

4. ITRE Introduction

4. Committee on Industry, Research and Energy (ITRE)

The question of innovation, industrial automation, and digitization:

In times of increasing technological developments, the necessity of innovation has become an essential component of industrialized economic systems to increase international competitiveness and foster economic growth. Innovation offers numerous advantages to society; simultaneously, digitization and automation offer opportunities but also pose a threat to the economy. Which measures can be taken by the European Union to expand its role in the global market of innovation and technological breakthrough? How can this strive for innovation meet the changing demands on the labour market?

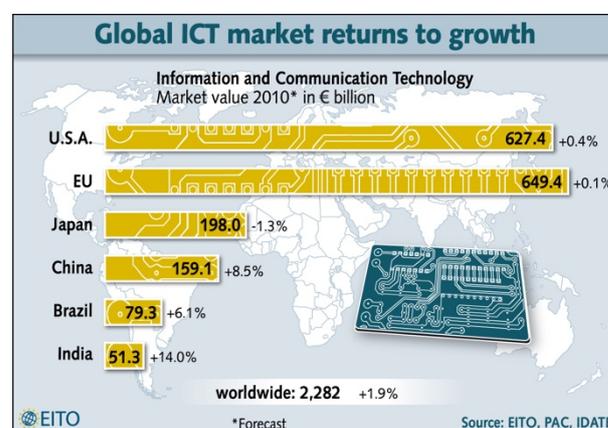
Digital technologies are central to Europe's economic growth. While 250 million Europeans use the internet daily, 18% have never used it at all. The digital economy is growing 7 times as fast as the rest of the economy. Much of this growth has been strengthened by broadband internet. Today's high-speed broadband networks are having just as great an impact as electricity and transport networks a century ago. They are also paving the way for innovative services such as E-Health, smart cities and data-driven manufacturing.

The European Commission is encouraging the spread of high-speed broadband through:

- new cost reduction rules
- a Recommendation on Next Generation Access-Networks
- revised state aid guidelines for broadband

As part of the digital single market strategy, the Commission will also overhaul EU telecoms rules to create incentives for investment in high-speed connectivity.

The information and communication technology (ICT) sector represents nearly 5% of the EU economy and generates a quarter of total business expenditure. Investments in ICT account for half of all European productivity growth. The information and Communication Technology Market value is the highest in the EU, even compared to the United States, Japan or China. This shows, how important technology is for competitiveness in the modern global market.



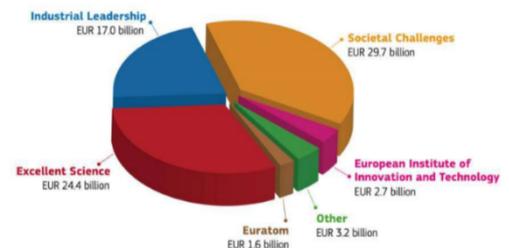
Existing EU -policies

Innovation is a major priority of the EU. According to the EU “the uptake of product and service innovations, use of innovative manufacturing technologies and introduction of new business models is necessary”. Therefore, the Commission developed several policies (visit the EU website for further information¹) that promote innovation through the Horizon 2020 programme.

Horizon 2020

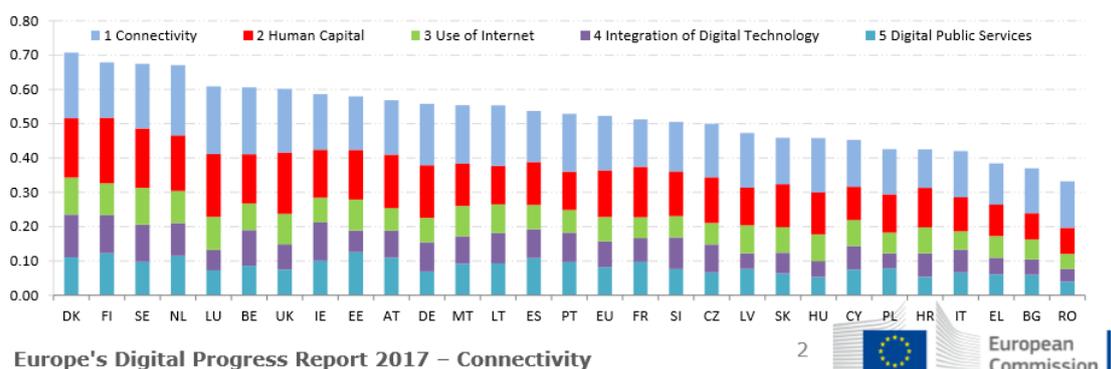
Horizon 2020 is the biggest EU Research and Innovation programme ever with around 80 Billion € of funding available, aimed at securing competitiveness. It promotes world-class science, facilitates innovation and helps companies and small/medium businesses alike to deliver innovation.²

HORIZON 2020 BUDGET (EUR 78.6 billion, current prices)



Digital Agenda for Europe

The EU Digital Agenda is part of the Europe 2020³ growth strategy. It aims at establishing connectivity across the continent and providing Europeans with basic or advanced technology skills, improving their chances to get employed. To help achieve those targets, there is a yearly digital



scoreboard⁴, indicating whether those targets were achieved or not.⁵

Digital Europe programme

In 2018, the European Commission created the Digital Europe programme the digital transformation of Europe’s society. It has a budget of 9,2 billion available to support several projects. The main emphasis will lie on Supercomputing, Artificial Intelligence, Cyber Security and a special focus on Digital Literacy.⁶

Conclusion

Digital transformation is the key to Europe’s future, which is why the European Union has already declared it one of the most important topics. This does not mean, however, that there is nothing to

¹ https://ec.europa.eu/growth/industry/innovation/policy_en

² <http://ec.europa.eu/programmes/horizon2020/en/what-horizon-2020>

³ <https://ec.europa.eu/digital-single-market/en/europe-2020-strategy>

⁴ <https://ec.europa.eu/digital-single-market/en/download-scoreboard-reports>

⁵ https://eige.europa.eu/resources/digital_agenda_en.pdf

⁶ https://ec.europa.eu/commission/sites/beta-political/files/budget-june2018-digital-transformation_en.pdf

do anymore. Build your resolution on the already existing funds and programmes; expand and improve them.

What can be done to solve the problem?

As the EU is not oblivious of the necessity to strive for innovation in order to be a competitor in the global market and nurture economic growth they have adapted the so-called 'Innovation Union', one of the seven flagship initiatives of the Europe 2020 strategy. The three main objectives of this initiative are to

- “make Europe into a world-class science performer
- remove obstacles to innovation like expensive patenting, market fragmentation, slow standard-setting and skills shortages
- revolutionize the way public and private sectors work together, notably through Innovation Partnerships between the European institutions, national and regional authorities and business”⁷

In order to achieve this they plan to, inter alia, complete the European Research Area (ERA), modernize the education system as well as remove barrier for entrepreneurs, just to give you a short insight on the initiative.

Having read that and considered all the measures that are in place the following questions arise: Are the Innovation Union and the other initiatives sufficient and if that is not the case how can we enhance their usefulness?

The Innovation Union: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0546&from=EN>

In various statistics South Korea is listed as one of the most innovative countries in the world. After its liberation from Japan (1945) and the Korean War (1950-1953) the country was left devastated. During the 1970s the government intervened severely in the country's economy, their aim in particular was focused on heavy industry, engineering, electronics as well as ship construction. A scarcity of natural resources motivated the peninsula to work with the capabilities they had namely human capital and invested in technology, science and education. Nowadays the Korean students are known to be one of the best performing overall and companies like LG, Samsung and KIA are leaders in their respective fields. South Korea itself is identified as one of the 20 mayor economies. However, various issues accompanied this growth: Suicide rates are one of the highest around the globe as well as there is hardly any possibility for small companies or new entrepreneurs to succeed.

South Korea's innovation policies:

<https://www.ida.org/idamedia/Corporate/Files/Publications/STPIPubs/ida-d-4984.ashx>

A respectable number of inventions that shaped our life as we know it these days originate in the country of Sweden. The three-point seatbelt, safety matches or Bluetooth were all invented by the Swedish just to name a couple of examples how this Scandinavian country contributed to our standards of living. How can this trend be explained? First of all, Sweden is one of Europe's top three spenders in research and development, investing 3.3 per cent of GDP in it in 2015. With collaborations between schools and other institutions they foster the entrepreneurial spirit and interest in technology from a young age on. Some say Sweden's social safety net and wealth equality

⁷ https://ec.europa.eu/info/research-and-innovation/strategy/goals-research-and-innovation-policy/innovation-union_en

are at the very heart of what makes this country so innovative since it provides the security in order to risk starting a business.

How Sweden became one of the most innovative countries in the world:

<https://www.independent.co.uk/news/business/news/sweden-s-technology-powerhouse-shows-brex-it-britain-a-positive-way-to-fix-its-ailing-economy-a8118641.html>

These two mentioned countries just served as an examples of how a country could achieve innovation. It is important to ask ourselves how we can adapt the strategies of 'successful' countries in this context (as seen in the following statistic) in the EU bearing the emerging issues in mind as well and trying to overcome these.

Bloomberg 2018 Innovation Index

| 2018 rank | 2017 rank | YoY change | Economy | Total score | R&D intensity | Manufacturing value-added | Productivity | High-tech density | Tertiary efficiency | Researcher concentration | Patent activity |
|-----------|-----------|------------|-------------|--------------|---------------|---------------------------|--------------|-------------------|---------------------|--------------------------|-----------------|
| 1 | 1 | 0 | S. Korea | 89.28 | 2 | 2 | 21 | 4 | 3 | 4 | 1 |
| 2 | 2 | 0 | Sweden | 84.70 | 4 | 11 | 5 | 7 | 18 | 5 | 8 |
| 3 | 6 | +3 | Singapore | 83.05 | 15 | 5 | 12 | 21 | 1 | 7 | 12 |
| 4 | 3 | -1 | Germany | 82.53 | 9 | 4 | 17 | 3 | 28 | 19 | 7 |
| 5 | 4 | -1 | Switzerland | 82.34 | 7 | 7 | 8 | 9 | 11 | 17 | 17 |
| 6 | 7 | +1 | Japan | 81.91 | 3 | 6 | 24 | 8 | 34 | 10 | 3 |
| 7 | 5 | -2 | Finland | 81.46 | 8 | 16 | 10 | 13 | 19 | 6 | 4 |
| 8 | 8 | 0 | Denmark | 81.28 | 6 | 15 | 11 | 15 | 26 | 2 | 10 |
| 9 | 11 | +2 | France | 80.75 | 12 | 35 | 14 | 2 | 10 | 21 | 9 |
| 10 | 10 | 0 | Israel | 80.64 | 1 | 27 | 9 | 5 | 41 | 1 | 19 |
| 11 | 9 | -2 | U.S. | 80.42 | 10 | 23 | 6 | 1 | 42 | 20 | 2 |
| 12 | 12 | 0 | Austria | 79.12 | 5 | 8 | 15 | 26 | 12 | 12 | 5 |
| 13 | 16 | +3 | Ireland | 77.87 | 22 | 1 | 1 | 18 | 20 | 14 | 33 |
| 14 | 13 | -1 | Belgium | 77.12 | 11 | 22 | 13 | 10 | 37 | 13 | 21 |
| 15 | 14 | -1 | Norway | 76.76 | 19 | 37 | 19 | 11 | 23 | 8 | 14 |
| 16 | 15 | -1 | Netherlands | 75.09 | 17 | 26 | 20 | 6 | 47 | 15 | 18 |
| 17 | 17 | 0 | U.K. | 74.54 | 20 | 40 | 23 | 14 | 8 | 18 | 15 |
| 18 | 18 | 0 | Australia | 74.35 | 14 | 46 | 16 | 17 | 17 | 3 | 20 |

Figure 1: Bloomberg 2018 Innovation Index <https://www.bloomberg.com/news/articles/2018-01-22/south-korea-tops-global-innovation-ranking-again-as-u-s-falls>