



Perspectives for the European Union's Industrial Policy

Towards Sustainable Digital Economy – Renewal of European Industry

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Towards Sustainable Digital Economy – Renewal of European Industry

Executive Summary

The backbone of European wellbeing is competitive and sustainable export. Industry counts for two thirds of total exports from Europe to the rest of the world. The total employment impact of European industries is well over 80 million people, more than one third of all jobs in Europe.

As the global competitive landscape is being redrawn, it is important that the EU adopts and implements an ambitious industrial policy that takes an integrated approach in all relevant EU policy areas to foster European competitiveness and long-term global leadership. Europe's opportunity for the renewal of industry lies at the heart of three symbiotic ingredients: technology, innovation and sustainability. Europe is leading the action against climate change, and by focusing on technology and innovation European industries can provide the best solutions to fight most global challenges.

Exponential technologies fuelled by digitalisation and servitisation will drive an unprecedented wave of innovation through all businesses and industries. The future of Europe depends on how industry and society will be capable of leading and leveraging industrial renewal. The forerunners will be the winners of the digital age. The faster digitalisation and servitisation of society are implemented the greater the benefits. Robotisation, automation, data mining and analysis, utilisation of artificial intelligence, sensors, industrial services and other forms of digitalisation will provide the greatest benefits to those companies, people and societies that are the quickest to adopt them. This transformation demands a lifelong learning attitude from everyone as well as increased investments in intangible and tangible assets.

Technology Industries of Finland proposes that in the forward-looking industrial policy the EU leaders should focus on the following objectives to achieve sustainable growth and the climate mitigation targets:

Innovation with impact Innovation with impact is the key to the future success of Europe, and the tools are industry-led innovation ecosystems that focus on the development of competitive scalable business, as well as attracting the best talent. Innovation funding must be increased, and other parts of the EU budget should have a strong focus on renewal too instead of sustaining the status quo. Forward-looking industrial policy needs to focus inter alia on innovation, digital transformation and competitive business environment.

The Single Market should be better integrated by employing digital, real-time business solutions EU-wide. The Single Market should place emphasis on services, including industrial services. The EU should prepare a long-term action plan on digitalisation and servitisation and the concrete steps required to make it happen.

The EU climate policy has to be ambitious, concrete and have a global perspective. Climate change mitigation is based on innovations in low-carbon industries, transportation and energy production. Implementation of the EU 2050 "Green Planet for All" -strategy should comprise technology, funding and innovation solutions.

1 The Impact of European Industries

Technology based industries are the cornerstone of European prosperity. Their impact to Europe's wellbeing is bigger than that of any other sector. The future of Europe depends on how industry and society will be capable of leading and leveraging industrial renewal. As the global competitive landscape is being redrawn, it is important that the EU industrial policy takes a holistic and integrated approach in which all relevant EU policy areas are aligned. This is needed to enable European industry's competitiveness and long-term global leadership.

Europe's opportunity for industrial renewal lies at the heart of three symbiotic ingredients: technology, innovation and sustainability. Exponential technologies fuelled by digitalisation and data will drive an unprecedented wave of innovation through all industries. Increasing consumer demand for transparency and traceability will change the way we design, produce, commercialise, maintain and generate value from products and services. The shift to sustainable and responsible consumption and production will be a major driving force for change.

Industrial productivity development has been weak in Europe in recent years and concerted efforts are needed to safeguard the competitiveness of European industry. Both intangible and tangible investments play a key role in improving productivity. Productivity improvement often means production scaling. It is not possible to do this without production investments in automation and robotics, or even in production extensions. It is important to ensure the availability and affordability of investment financing.

1.1 Employment and value added

Technology-based industries create roughly 25% of gross value added in the EU and employ directly 37 million people (manufacturing, extracting and utilities industries). Employment is growing: 1.7 million new jobs have been created during the past five years. A recent study carried out in Finland indicates that the manufacturing and process industries employ indirectly 1.3 persons per each person directly employed. Accordingly, the total employment impact of European industries is well over 80 million people, more than one third of all jobs in Europe.

1.2 Impact of transformation

The forerunners will be the winners of the digital age. Robotisation, automation, data mining and analysis, utilisation of artificial intelligence, sensors and other tools of digitalisation will provide the greatest benefits to those companies, people and societies that are quickest to adopt them. Rapid digitalisation of industries will develop better competitiveness and improve efficiency, creating faster GDP growth, plenty of totally new skill needs and occupations, and new employment opportunities in Europe. Transformation demands lifelong learning attitude from everyone. More jobs and a lifelong learning together will bring more inclusiveness to society. The solutions required to address the needs of the planet and its people will be driven by advanced technologies.

1.3 Export

The backbone of European wellbeing is competitive and sustainable export. Industry counts for two thirds of total exports from Europe to the rest of the world. Europe is leading the action against climate change, and European industry can provide the best technologies and solutions to fight global climate challenges. Investing in industrial innovation will create new competitive edge, more rapid economic growth and additional employment in Europe. To safeguard European industries' access to global growth opportunities and strategic value chains a forward-looking industrial policy is needed in the EU. A focus on exports will help to prioritise and test the innovations and safeguard dynamism.

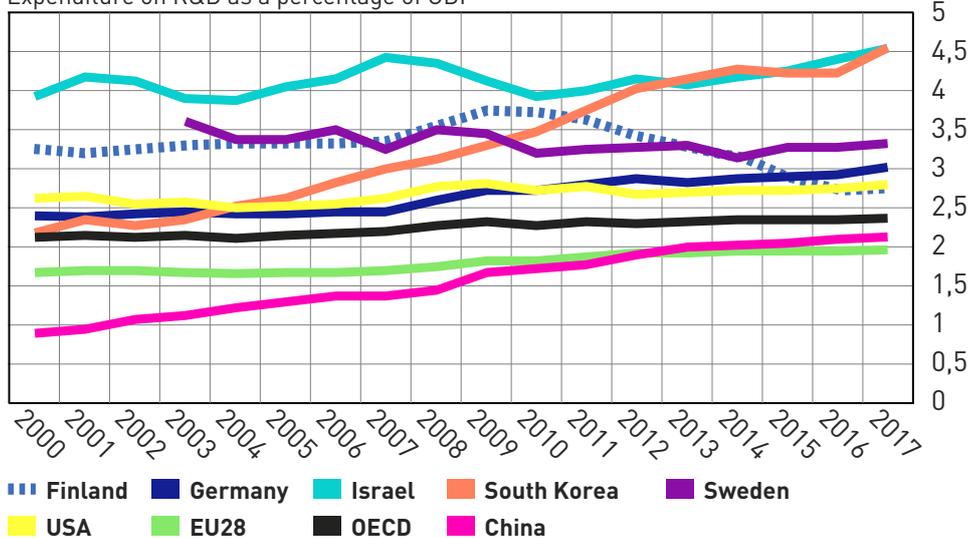


2 Putting Innovation at the Heart of the EU

Research and innovation (R&I) have a crucial role in shaping the future. Investing in intangible assets makes vital contributions to productivity and is at the core of what makes firms competitive, resulting in higher value-added jobs, goods and services and value generation for economy and society. Given that R&I is one of the main factors of global competitiveness, the EU's ambition must be to at least align its investment with that of its main competitors such as the USA, Japan, South Korea or China. Every action and all funds of the EU should be targeted at the renewal of Europe instead of sustaining the past.

Increasing and leveraging investments in research and innovation needs to be at the very heart of the EU's agenda

Expenditure on R&D as a percentage of GDP



Source: OECD

Europe has a wide set of means and assets at its disposal to drive this differentiation: We can pool together resources from the private and public sectors to invest in ecosystems with networks of trailblazing testbeds and innovation hubs and activities close to the market. We need to build on one of the biggest assets of European industry, namely its strength in managing complex cross-domain, cross-disciplinary projects. The EU needs innovation-friendly Single Market regulation and enabling investment policy to speed up the adoption of exponential technologies for sustainability. Significant EU investments need to be geared at industrial innovation and co-creation between large, mid-sized and small companies, research institutes and universities. To further stimulate market demand for products and solutions based on advanced technologies, Europe needs to strengthen its competitiveness along entire value and innovation chains. European Public Private Partnerships (PPP) play a crucial role in achieving this goal.

Only one fifth of companies in the Member States are highly digitised according to the Digital Economy and Society Index DESI. The Horizon Europe and Digital Europe programmes complement each other and play an important role in strengthening digital capabilities along entire industrial value chains.

Digital Economy and Society Index Report 2018.
<https://ec.europa.eu/digital-single-market/en/integration-digital-technology>



Action points

- **The EU and the Member States should prioritize research and innovation in the EU and national budgets.** Double the budget of the post-2020 EU research and innovation programme. Direct the use of EU cohesion funding and agriculture funding increasingly for renewal and sustainability.
- **Design the EU R&I programme for greater impact.** Ensure that the Horizon Europe pillars are driven by purpose and impact. Fine-tune the proposal evaluation system and increase flexibility in implementation to make the programme more attractive to companies of all sizes.
- **Make Horizon Europe more attractive to industry by**
 - giving a high weight to Pillar II in Horizon Europe and ensuring that the industry's requirements drive the agenda, the PPPs and the individual projects;
 - emphasising a bottom-up approach and topics rather than top-down complex call texts;
 - ensuring faster decision-making and speed to money;
 - giving scope for higher technology readiness levels (TRL) that are important for impact, without losing focus on radical innovation;
 - accepting smaller consortia when closer to market;
 - making IPRs available for industry licencing free or with very reasonable terms.
- **Foster industry-led ecosystems and partnerships** that bring together industries (global companies, SMEs, start-ups), innovators, researchers and governments, and promote and invest in R&I collaboration and innovative ideas with true scale-up potential.
- **Make Europe a competitive environment for data-driven business to evolve and grow.** Ensure competitive infrastructures that enable effective mobility, sharing and use of data, development of data-platforms to seize leadership in the data-economy, particularly in B2B sectors. Fast-track the Europe-wide roll-out of first-class communication networks, such as 5G and fibre optics, and develop a European cybersecurity infrastructure that enables resilient, flexible and market-based cybersecurity solutions for a connected Europe.
- **Ensure a strong focus on advanced technologies, their faster adoption and new business solutions** in Horizon Europe, Digital Europe as well as in the other EU funding instruments to make European industry and the EU stay at the forefront of the fast, technological revolution and benefit from the opportunities related to AI and digitalisation, data economy, clean and circular economy, etc.
- **Foster industrial cross-border cooperation** with strong European players, around strategic value chains that are key to the EU's industrial competitiveness and strategic autonomy. Ensure that the Important Projects of Common European Interest (IPCEI) have positive spill-over effects across Europe and are carefully designed and justified. The fundamental European values of free and fair competition and market-driven innovation, reinforced with supporting trade policies, will continue to be strategic advantages in future and must not be discarded.
- **Rationalise the EU funding landscape and achieve synergy between programmes** such as Horizon Europe and Digital Europe and with structural funds. Adopt a more strategic approach to facilitate innovative, public procurement.
- **Measure the success of investments by monitoring new products and services** entering the market, for instance.

3 The Future of European Jobs

Europe is facing challenges in its labour market, some of them greater than in Asia and the US. The aging societies, the brain-drain, the mismatch in the labour market and the fast development of technologies are making it more difficult to anticipate the future of work and to respond to new demands. The European Single Market is also a Labour Market with the free movement of persons. Skilled labour and mobility are the key factors for successful and vigorous growth in the European Union.

Europe must fight for global talent, use all existing attraction factors and create new policies to make Europe the world's best place to work and live, to invest in and to do business. World-class research, education, innovation and business ecosystems are critical for attracting global top talents to Europe.

The evolving sustainable digital economy is shifting parameters in working life. The platform economy, new professions and skill needs, disappearance of set working place and time, as well as rapid disruption of businesses are challenging the boundaries of labour market regulation. The legislation designed in the past is not compatible with the future needs of customers, employers and employees in the EU. Working time regulation must be adapted to the changing world of work to allow flexibility for both companies and employees. Future and existing labour market regulation needs a reality check through the REFIT platform. In addition, the EU should focus on promoting national labour market reforms in Europe.

The Member States and the EU must take more actions to support reskilling and upskilling of the work force of all ages. To make learning opportunities available for everyone shared responsibilities between the different stakeholders, agile and proactive approaches, as well as a lifelong learning attitude from everyone are needed.

Work-related mobility and immigration must become a key target at European level. With the help of European instruments, new incentives could be innovated for cross-border mobility within Europe, as well as from third countries to Europe. Europe must increase the number of work-related immigrants from third countries and significantly improve the ways of integrating graduates who studied in Europe as well as refugees and other non-working immigrants into the European labour market.

Action points

- **The Commission must come up with an ambitious plan to ensure the availability of the world's top talent** for research, innovation and business.
- **The EU needs an immersive work-related immigration programme.**
- **EU labour market regulation should meet the needs of the digital era** – it should be reduced when necessary, redeveloped when necessary.
- **The EU and the Member States should increase investments** in digital skills and competencies and boost science, technology, engineering and mathematics education from an early age **to address the skills needs arising from the digitalisation of industry and global challenges such as climate change.**
- **The EU should support national education and training systems in digital reskilling/upskilling.** Cohesion funds could be targeted at creating smart schools, for example.



4 The Single Market as an Enabler

The Single Market must become an effective and true enabler of economic competitiveness and growth, as a platform for scaling up businesses in the wider home market, thereby creating competitive edge to European businesses in the global context.

However, the Single Market is not yet fit for the digital age; it must be rebooted and updated. The crucial intra-European trade barriers must be identified and removed. The Single Market should enable the development of European infrastructure and cross border economic growth activities, be they smart transport, sustainable energy market or digital platforms.

Several legislative proposals of the Single Market Strategy have failed. The Union has not been able to deliver the most significant actions to improve free movement in the Union. Protectionism is a threat both inside the Union and in the global economy. While the industrial service business is growing, and Europe is moving towards a service-oriented economy, there is still virtually no free movement of services. Industrial and Single Market policies must meet, in particularly with respect to services. Poor implementation of these legislations risks the expected return of investments and funds made available.

Circular economy demands a more systemic and holistic view. The key integrating component is data. The Commission must strive for a future in which every arterial stream is accompanied by a data stream. All policy areas must work for the same objective: regulation has a role to play in opening new datasets, standardisation may be used to facilitate data flows, and acceleration of advanced technologies, data and innovation-driven renewal of European industries must be a key component of financing plans.

A well-functioning Digital Single Market concept responds to challenges we are facing not only in the EU, but also in the global economy enabling European industries to tap business opportunities in the increasingly globalized market. The Single Market strategy must also address the interlinkages of industrial and de-carbonisation policies and provide a coherent vision on how the sustainable data economy will transform European industries and societies so that everyone has a part to play.

The principle of 'free movement of data' must be mainstreamed in the Single Market agenda by the new Commission.

Real Time Economy could provide annual operational savings of hundreds of billions of euros to the enterprises and the public sector. RTE must be included in the Single Market agenda and the first cross-border pilots should be launched as soon as 2020.

The European Union should focus on RTE and thus strive to ensure that all financial and administrative transactions are performed in a structured standardised digital format, generated automatically and completed in real time. RTE would contribute to making the Union the number one market in the data economy. RTE could provide annual operational savings of hundreds of billions of euros to enterprises and the public sector, and it helps in fighting against the shadow economy, broadening thereby the tax base. Structured high-quality financial data will provide a solid platform for data analytics and new digital businesses. The data also gives possibilities to form a real-time big picture of the economy and its development. The European Commission should act as an example in introducing the RTE approach in its own digital platforms

Intelligent and dynamic setting of globally accepted standards can reduce risks for both innovators and other actors in the economy. Standards provide legal certainty and can encourage innovation if they are set at a demanding level of functionality - not specifying the solution but ensuring interoperability and results.



Action points

- **The EU needs a coherent Single Market strategy**, where data and digitalisation act as merging components, tying together industrial, circular and de-carbonisation policies.
- **Real Time Economy must be included in the Single Market agenda** and the first cross-border pilots should be launched as soon as 2020.
- **The Commission must come up with an ambitious Scale-Up strategy for European SME's.** We need European unicorns! The European Innovation Council Pilot is a good platform for this. However, it should work to balance risk and enable deal-flow for existing private sector venture capital – and not to create an alternative funding route.
- **AI does not need specific new regulation.** New datasets and data repositories need to be opened and APIs (application programming interfaces) enforced by means of regulation. The best way to address ethical issues of AI is to facilitate close cooperation of developers, deployers and academia, preferably through AI hubs in the Member States.
- **The EU needs a boost in public procurement policy to make it agile and administratively lighter.** Lifecycle costs, sustainability factors and quality must be the key principles of public procurement. The EU should also impose swift adoption of its revised proposal for an International Procurement Instrument - a tool to promote open and reciprocal access to public procurement markets around the world.



5 Taxation

In the initiative and the Communication from the EC on a Tax System for the digital Single Market the main goals to be reached are:

- Fairer taxation, level playing field for all businesses;
- Sustainability of public revenue and Members States' tax bases to prevent tax avoidance;
- More effective and efficient taxation, tax certainty.

All of these targets, if reached, would benefit the EU, Member States and companies. However, the recent tax proposals by the EC are not likely to achieve the goals set.

All business and industries are heavily digitalised or digitalising. Therefore, attempts to introduce new tax models targeting "the digital economy" will be unsuitable, discriminatory and increase complexity, double-taxation, tax disputes and administrative work for both companies and administrations. The OECD has introduced proposals for updating the taxation of the digitalised economy. The EU should work in effective and constructive cooperation with the OECD to reach a global, sustainable solution. All changes to international taxation should be done at a global level, creating a sustainable and neutral taxation system.

The EC has given a CCCTB directive proposal (Common Consolidated Corporate Tax Base) that would change corporate taxation entirely. As a first step, CCCTB would introduce a harmonised way of calculating the corporate tax base. The second step would consolidate taxation of multinational groups, by combining the tax bases of all group companies. Once determined the tax base would be allocated to Member States based on defined factors: sales, tangible assets and employees.

Work becoming more disconnected from a set place proves that such an allocation formula is outdated. The digitalised economy relies heavily on intangible assets, which are becoming more and more the value drivers within multinational groups and which are difficult to identify and value. The solution to this challenge cannot be that intangible assets will be afforded less weight in the future when determining where taxation rights lie.

The digital economy is about trying to find more efficient and sustainable ways of doing business. The environmental aspect should be taken into consideration also when analysing taxation.



Action points

- **The digitalised economy cannot be ring-fenced, and the EU must not introduce globally different tax systems but cooperate with the OECD.** The global taxation system must be considered in its entirety taking into account other types of taxes as well, such as value-added taxation and taxes on energy.
- **Digitalisation, automation and harmonisation of taxation procedures should be enhanced to create similar taxation procedures to be used in all of the EU and to enhance leadership in the Real Time Economy.** Gradual and predictable harmonisation of tax base calculation (CCCTB) might boost this process. If the preparation of the CCCTB directive proposal proceeds, the proposed R&D deduction in the CCCTB proposal should be mandatory in order to support R&D investments and growth.
- **There must be a sound and thorough analysis of how the intended changes to the taxation systems would affect issues such as trade, jobs and growth,** and what the costs of implementing the reform would be before making any changes.



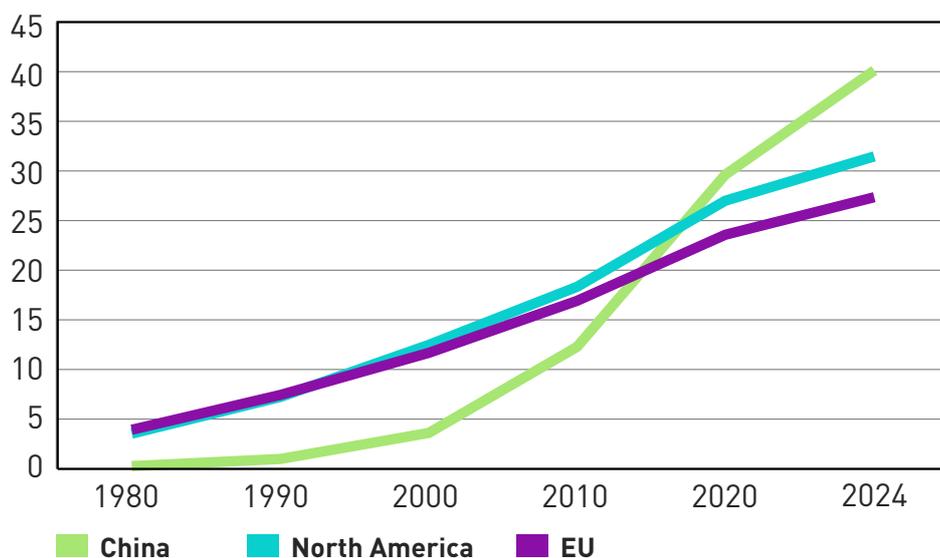
6 EU - The International Dimension

The EU industrial policy needs to have a strong international dimension. It must inherently be designed to ease access to global markets and strategic value chains and to safeguard fair competition for European industries. By internalizing climate change costs, and by putting real costs on carbon and natural resources, policy will create strong financial incentives to reduce emissions and waste, whilst promoting innovation and improving opportunities for doing responsible business profitably.

Properly formulated EU trade policies ensure peace and stability at its borders by forging deeper and closer political and economic ties with world economies. The type of relation and level of integration should be adapted to the specificities of the trading partner. Long-term efforts and clear principles will enable changing consumer behaviour to support the European policies.

The EU trade policy needs to remain transparent and inclusive. Defending the benefits of open and rules-based trade is an essential part of the EU's policies to harness globalisation. The EU should use its weight to promote a global level-playing field in bi- and multilateral trade negotiations and to improve the implementation and enforceability of trade rules and trade agreements. This will ensure more companies can benefit from trade and investment opportunities in third markets and improve the playing field for European companies both in the EU and abroad.

EU countries in a global perspective



GDP, current prices, purchasing power parity: trillions of international dollars
Source: IMF

Open trade must be fair and sustainable. Strengthened trade defence instruments and a new enabling framework to screen foreign direct investments (that may pose a threat to security or public order) will help ensure that Europe operates on a global level playing field.

Reciprocity in trade relations is required to address increased global competition, promote universal respect for fundamental labour rights, and fight indirect state aid, such as government subsidised foreign direct investments/exports.



Action points

- **The EU should continue to develop the most ambitious and comprehensive network of bilateral trade and investment agreements.** Asia, Africa and Latin America are fast growing and promising regions and should be in the focus of our efforts.
- **The EU should develop WTO-compatible measures** in respect of imports of products to replace, adapt or complement any existing measures on carbon leakage.
- **Free flow of capital is a cornerstone for innovation and industry.** The EU must have a consistent policy on investment covering both market access and protection of investors. Investment protection should remain a key priority in the EU's bilateral trade negotiations.
- **Reforming the WTO will enable the development of regulatory cooperation in key sectors, elimination of tariffs for industrial goods, developing modern trading rules and a more effective international trading order.** A functional, transparent and independent dispute settlement mechanism must remain a top priority of EU trade policy.
- **The EU should maintain a strong and stable relation with the US and push forward the on-going trade talks with the US.** The new possible treaty should lower trade barriers and duties and encourage investing across the Atlantic. Even a minimal treaty would be a success for EU-US bilateral relations.
- **The EU should rebalance its relations with China by promoting a framework that ensures improved market access and fair and equal treatment for European companies.** The conclusion of an ambitious and comprehensive Bilateral Investment Treaty should remain a priority. The EU should also engage with China to address key multilateral challenges like the WTO reform, while insisting that China actively commits at a level that is proportional to its current economic and technological development.





**Technology Industries
of Finland**