



EUROPEAN INDUSTRIAL SOVEREIGNTY

Future Watch Strategy Brief

07/12/2020

Table of Contents



Introduction and objectives



Review of global industrial sovereignty trends



Review of European industrial sovereignty trends & the current situation in the European Union



Review across industries & exemplary business cases



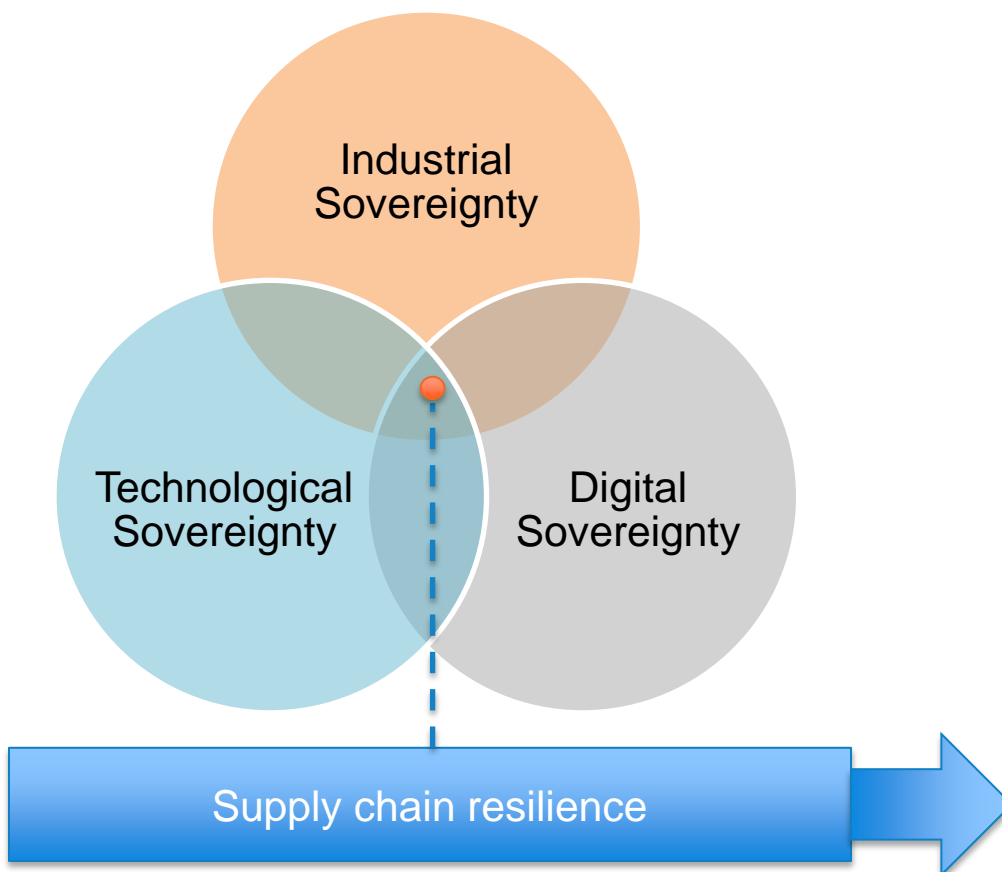
Scenarios for 2025-2030 & Map of current and future drivers and risks related to the European Industrial Sovereignty initiatives



Summary and recommendations

Industrial Sovereignty concept evolution

The Industrial Sovereignty concept refers to some level of industrial independence but is not homogenous and encompasses various dimensions, depending on the context, content and scope



Industrial Sovereignty is the most general concept which challenges global interdependencies and asks questions about how effective globalisation is in value creation, wealth distribution and the diffusion of innovations. It assumes some level of self-reliance in general or in selected industries, which is extremely difficult and costly to restore or create from the scratch, and then maintain. Access to raw materials is another important aspect.

Technological Sovereignty refers to particular technologies or industries which are being considered as particularly important for building competitive advantage of a national economy on the global arena or being the key base technology for the development of other related or dependent technologies (e.g. artificial intelligence, batteries, quantum computing, etc.).

Digital Sovereignty is closely related to data processing and security in Internet, communication, machine learning, IoT and AI technologies. Data has become an extremely valuable resource and access to this data is of strategic importance for almost every industry. Then there is the issue of sensitive or personal data which requires special protection.

Supply chain resilience lies at the center of the debate about how post-Covid economic relations should be shaped in order to secure uninterrupted supplies of goods and services most critical for national health, energy and food security. It doesn't require Industrial, Technological or Digital Sovereignty, but rather strategies and actions focused on diversification and risk mitigation.

Global industrial sovereignty trends

USA

- ✓ Tightening the screening of FDIs
- ✓ Donald Trump's former election promise to bring manufacturing back to USA
- ✓ "America First" policy, meaning shift from trade liberalisation (withdrawal from the Trans-Pacific Partnership) toward protectionism (CureVac takeover attempt and redirecting air deliveries around globe in order to support supplies to US hospitals) and trade war with China initiated by Donald Trump's administration. However we might expect change of the course under Joe Biden's presidency

China

- ✓ Technological Sovereignty as a strategic decision
- ✓ "Dual circulation" economic strategy
- ✓ Aims to gain technological independence in aerospace, semiconductors and robotics
- ✓ Imposing restrictions for foreign companies interested in entering its tech business
- ✓ Subsidising state-owned enterprises and awarding them with numerous privileges
- ✓ Restricting foreign investments

Japan

- ✓ Tightening the screening of FDIs
- ✓ Granting subsidies to companies moving their manufacturing capabilities back from China (however only a fraction of them are interested – 4% currently)
- ✓ Established the USD2.2bn programme for restructuring supply chains, as risk management tool

Important factor behind Industrial Sovereignty trends in APAC countries is China's regional hegemony

India

- ✓ Focus on liberalising internal business environment
- ✓ Rising concerns about USD55bn trade deficit with China (data for 2019) and its negative impact on Indian economy are leading to joining supply chains alternative to China
- ✓ Enhancing own manufacturing capabilities in cooperation with Western business partners (in 2019 India has joined European Alliance for Multilateralism) – positioning itself as more trustworthy alternative to China
- ✓ Focus on digital sovereignty (blocking 59 Chinese apps due to data security concerns)

Australia

- ✓ The need signaled for a National Sovereignty Strategy which should overlook **areas of comparative advantage** (mining, agriculture technologies, mineral processing, food and beverage manufacturing) and **areas of national priority** (pharmaceuticals, medical technology, defense, energy, space, waste and recycling) but as for now only liquid fuel security has been discussed
- ✓ Implementing the FMCEA (Failure Mode Affects and Criticality analysis) to reduce the failure probability and to mitigate failure consequences
- ✓ Equilibrium between global connectivity and self-reliance
- ✓ Tightening the screening of FDIs

Key trends

- ✓ Securing uninterrupted supplies of strategic goods and services such as fuels, medicines and food, through diversification and risk management
- ✓ Focusing multiple efforts on building excellence in the given industry or technology
- ✓ Re-shoring or rebuilding manufacturing capabilities
- ✓ Protecting markets from e.g. hostile takeovers or outside competition

Global industrial sovereignty trends – consequences for European entrepreneurs



Securing the uninterrupted supplies of strategic goods and services such as fuels, medicines, food, through diversification and risk management

- ✓ Opportunity to enter supply chains that must be redesigned due to the need to improve their resilience – actively searching for announcements that might indicate such movements in given supply chains
- ✓ Threat for companies engaged with supply chains that are expected to undergo the transformation
- ✓ Must expect and accept new, stricter requirements securing more flexibility in already existing or future contracts



Focusing multiple efforts on building excellence in the given industry or technology

- ✓ Threat of losing the technological competitive advantage over companies in industries supported by a given country
- ✓ Must actively search for niches still not covered by the programmes coordinated by the given states
- ✓ Opportunity for taking advantage of closer technological cooperation with companies enjoying state support programs in their home countries, where possible



Re-shoring or rebuilding manufacturing capabilities

- ✓ Use of competitive advantage of many European companies which are experienced in implementing manufacturing 4.0
- ✓ Opportunity to participate in building new manufacturing plants – monitoring the national announcements and public procurements, building relations with decisive bodies in a given country
- ✓ Attracting companies who are trying to relocate their manufacturing capabilities closer, but still offshore



Protecting markets from e.g. hostile takeovers or outside competition

- ✓ Must undergo more extensive procedures when acquiring major or significant share of companies located outside EU
- ✓ Experience obstacles when introducing products or services for a given market (e.g. additional requirements related to norms or legal or technological compatibility)
- ✓ Experience difficulties when already present on a given market (e.g. changing the previously agreed conditions, imposing new taxes or fees, etc.)

Evolution of the Industrial Sovereignty concept in Europe

The concept of European Industrial Sovereignty has been present in public discussion since the early 2000s. It was driven by the weakening competitive position of Europe in the global arena.

Early 2000s

The idea appears in the French and European debate

2004

The “Euro-power” idea postulated by French President Jacques Chirac in the context of competition with other major economies, Asia and the US. It has also put some “sensitive” industries in the spotlight that require protective measures. This concept has been supported then by UK, Germany, Italy and Spain

2018

The Villani Report on Artificial Intelligence, including:

- ✓ The call for intensification of the works on suitable policies and regulations on AI
- ✓ Establishment of JEDI initiative (Joint European Disruptive Initiative), similar to the American DARPA

COVID-19

The Covid-19 outbreak has intensified the trend and brought additional issues to the table such as:

- ✓ national health security, including uninterrupted access to pharmaceuticals, personal protective equipment and medical devices
- ✓ supply chain resilience has been challenged by border closure during lockdown, highlighting too much dependence on far-away suppliers, in particular China
- ✓ lack of risk management tools and response mechanisms which could enable mitigation of the negative impact of the outbreak
- ✓ lack of joint response and efforts coordination on pan-European level

2013

Snowden affairs raised the debate on data security and enhanced the digital sovereignty trend

2002

Galileo satellite positioning system as a means to maintain Europe’s autonomy, sovereignty, technological capacity and control of its knowledge

2002

The President of the Belgian Senate, Armand De Decker – the idea of a common defense strategy as a driving force behind technological and industrial policies

2016

The European Commission’s investigations confirmed that Chinese steel and iron products had been sold in Europe at heavily dumped prices. In turn duties ranging between 43.5% and 81.1% have been imposed

2019

The debate on the deployment of 5G technology in Europe, whether Huawei and ZTE should be admitted to build the European infrastructure, in light of the concerns related to the European citizens data governance and security

2017

Technological and digital sovereignty were important issues in Emmanuel Macron’s campaign



Initiatives and actions undertaken on the EU level



EU Industrial Strategy



New paradigm for the European Union → strategic autonomy in key technologies and access to raw materials

	Initiatives	Actions	Timeline
1	The framework for screening foreign direct investment to safeguard Europe's interests	As of 14 th October 2020, 14 Member States have already notified and implemented screening mechanisms in their internal regulations: Denmark, Germany, Slovenia, Spain, France, Italy, Latvia, Lithuania, Hungary, The Netherlands, Austria, Poland, Portugal, Romania and Finland	Was supposed to be fully operational on 11 th October
2	The Important Projects of Common European Interest (IPCEI)	The tool with a proven track record, which allows Member States to fund large, cross-bordered innovation projects. IPCEIs have already been implemented in Batteries, Microelectronics and Hydrogen technologies	Open initiative with no deadlines
3	Action Plan on synergies between civil, defense and space industries	The Action Plan is under development. Commission adoption is planned for first quarter 2021	Q1 2021
4	Intellectual Property Action Plan to uphold technological sovereignty	The Action Plan is under development. Commission adoption originally was planned for third quarter 2020	Q3 2020
5	New EU pharmaceutical strategy in 2020	The Strategy is under development. Public consultation closed on 15 th September 2020. Commission adoption is planned for fourth quarter 2020	Q4 2020
6	Further legislation and guidance on green public procurement	Since May 2020, the EU has announced new GPP criteria for textiles, data centers, server rooms, cloud services, imaging equipment, consumables and print services	-
7	Action Plan on Critical Raw Materials	Developed and presented in September 2020, includes list of Critical Raw Materials, foresight study to 2050 and propositions how to reduce Europe's dependency on third countries, diversifying supplies and improve resource efficiency	-



Initiatives and actions undertaken by selected European countries

UK

- ✓ The framework for screening foreign direct investments has been introduced
- ✓ As a result of leaving the EU, Great Britain loses access to some common programmes and mechanisms aimed at developing new technologies and / or protecting the Common Market
- ✓ Developing its own new state aid programme
- ✓ Raising need to implement regulations protecting the technological independence. The recent Arm's takeover by Nvidia put the UK in predicament between the US and China; due to the trade war between those two countries, Arm (securing 2,500 jobs in the UK) will lose the lucrative contract with China's Huawei



France

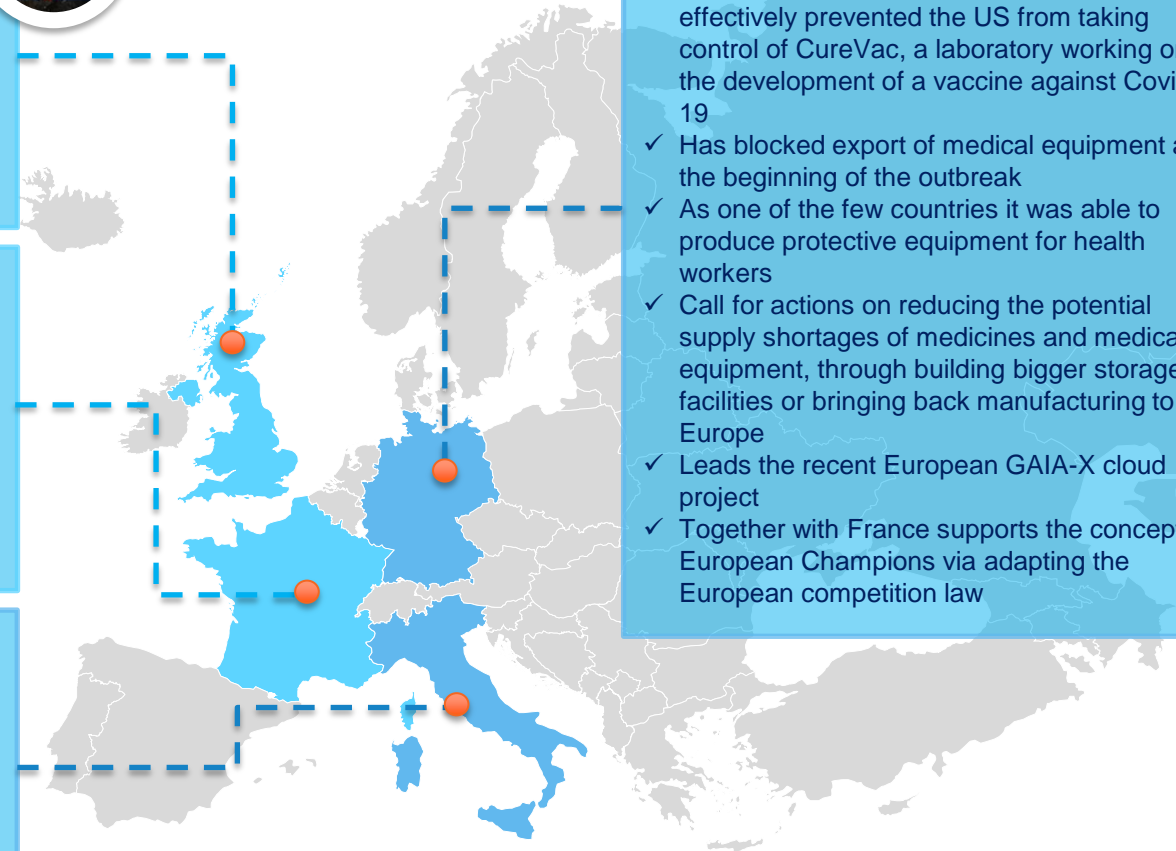
- ✓ Strengthening their powers of control and authorisation for foreign investment
- ✓ One of the 3 pillars of Covid-19 Response plan is protecting strategic companies which could be potentially endangered in the market, through increasing the capital share of the state, recapitalizing or even nationalizing
- ✓ Call for bringing pharmaceutical laboratories back to France, in order to reduce dependence on supplies (up to 80% now) from Asia and India
- ✓ EUR 1B of the EUR 100B recovery plan has been intended for support companies starting production of strategic goods at home
- ✓ Has blocked export of medical equipment at the beginning of the outbreak

Italy

- ✓ Strengthening their powers of control and authorisation for foreign investment
- ✓ Especially strong impact of the first wave of the Covid-19 outbreak was caused by the lack of own capability in manufacturing the personal protection measures. That raised the need for repatriate such activities. Special tax incentives have been already announced to enhance this process
- ✓ The government has recently extended the scope of the so-called "golden share" protection system beyond defense and security companies, and included telecoms, energy grids and health companies

Germany

- ✓ Strengthening their powers of control and authorisation for foreign investment - has effectively prevented the US from taking control of CureVac, a laboratory working on the development of a vaccine against Covid-19
- ✓ Has blocked export of medical equipment at the beginning of the outbreak
- ✓ As one of the few countries it was able to produce protective equipment for health workers
- ✓ Call for actions on reducing the potential supply shortages of medicines and medical equipment, through building bigger storage facilities or bringing back manufacturing to Europe
- ✓ Leads the recent European GAIA-X cloud project
- ✓ Together with France supports the concept of European Champions via adapting the European competition law





Initiatives and actions undertaken by selected European countries

Poland

- ✓ Strengthening their powers of control and authorisation for foreign investment
- ✓ As one of the few countries it was able to produce protective equipment for health workers
- ✓ Focus on the initiatives supporting the development of domestic pharmaceutical industry, i.e. Reimbursement Mode for Development project which will encourage pharmaceutical companies to transfer production to Poland as well as create the conditions for the further development of existing factories
- ✓ The Polish Digital Sovereignty Charter began work on a basic set of rules that will enable sustainable and socially beneficial development of the digital economy in Poland

Czech Republic

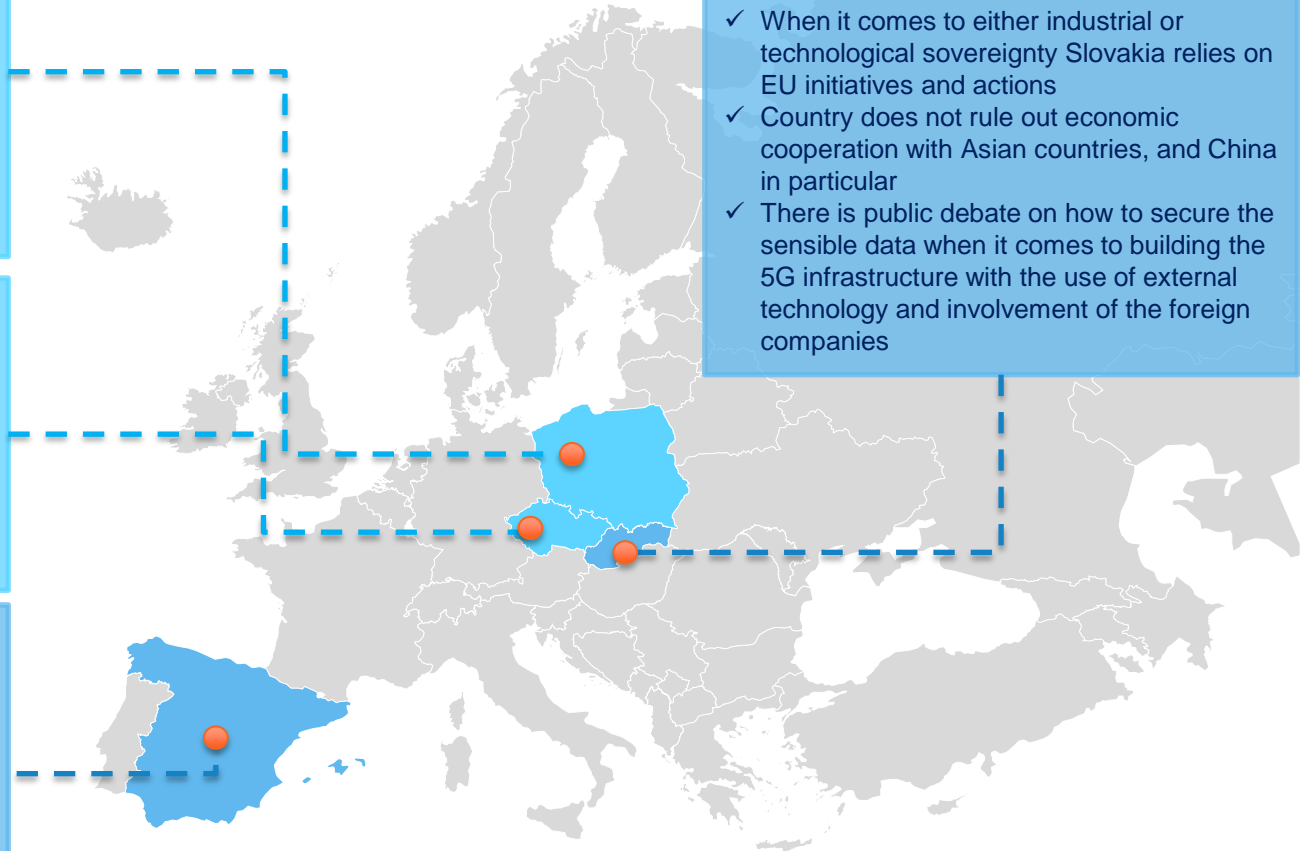
- ✓ One of few countries able to produce protective equipment for health workers
- ✓ Czechs believe that they are too small to be able to build any kind of industrial, technological or digital sovereignty. Therefore they consider the EU as the coordinator and support the common initiatives. However slow response to the first outbreak caused nationwide doubts if EU is capable of coping with it properly
- ✓ The digital sovereignty subject has been only discussed in the context of cybersecurity

Spain

- ✓ Strengthening their powers of control and authorisation for foreign investment
- ✓ The strategic mistake of exporting medical personal protective equipment to China in mid-February raised the public debate on better planning, prevention and building strategic capacity for potential future crisis situations
- ✓ Considers reshoring, nearshoring and health sovereignty
- ✓ Prefers building resilience through exploiting the European interdependencies
- ✓ Wants to avoid antagonizing China
- ✓ Lagging behind in terms of digitization and ICT and being dependent on US and Chinese technologies supports EU Digital Sovereignty initiatives

Slovakia

















- ✓ When it comes to either industrial or technological sovereignty Slovakia relies on EU initiatives and actions
- ✓ Country does not rule out economic cooperation with Asian countries, and China in particular
- ✓ There is public debate on how to secure the sensible data when it comes to building the 5G infrastructure with the use of external technology and involvement of the foreign companies





EU leading trends

European trends related to the Industrial Sovereignty concept are very similar to those observed globally. However many activities are coordinated at the pan-European level to secure the coherence of activities (that is the case of the for the screening of foreign direct investment) as well as to obtain the synergy effect (common R&D and implementation initiatives such as IPCEI mechanism)

Trend	Industrial Sovereignty	Technological Sovereignty	Digital Sovereignty
 Protecting markets from hostile takeovers leading to the loss of control over strategic technologies or resources			
 Focusing multiple efforts on building excellence in the given industry or technology			
 Re-shoring or rebuilding manufacturing capabilities in industries critical for national health or security			
 Developing strategies and risk management measures aimed at securing the uninterrupted supplies of the strategic goods and services			
 Providing public support to the selected industries and companies if the form of subsidies, tax incentives, etc.			

European Industrial Sovereignty across industries

Full industrial sovereignty remains a theoretical concept in Europe. When access to rare natural resources is taken into account, it is not possible for it to be deployed in any single European country or even in the European Union as a whole. Therefore it applies only to individual sectors of the economy. Cross-industrial analysis identifies a number of industries being the subject of debate on the need for some level of autonomy. While there are very different premises behind this need, these industries can be grouped into 3 separate categories: **critical**, **competitive** and **strategic**. Each of them implies distinctive roadmaps, legislative mandates and procedures, as well as tools and mechanisms of implementation.

CRITICAL



Industries or resources crucial for maintaining national safety and health. Might require fast track legal processing, interference with the current legal status or international agreements. Any activities coordinated and funded by the state, usually on the Member State level.

- ✓ Pharmacy
- ✓ Medical equipment
- ✓ Personal protective measures / equipment
- ✓ Defense
- ✓ Energy
- ✓ Aviation
- ✓ Aerospace
- ✓ Geopositioning

COMPETITIVE



Current industries or technologies that are perceived as a competitive advantage for a single country or region in the global arena. Usually funded from special purpose funds, from member states and private company contributions. Initiatives coordinated by NGOs or jointly by the countries concerned.

- ✓ Batteries (which account for about 40% of the total cost of an electric vehicle)
- ✓ Hydrogen fuels
- ✓ Microelectronics
- ✓ Automotive
- ✓ Advanced manufacturing
- ✓ Industrial and agriculture machinery
- ✓ Chemical engineering
- ✓ Telecoms

STRATEGIC



Future industries or technologies being considered as basic ones for the further development of derivative technologies or essential transformation of already existing ones. Funded from special purpose funds and coordinated on a pan-European level. Initiatives concern all Member States and associated countries.

- ✓ Infrastructure for digital economy, i.e. federated cloud infrastructure, connecting all European cloud service providers and giving priority of data access to European companies, in order to create value first in Europe
- ✓ AI – requires common regulations and commonly agreed standards
- ✓ Quantum computing, blockchain

Critical industries – initiatives and actions

HEALTH

- ✓ Imposing export prohibitions and restrictions in order to secure supply of products enabling the response to Covid-19 (France and Germany have taken such decision at the beginning of Covid-19 outbreak in March 2020)
- ✓ Need for mapping the EU healthcare infrastructure and dependencies and identifying the vulnerabilities and gaps
- ✓ Creating common strategic stocks

PHARMACY

- ✓ Concepts of legislation that would force pharmaceutical companies to maintain a specific part of the supply chain in the country of origin or in Europe; or would limit the access to the tenders to companies who obtain active ingredients from the EU
- ✓ National strategies for drug sovereignty (e.g. Poland, France, Spain) – creating conditions for further development of already existing factories and offering incentives to transfer the production back home

GEOPOSITIONING

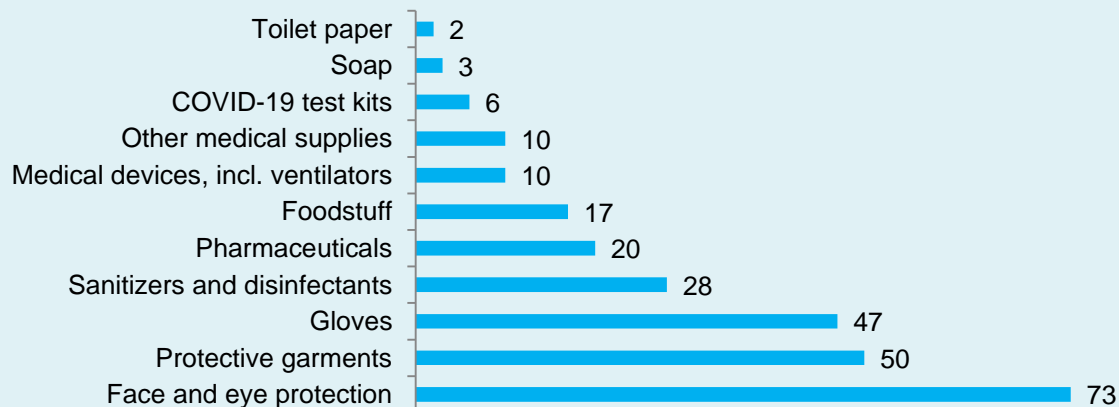
- ✓ Galileo - Europe's Global Navigation Satellite System (GNSS)
- ✓ Alternative to American GPS or Russian GLONASS, which are non-civilian
- ✓ Secures the access to positioning system for critical, emergency response services



AVIATION

- ✓ Airbus – jointly owned by Germany, France, Spain and Britain's BAE Systems; registered in the Netherlands, its shares are traded in France, Germany and Spain
- ✓ Subsidized loans for the development of new aircraft — the A380 superjumbo and the A350 twin-aisle jet recognised by WTO in 2018 as illegal EU assistance

Number of countries / territories introducing export prohibitions and restrictions as a result of COVID-19 (source: WTO Secretariat, April 2020)



Actions on national level

- ✓ Tax incentives for companies who bring their activities back to home country (Italy)
- ✓ Golden Share rule – minimum number of shares controlled by state in the companies operating in industries strategic for national safety (usually defense, security companies, telecoms, energy networks and now also health companies)

Actions on EU level

- ✓ the **Strategic Investment Facility** - proposed in May 2020, as a part of **InvestEU**, would target investments in strategic areas such as pharmaceuticals, health and biotechnology, green and digital technologies, and critical infrastructures

Competitive industries – initiatives and actions

AUTOMOTIVE

- ✓ European Automotive and Telecoms Alliance – created in 2016 – forum for cooperation between automotive and telecoms sectors to jointly explore how to best accelerate the deployment of connected and automated mobility in Europe
- ✓ Connected and autonomous mobility is being supported also through initiatives on building common European data infrastructure



MICROELECTRONICS

- ✓ **Important Project of Common European Interest (IPCEI) on Microelectronics** – program accepted by the European Commission in 2018. As far 29 companies from France, Germany, Italy and UK are involved. Initiative covers following technology fields: energy efficient chips, power semiconductors, smart sensors, advanced optical equipment, compound materials. The funding comes from the participating states, not the European Union;



RAW MATERIALS

- ✓ **The European Raw Materials Alliance** – announced in September 2020 – its aim is to build supply chains around metals and rare earths, critical in manufacturing of batteries and equipment for renewable energy
- ✓ Only a few rare earths are mined in Europe: Norway (Silicon metal – 30% of global production), Finland (Germanium – 51%), Germany (Gallium – 35%), France (Hafnium – 84% and Indium – 28%) and Spain (Strontium – 100%) [source: European Commission, 2020]

HYDROGEN

- ✓ **Clean Hydrogen Alliance** – announced in March 2020 as part of the new industrial strategy for Europe
- ✓ **Important Project of Common European Interest (IPCEI) on Hydrogen** – still in preparation phase. Includes projects in following areas: generation of hydrogen, transportation of hydrogen, mobility sector, industry applications, energy sector, housing sector and end user driven applications;



BATTERIES

- ✓ Important Project of Common European Interest (IPCEI) on Batteries
- ✓ European Battery Alliance
- ✓ Northvolt investment in demonstration facility in Vasteras co-funded by Volkswagen, Goldman Sachs and Ikea, with a production of about 350MWh and in Skelleftea, with an expected capacity of 40GWh
- ✓ Setting environmental standards on batteries production (including mineral extraction, cell manufacturing, software standards and recycling) on pan-European level

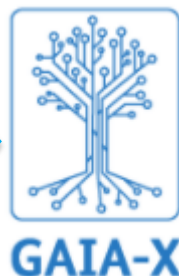
CIRCULAR PLASTICS

- ✓ Circular Plastics Alliance – launched in December 2018, 245 members as far involved in the plastic value chain
- ✓ The Alliance declaration: “to take actions to boost the EU market for recycled plastics up to 10 million tones by 2025”
- ✓ In May 2020 there has been R&D agenda developed which lists 7 strategic R&D needs (common to at least 3 plastics-using sectors) and series of specific R&D needs (common to only 1 or 2 plastics-using sectors)

Strategic industries – initiatives and actions

Infrastructure for digital economy

- ✓ European Strategy for Data
- ✓ Announced in February 2020, aimed at the creation of a single European market for data to be used by European companies for analytical purposes
- ✓ Part of this data space will be “**federated cloud architecture**” integrating all cloud service providers operating in Europe (as alternative to AWS and Azure, ensuring the security of data and data governance in line with EU regulations)
- ✓ Synergy with GAIA-X project



- ✓ Project launched in 2019
- ✓ Aim of the project: to develop the foundations for a federated, open data infrastructure based on European values
- ✓ Has been founded by 22 companies from France and Germany (11 companies from each country)
- ✓ Currently 300 companies and organisations are already engaged from 7 countries (i.e. Netherlands, Spain and Switzerland)
- ✓ Use cases for: Industry 4.0 / SME, smart living, finance, health, public sector, mobility, agriculture, energy

Artificial Intelligence

- ✓ Creating an ecosystem of excellence for efficient research and development processes and fostering the collaboration between all stake holders to provide sufficient funding
- ✓ Creating a legal framework for enhancing trust in AI and to regulate high risk systems
- ✓ Promoting the “European way of digitisation”, human-centered and value-oriented
- ✓ Increased investments in AI under R&D programs such as Horizon



NETWORKING

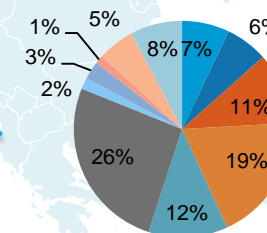
- ✓ Network approach to the digital industry, innovation and skills; Fostering the excellence of the process of developing new technologies and gaining the synergy effect of efforts undertaken jointly
- ✓ E.g. the European Cluster Collaboration Platform is a service facility aiming to provide cluster organizations with modern tools



R&D

- ✓ Horizon Europe – EUR 100B research and innovation program to succeed Horizon 2020
- ✓ Pillar 2: Global Challenges and **European Industrial Competitiveness** including:
 - Health,
 - Civil Security for Society,
 - Digital, Industry and Space,
 - Climate, Energy and Mobility
 - Food, Bio-economy, Natural Resources, Agriculture and Environment

Incubators, accelerators, technology centers, etc.



Most focus and effort on industrial manufacturing, material and transport, as well as electronics, IT and telecoms

- Agriculture and Marine Resources
- Agrofood Industry
- Biological Sciences
- Electronics, IT and Telecoms
- Energy
- Industrial Manufacturing, Material and Transport
- Measurements and Standards
- Other Industrial Technologies
- Physical and Exact Sciences
- Protecting Man and Environment
- Social and Economics Concerns

European Heritage

- ✓ As an answer to Boeing’s dominance in commercial aircraft market, on 29th May 1969 German and French ministers agreed a partnership between European countries, joined also by Spain and the UK, to develop the first Airbus plane
- ✓ Its legal structure is “European Company” – Airbus Societas Europaea
- ✓ More than 90% of Airbus workforce is located in Europe

Impact of Covid-19 outbreak

- ✓ Had to shut down its production in France and Spain for some time due to the health and safety concerns related to covid-19
- ✓ Had to reduce the opened workstations due to health concerns
- ✓ Received requests for delivery deferrals, as many of its customers are struggling with the impact of covid-19 on transport

Threats

- ✓ Most suppliers involved in European supply chains are companies with less than 100 employees, which are strongly dependent on the aircraft industry (with low level of business diversification) and operating in low margin segments – therefore the Covid-19 outbreak threatens their existence and also the flawless operations across whole supply chain

Actions

- ✓ Lobbying for government support for implementing a programme of profound restructuring of their domestic supply chains that are highly fragmented
- ✓ The aim of this action is to support creating more robust suppliers (i.e. through consolidation processes) that would survive the Covid-19 crisis and protect the core technologies from the acquisition by foreign companies

Airbus footprint on European market

- ✓ Among more than 12,000 direct suppliers 8,400 are based in Europe
- ✓ European suppliers benefit from the 68% of the total value of external sourcing



FILTON

- ✓ Development: wing; development and testing: landing gear, fuel systems

BROUGHTON

- ✓ Assembly and pre-equipping: wing box

STADE

- ✓ Manufacturing: aft fuselage upper and lower shells, wing upper cover; assembly and equipping: vertical tail plane; testing: vertical tail plane

HAMBURG

- ✓ Development: cabin and fuselage; assembly and equipping: aft fuselage, forward fuselage; testing: cabin and fuselage; Customer Definition Centre

BREMEN

- ✓ Development and testing: cargo loading systems, wing movable surfaces; assembly: flaps; and equipping: wing

SAINT-NAZAIRE

- ✓ Assembly and testing: nose and center fuselage

NANTES

- ✓ Manufacturing and assembly: center wing box, keel beam, rudder and air inlet

TOLOUSE

- ✓ Aircraft development; testing of structure and systems; final assembly; flight test; customer delivery

SAINT-ELOI

- ✓ Development: pylon, air inlet and nacelle integration; Assembly and integration: pylon and aft pylon fairing

GETAFE

- ✓ Assembly and equipping: horizontal tail plane; assembly: S19

ILLESCAS

- ✓ Manufacturing and sub-assembly: wing lower cover; manufacturing: S19 full barrel skin

PUERTO REAL

- ✓ Assembly: horizontal tail plane boxes

Source: Airbus



Business Case 2

Volkswagen – top world automotive player with strong European roots

European Heritage

- ✓ Founded in 1937 and headquartered in Wolfsburg
- ✓ Today it is a part of Volkswagen Group, which is indirectly majority owned by the Austrian Porsche family, and comprises 12 brands from 7 European countries
- ✓ It's the largest car manufacturer in Europe (71 manufacturing plants) and since 2016 it's the second largest auto maker in the world and 10th biggest company overall

Impact of Covid-19 outbreak

- ✓ Company had to halt production at some sites, due to the state of emergency announced in the countries where plants are located
- ✓ Group sales revenue decreases by 23.2%
- ✓ Raise in prices of components from suppliers – they were investing heavily to meet high VW's demand on parts and components, and now they have to cover high depreciation costs while seeing lower volumes being ordered

Threats

- ✓ Financial and operational difficulties that some of the suppliers undergo can affect the supply chains
- ✓ The group is undergoing deep restructuring and simplification of supply chains, as it strategically switches into electric and autonomous cars; the turbulence caused by Covid-19 could disturb this process

Actions

- ✓ German government has resisted call for more state support for the car automakers; The existing support programmes are directed to suppliers only
- ✓ Further integrating all 124 production plants into single Volkswagen Industrial Cloud, what together with IoT and Big Data analysis will further improve cost efficiency. That will strengthen the company's ability to compensate negative effects of such events as Covid-19 outbreak

The importance of automotive industry to the European economy



Automotive sector generates 7% of the total EU's GDP



14.6 million European citizens work directly or indirectly in the automotive industry, which accounts for 6.7% of all EU jobs



European automotive sector also creates around 3.7 million manufacturing jobs - 11.5% of the total number for whole EU



Each year there are 18.5 million vehicles produced in 226 assembly and production plants across EU



The industry accounts for €74B trade surplus for the EU

Source: ACEA

Challenges related to the European automotive industry supply chains



A single car is manufactured from about 20,000 parts which are supplied from over 30 countries, including China



Complex sub-assembly process is required to finish a single vehicle + equally complex supply chain of parts



Commonly used practice of Just-In-Time manufacturing, which results in limited stock

European Heritage

- ✓ Company formed in 1973, headquartered in Paris, France, operates internationally; 7th biggest pharmaceutical company in the world
- ✓ Since 1999 it has undergone numerous M&A processes and was rebranded 'Sanofi' in 2011
- ✓ Through its subsidiary Sanofi Pasteur, it is one of the world's largest vaccines manufacturers

Impact of Covid-19 outbreak

- ✓ As soon as it was possible, the company began developing a covid-19 vaccine
- ✓ Sanofi is now leading the clinical development and registration of a vaccine in partnership with British GSK

Threats

- ✓ French pharmaceutical companies produce 80% of their medicines in China. Sanofi's production also relies heavily on APIs sourced from the Asian region
- ✓ Not enough capacity to scale up in case of global immunisation need for millions of people

Actions

- ✓ In February 2020, the company announced plans to establish a new company in Europe, where APIs would be manufactured. The ambition is to become the second largest API provider in the world. The company has its HQ in France, and will have 3,000 employees in 6 European plants. The costs of manufacturing will be 10% - 15% higher than in Asia, however it is a strategic decision to keep these facilities in Europe – no public aid assigned so far
- ✓ Sanofi is also planning to spend \$554M on a brand new vaccine manufacturing plant in France. The construction is going to take 5 years and its purpose is to secure vaccine production capacity for future pandemics – will be a part of "global biosecurity network" - no public aid assigned so far

Pharmaceutical industry in Europe in numbers



Pharmaceutical industry delivers €206B gross value added to European economy annually



Due to the European Federation of Pharmaceutical Industries and Associations (EFPIA) there are 7,000 medicines currently in development in Europe



Creates 2.5 million jobs, 642,000 of which are employed directly by pharmaceutical companies



Around 3,200 European patent applications in the pharmaceutical industry originated from European based companies in 2019



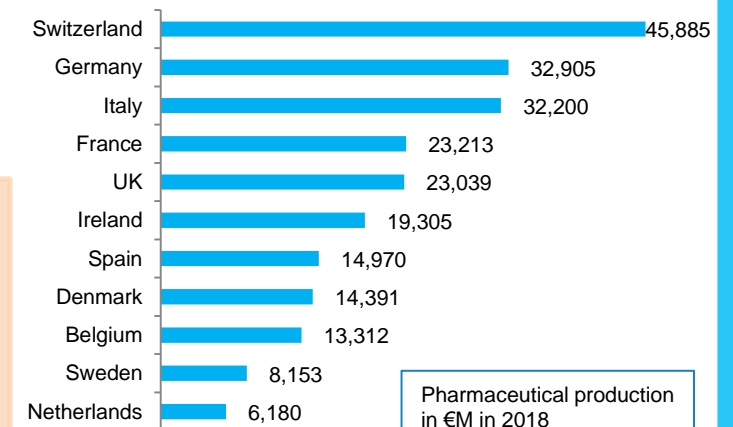
Contributes annually over €35B investment in European research and development

Source: EFPIA

Characteristics of the pharmaceutical industry in Europe



70.9% of active pharmaceutical ingredients (APIs) used to the production of pharmaceuticals in European laboratories come from Europe, 8.0% are imported from China and 3.4% from India (in volume terms 22.5% and 3.2% respectively)



Pharmaceutical production in €M in 2018

Scenarios for 2025 - 2030

Introduction:

- ✓ The objective of this part of the research and analysis is to present three scenarios on how the industrial sovereignty trends could develop to 2030
- ✓ As the issue is complex, and some industries or countries will be more impacted by these trends than others, it is not possible to draw general scenarios for the entire EU. Therefore the scenarios must be considered through at least two different lenses: industrial (3 groups of industries defined earlier: critical, competitive and strategic) and political (particular countries have different approaches and readiness toward cooperation). All these interdependencies have been mapped as part of the analysis
- ✓ The main driver for industrial sovereignty initiatives across the globe will be China's recently announced (29/10/2020) self-sufficiency and "double-circulation" strategy – also mentioned on the map of interactions
- ✓ The development of the European Industrial Sovereignty scenarios to 2030 will depend more on movements in global politics and economies than the COVID-19 situation
- ✓ However, the pandemic could speed up certain trends or pivot others, and therefore three scenarios on how the pandemic could influence the EU have also been included. The most important aspect in terms of Covid-19 is the impact on the global supply chains. The possible negative impact on supply chains fully or partially located in the regions or countries most affected by the pandemic will likely support more radical actions toward industrial sovereignty in these countries

Covid-19 pandemic scenarios:

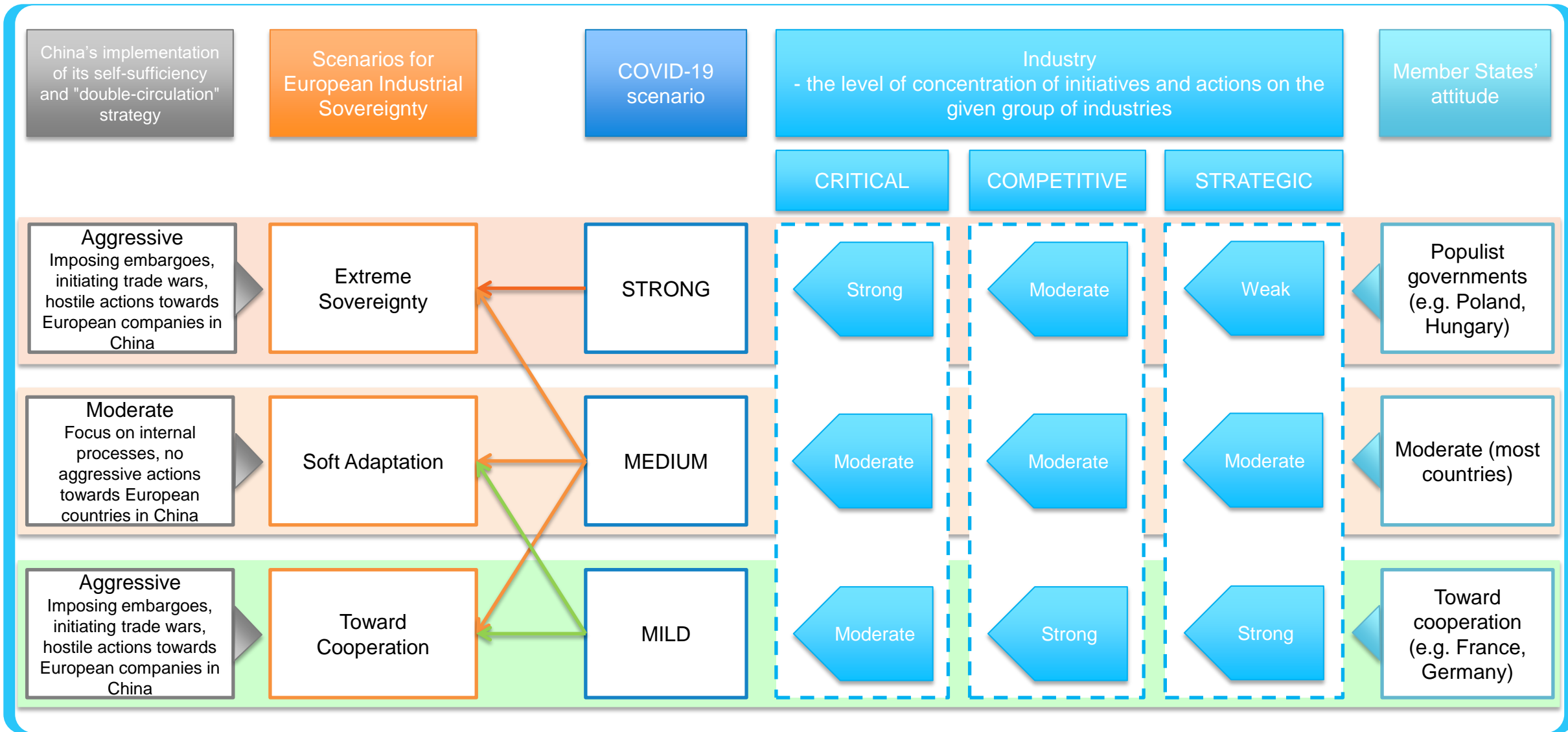
- ✓ The development of the pandemic, as well as the responses to it, will be different across countries and regions
- ✓ The impact on Europe will depend on the location and distribution of supply chains (Covid-19 situation in a particular region or country)

COVID scenarios	Scenario 1 STRONG	Scenario 2 MEDIUM	Scenario 3 MILD
Pandemic escalation	Number of cases growing; Crisis in the healthcare; Chaos, no control	Active adaption to the situation; Number of cases growing but under control; Healthcare system under pressure	Number of cases stable and under control, easy to forecast and manage; Efficient healthcare system
Possible answer to the given scenario in terms of movement of people and goods	Total lockdowns, including closing borders and cancelling or limiting flights (also cargo)	Restrictions to the movement of people, (therefore some services are limited) but the transport of goods not affected	Some restrictions to travel (i.e. only business travel allowed), however the transport of goods is not affected at all

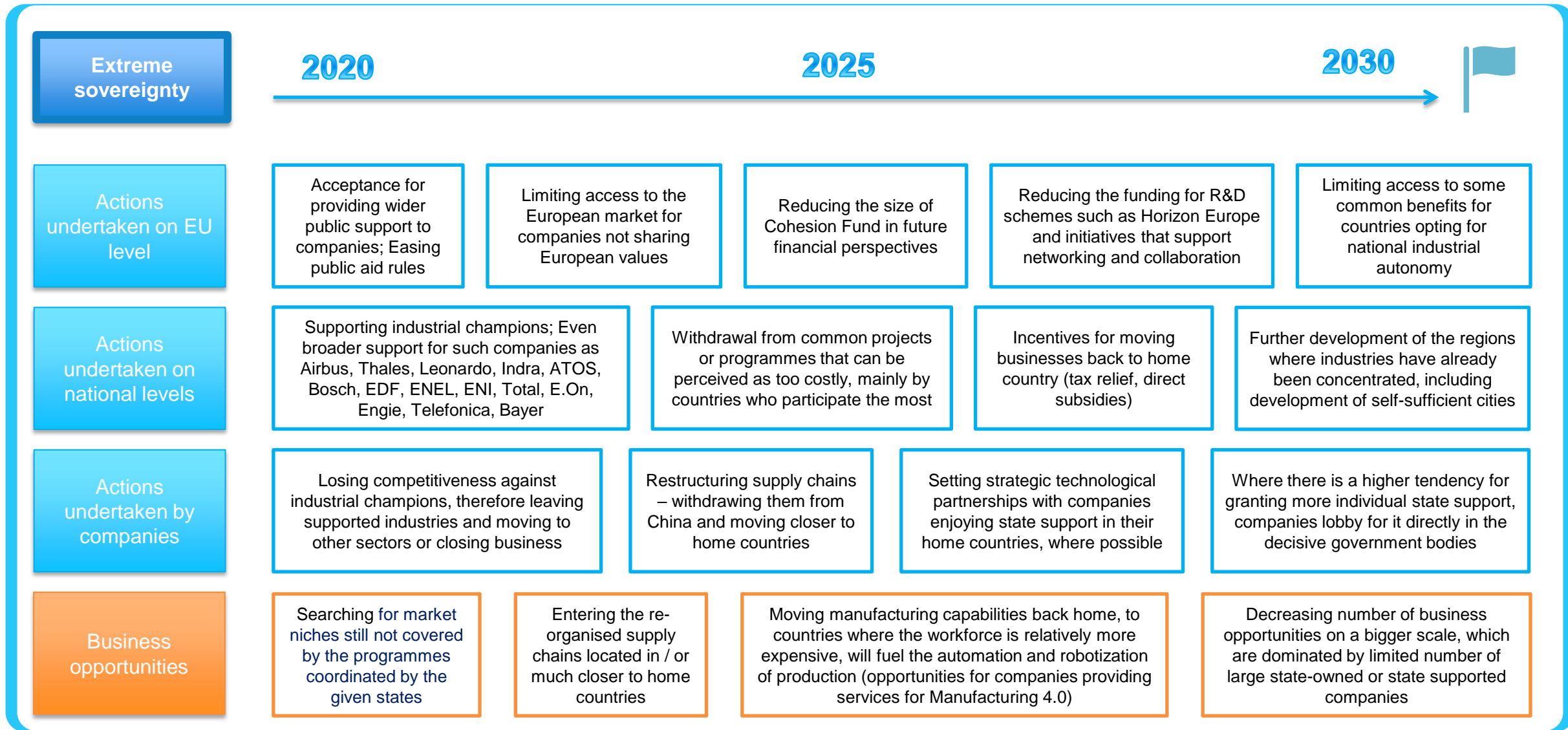
Scenarios for 2025 – 2030 (1/2)

	Scenario 1 Extreme sovereignty	Scenario 2 Soft adaptation	Scenario 3 Toward cooperation
Main features	<ul style="list-style-type: none"> Member States undertaking independent actions toward total sovereignty of specific industries; Moving production facilities and supply chains back home; Withdrawal from multinational agreements and alliances; 	<ul style="list-style-type: none"> Member States undertaking independent actions but only for some of the critical industries and in line with European regulations; Common initiatives toward European technological and digital sovereignty but not all countries engaged; 	<ul style="list-style-type: none"> High engagement into common initiatives on pan-European level aimed at building technological and digital sovereignty with extraordinary effects; EU as strong economic powerhouse able to build competitive advantages against rising Chinese dominance;
Cooperation between countries within the EU for resource supplies	<p>LOW</p> <p>Member States competing for resources rather than cooperating</p>	<p>MODERATE</p> <p>Some countries don't want to accept support or don't want to provide support to others</p>	<p>HIGH</p> <p>Member States offering and accepting help / support</p>
Acceptance of higher public aid for companies, especially state-owned ones	<p>HIGH</p> <p>High acceptance for public support of state-owned companies</p>	<p>PARTIAL</p> <p>Some countries more eager to accept supporting the state-owned companies from public sources; however others want to follow the current rules</p>	<p>LOW</p> <p>Low acceptance for more support for state-owned companies; further public support for SMEs as the pillars of European economy</p>
Assessment of the actions undertaken on EU level	<p>WEAK</p> <p>High skepticism for EU initiatives</p>	<p>ACCEPTABLE</p> <p>but not sufficient in some fields</p>	<p>HIGH</p> <p>High level of trust</p>
Knowledge and technology transfer between EU member states	<p>LOW</p> <p>Companies keep access to their knowledge closed; Low willingness to cooperate with other entities on its further development</p>	<p>MODERATE</p> <p>Companies cooperate on R&D projects under schemes supported by EU (e.g. Horizon Europe)</p>	<p>HIGH</p> <p>High tendency to cooperate on R&D projects with other companies and joint efforts on technology transfer and commercialisation</p>

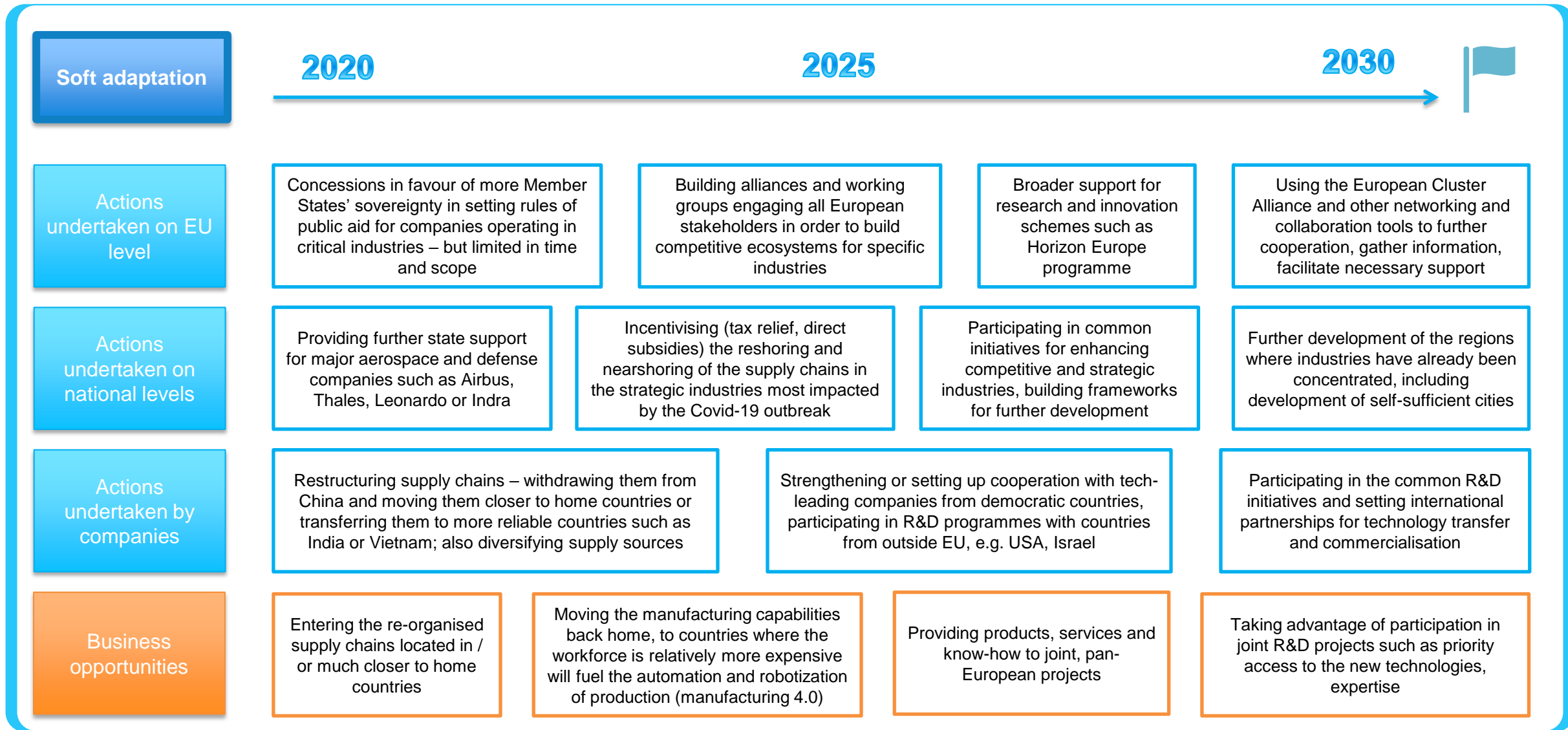
Scenarios for 2025 – 2030 - map of the interactions (2/2)



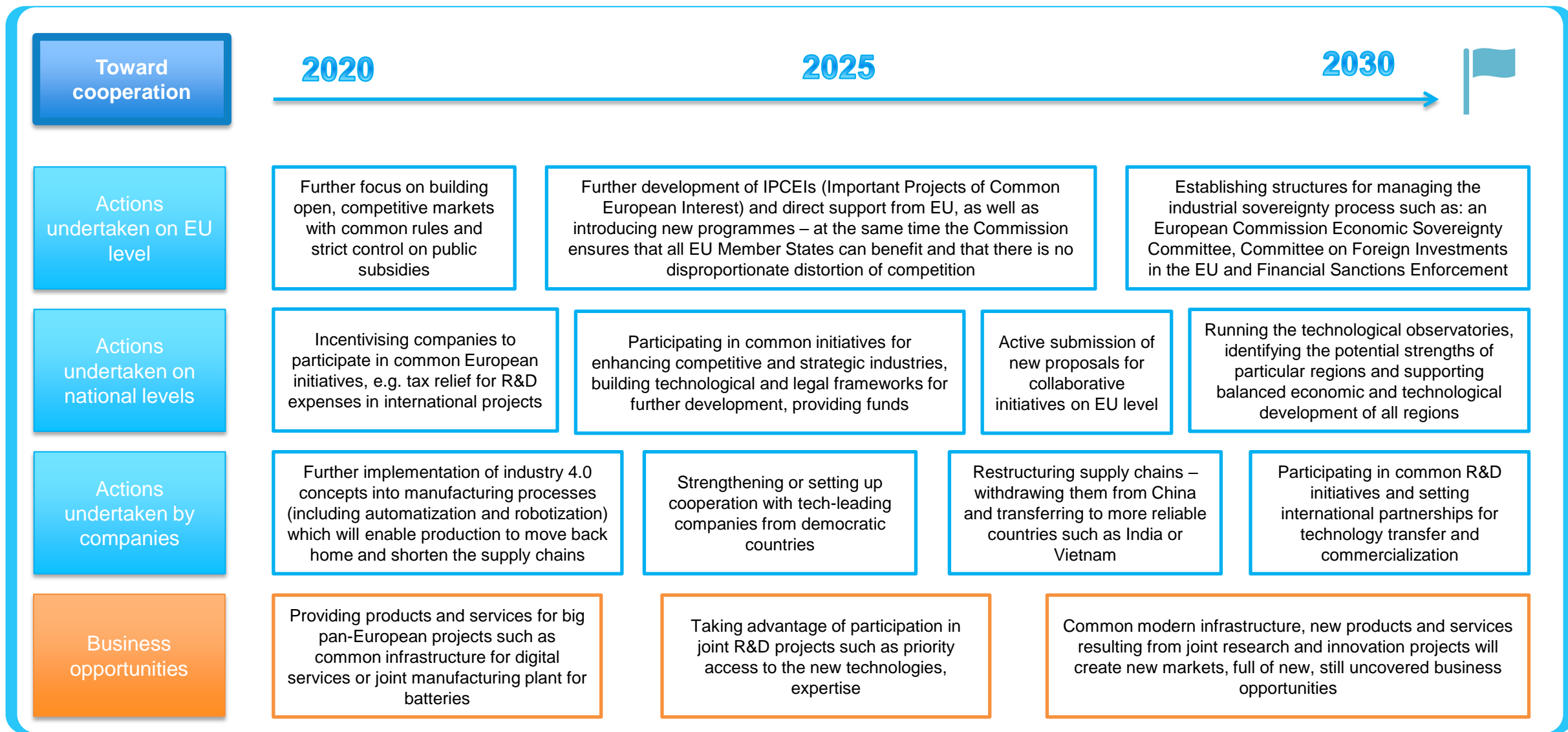
Scenario 1 – impact on EU industry



Scenario 2 – impact on EU industry

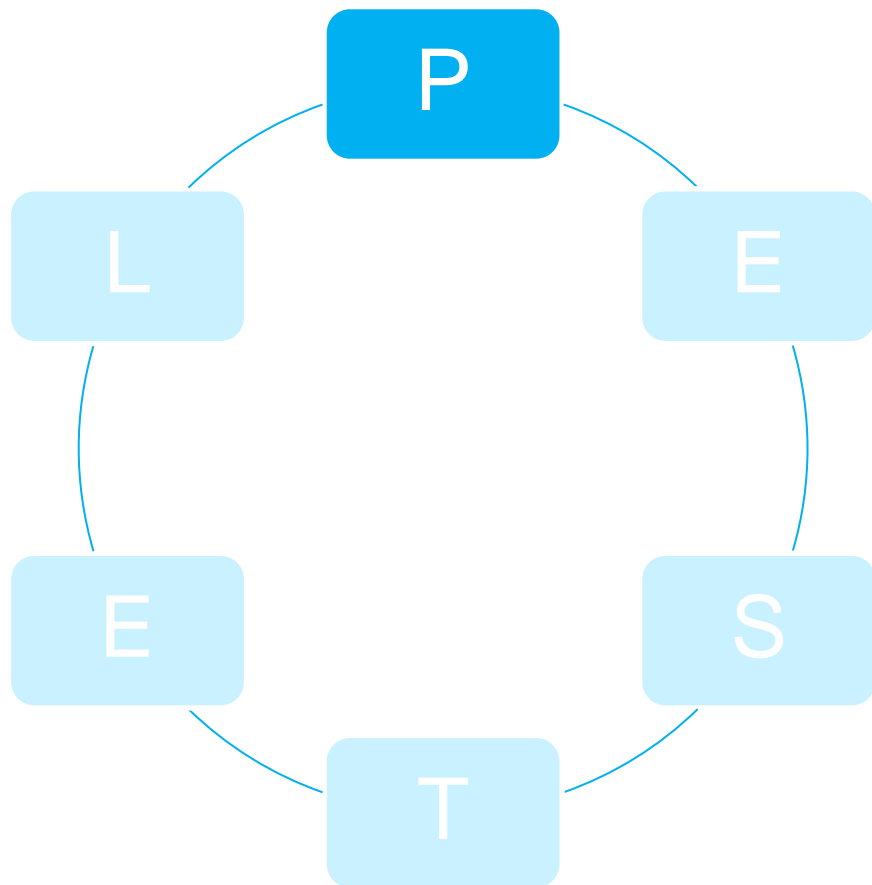


Scenario 3 – impact on EU industry



Map of current drivers and risks related to European Sovereignty Initiatives

Political factors



DRIVERS

- ✓ China's implementation of its self-sufficiency and the "double-circulation" strategy, together with American technological dominance in many areas, is pushing Europe to undertake initiatives that strengthen its internal technological capabilities
- ✓ More state aid for single companies, also state owned or co-owned and launching programmes financed or co-financed from public sources
- ✓ Brexit – for the UK economy, if there is a no-deal scenario and the UK fail in setting up favourable trade agreements with other blocks

RISKS

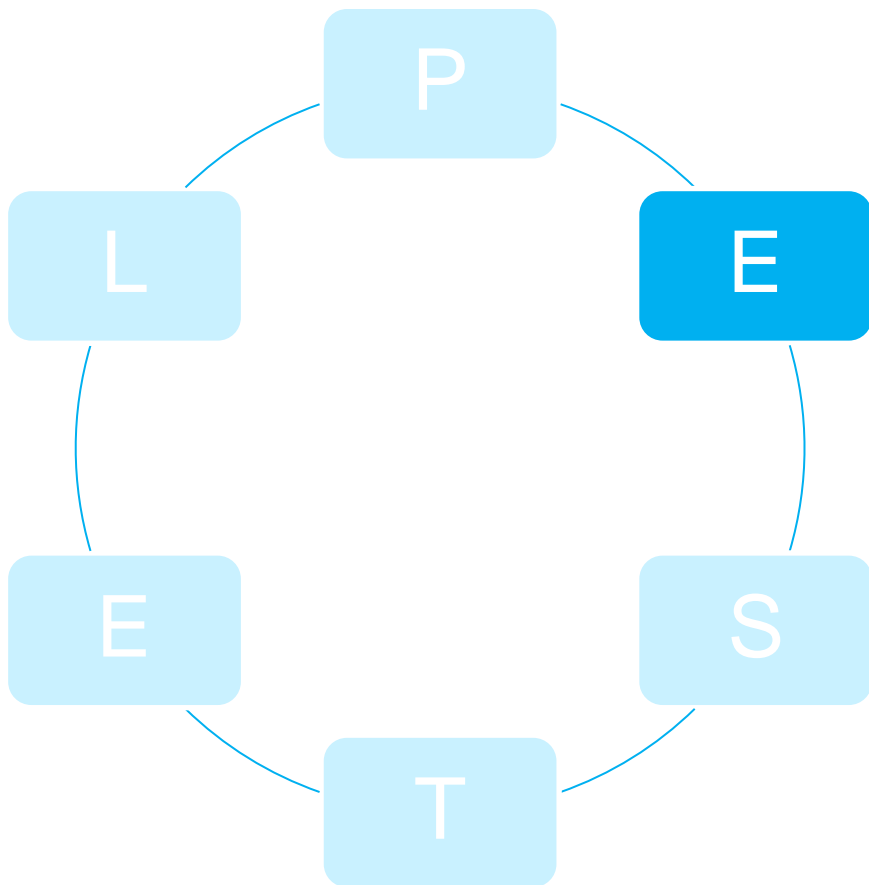
- ✓ In the long term, too much public aid injected into the economy will cause weakening competitiveness of single companies and whole economies
- ✓ Breaking down and disrupting the operational continuity of supply and value chains spread across the English Channel

OPPORTUNITIES

- ✓ Strategic technological partnerships with companies enjoying state support in their home countries, where possible
- ✓ Setting up legal representatives or other legally independent entities in the UK in order to provide products and services to supply chains located on the islands

Map of current drivers and risks related to European Industrial Sovereignty Initiatives

Economic factors



DRIVERS

- ✓ Transmission of economic crisis through international business connections and supply chains spread across the globe
- ✓ Unfavorable balance of payments with no alternatives for its improvement other than taking some of the value chain back home
- ✓ Increasing competitiveness on the markets where the supply chains are located due to economic development and raising labor cost there, therefore keeping operations there is becoming less and less profitable and rise questions on taking them back home

RISKS

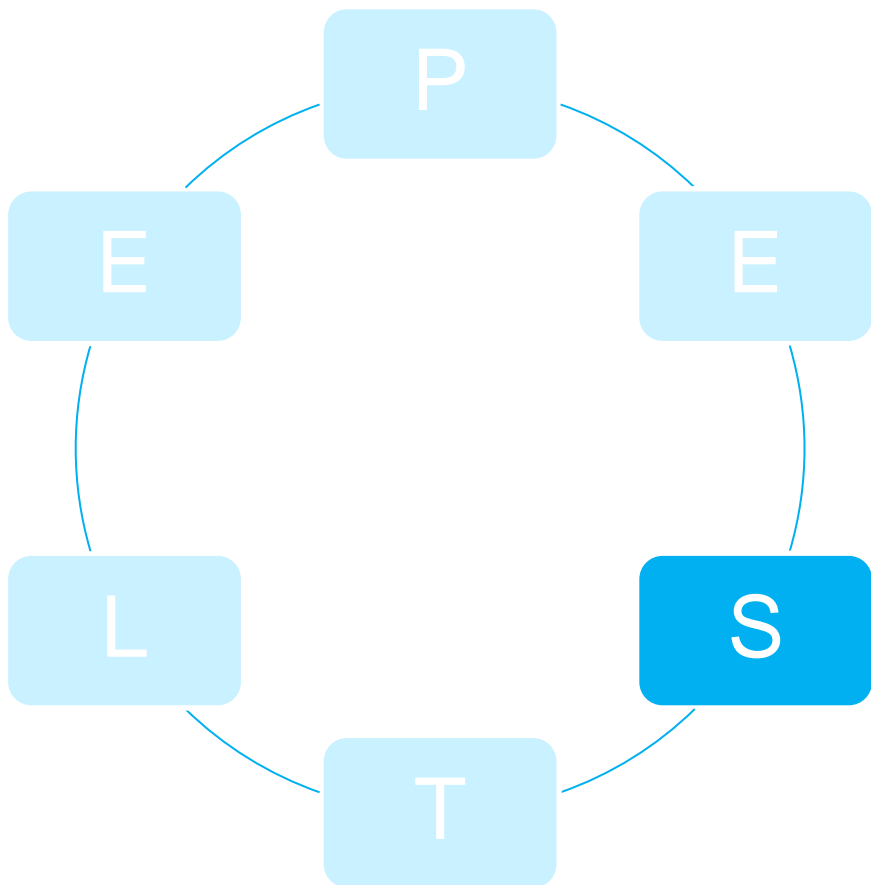
- ✓ Lack of enough work force with required skills will make the re-shored industries more vulnerable to labor shortages and will lead to rise in prices
- ✓ Economic dependency on fewer and larger companies able to survive in more competitive conditions due to the economy of scale

OPPORTUNITIES

- ✓ Agency in hiring employees coming from abroad
- ✓ Entering the re-organized supply chains relocated to the countries with lower labor costs
- ✓ Manufacturing 4.0, automatization and robotizing the production plants

Map of current drivers and risks related to European Industrial Sovereignty Initiatives

Social factors



DRIVERS

- ✓ Fear about depending on other countries in technologies or industries critical for national and health safety
- ✓ Growing concerns around cybersecurity related to technologies enabling big data collection in a way that is difficult to control
- ✓ Narratives used by populist governments, which build a feeling of national pride around industries 100% controlled by home-grown capital and favour state-owned companies in procurement

RISKS

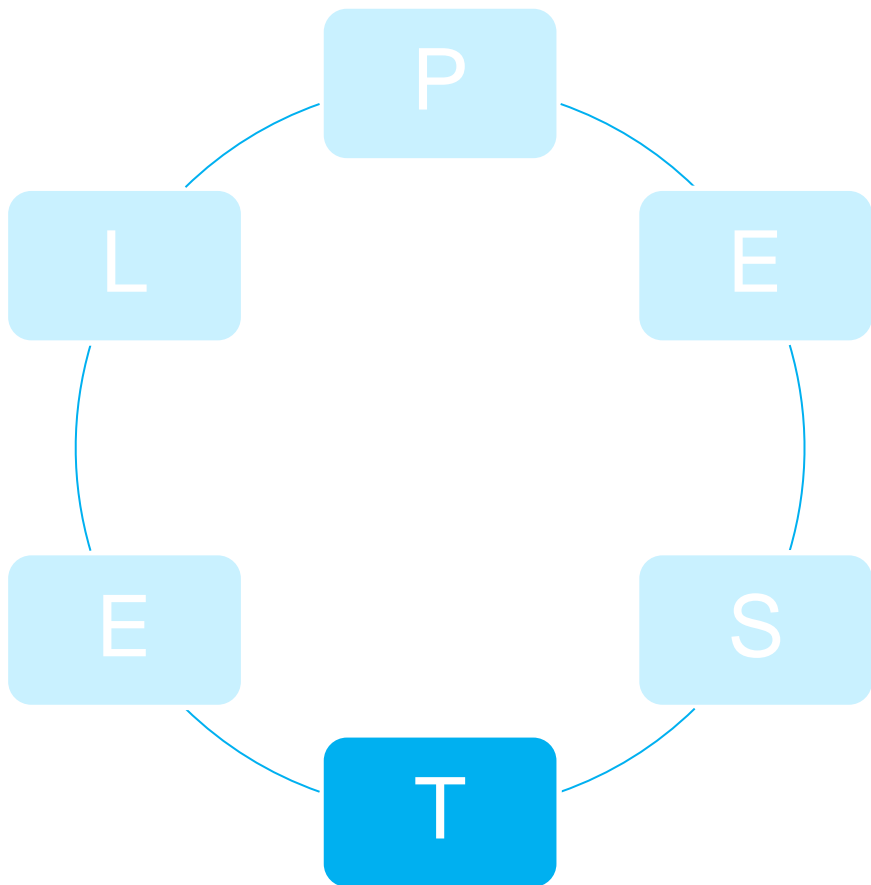
- ✓ Blocking further development of technologies i.e. more connected and autonomous mobility
- ✓ Limited access to technologies crucial for economic development
- ✓ Decreasing competitiveness of a given industry or whole economies

OPPORTUNITIES

- ✓ Building strategic partnerships within industries supported by states
- ✓ Trusted technologies providing cybersecurity in line with EU standards
- ✓ Providing products and services to the critical industries rebuilt on national levels

Map of current drivers and risks related to European Industrial Sovereignty Initiatives

Technological factors



DRIVERS

- ✓ The growing technological dominance of the USA and China, which could leave the European economy behind if no actions are undertaken
- ✓ Growing importance of innovation hubs and eco-systems across Europe, which attract knowledge, capital, talent and startups in given areas of expertise, i.e. Golden Triangle (London, Oxford, Cambridge), Medicon Valley in Sweden, Swiss BIOVALLEY Life Science Network, Cosmetic Valley in Paris, IT hubs in Berlin, London or Barcelona, etc.
- ✓ R&D programs supported through European Funds (i.e. Horizon Europe)

RISKS

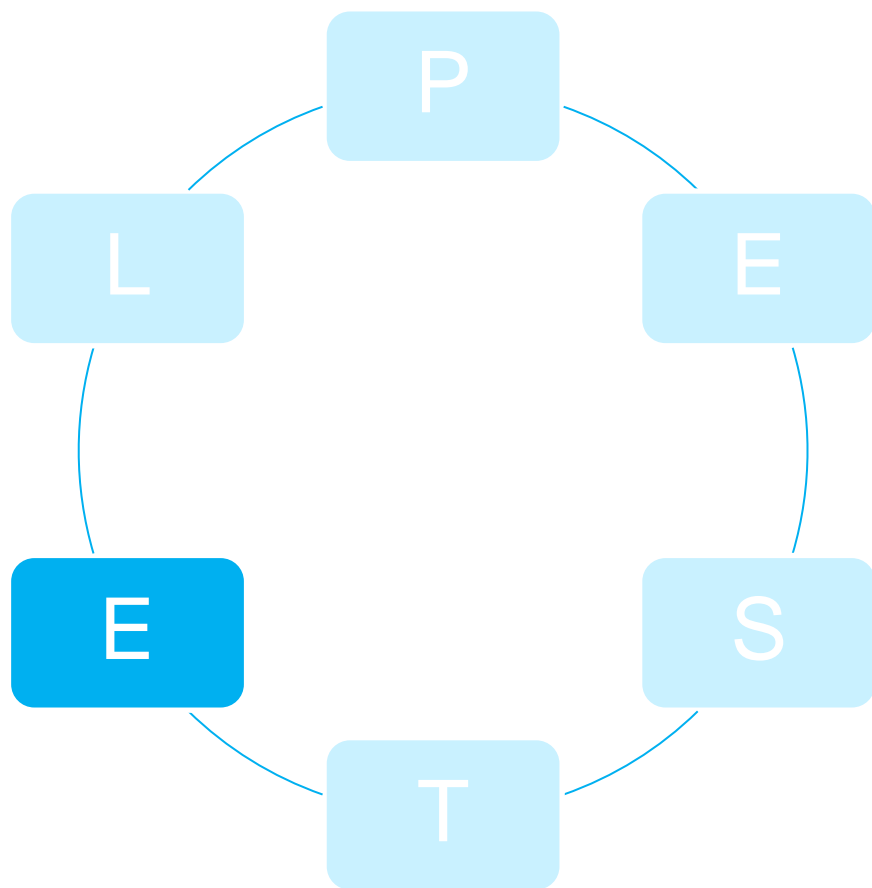
- ✓ Lack of technological standards and compliance related to some strategic technologies such as quantum computing or AI
- ✓ Failure to use the synergistic effect of joint effort on new technological development and commercialisation

OPPORTUNITIES

- ✓ Exploring innovation and technology hubs across Europe to find the most relevant to own business profile, then locate business development efforts there
- ✓ Taking advantage of participation in joint R&D projects such as priority access to the new technologies, expertise

Map of current drivers and risks related to European Industrial Sovereignty Initiatives

Environmental factors



DRIVERS

- ✓ Interruptions in the supply of energy resources caused by climate change (e.g. drying up of rivers, drying up of sources of water used for cooling energy plants, dependency on the supplies from countries affected by extreme weather phenomena)
- ✓ Growing exposure to emerging natural disasters, such as floods and fires, supports the initiatives for building own disaster response facilities (to a large extent covered by defense sector but might also relate to other industries)
- ✓ Development of technologies enabling better exploration of renewables available at home

RISKS

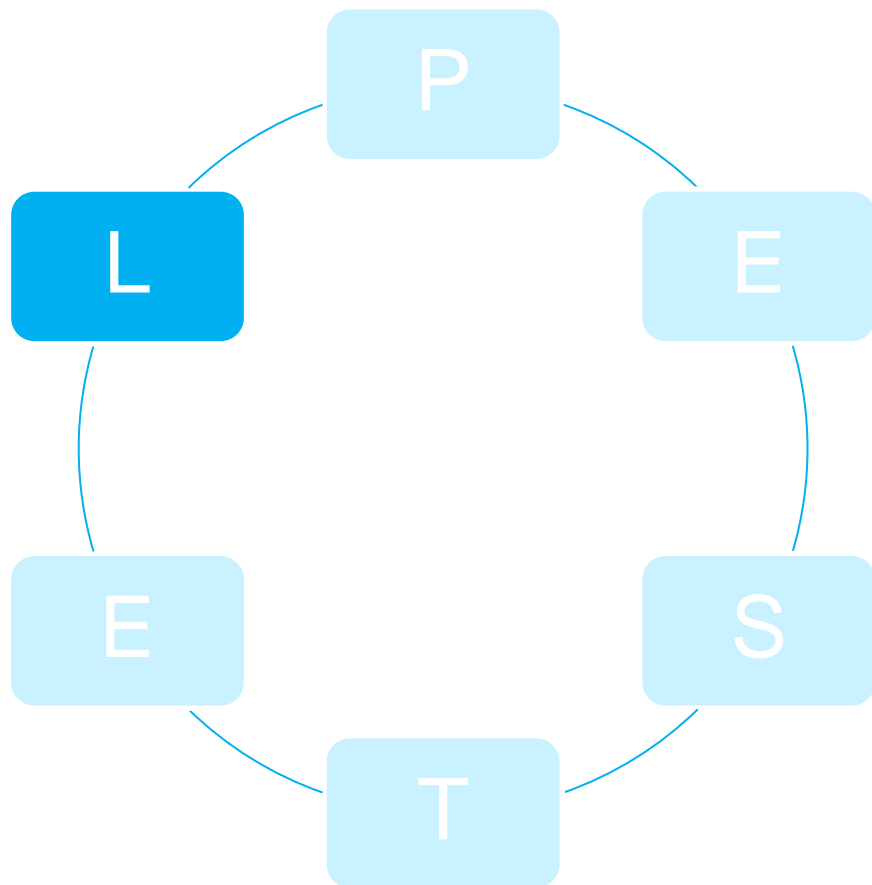
- ✓ Losing access to strategic natural resources if they are affected by climate catastrophes
- ✓ Rising prices of commodities affected by climate change
- ✓ Further reliance on fossil fuels if no investments in renewables taken

OPPORTUNITIES

- ✓ Moving supply chains to regions / countries more resistant to environmental changes – Europe is far less vulnerable to severe floods or fires
- ✓ Development of technologies for renewables

Map of current drivers and risks related to European Industrial Sovereignty Initiatives

Legal factors



DRIVERS

- ✓ Uncertainty around unethical actions by China with regards to IPO rights, such as duplicating technologies with no respect for international regulations
- ✓ Uncertainty with regards to the unclear methods and purposes of gathering sensitive data, collected by systems with Chinese-origin technologies, often controlled by state-owned or state-controlled companies
- ✓ China's divergence from multilateral standards

RISKS

- ✓ Losing control of sensitive personal data
- ✓ Providing access to big data, generated by various devices and systems, to external companies which can monetize this data and gain competitive advantage over European companies

OPPORTUNITIES

- ✓ Taking over high technology businesses which will be reshored from China for fear of dishonest actions
- ✓ European companies providing services in IoT, Machine Learning and Big Data analytics preferred over their Chinese counterparts

Recommendations

How to explore opportunities created by European Industrial Sovereignty trends

Check to what extent your business operations could be affected by global industrial sovereignty trends

Determine which group of industries you provide goods and / or services: critical, competitive or strategic

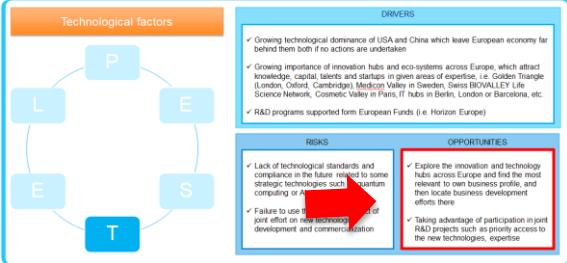
Check what the COVID-19 impact on the given industry may be

Find out how national politics influence the industrial sovereignty trends in a chosen market

Verify which scenario is the most relevant in a preferred market, in the given industry

Soft adaptation	2020	2025	2030
Autarky orientation on EU level	Concessions in favor of more Member States' sovereignty in setting rules of public aid for companies operating in critical industries - but limited in time and scope	Building alliances and working groups engaging all European stakeholders in order to build competitive ecosystems for specific industries	Further broader support for research and innovation schemes such as Horizon Europe program
Autarky orientation on national level	Providing further state support for major European and defense companies such as Airbus, Thales, Leonardo or Safran	Restructuring the supply chains (direct subsidies) the reducing and reorganizing of the supply chains in the strategic industries mostly impacted by the Covid-19 outbreak	Participating in the common initiatives for enhancing competitive and strategic industries, building frameworks for their further development
Autarky undertaken by companies	Restructuring the supply chains - withdrawing them from China and strong shift to home countries or transfer them to more reliable countries such as India or Vietnam, also diversifying the supply sources	Strengthening or setting up cooperation with technology companies from democratic countries, participating in R&D programs with countries from outside EU, e.g. USA, Israel	Participating in the common R&D initiatives and setting international partnerships for technology transfer and commercialization
Business opportunities	Entering the re-organized supply chains located in or much closer to home countries	Moving the manufacturing capabilities and R&D to countries where the workforce is relatively more expensive will fuel the automation and robotization of production (manufacturing 4.0)	Taking advantage of participation in joint R&D projects such as priority access to the new technologies, expertise

1	2	3	4
Securing the uninterrupted operation of the strategic goods and services such as fuels, medicines, food, through diversification and risk management	Fostering multiple efforts in building resilience in the given industry or technology	Re-sharing or rebuilding manufacturing capabilities	Protecting markets from a) IP, b) trade, c) espionage or undue competition
<ul style="list-style-type: none"> Opportunity to enter the supply chains that must be redesigned due to the need to improve their resilience - actively searching for announcements that might indicate such movements in given supply chains Threat for companies engaged with supply chains that are expected to undergo the transformation Must expect and accept new, more strict requirements, securing more flexibility in already existing or future contracts 	<ul style="list-style-type: none"> Threat of losing the technological competitive advantage over companies in industries, supported by a given country Must still take care of cost Opportunity of taking advantage of closer technological cooperation with companies enjoying state support programs in their home countries, where it's possible 	<ul style="list-style-type: none"> Use of competitive advantage of many European companies which is experience in implementing manufacturing 4.0 Opportunity of participation in building new manufacturing plants - monitoring the national announcements and public procurements, building the relations with decision bodies in a given country Attracting the companies who are trying to relocate their manufacturing capabilities closer, but still offshore 	<ul style="list-style-type: none"> Must undergo more extensive procedure when acquiring major or significant share of companies located outside EU Experience obstacles when introducing products or services on the given market (e.g. additional requirements related to norms or legal or technological compatibility) Experience difficulties when already present on a given market (e.g. changing the previously agreed conditions, imposing new taxes or fees, etc.)



Explore the opportunities created by the industrial, technological and digital sovereignty initiatives under selected conditions

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Thank you
