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From:	Trio Presidency
To:	High Level Working Group on Competitiveness and Growth
Subject:	European industry and the advance in digital technology: from innovation via strategic projects towards strengthened competitiveness

The economic impact of the COVID-19 pandemic represents one of the greatest challenges in the history of the European Community. It has revealed the strengths and weaknesses of our interconnected global economy. It has shown new digital possibilities in manufacturing and cooperation. Achieving digital and strategic leadership while preserving an open economy has become a key objective of the Union as we strive to become more self-determined.

The European Green Deal and the EU's Digital Strategy show us the way ahead, and the European Industrial Strategy contains the specific initiatives for industry to master it. Our advances in digital technologies will turn out even more valuable if they are organised in pan-European cooperation and can thus achieve a higher level of "European value added". It is our task to make sure Europe benefits from world-leading digital technologies, their innovative character and required infrastructure. Therefore we need to ensure the right framework conditions and incentives for investment that will foster our collective competitiveness.

The importance of a self-determined digital Europe

We must be able to make sovereign decisions about the areas in which we want to be independent, but without resorting to protectionist measures or even attempting to become self-sufficient. We do not want to demarcate ourselves from other global actors, but rather to follow a self-determined European path. Our European values and fundamental rights are the foundation for the identity we project worldwide, and this is also the case for the digital age. To protect these values platforms must be held responsible for the products, services and content they offer. The envisaged Digital Services Act Package of the European Commission will present a new regulatory framework to achieve that goal. It should strengthen the internal market and also provide legal clarity and a level playing field between all service providers, established both inside and outside the European Union. The Package will also contain new ex ante rules for large online platforms acting as gatekeepers to ensure a fair trading environment and increase the innovation potential and capacity across the online platform ecosystems in the European Union's internal market.

Europe must have the ambition to regain state-of-the-art skills in all key digital technologies. We must ensure the openness of the European market and the retention of the European multilateral approach. This includes constant monitoring of European digital capacities, substantial and concerted public and private investment, and a common understanding among the EU Member States about the definition of and the path towards greater digital leadership. In a globalised world, the ability to shape the digital transformation in a self-determined manner should be anchored as a key principle of European digital policy. This also requires a common understanding of what digital leadership means for Europe.

Strategic projects for strengthened competitiveness

Europe must pool its strengths to do collectively what no one can do alone in terms of advancing disruptive game-changing technologies with cross-sectoral impacts and long-lasting growth projections. Important Projects of Common European Interest (IPCEIs) are already an increasingly used instrument to realise cross-border cooperation in highly innovative technologies and value chains such as for batteries – with great success right from the outset. Furthermore, IPCEIs represent opportunities notably to leverage the R&I investments of European partnerships such as Key Digital Technologies or Smart Networks and Services towards future industrialisation and commercialisation. Here are some examples of the high potential offered by close European collaboration in this area:

IPCEI on Microelectronics

Microelectronics is a significant part of the semiconductor industry and thus a foundational technology. As such it is not only an essential prerequisite for the competitiveness of European industry but also is of significant importance for national security within the EU. It is the basis for almost all emerging technologies like communications (5G and future 6G networks as an opportunity to develop a European capability in that respect), AI, new mobility, IoT, autonomous driving, medical technology and security/defence technology.

The first IPCEI on Microelectronics was set up by industry and Member States (DE, FR, IT, UK) and was approved by the European Commission on 18 December 2018, also triggering multiplier effects for the ECSEL partnership investments. By launching the IPCEI on Microelectronics, Europe was able to send a clear innovation policy signal in favour of growth, employment and prosperity through high-tech investments. This has already enabled companies to develop a large number of innovative microelectronic components and technologies that can be used in fields like medical technology applications or automated driving. Many of these developments, which set standards in Europe and worldwide, are already protected by patents and therefore strengthen Europe's position in a more digitalised and connected economy.

IPCEI on Microelectronics and Synergy with Connectivity (working title)

However, European innovation in all areas of emerging technologies will remain fragile if European industry remains highly dependent on supplies from U.S. or Asian companies, notably in the communications sector, where components are key to reaching the objectives of cybersecurity (Cyber Toolbox Communication of 29 January 2020). The European economy will only be able to compete on the world markets if major products and microelectronic components, such as processors, are developed and manufactured in Europe and if worldwide sales of European microelectronic components do not depend on patent rights from the U.S. or China – and therefore cannot be prevented or disrupted.

For these reasons, a European initiative should be established on the basis of a major forward-looking IPCEI to:

- increase the share of global patent applications in nano- and microelectronics in Europe,
- strengthen the microelectronics and communication networks sectors in which Europe is well positioned,
- catch up in areas where Europe is partly very or extremely dependent,
- develop and produce these chips in Europe
- leverage investments of key partnerships such as Key Digital Technologies or Smart Network and Services, CCAM, EuroHPC, etc
- reduce the talent shortage of professionals with technological skills in the electronics industry.

For this purpose, in the medium term a leading-edge EuroFoundry is required to produce these chips in Europe. It would also allow a European implementation of the European Processor Initiative. In addition, with this IPCEI Europe could offer safe, secure, sustainable and self-determined microelectronic and communication products on a global scale.

In addition, we need to establish a European Microelectronics Alliance that would bring together those interested Member States with industries which would be prepared to invest.

The proposed Key Digital Technologies Joint Undertaking, which brings together national authorities and industry, will be crucially important in laying a foundation for planning and for progress – in particular around the full ecosystem for design and production of processors and related applications – over the next few years.

IPCEI on Cloud and Data Processing

Throughout the past decades, Europe has created and accumulated a tremendous amount of IoT data. This mass is an early manifestation of Europe's industrial potential and the influence it can one day have in building the world's data economy landscape in harmony with its fundamental values. Europe's capacity to fulfil this potential depends on its ability to take preemptive actions that will allow European industries to capitalise on the impending torrents of data. It is therefore essential to seize the opportunity in Europe to build the technological foundations for how data will be generated, stored, processed, searched, accessed, shared and exchanged in accordance with European values. An IPCEI on Cloud and Data Processing in this area could be the vehicle to jointly invest in a basic infrastructure to set up a reliable, secure and energy-efficient European infrastructure which will enable competitive European industrial data ecosystems to compete globally.

Digital leadership through industry platforms and necessary framework conditions

The current COVID-19 crisis has shown that digitisation is one of the most important elements in increasing the resilience of industry as it provides the flexibility needed, e.g. in production processes and supplier structures. The high level of technical and organisational complexity means that we need to work together more closely and engage in new forms of cooperation and data governance. Industrial data platforms and platform ecosystems will become increasingly important in managing these future digital value networks and will take on a strategic role.

International suppliers have long recognised the strategic importance of platforms and platform ecosystems and see them as an opportunity to break into the industrial domain, which is dominated by Europe's industries, and acquire new business. It is to be expected that platforms will generate high potential for added value in the industrial domain as well.

A common secure and European data infrastructure

In order for a European platform economy to develop, Europe needs to build up a secure and interoperable data infrastructure that enables data to be exchanged confidentially and that can be used across the continent in accordance with European values. It is also essential for industry to be able to place their trust in the sharing of data and the value creation associated to it along value chains. Such a data infrastructure must build on Europe's strengths; it must emphasise our diversity, open ecosystems and plurality. It must create fair and equal competitive conditions and allow free competition among all market players. That is part of the joint objective of the European Alliance on Industrial Data and Cloud and the GAIA-X project: that the EU can build a secure and trustworthy data infrastructure. As we develop this project, which can form the basis of a vibrant digital ecosystem, we want to attract as many other European partners as possible.

Questions for discussion

- *What is the most operational understanding of resilience regarding industry and digital technologies, and which policy tools can best support industry resilience?*
- *How can innovation be transferred even faster and less bureaucratically into the strengthening of digital technologies in Europe so as not to miss the "first mover advantage" in digital innovation? Which high-potential technologies should be given preferential focus?*