

Observatoire des futurs
EM Strasbourg

Support Policies

Prospective Study

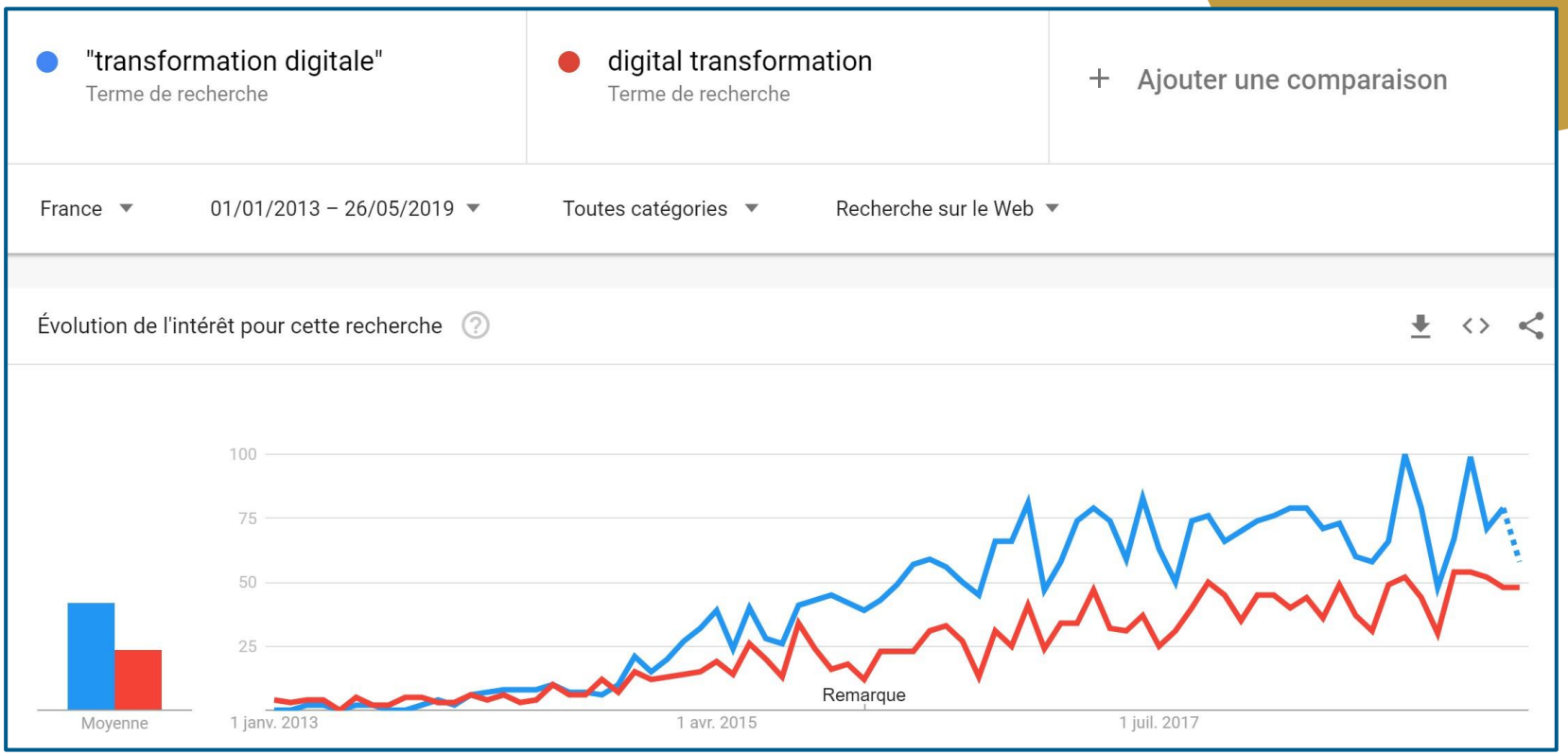
EM Strasbourg BUSINESS SCHOOL
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Policies to Support Digital Transformation

1. Definition and Relationships with Other Factors

General Definition

- According to Ducrey and Vivier (2017, pp. 42–43), digital transformation refers to "*an ambitious, long-term vision, supported by top management and substantial human and financial resources, to develop digital capabilities within an organization.*" This digital transformation is based on **six key areas:** leadership, culture and organization, technology, data management, marketing and customer experience, and performance measurement.
- Matt et al. (2015) propose a digital transformation model based on **four pillars**: the use of technology, changes in value creation, structural changes, and financial investments.
- The goal of digital transformation is **to leverage digital technologies to improve** an organization's **productivity** and innovation and to reduce production costs.



Other terms have been used in the past to describe this digital shift, ***namely the digital transition and the digitization of the economy.***

General Definition

- Since the onset of the digital transformation, the **French government has sought to support digital initiatives** and help businesses drive or accelerate their digital transformation through various funding programs and support policies.
- This government commitment to supporting the digital transformation of the economy (and the state) is also reflected **in the appointement of ministers responsible for digital affairso**



Connection to Uberization and Industry 2030

Key Questions for the Future

- **Funding mechanisms and stakeholders?** What investments, and over what time frame? What are the projections for support policies?
- **What support (from whom , how, and with what resources) is available for digital education** and training, as well as for the digital transformation of the workplace?
- **What regulatory and social developments are related to the promotion and dissemination of digital technology** : internet governance, digital content and uses, and the security of communications, networks, and information systems?
- **What trade - offs are involved in support policies to ensure fundamental rights and freedoms in the digital world**, technological ethics, inclusion, accessibility, and digital mediation?

2. Summary of the Retrospective Analysis

Retrospective

In General and for Uberization and Industry 2030

History of initiatives designed to help businesses achieve their digital transformation:

- **2012–**Digital Transition Program: a government program aimed at training businesses in the professional use of digital technology.
- **2013–**BPI France offers a “digital loan” to accelerate business growth and competitiveness. The funding package totals €300 million in the form of subsidized loans.
- **2013–**First plan, titled “Factory of the Future.”
- **2015–“**Industry of the Future” Plan (implemented by the Alliance for the Revitalization of French Industry):
  - Creation of a common audit framework for factory modernization
  - Objective: to develop French production technologies that are globally competitive

Current Trends

In General and for Uberization and Industry 2030

Recent initiatives:

- **2018–2022–**The Major Investment Plan (€57 billion) to address four major challenges facing France: carbon neutrality, access to employment, competitiveness through innovation, and the digital government (€9 billion).
- **July 11, 2018–**Creation of the National Council for Digital Industry (CNI) to steer the digital transformation of this sector
- **September 20, 2018–**Government action plan to support the digital transformation of industry:
  - A 40 percent tax depreciation allowance on investments limited to robotics and digital transformation (3D printers, production management software, connected sensors, etc.) for purchases made between January 1, 2019–December 31, 2020. This benefit will be reserved for SMEs.
  - Budget of €500 million

Current Trends

In General and for Uberization and Industry 2030

Investment for the Future Program (PIA):

- "Six national priorities have thus been identified to enable France to increase its growth and job potential
- higher education, research, and training,
- the commercialization of research and its transfer to the business sector,
- sustainable development,
- industry and small and medium-sized enterprises,
- **the digital economy -> PIA Numérique,**
- health and biotechnology."

Source: BPI France

> Innovation-Growth Competition: co-financing of research, development, and innovation projects with total costs ranging from €600,000–€5,000,000, and support for the development and market launch of innovative solutions and technologies.

Current Trends

In General and for Uberization and Industry 2030

Some initiatives currently in place (regional funding to help small and micro-enterprises achieve their digital transformation)

- **The "Ambition PME" grant** in Auvergne-Rhône-Alpes;
- **The "Digital Voucher"** in Pays de la Loire and Midi-Pyrénées;
- **The "Digital Transformation Voucher"** supported by the ERDF in Nouvelle-Aquitaine ;
- **The "TP'UP" grant** in Île-de-France;
- **The "Pays de la Loire Digital Investment" grant.**

Current Trends

In General and for Uberization and Industry 2030

Some initiatives implemented in the Grand Est region

- **European programs in Alsace are funded by the ESF, ERDF, and EAFRD**. The ERDF program comprises two components: “Improve access to, use of, and quality of information and communication technologies” and “Support the competitiveness of small and medium-sized enterprises.” The first component therefore supports the digital transformation of businesses.

- **Creation of a regional innovation agency > Grand E-nov** (contact point for the European network)
  - Range of services, including specialized support related to “digital transformation and the industry of the future”.
  - Funding opportunities to carry out creative and digital projects: example of the eighth edition of the Tango&Scan call for proposals (€346,000 in funding in 2019).

Current Trends

In General and for Uberization and Industry 2030

Support mechanisms organized in networks with specific associations

- Example of the EEN Network: Enterprise Europe Network > support for European SMEs in their development, particularly in the areas **of innovation and internationalization.**

Elsewhere... A few examples of initiatives

In **Germany:**

- The government's "Industrie 4.0" plan, launched in 2012, aims to make factories smart through emerging technologies and the Internet (e.g., the use of connected devices, robotics, and artificial intelligence).
- Establishment of 19 centers of excellence (for companies in each state) focused on the "Industry of the Future" to bring together various stakeholders: universities (e.g., Aachen); research centers, the "Fraunhofer" institutes; certain major manufacturers (such as Bayer) or technology providers (SAP, for example), to understand and test the new technologies.
- **In Singapore**, creation of a government-funded training plant.

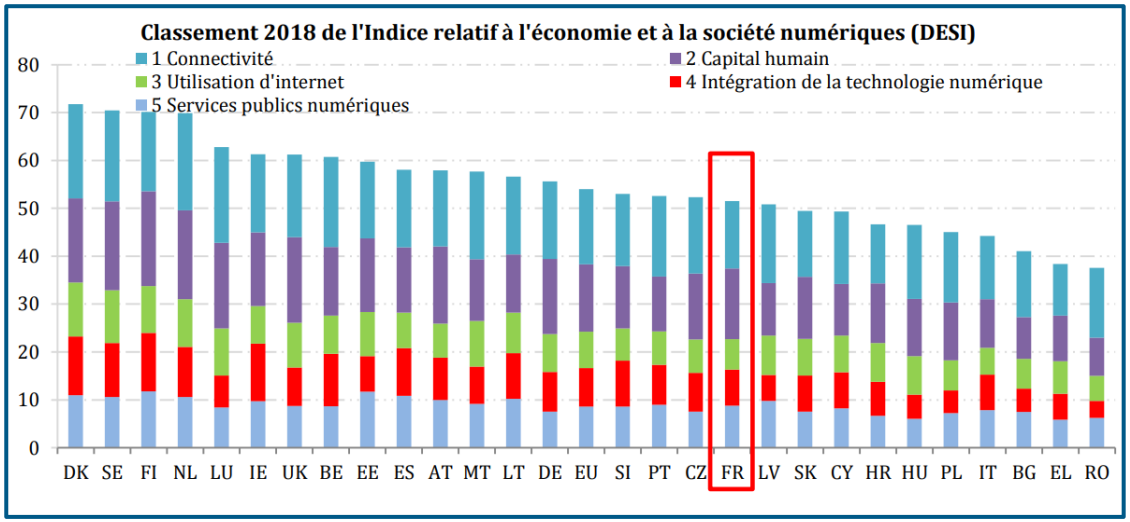
Current Trends on Courses

In General and for Uberization and Industry 2030

Elsewhere… a few examples of initiatives

- In the United States: centers of excellence by industrial sector that receive substantial public grants and are often led by major universities > to identify, test, and demonstrate practical solutions to the challenges facing that sector. Example: DMDII (Digital Manufacturing and Design Innovation Institute), located in Chicago.

Progress made by member states regarding their digital transformation (source: DESI Report): France ranks 19th.



3. Summary of Prospective Exploration

Major Trends / Constants

- **Digital transformation is a driver of growth** for the French economy.
- The number of companies that have implemented a **digital transformation program continues to grow.**
- **Support from European programs** for the formalization and development of digital skills.
- **Government involvement** to support digital transformation and coordinate stakeholders: for example, **[France Num],** a new initiative to assist microbusinesses and SMEs with digital transformation.

Uncertainties

- **Political uncertainty:** Changes in government are likely to lead to shifts in policy priorities (whether in France or in Europe). The recent Brexit also illustrates the potential divisions that can arise in Europe and undermine European policies (e.g., the digital single market).

- **Economic uncertainty:** It is difficult to assess how far France will have progressed in terms of digital transformation 15–20 years from now. It is also unclear how many companies will take advantage of all these support measures and policies. For example, following the “Factory of the Future” plan launched in 2013, the expected results failed to materialize a year later. In fact, by the end of 2014, fewer than a thousand companies had taken the plunge, whereas the government plan had projected approximately twice that number (Source: Le Nouvel Economiste).

- **French industry is falling behind:** it is lagging in the modernization of its factories. The Institut Montaigne report notes that the situation facing French industry is cause for concern, both due to the job losses it has suffered over the past 25 years (1.4 million jobs eliminated) and the decline in its share of GDP (a 20 percent drop over 15 years).

Seeds of Change

Acceleration centers as a tool for rolling out the industry of the future in France. Created at the initiative of a major industrial group to address the development challenges faced by small and medium-sized enterprises (SMEs) and mid-sized companies in its sector (Institut Montaigne).



Source : Institut Montaigne

Controversies

- **The gap is widening between large companies**, which are investing heavily in digital transformation, and small and **medium-sized enterprises (SMEs)**, which are more reluctant to do so.
- **The gap between France and other countries** (in Europe and internationally) **is widening.**
- **Asia is catching up very quickly to Europe in terms of digitalization**– but what about the investment capacity of European companies? Will they be willing to make the "efforts" necessary for their digital transformation?
- Data from the Acsel Barometer indicates that **"the relatively low level of digitization among French companies accounts for only a small share of value added** (6% of GDP in France compared with 10% in the United Kingdom, for example)." (Poligne 2019)

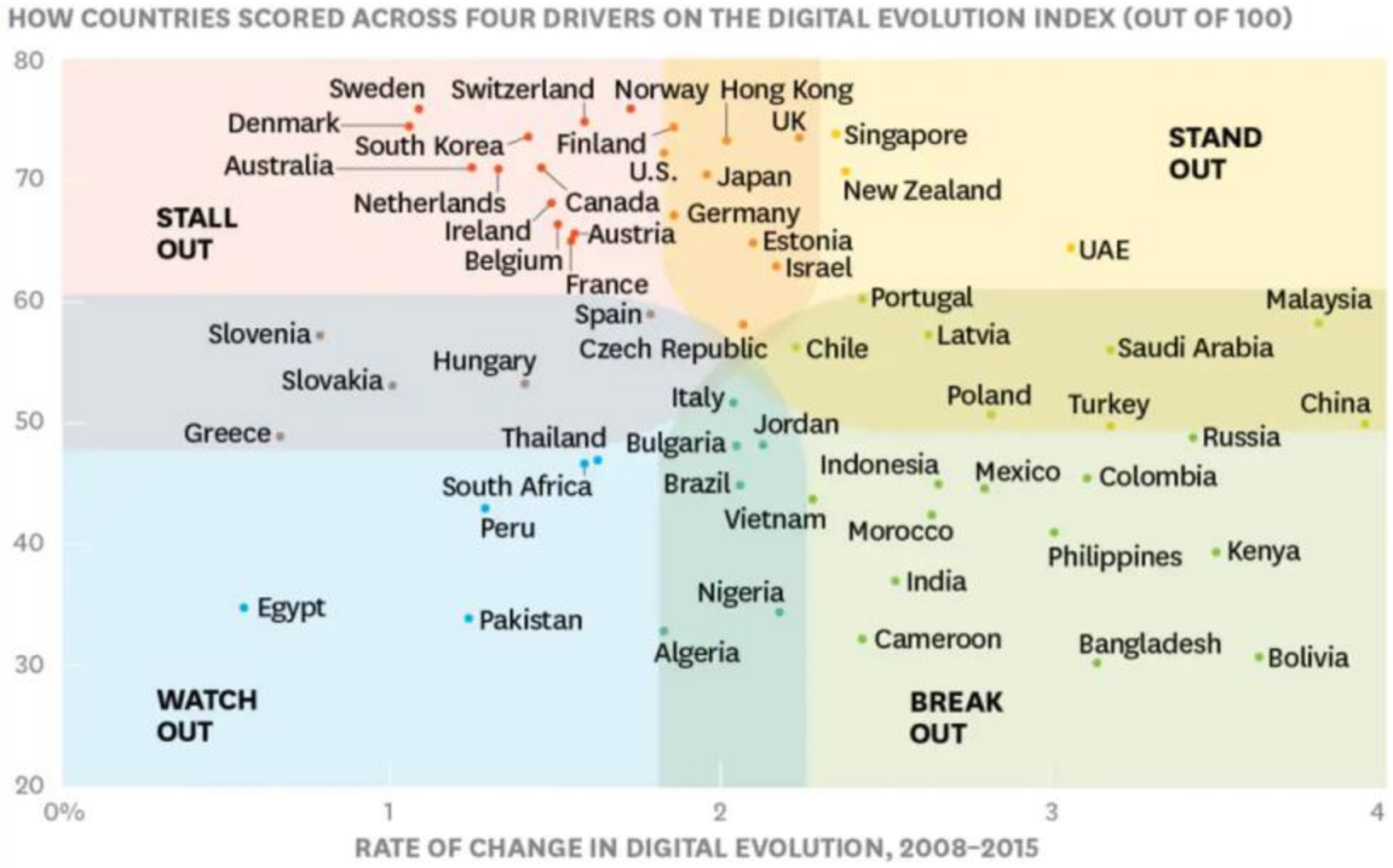
Disruptions

- **Changes in public aid, questioning of the public incentive model.**
- **Inertia / inability / paralysis among stakeholders to mobilize support for transformation:** evolution of corporate culture, “digitizing thought”
- **Digital leadership?**
- **Asia: lack of AI expertise;** barriers to innovation stemming from restrictions on the free flow of ideas and information imposed by the Chinese government
- **United States: slowing pace of investment and innovation.**

Source: Study published with the matrix Pays : Niveau de développement numérique / le rythme de l'investissement et de l'innovation

Plotting the Digital Evolution Index, 2017

Where the digital economy is moving the fastest, and where it's in trouble.



SOURCE DIGITAL EVOLUTION INDEX 2017, THE FLETCHER SCHOOL AT TUFTS UNIVERSITY AND MASTERCARD

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Comparing 60 countries' digital economies. Harvard Business Review, used and reproducible by permission, CC BY-ND

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