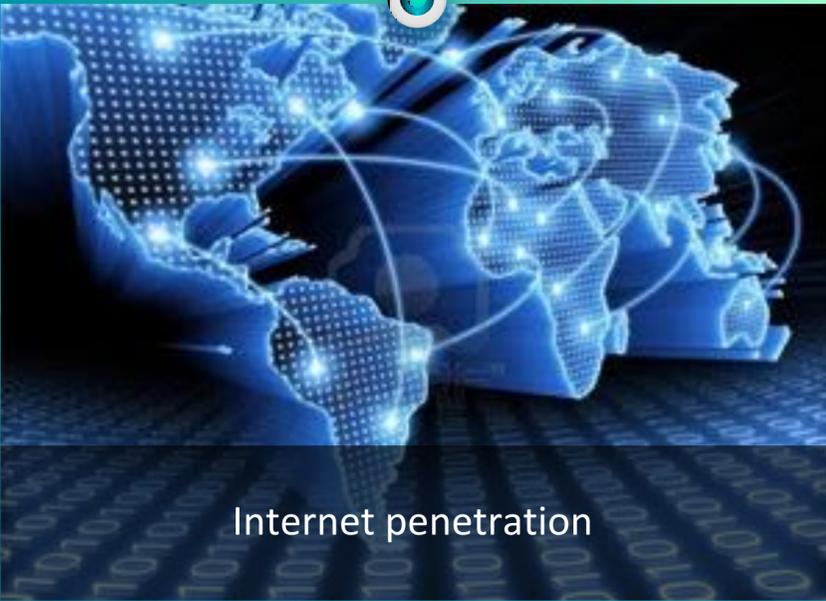
Average consumption of electricity per capita

1st & 2nd Industrial Revolution

- New energy sources
- Transport revolution
- Mass production

@ Internet Society

1971 ~ 2014



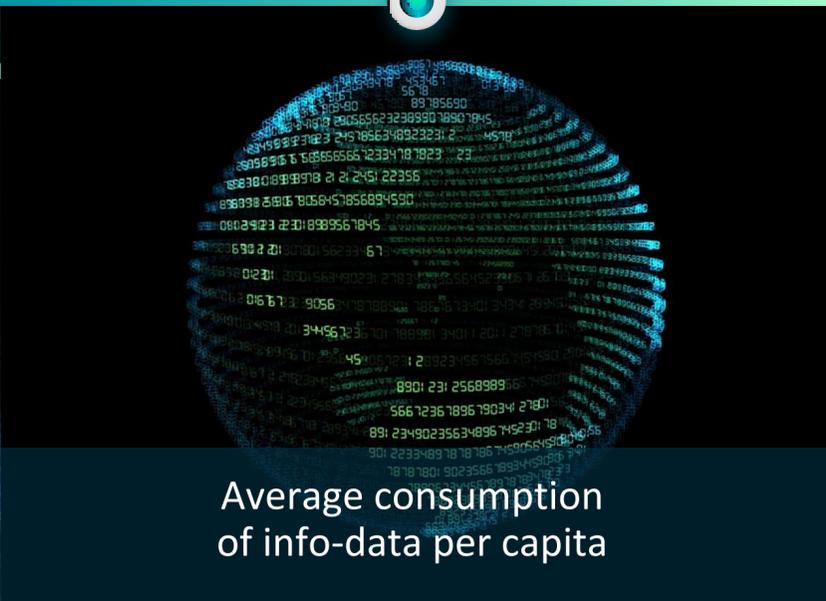
Internet penetration

3rd Industrial Revolution

- Manufacturing automation: microelectronics and robotics
- An increasingly connected world and the beginnings of e-Commerce

Data Society

> 2015



Average consumption of info-data per capita

4th Industrial Revolution

Trends

1. Hyper-Connectivity
2. A data society
3. World is more internationally connected
4. Physical and digital world merging

1. A digital revolution fostered by an hyper connected society...

Exponential data traffic

Everyone & everything connected



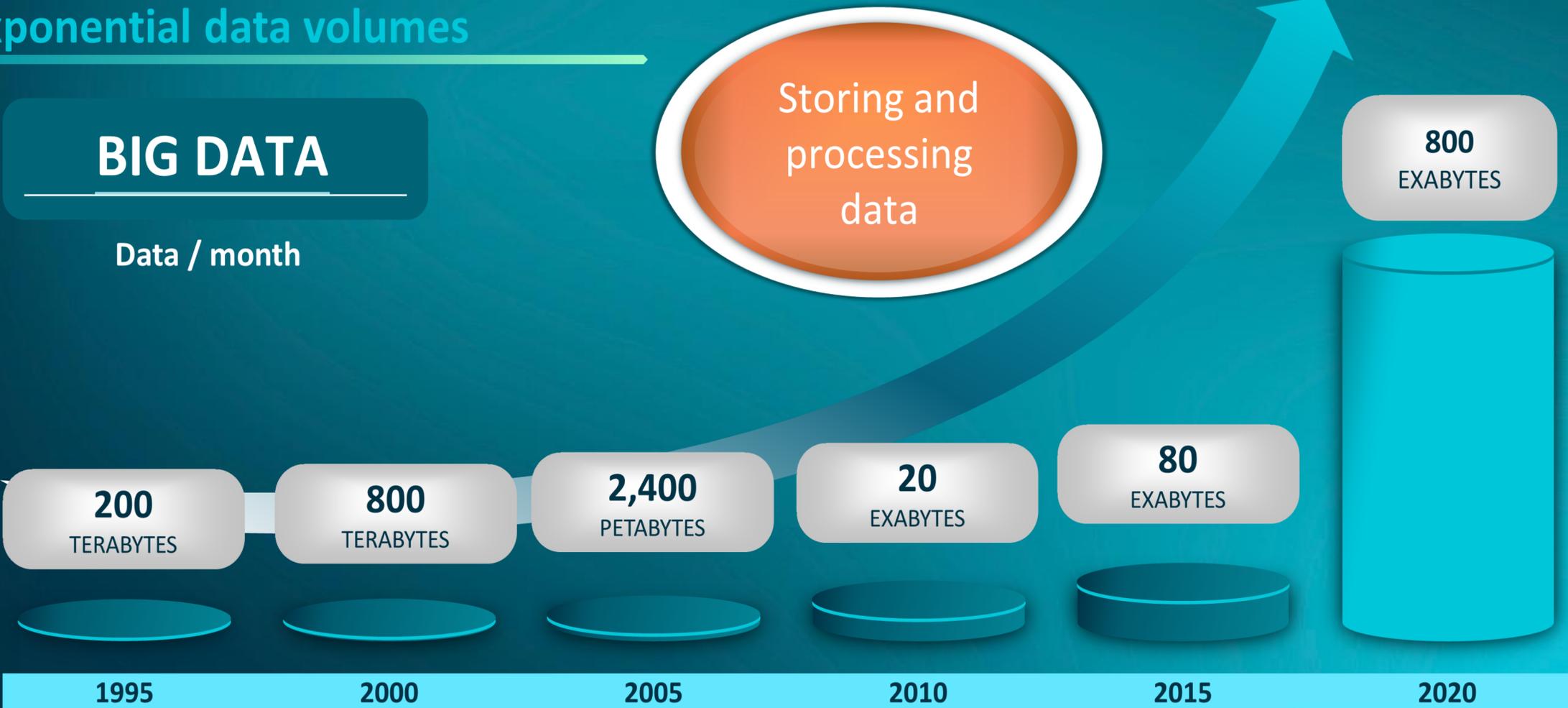
Global CAGR 2015 -2021

- +10% smartphone subscriptions
- +50% data traffic / smartphone
- +55% mobile video traffic

... always on, in real time

2. Data will not only be stored, it will be processed to generate insights...

Exponential data volumes



Marc Andreessen

*“Six decades into the computer revolution, four decades since the invention of the microprocessor, and two decades into the rise of the modern Internet, all of the technology required to transform industries through **software** finally works and can be widely delivered at global scale.”*

... in a world where “software is eating the world”

3. The world is more internationally connected than ever...

Increasing global flow of data ...

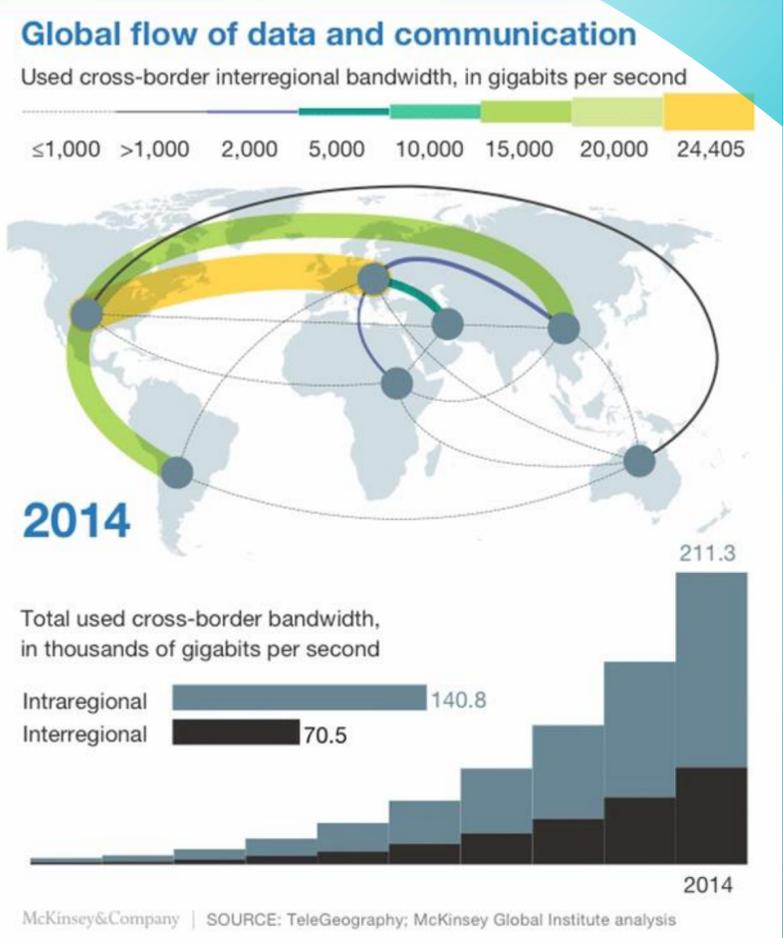
... generating +value than the global goods trade

2005
4,7 Terabits/sg

45x
data flow 2005-2014

10%
increase in global GDP due to
Global Trade (7,8 trillion USD)

2,8 Trillion USD
Increase in GDP due to
international Data Flows

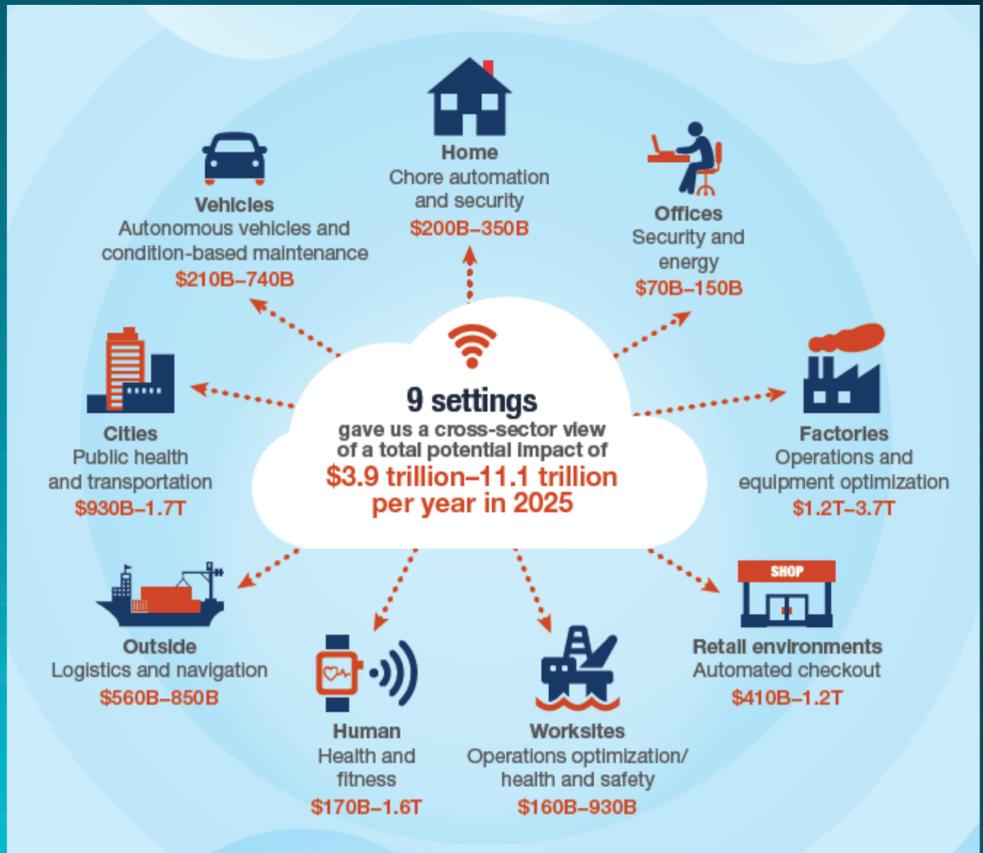
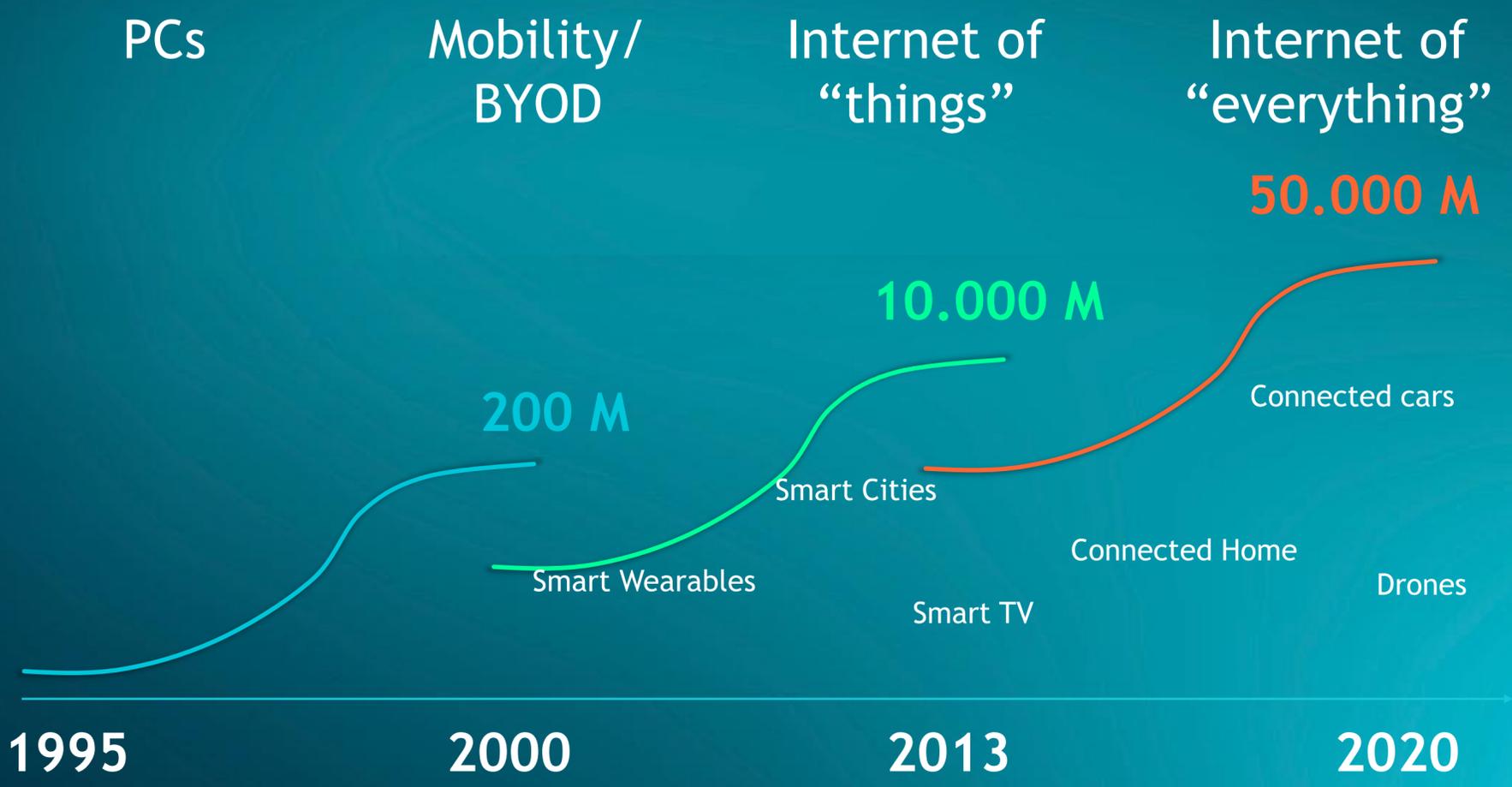


2014
211,3 Terabits/sg



... leading to a hyper globalized era

4. Physical and digital world are merging



McKinsey. THE INTERNET OF THINGS: MAPPING THE VALUE BEYOND THE HYPE. Junio 2015

+ 3D printing
+ Machine Learning & AI

Source: CISCO "Internet of everything"

The digital economy will intensify with Industrial internet: An opportunity to boost productivity and competitiveness

Industrial Internet

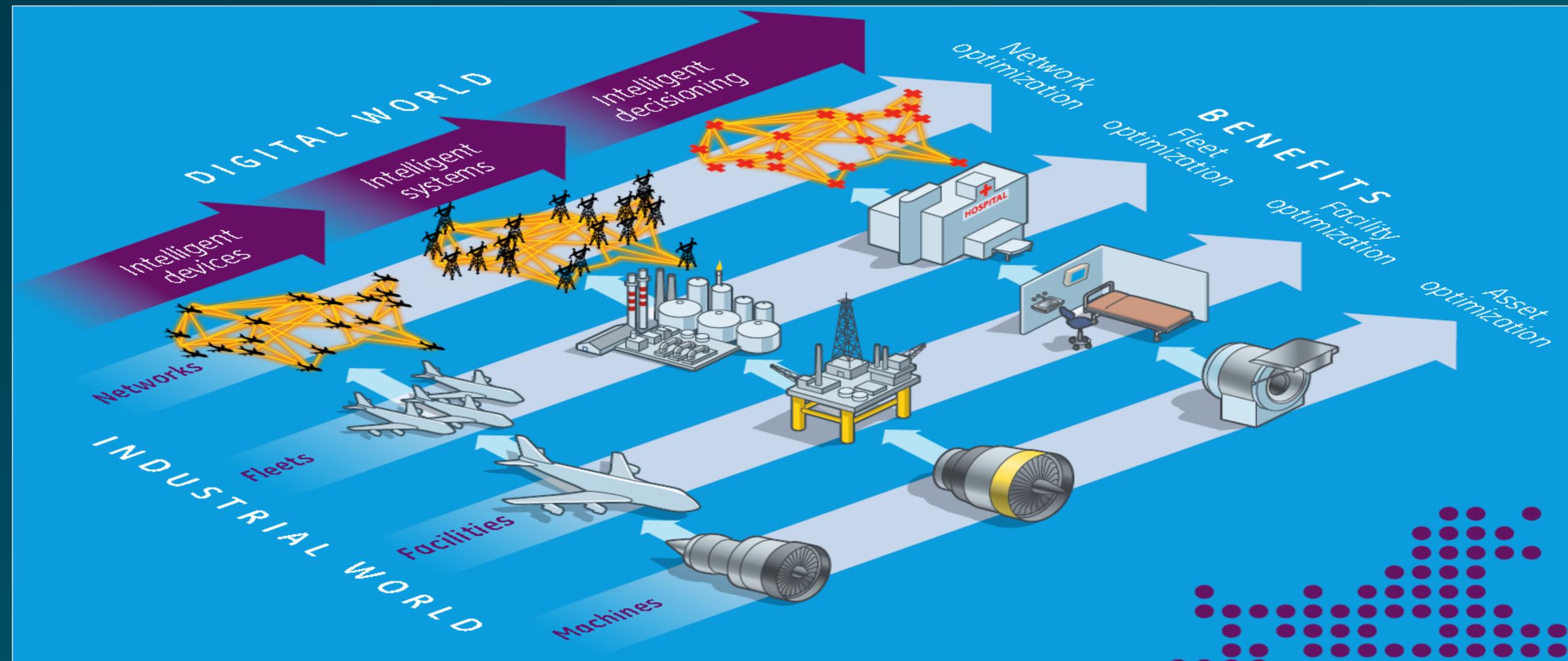
Convergence between industries, advanced **computing** power, **data** analysis, **low-cost sensors** and **connectivity** ...

... capturing and analysing **large volumes of information** from the machines to transform it into predictive analysis ...

...improving the **efficiency** and performance of the industries and redefining **business models**.

15 Tn \$

Estimated contribution of the Industrial Internet to the Global GDP in the next 20 years



Data economy grows in the context of the Digital Challenge

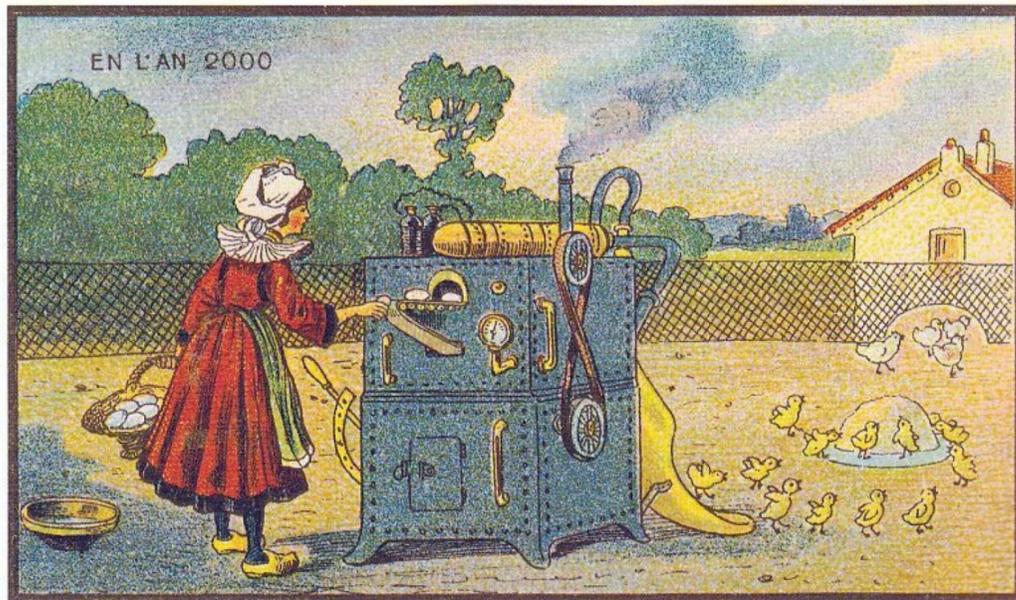
The Challenge

Digital Economy is Economy itself

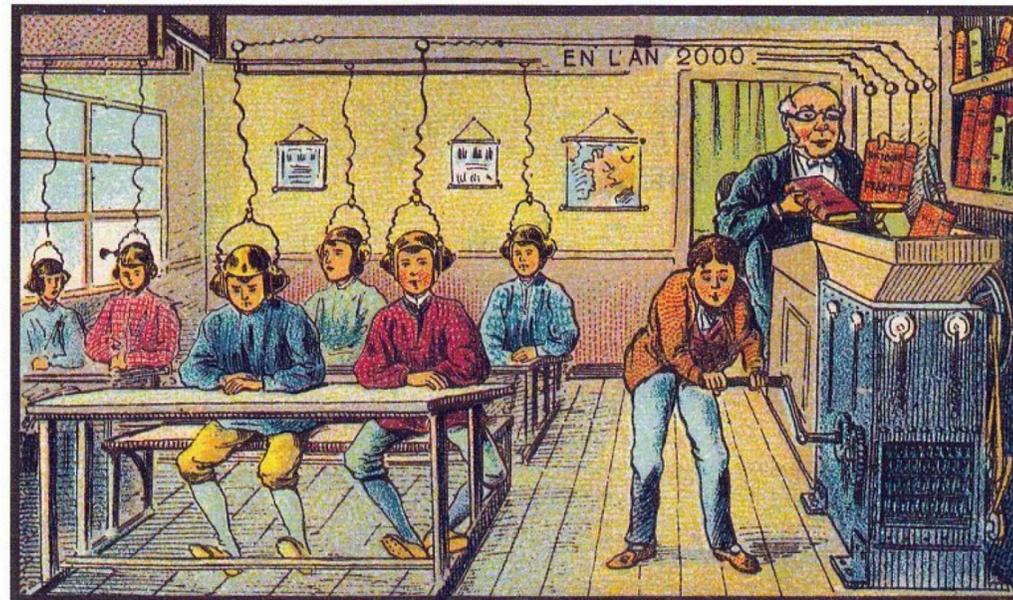
Digital Life is Life itself

The rules of the game

... even if changes are not all as we may predict!



Intensive Breeding

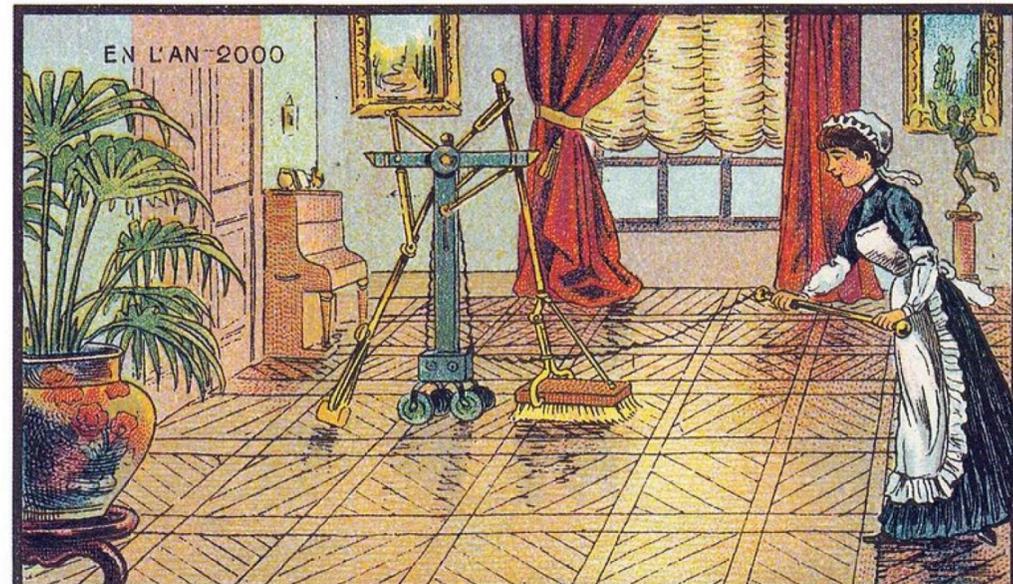


At School

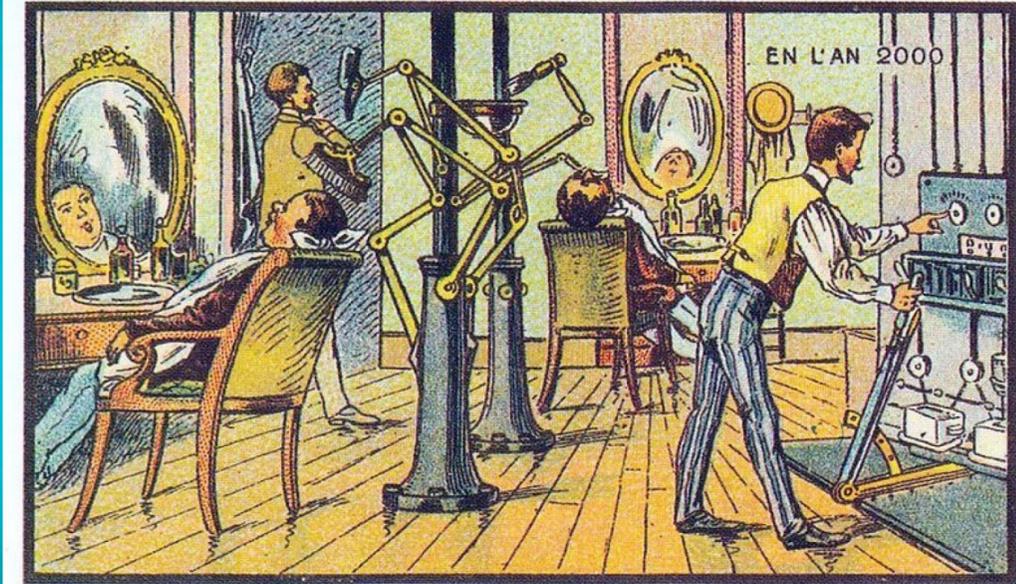
.... "we didn't just automate the processes of 1900, we also reengineered the ways we were solving those problems, and our society adjusted accordingly"



The Rural Postman



Electric Scrubbing

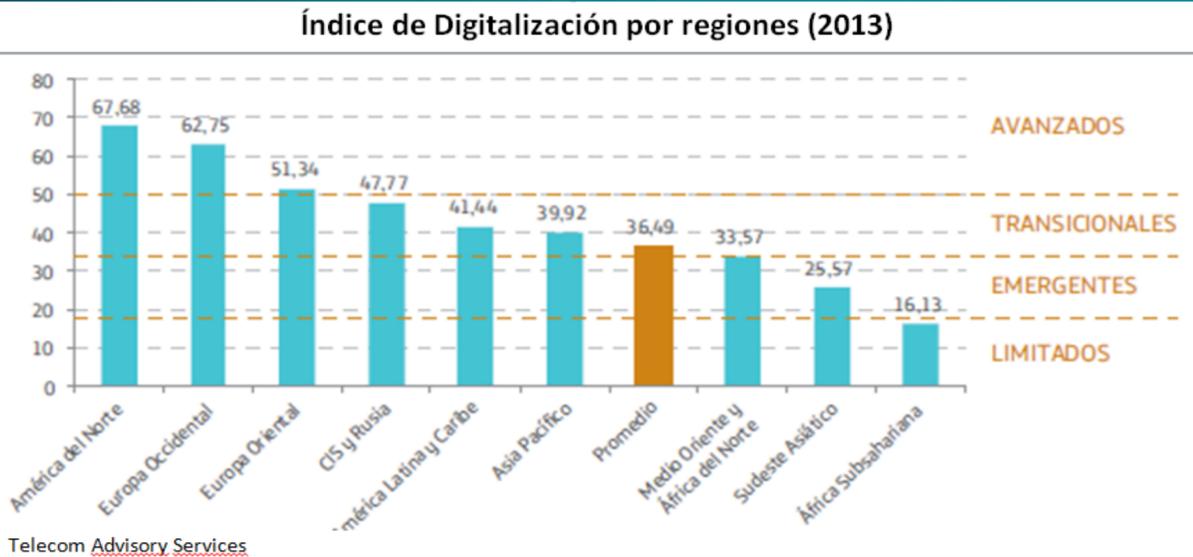


The New-Fangled Barber

"France in the Year 2000" Paintings, made by Jean-Marc Côté in the 1900

Challenges of the Digital Transformation

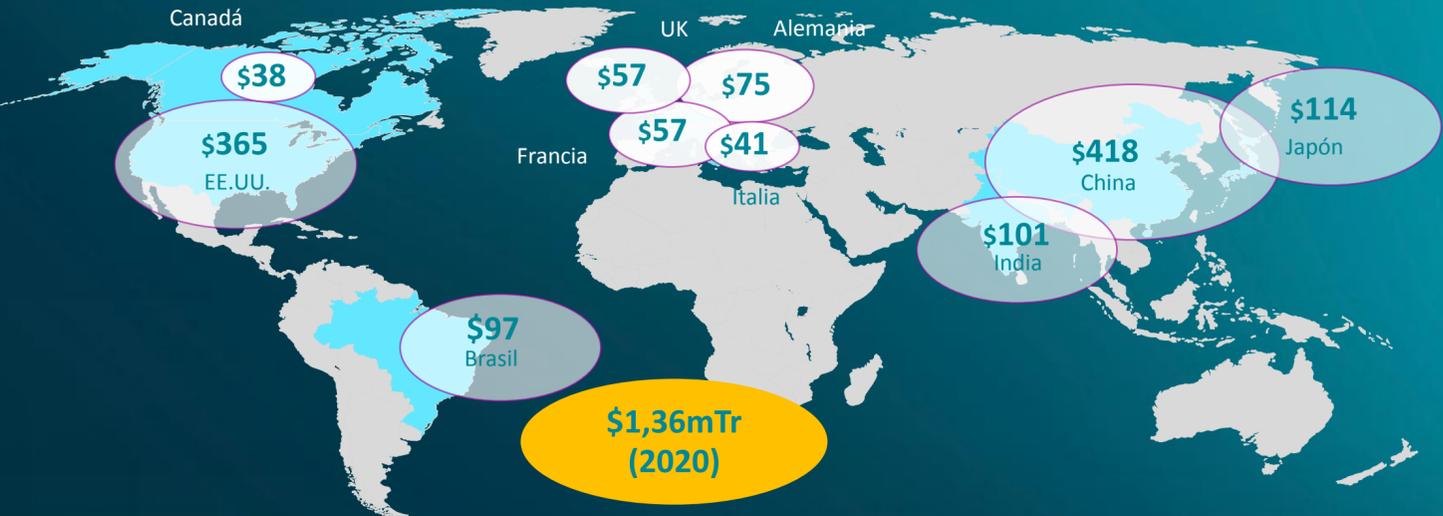
The 21st century rich countries will be those able to address the challenge of digitization



Promoting the digital economy is key to ...

- Boost **productivity, competitiveness and growth** (4.3% of GDP between 2005 and 2013)
- Foster **innovation** (+ 5pp digitization increases + 17pp the innovation index)
- Develop **employment** (+ 10% in digitization generates a 0.72% reduction in the unemployment rate)
- Improve **well-being and development levels**

GDP increase in a scenario where the Digital Density is improved by 10 points



Source. Katz. Informe al Consejo Iberoamericano de la Productividad y la Competitividad

It is not a technological challenge

Telefónica basado en Accenture Strategy "Digital Density Index" (2015).

The rise of innovative business models transforms market dynamics

 Transport	
 Hospitality	
 Finance	
 Commerce	
 Comms	
 Media	

New marketing & Internationalization models

Tens of millions of SMEs become exporters. 12% of global goods by e-commerce



New competitive models

Small companies grow and compete with multinationals



Rapid innovation expansion

European Start-up tech companies with international activities

86%

(NON EXHAUSTIVE)

... in the era of digital disruption

Digitization is linked to globalization, bringing consequences and driving challenges to labour market

1

Is Neo-Luddism justified?

2

Digital training essential not to miss the boat: Education as a priority to develop human capital

3

It is vital identifying excluded people by the digitization process: it is not the young people, although the figures may deceive

Failure to do so has serious political consequences (populism)

The Future of Jobs

The Fourth Industrial Revolution is interacting with other socio-economic and demographic factors to create a perfect storm of business model change in all industries, resulting in major disruptions to labour markets. New categories of jobs will emerge, partly or wholly displacing others. The skill sets required in both old and new occupations will change in most industries and transform how and where people work. It may also affect female and male workers differently and transform the dynamics of the industry gender gap.

WORLD
ECONOMIC
FORUM

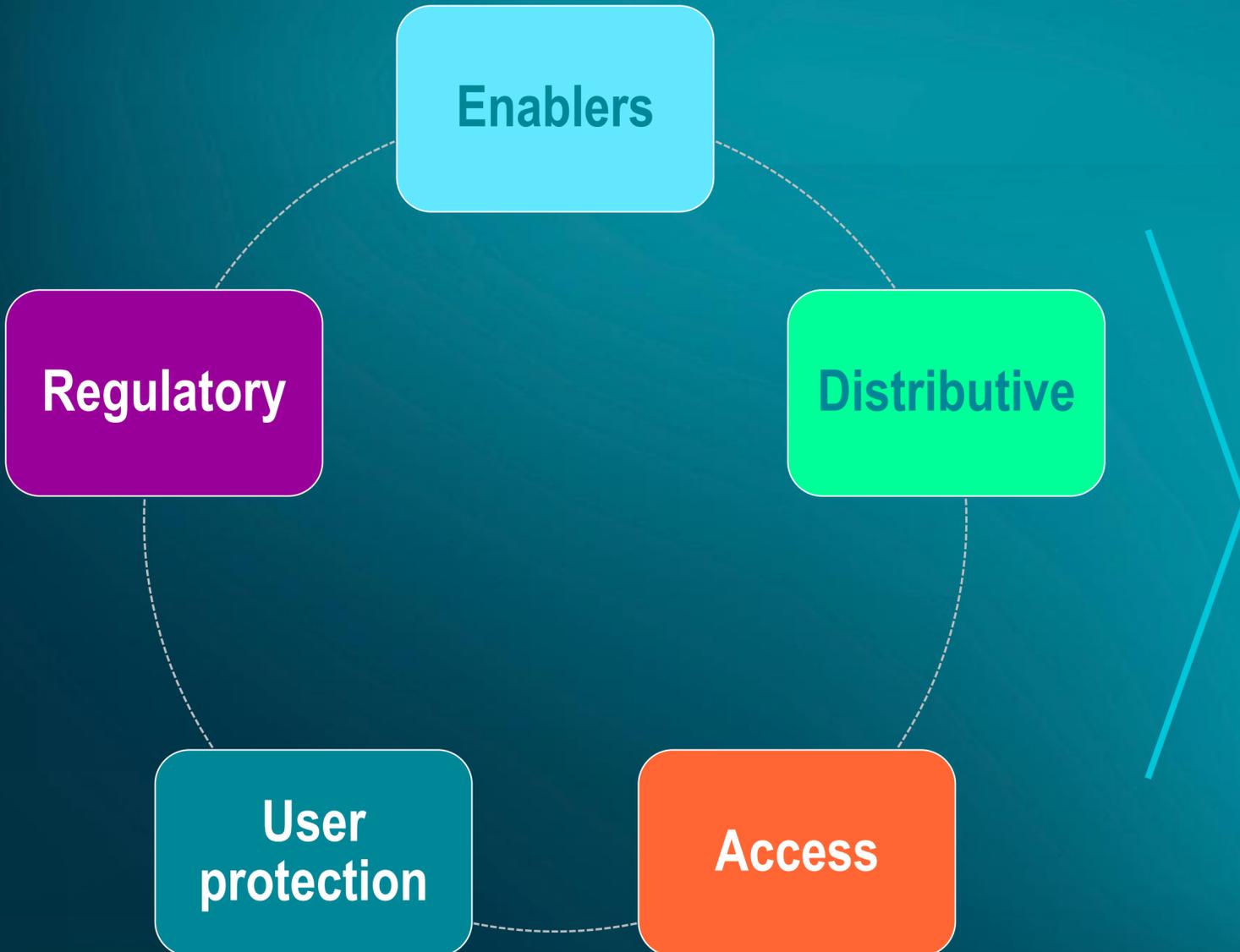
Why taxing robots is not a good idea

Bill Gates's proposal is revealing about the challenge automation poses



- The digitalization of the industry will mean the **disappearance of 5 million jobs worldwide** by 2020 (due to the impact of technologies such as the Internet of Things, 3D printing, artificial intelligence or robotics), and the **creation of 2 , 1 million new jobs**.
- **8 out of 10 young people between the ages of 20 and 30 will find employment related to digital field jobs that do not yet exist.** Among the ten most requested professions are Smart Factory engineer, expert in digital innovation, data scientist, expert in user experience or manager of digital risks.

Urgent need to define adequate digital public policies



Public policy for digitization

- 01. Institutional model adaptation
- 02. Digitization of the Government and Public Admin.
- 03. Digitization of companies and productive proc.
- 04. Development of human capital
- 05. Fostering digital innovation
- 06. Tax policy
- 07. Digital extraterritoriality policy
- 08. Digital connectivity policy
- 09. User protection in the digital ecosystem
- 10. Regulatory and competition policy (LPF)

One of the greatest challenges is to drive Digital Confidence ...



Security

- Ensure the same protection in the digital world as in the physical world.
- Return to users control of their information.

Privacy

- Ensuring the security of the data is essential to foster the data economy.

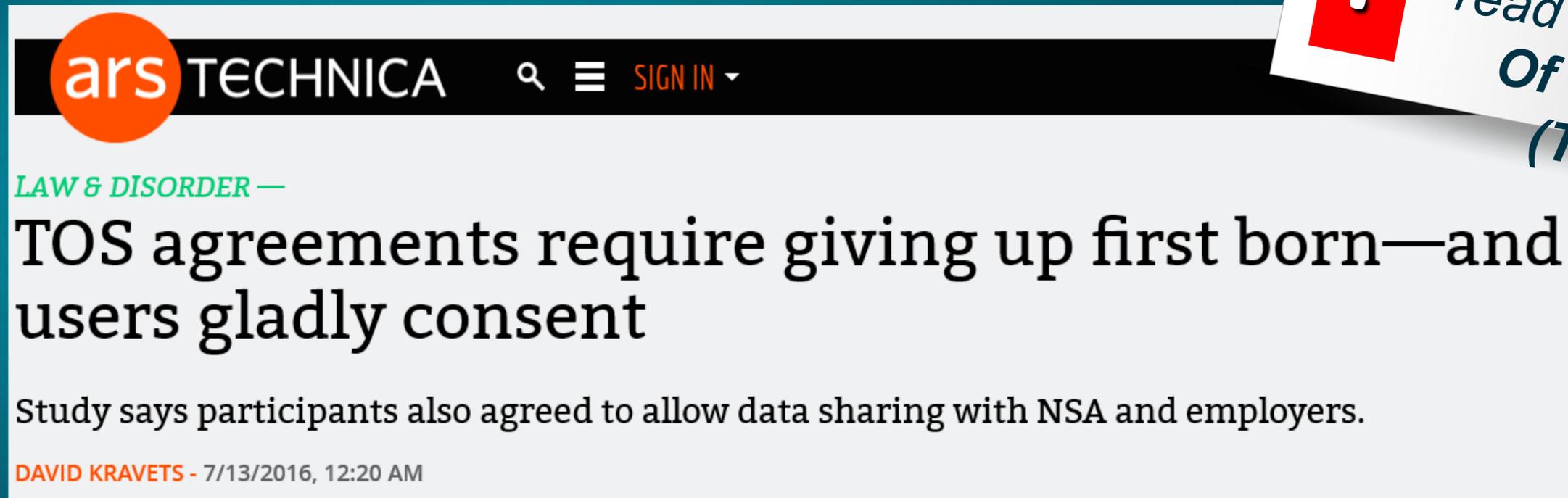
Empowerment

- We are committed to give back to the customers the freedom, confidence, and control of their data

4th
Platform

... and Transparency

 Does anybody read the Terms Of Service (TOS)?



ars TECHNICA   SIGN IN ▾

LAW & DISORDER —

TOS agreements require giving up first born—and users gladly consent

Study says participants also agreed to allow data sharing with NSA and employers.

DAVID KRAVETS - 7/13/2016, 12:20 AM

 ... of university students⁽¹⁾, didn't bother the TOS before signing up for a fake social networking site

 They agree to provide their first-born child as payment for the service

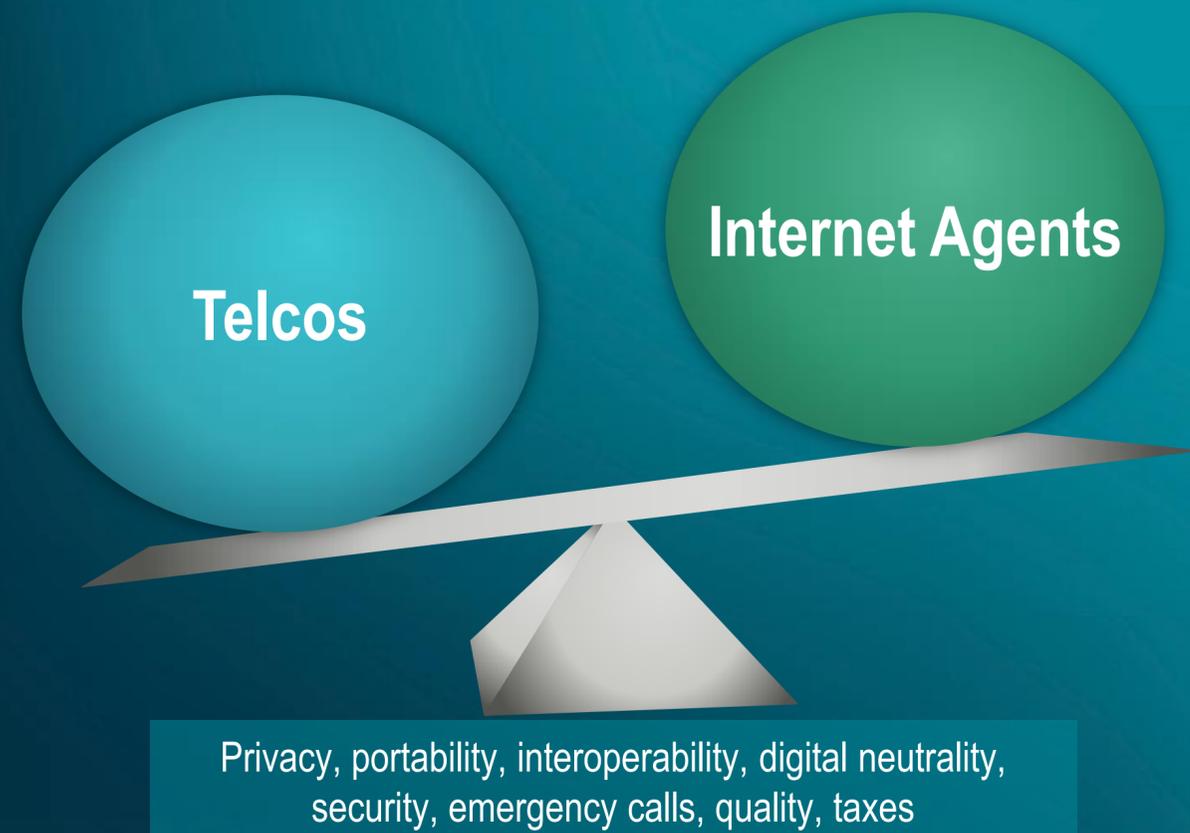
 The terms of service was 4,316 words (10 pages)

 ... minutes is the average adult TOS reading time⁽²⁾

(1) 543 University students involved in the study.

(2) For readers, average TOS reading time was 51 seconds. The average adult reading speed is 250-280 words per minute (TOS should have taken 16 minutes).

Protection of consumers, regulatory and competition policy: towards a level playing field



Same services same rules

Same services same protection

Same services same rights

Same services same taxes

In this context, what is the state of digitalisation in Spain?

Spain must be analyzed in the European context: Europe has to face its weaknesses in the digital ecosystem



What is Europe trying to do?

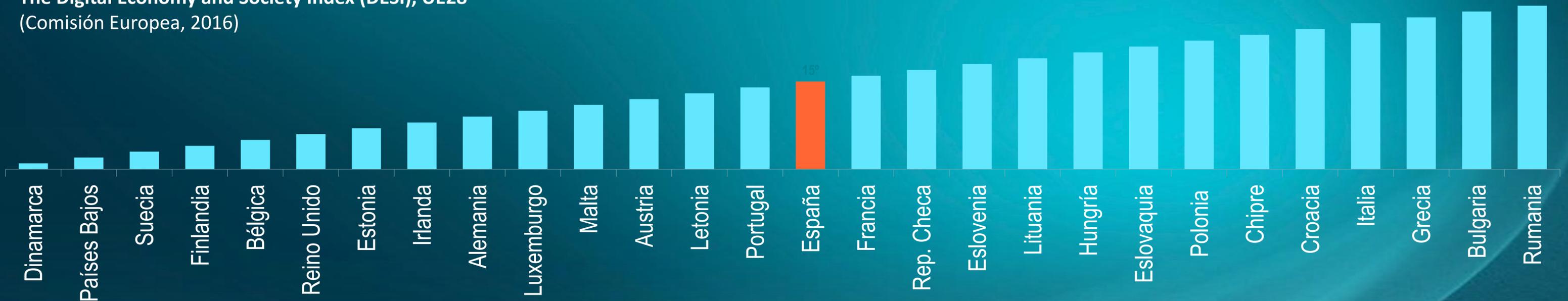


Spain ranks 35th in the global digital ranking and 15º in the EU28, despite being the 14th overall economy

Network Readiness Index
(WEF, 2016)

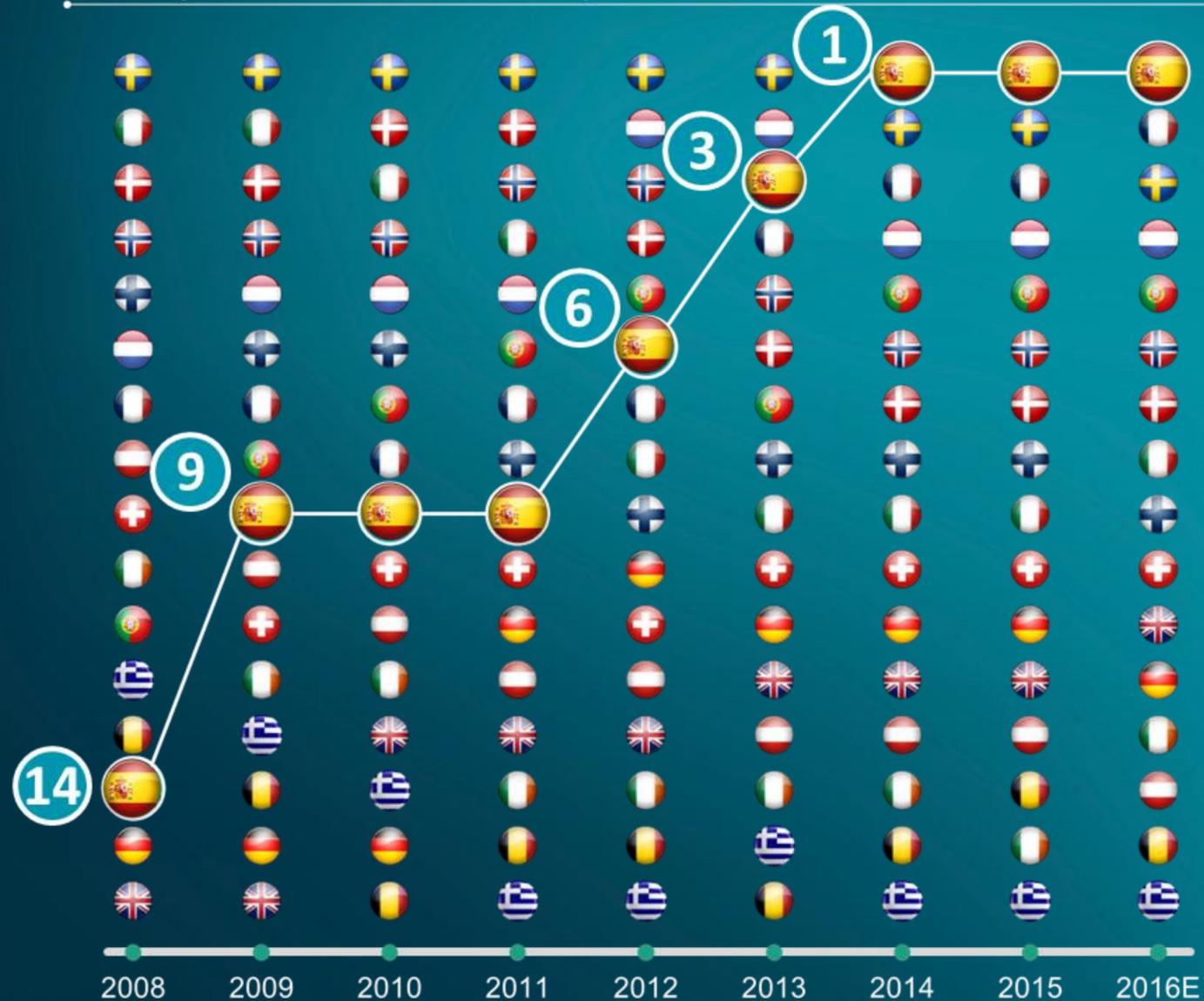


The Digital Economy and Society Index (DESI), UE28
(Comisión Europea, 2016)



But Spain is a worldwide reference in fibre deployment...

Suscripciones de fibra en Europa



Fuente: Analysys Mason & IDATE

In the worst years of economic crisis in Spain, we have managed to lead the deployment of ultrafast fibre in Europe.



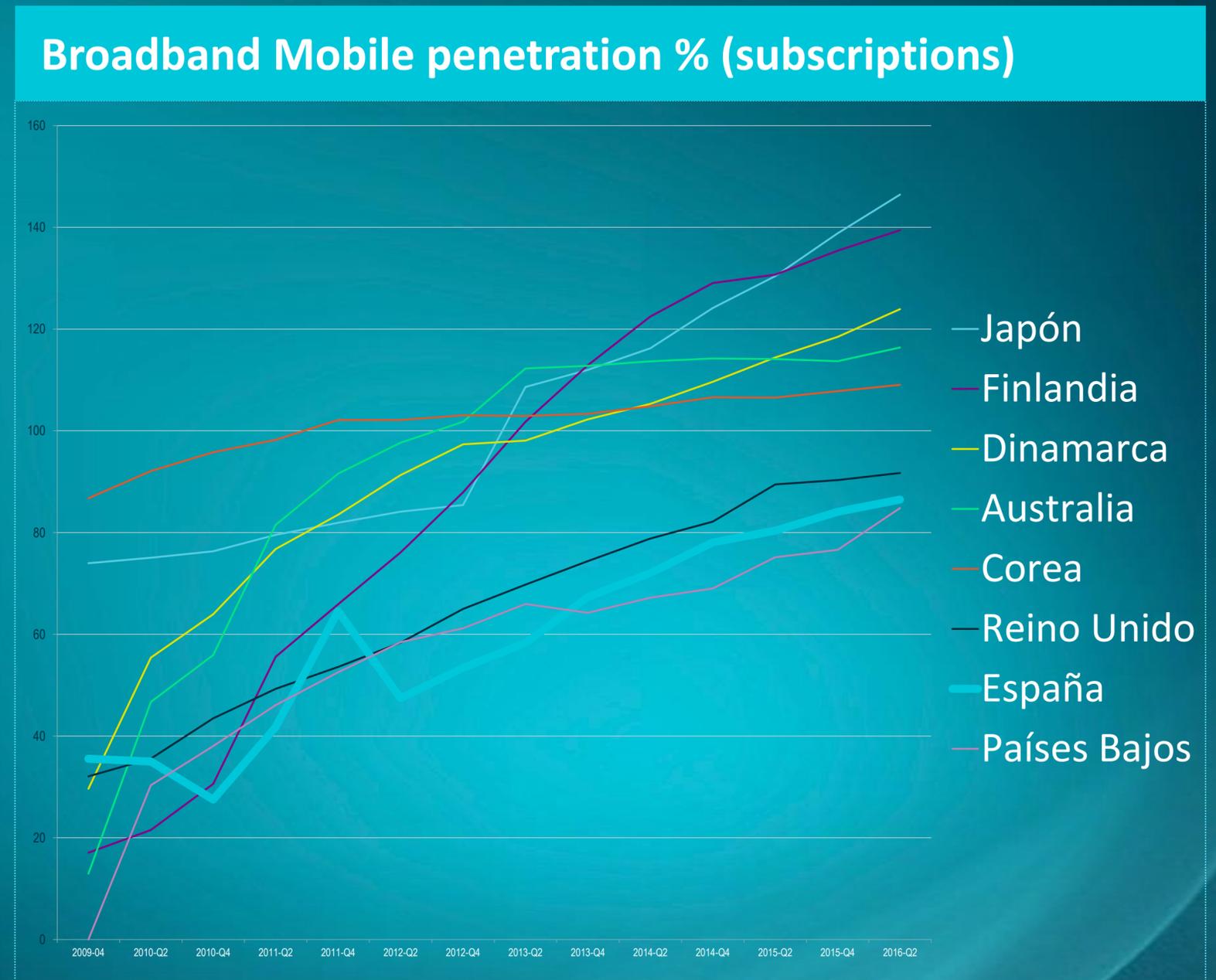
17,5 M > France + Italy + Germany + UK

Top 5 countries EU with > 1 M customers



... and Spain is among the leading countries in smartphones and mobile broadband penetration

European leading markets (2016)	Mobile penetration (% population)	Penetración Smartphone (% móviles)
 España	106,2%	87,2%
 Suiza	148,9%	75,2%
 Austria	159,0%	74,2%
 Reino Unido	118,6%	73,6%
 Francia	102,0%	71,5%
 Noruega	98,2%	71,1%
 Países Bajos	112,9%	70,8%
 Italia	123,0%	68,0%
 Alemania	123,5%	63,5%



This places Spain in a good base position to tackle the digital challenge, but must address the outstanding issues:

Innovation

- Spain lags behind in innovation, especially in the private sector
- Efforts to boost the entrepreneurial ecosystem must be strengthened

Taking advantage of tractor sectors

- Technological sector and key economic sector can drive the digitization of the whole economy

SME

- Boosting innovation and the adoption of digital technologies in SMEs would foster job creation

Financing

- The venture capital market in Spain is still emerging and very concentrated

Education

- The development of digital skills, is critical to undertake the digital transformation



The digitization is a great
opportunity for Spain

Telefónica

