WHAT IS A “DIGITAL TRANSFORMATION”?
HOW DOES IT LOOK LIKE WHEN IT HAPPENS?

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AGENDA

- What is not a Digital Transformation?
- How Digital Transformation is changing the world?
- What is Digital Transformation and how does it look like when it happens?
- Which are the (technological) main agents of change?
- What will be the foreseeable social impact?
- Some basic concepts
- Example of Digital Transformation.
What is not a Digital Transformation?

- The use of IT to improve traditional business processes in organizations...
- Automation of some business functions without a significant change in the business model of a company...
- Traditional implementation of computer applications such as ERP, CRM, ...for improving performance of a company’s business and/ or support some of its core functions ...

**Business Model, Strategy, Value Proposition, remain essentially the same.**
What is a Digital Transformation?
(An Example)

Example: instantaneous creation of new players (WhatsApp)
Target: 100b world SMS segment of Telco Operators
Founded: 2009
Sold to Facebook: 2014
Sale Price: 19b
Market Cap of Vodafone at the same time: 100b
Number of workers: 55 (Vodafone 100.000)
Value destroyed for telco oprs: aprox 20b
What is a Digital Transformation?

**Business Model and Organizational Change through the use of Digital Technologies**

The use of IT such that the way a given company does business actually changes and so does its internal organization...

**Or Complete Disruption of a complete Industry sector caused by new emerging players**

Once disrupted, such industries can no longer be the same even if the initial disruptor ends up failing in the market...

New disruptors may turn global in such a small amount of time that the overall power distribution in one or several industries can be completely altered...

Think of new media companies, self-driven cars, think of digital personalized advertising, retail...as examples...

**EXAMPLES**

- Complete disruption of the Media and Entertainment markets...
- New disruptive players in Retail...
- (Very) personalized advertising...Michal Kosinsky
- Self-Driving cars...
How Digital Transformation is changing the World?

Exhibit A:
The emergence of new digital players stronger than most countries;

GDP Vs Revenues
Economic Output (GDP Revenues)

2017 figures
Perceptions...
(Not what your output is but rather how you are seen)
Perceptions (Superpowers vs SuperCorporations)

Do we miss anyone here?

Perception (Market cap Vs GDP, 2017)
How Digital Transformation is changing the World?

Exhibit B: Most Valuable Companies and Most Valuable Brands;
How Digital Transformation is changing the World?

**Most valuable companies and brands**

**Digital Players** occupy 5 positions among the 10 more valuable listed companies (the world’s most valuable public companies, Forbes, 2017) … 7 in 2018 including 2 Chinese!

**Digital Brands** occupy 6 positions among 10 (the world’s most valuable brands, Forbes), including the first 4 positions in that ranking. (Apple, Google, Microsoft, Facebook, Amazon e Samsung)…Same in 2018.

None of them existed, except Samsung, before the digital revolution, but even Samsung had a complete change in portfolio.
How Digital Transformation is changing the World?

Exhibit C: National Communities Vs Digital Communities
Communities - Country perspective
Communities - Today (with digital transformation)
How Digital Transformation is changing the World?

Exhibit D: Techplomacy
How Digital Transformation is changing the World?

**Techplomacy (Ex. Denmark)**

Countries are discovering new power players on the planet; Denmark appointed in 2017 the first ambassador for the Tech Companies; Casper Klynge was the former ambassador to Indonesia; Digital Global Players seen as more important to Denmark than most countries; The role of the new ambassador: techplomacy - to lobby the digital players to invest in Denmark; to prepare legislation and regulation for the arrival of new digital players; to understand how the world is changing and challenge the government;
How Digital Transformation is changing the World?

Exhibit E: Star-Industries no longer let by Governments
Star-Industries like Space Exploration no longer led by Governments

- Spacex (Elon Musk) using new paradigms (reusable rocket boosters...) selling services to NASA and creating a new vision for Mars exploration...

- Blue Origin (Jeff Bezos) proposing new paradigms for private human access to space...
The speed of change ...
The scale...
The chaos...

New players ...
Incumbents responding, their businesses changing ...
Power shifting among regions ...

What does it look like when facing a Digital Transformation?
Have we seen this before? Technology as an agent of change...1894

The Great Horse Manure Crises of 1894
City Transports completely relying on Horse Power
- 50,000 Horses in London, 100,000 in NY
- 2.5m Pounds of manure/day in NY alone
- Urine and putrifying horse bodies lying in streets
Projected in 50y London streets would lie 9 feet under horse manure
First World City Planning Conference (NY 1894) ending with no solution;
But Technology provided a solution much earlier...

Henry Ford’s came up with his Ford Model T (1908) and the invention of a solution to produce motor cars at affordable prices (moving assembly line);

By late 1910’s (only 15 years after), this seemingly insurmountable problem had been resolved; in cities all around the globe, horses were being replaced and now motorised vehicles were the main source of transport and carriage;

Workers were also given increased salaries and stable jobs...
What’s new with Digital Technology?

The exponential growth of computer power and storage capacity

- The invention of the computer Chip (1958)
- Moore’s law
  - The number of transistors one can store in a given physical space will double every 2 years;
  - Remains valid after 60 consecutive years;
  - No industry has yet benefited from such an exponential growth during a longer period of time;
The exponential growth of computer power and storage capacity
A one GIGAFLOP computer did not exist in the 60’s
The supercomputer CRAY in 1984 was priced the same as a private jet;
Such a computer would cost the price of a good sports car in 1997;
In 2013 such a powerful computer existed in many homes (it’s called Playstation 4);
The new (Technological) Agents of Change... for Digital Transformation?

- Mobile Technologies, devices and applications, platforms, ecosystems...
- Social Networks,
- IoT (sensors, connectivity M2M),
- Cloud/edge computing,
- Blockchain, digital currencies,
- Big Data/Analytics,
- AI/Robotics,
- Agile Development,
  ...

The new (Technological) Agents of Change... for Digital Transformation?
Lets look a little bit closer to some of these disruptor technologies...

- AI/ Machine Learning/ Robotics, Knowledge Representation ->>> Machines that learn
- IoT (sensors, connectivity M2M) ->>> More devices than humans...
- Blockchain, digital currencies ->>> The end of the trusted partner...
World Bank Employment Data (last 25 years only...)

Percentage of employment in Agriculture down from 7.1% to 3.2% in the Eurozone, from 11.5% to 8% in Portugal, and from 2.9% to 1.5% in the US.

Percentage of employment in Industry down from 34.4% to 23.5% in the Eurozone, from 33.6% to 23.8% in Portugal, and from 25.1% to 17.2% in the US.

Percentage of employment in Services, up from 58.6% to 73.3% in the Eurozone, from 54.9% to 68.2% in Portugal, and from 72% to an impressive 81.3% in the US.

And after this migration to services where will employment go? From transactions to emotions?
And now my own 5 seconds of advertising...