
POLICY SOLUTIONS FOR AN EFFECTIVE
PLATFORM ECONOMY:
THE BATTLE THAT EUROPE CANNOT AFFORD
TO LOSE.

POSITION PAPER

Authors: Claire Stolwijk, Tom van der Horst, Hanna Kuittinen, Heidi Korhonen, Riikka Virkkunen, Christian Hartmann, Matthijs Punter, Tjerk Timan, Amber Geurts, Jacqueline Allan, Chiara Tripepi

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This position paper was written by the JIIP partners, led by TNO, in intensive consultation with many different stakeholders, before the crisis of the Coronavirus pandemic. The Corona crisis will permanently change the world in many areas and the importance of Digital Industrial B2B platforms will therefore be seen in a different light. As the importance of a pro-active approach on platforms has increased even further due to the pandemic, this paper has been updated to incorporate the latest insights.

The Joint Institute for Innovation Policy (JIIP) is a joint venture of four renowned Research and Technology Organisations (RTOs) from four different European countries: Joanneum Research (Austria), Tecnalia (Spain), TNO (the Netherlands), and VTT Technical Research Centre (Finland). It was established in April 2008, based on a consortium agreement, and became a legal entity in July 2012. JIIP provides evidence-based research and intelligence to support policymaking, with a focus on research and innovation policy.

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SUMMARY

Digitisation offers a strong growth potential for Europe and is very important for the current global pandemic. However, digitisation also presents major challenges for European industry for the coming decades. Many sectors and the majority of SMEs are struggling with digitization. In addition, the high value-added industry of the EU is facing strong competition from the US and China.

Disruptions such as trade wars or the current Coronavirus crisis seem only to sharpen these contradictions. For example, some geopolitical experts stress that Europe must become self-supporting in critical supply chains and strive for production sovereignty. Some of them mention that this development offers the opportunity to re-shore production capacity and employment for vital sectors such as the medical sector. Research and development and the application of new technology, such as robots and AI, play a vital role in this. Other experts indicate that a global spreading of production, and thereby, risks is a better solution than re-shoring.¹

Digital industrial B2B platforms will also be key to achieving flexible, adaptive and more cost-effective European industries. These can be defined as *a collection of shared*

*infrastructures, systems and processes, where the value of the platform is based on data sharing and data exploitation.*²

This paper indicates that the US and China dominate the B2C and social media platform model, due to their access to a homogeneous local data market, which enabled the creation of very large data lakes. But Europe is well positioned to capitalize on the B2B platform market.

The mission for Europe is to ensure keeping this position, embracing the business opportunities that these digital industrial B2B platforms offer, and further shaping the platform landscape, while adopting and respecting European values.³

Suggested courses of action to realise this mission are, among others:

- Invest in the development of underlying key enabling technologies, such as AI, nanotechnology, the quantum internet, etc.
- Develop a European cloud platform, such as Gaia-X, to mitigate against American or Asian dependency and to enable and maintain EU digital sovereignty.

¹<https://www.supplychainmagazine.nl/meer-productie-in-eigen-land-maakt-supply-chain-juist-kwetsbaar/>
2 Parker G., Van Alstyne, M., Choudary, S. P., & Foster, J. (2016). Platform revolution: How networked markets are transforming the economy and how to make them work for you. New York: WW Norton

³Advanced & Interoperable Digital B2B Platforms for Smart Factories and Energy:
<https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and>

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- Stimulate data agglomeration into big data via decentralised governance of platform ownership to ensure data sovereignty (e.g. such as the International Data Spaces).
- Stimulate the setup of a Policy Support Facility by RTOs for monitoring of digital industrial B2B platforms and experimentation with underlying technologies.
- Use digital industrial B2B platforms to enable supply chain robustness.
- Provide digital skills development and onboarding programmes for employees not familiar with digitisation or not welcoming digital industrial B2B platforms.

INTRODUCTION

Digitisation offers enormous growth potential for Europe,⁴ and is even more important when faced with the current global pandemic. However, digitisation also presents major challenges for the European industry for the coming decades.

Many sectors (especially traditional ones such as construction) and the majority of SMEs are struggling with digitisation.^{5,6} In addition, the high value-added industry of the EU is facing severe competition from the US, China and other parts of the world.

Disruptions, such as trade wars or the current Corona crisis, seem only to sharpen the need to address the challenges and capitalise on the global growth potential. Globalisation is generally seen as a good thing since it provides access to new markets worldwide. In recent decades, multinationals in particular have moved part of their production process to China and other parts of the world to reduce costs (because of low labour costs in other parts of the world), not only for "low tech" items but also for higher value and critical need items such as essential medical supplies. The pandemic highlights just how vulnerable and dependent the international production chains of European companies have become due to globalisation. According to some geo-political experts this

insight may well become a catalyst to increase the de-globalisation that has already started as a result of the trade war between the US and China. One European company that has announced that it will produce closer to its home location to become less dependent on imports from Asia, is the safety shoe manufacturer *Emma Safety Footwear* located in the Netherlands. Another example is *Philips* which re-shored its production of shavers from China to the Netherlands even earlier.

Whether de-globalisation is in the interest of an open Europe could be questioned. Other experts indicate that a global spreading of production and risks is a better solution for supply disruptions caused by the Corona crisis.⁷ Digital Industrial B2B platforms will also be key to achieving flexible, adaptive and more cost-effective European industry. Since they connect ecosystems of buyers and suppliers, based on which they can create strong network effects and thereby become stronger business players. Research and development and the application of new underlying technologies, such as robots and AI, play a key role in this.

Digital Industrial B2B platforms are the critical infrastructure in achieving this, but bring both opportunities and challenges.

⁴ Workshop report [Advanced & Interoperable Digital B2B Platforms for Smart Factories and Energy](https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and-energy): <https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and-energy>

⁵ Ibid

⁶https://ec.europa.eu/info/sites/info/files/communication-sme-strategy-march-2020_en.pdf

⁷<https://www.supplychainmagazine.nl/meer-productie-in-eigen-land-maakt-supply-chain-juist-kwetsbaar/>

Digital Business to Consumer (B2C) platforms like Facebook, Amazon, and, Airbnb are well known. Moreover, a global competition to create the one overriding platform to surpass all others such as WhatsApp or WeChat⁸, is on the rise. Digital industrial Business to Business (B2B) platforms are relatively new compared to B2C (social media) platforms. Industrial B2B platforms can be defined as *a collection of shared infrastructures, systems and processes, where the value of the platform is based on data sharing and data exploitation.*⁹ Such Digital Industrial B2B platforms are often based on underlying technologies and platforms for data exchange (e.g. artificial intelligence, block chain, aggregators), which enable connectivity, data flows, data storage, data analysis etc. Such platforms will change the industrial ecosystem by introducing new business roles, a new value creation logic and a different distribution of value creation within an ecosystem.

Moving to a digital industrial B2B platform approach means, for traditional companies, moving from a linear system of transactions into a network approach, including the aggregation of data and sharing of information across companies, systems and

products.¹⁰ The main goal is to create a better customer experience and company-client closeness around products with lower costs, as well as to leverage external resources in a more flexible and efficient way.¹¹ Large companies like Siemens, Bosch and General Electric, are already starting to take advantage of this approach¹² by using the increasing amount of industrial data. In the near future, digital industrial B2B platforms are expected to become mission critical for the business.¹³

In contrast to B2C, digital industrial B2B platforms are currently heterogeneous and fragmented, with limited consolidation.¹⁴ While the US and China dominate the B2C and social media platform model, mainly due to the homogeneous local data market which enabled the creation of very large data lakes¹⁵, Europe is well positioned in the B2B platform race. With leading players in Industry 4.0¹⁶ and strong manufacturing, energy automation and robotic sectors in particular.¹⁷ *“Europe has everything to play for in the B2B platform market. It has the technology, a highly skilled workforce, and know-how”.*¹⁸ Opportunities will also come from technological change, with new prospects for European business in

8<https://signal.supchina.com/what-is-wechat-the-super-app-you-cant-live-without-in-china/>

9 Parker G., Van Alstyne, M., Choudary, S. P., & Foster, J. (2016). Platform revolution: How networked markets are transforming the economy and how to make them work for you. New York: WW Norton

¹⁰ TNO report (2019) B2B platforms: The battle Europe cannot afford to lose:
<http://publications.tno.nl/publication/34634842/pqXc50/TNO-2019-R10779.pdf>

¹¹ Ibid

¹² Ibid

¹³ Workshop report [Advanced & Interoperable Digital B2B Platforms for Smart Factories and Energy](https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and-energy):
<https://ec.europa.eu/digital-single->

[market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and energy](https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and-energy)

¹⁴ TNO report (2019) B2B platforms: The battle Europe cannot afford to lose:

<http://publications.tno.nl/publication/34634842/pqXc50/TNO-2019-R10779.pdf>

¹⁵ <https://www.linkedin.com/pulse/europe-has-everything-takes-lead-technology-race-thierry-breton>

¹⁶ Ibid

¹⁷ <https://ec.europa.eu/digital-single-market/en/blogposts/business-business-platforms-race-europe-cannot-afford-lose>

¹⁸ Mentioned during the workshop by one of the experts.

technological areas such as digital solutions for safety critical applications, and quantum computing¹⁹ (e.g. the quantum internet). These trends show that the winners of today do not have to be the winners of tomorrow.²⁰ Since the sources of competitiveness for the coming decades in the platform economy are determined now, the EU should act “today”.²¹

The mission is to ensure that Europe keeps this position, embracing the business opportunities that these digital industrial B2B platforms offer, and further shaping the platform landscape, while adopting and respecting European values.²²

In order to realize this mission, action needs to be taken, as we present in this position paper. Firstly, we provide (in section 1) an overview of the opportunities that digital industrial B2B platforms offer and the policy measures required to seize them. Next in section 2, we describe the challenges related to digital industrial B2B platforms and the related policy measures to mitigate them. Finally in section 3, we describe the

suggested courses of action building on the European strategy for data²³ and the New Industrial Strategy for Europe.²⁴

In this paper we mainly focus on platforms for manufacturing, given their high potential in Europe.

The aim of this position paper is twofold: firstly, it aims to create awareness about the opportunities and challenges of these platforms, and secondly to provide policy recommendations and suggested actions for policy makers, platforms and industry as platform user.

This position paper is based on desk research and two JIIP workshops led by TNO (in October 2019 and February 2020) with stakeholders from the European Commission (DG Connect), Members of the European Parliament, the Industry, RTOs (TNO, TecNALIA, Joanneum Research, VTT), and representatives from B2B platform related initiatives.

¹⁹https://ec.europa.eu/info/sites/info/files/communication-european-strategy-data-19feb2020_en.pdf

²⁰ Ibid

²¹ Ibid

²²**Advanced & Interoperable Digital B2B Platforms for Smart Factories and Energy:**
[https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-](https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and)

[interoperable-digital-business-business-platforms-smart-factories-and](https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and)

²³https://ec.europa.eu/info/sites/info/files/communication-european-strategy-data-19feb2020_en.pdf

²⁴

https://ec.europa.eu/info/sites/info/files/communication-eu-industrial-strategy-march-2020_en.pdf

1. OPPORTUNITIES AND POLICY MEASURES TO SEIZE THEM

In this section we describe the opportunities presented by digital industrial B2B platforms, as frequently mentioned by experts during the workshops and/or identified in the publications reviewed while drafting this position paper. In our opinion, all of the opportunities described are equally important, meaning that their order of presentation does not imply that the first opportunity is more important than the last opportunity.

Each of these opportunities, is followed by policy measures that will be required for Europe to capitalize on them.

1.1 COMPETITIVENESS OF EUROPEAN INDUSTRY

OPPORTUNITY

By connecting ecosystems of buyers and suppliers, digital industrial B2B platforms can create strong network effects and thereby become stronger business players. Therefore, digital industrial B2B platforms are becoming mission critical for business and competitiveness of the European industry.

POLICY MEASURE

To increase the competitiveness of European Industry by digital industrial B2B platforms the following policy measure is proposed:

- To the European Commission to promote the use of standards both by the platforms and its users. Standards are important to connect the diverse players in the supply chain via these platforms and to enable cooperation between these platforms (e.g. IDS cooperating with FIWARE). Standards enable network effects, and the larger the number of platform users, the larger that effect and the more useful the platform becomes to existing and new users alike.

1.2 HIGHLY CUSTOMISED PRODUCT SOLUTIONS

OPPORTUNITY

Digital industrial B2B platforms also offer faster and more tailor-made responses to customer demand, which will enhance supply chain cooperation down to the lowest supply chain level, as illustrated by examples like the Open Automotive Alliance, or the Automotive Edge Computing Consortium (AECC) led by Intel and Toyota.²⁵

POLICY MEASURE

To enable highly customized product solutions, platforms providers are recommended to enable a faster and more direct link between the operational side of manufacturing and the customer side to seize this customised approach. This requires the involvement of the whole supply chain via a digital industrial B2B platform.

1.3 GAINS IN PRODUCTIVITY AND PRODUCTION FLEXIBILITY

OPPORTUNITY

Underlying platform technologies (e.g. artificial intelligence, cloud computing and storage, blockchain etc.) promise enormous gains in productivity. These technologies also contribute to lower overheads, faster customer response times, greater efficiency, higher productivity and cost optimisation as systems of suppliers and customers can be highly integrated.²⁶ Production flexibility (which is important to quickly adjust to disruptions) is further advanced by human-robot solutions and advanced manufacturing methods that need to be considered simultaneously with digital technologies. Opportunities to boost productivity drive industry towards a rapid digitisation shift and the use of data sharing and data analytics enabled by digital industrial B2B platforms.

POLICY MEASURE

To increase the productivity and production flexibility, European policy makers are recommended to stimulate the use of digital industrial B2B platforms and their underlying technologies (e.g. artificial intelligence, cloud computing and storage, block chain, HPC, etc.).

²⁵ TNO report (2019) on Industrial B2B platforms: <http://publications.tno.nl/publication/34634842/pqXc50/TNO-2019-R10779.pdf>

²⁶https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=55847

1.4 SERVICISATION

OPPORTUNITY

Industrial digital B2B platforms enable the shift towards servitisation. This is the process of turning of companies from product based to service-based business models and the transformation of supply chains to new ways of creating value and fulfilling customer needs.

User data can be combined with product and process data for the development of new services. By enriching digital platforms with foresight methods and artificial intelligence algorithms capable of learning from data, emerging market needs can be better predicted, and services and product-service systems developed for future markets. In this way, digital industrial B2B platforms enable a better customer experience and enhanced customer relationships with potentially lower transaction costs.

Data created by things, rather than people, are expected to increase servitisation. By 2025, objects – e.g. IoT devices such as wireless smart sensors in factories and supply chains, but also cities, hospitals, and connected vehicles – are expected to create nearly 90% of the data. This would represent a huge potential source of market growth for Europe, which has the largest industrial market in the world, with leading players, especially in the Industry 4.0.²⁷

Data created by things is already raising new questions such as²⁸: who owns the data generated by an algorithm? Who owns the measurement data collected by a sensor? Is it the user of the machine containing the sensors, or the owner of the machine, or the supplier of the technology?

POLICY MEASURES

To accelerate servitisation the following measures are proposed:

- Digital industrial B2B platforms to enable customer and user-centric behavior by industry. Platforms can help different stakeholders to better understand customer problems and to solve them collaboratively. They can also support the shift in customer behaviour from product ownership to the use of the product as a service and thereby enable the circular economy via more efficient use of resources. Different kinds of data-based services enabled by digital platforms are at the core of this industrial transformation. Platforms can also support business models such as product maintenance or fleet management services or manufacturing as a service (e.g. platforms that support product designers and engineers to find the manufacturing solution that best fits customer needs, such as either the fastest or the most price competitive solution).

²⁷ <https://www.linkedin.com/pulse/europe-has-everything-takes-lead-technology-race-thierry-breton>

²⁸ Based on the discussion during the workshop

- Digital industrial B2B platforms to develop services that best fit customer needs facilitated by the analysis of data enabled by an ethical, responsible artificial intelligence²⁹, within a framework of values and rules, including the General Data Protection Regulation (GDPR).³⁰ The European Commission provided guidelines for this with their plan for an ethical artificial intelligence accompanied by the first European data strategy presented on the 19th of February 2020.
- The European Commission and industry to join forces to answer the aforementioned questions concerning data collection about objects, a crucial element in the servitisation approach, including those on data ownership.

1.5 SHARING OF RESOURCES

OPPORTUNITY

Digital industrial B2B platforms help to leverage external resources in a more efficient manner with a network approach based on the sharing of resources between partners.³¹

POLICY MEASURE

To increase the sharing of resources, policymakers and platform providers are recommended to encourage the industry to use digital industrial B2B platforms more often.³² These platforms enable a move from a firm's own resources towards a network and community approach based on the sharing of assets between various supply chain partners.

1.6 ENABLING SUPPLY CHAIN CONNECTIVITY

OPPORTUNITY

Due to the Corona crisis several quarantine and travel measures taken by organizations, cities and countries have caused uncertainties and disruptions in supply chains as business operations were suspended or

conducted with limited capacity. This stimulated firms to make greater use of digital channels, such as online marketplaces and digital industrial B2B platforms. These digital channels help them to digitally connect to compensate for the lack of

²⁹ Tom Berendsen MEP (EVP) mentioned: "The European approach must ensure that we allow AI into our society based on our norms and values."

³⁰ <https://www.linkedin.com/pulse/europe-has-everything-takes-lead-technology-race-thierry-breton>

³¹ TNO report (2019) on Industrial B2B platforms: <http://publications.tno.nl/publication/34634842/pqXc50/TNO-2019-R10779.pdf>

³² Ibid

physical contact, but also to address the loss of demand.³³

To increase supply chain connectivity, European firms are recommended to invest in digitisation to fully embrace the opportunities that digital industrial B2B platforms offer both in a crisis situation and in daily business.

POLICY MEASURE

1.7 ENABLING SUPPLY CHAIN VISIBILITY

OPPORTUNITY

The Coronavirus has not only disrupted lives and businesses, it has highlighted underlying fragilities in the global supply chain (GSC) that are significant for economies worldwide.³⁴ The smartphone is a product of a global supply chain, designed by a company in one country, manufactured by another firm elsewhere, and distributed by dealers everywhere—all underwritten by global cash flows.³⁵ Often such supply chains are established without much redundancy planning or other risk-mitigation strategies to counter extraordinary shocks.³⁶

Digital Industrial B2B platforms enable the digitisation of complete supply chains, resulting in a dynamic system providing real time information from all involved stakeholders, enabling adjustment to (real-time) changing circumstances.³⁷ Such a

dynamic system enables an end-to-end visibility and transparency in the supply chain, a deeper monitoring of the supply chain and an early detection of disrupting influences (e.g. supply issues).

This is seen, for instance, in logistics. Online (freight) platforms are conquering the transport market, aided by advancing digitisation and an increasing demand for 'visibility' in the transport sector.³⁸

POLICY MEASURE

To increase the supply chain visibility the European Commission is recommended to stimulate the use of digital industrial B2B platforms by supply chain partners up to the 2nd or 3rd tier supplier level (including SMEs). This can be done by involving to a greater extent the various supply chain partners including SMEs in European projects for digital industrial B2B platforms.

³³ <https://www.linkmagazine.nl/gartner-ziet-in-coronavirus-reden-om-digitalisering-te-versnellen/>

³⁴ <https://hbswk.hbs.edu/item/has-covid-19-broken-the-global-value-chain>

³⁵ Ibid

³⁶ Ibid

³⁷ Flexibeler, robuster en slimmer werken in post Corona tijd (2020):

<https://www.metaalmagazine.nl/wp-content/uploads/2020/07/smart-industry-Whitepaper-Flexibeler-Robuuster-en-Slimmer-werken.pdf>

³⁸ <https://www.logistiek.nl/distributie/artikel/2020/03/coronavirus-versnelt-adaptatie-online-transport-platforms-101172920>

1.8 EARLY FORECASTING EXTERNAL DISRUPTIONS

OPPORTUNITY

Disruptions such as trade wars or the Corona crisis disrupt both supply and demand. Daily forecasts are required to quickly respond to rapidly changing circumstances in terms of volume, material use, sales markets, product portfolio, suppliers, etc. Platforms and their underlying technologies such as AI-enabled predictive analytics of internal (e.g. demand) and external (e.g. market trends) factors, provide data for a more precise forecasting of customer demand.³⁹ However, it is important to realise that, in the case of massive, worldwide disruptions like Coronavirus, the normal data feeding the models — which include buying patterns over years — are no longer as relevant.⁴⁰ The models can still be used, but the data needs to be modified. Companies such as Walmart and Amazon that use more complicated machine learning models to predict their market will also likely incorporate a higher degree of uncertainty into their systems.⁴¹

POLICY MEASURES

To stimulate early forecasting of external disruptions digital industrial B2B platforms should make their forecasting services as reliable and useful as possible, by collecting and integrating recent data.

Likewise, it is proposed that policymakers should take measures to stimulate data sharing.⁴²

1.9 CREATION/CHANGING OF (NEW) BUSINESS MODELS AND ROLES

OPPORTUNITY

Industrial B2B platforms enable innovative data-driven business models that necessitate new business roles.⁴³ Moving from 'Data for Business Intelligence' to 'Data for Artificial Intelligence' also means a focus on the

transition from internal processes to more collaborative and participative cross-domain ecosystems and open innovation. The most innovative data-driven business models show a wide variety of value creation possibilities, from direct data monetisation to access-

³⁹<https://www.mckinsey.com/business-functions/operations/our-insights/supply-chain-40--the-next-generation-digital-supply-chain>

⁴⁰<https://www.theverge.com/2020/4/27/21238229/algorithms-supply-chain-model-pandemic-disruption-amazon-walmart>

⁴¹ Ibid

⁴² https://ec.europa.eu/info/sites/info/files/communication-european-strategy-data-19feb2020_en.pdf

⁴³ TNO report (2019) on Industrial B2B platforms: <http://publications.tno.nl/publication/34634842/pqXc50/TNO-2019-R10779.pdf>

based valorisation of data assets on sharing platforms.

POLICY MEASURES

To stimulate the creation/and adaptation of new business models and roles, it is recommended that digital industrial B2B platforms increase their efforts to create awareness in European industry about opportunities offered by changing business models and roles.

Examples of platforms and their roles are:

- *Manufacturing as a service platform:* platforms that bring together customers searching for a specific manufacturing service and suppliers providing that service (e.g. 3D Hubs).

- *Information value providing platform that provides value added data services:* platforms that offer services based on data sharing and analytics.

The platform approach can enable new business features, such as offering products or services for free, if data exploitation creates related business revenues that outweigh the costs.

2. CHALLENGES AND POLICY MEASURES TO MITIGATE THEM

Despite clear opportunities, the European digital industrial B2B platform market is also experiencing challenges that require dedicated policy solutions. In this section, we describe the challenges of digital industrial B2B platforms that were often mentioned by the experts during the workshops and or in the publications that we studied when preparing the position paper. In our opinion, all selected challenges are equally important, meaning that their order of description does not imply that the first challenge is more urgent than the last challenge. After each of these challenges, we identify by which policy measures they can be mitigated.

2.1 LIMITED INVOLVEMENT OF SMEs IN THE PLATFORM ECONOMY

CHALLENGE

Currently digital industrial B2B platforms are operated by large companies in sectors including aeronautics, automotive, home appliances and electronic consumer goods. However, 99% of SMEs are not yet engaged in the data and platform economy⁴⁴ due to the entry barriers and investment costs of digital solutions. Although the limited physical contact between SMEs and their customers caused by Corona has stimulated their digital connectivity, entering fully into data-based business is difficult, especially for SMEs with limited resources and a lack of digital know-how.

To increase the number of SMEs involved in the platform economy, the following policy measures are suggested:

- The European Commission to stimulate an all-inclusive approach ('Europe United') by involving SMEs in digital industrial B2B platforms, for instance via collaborative projects for digital industrial B2B platforms (e.g. via EU projects or Digital Innovation Hubs focusing on the set up of digital industrial B2B platforms). The European Commission shows itself to be in favour of such an inclusive approach⁴⁵ when they refer to the access to data (one of the most important aspects of digital industrial B2B platforms). Their objective is to make Europe a global data hub for personal and industrial data, benefiting all European economic players – SMEs, start-

POLICY MEASURES

⁴⁴https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=55847

⁴⁵https://ec.europa.eu/info/sites/info/files/communication-sme-strategy-march-2020_en.pdf

ups, large industry groups – and European citizens”.⁴⁶

- Platform owners to develop an attractive value proposition for SMEs through digital industrial B2B platforms. “SMEs will bring their own ecosystem, which in turn has value for the digital industrial B2B platforms”.⁴⁷

- Platform owners to create platform openness, flexibility and simplicity. Avoidance of vendor lock-in and support to data-driven operations are prerequisites for any solution likely to achieve widespread acceptance of the platforms (especially by SMEs) and the generation of a sufficiently large ecosystem around it.⁴⁸

2.2 FRAGMENTATION OF THE CURRENT LANDSCAPE OF DIGITAL INDUSTRIAL B2B PLATFORMS

CHALLENGE

With different players using different systems for the activities of data generation, processing and analytics, thereby hampering interoperability, the current digital industrial B2B platform landscape is rather fragmented.

POLICY MEASURES

To reduce the fragmentation of the digital industrial B2B platform landscape the following policy measures are suggested:

- New ecosystems and marketplaces to cooperate with existing platforms to decrease this fragmentation.⁴⁹

- The European Commission to stimulate cooperation via European projects to make the sum of the small digital industrial B2B platforms.⁵⁰
- The European Commission and the Member States to develop a coherent EU Industry 4.0 and platform approach, avoiding that every country, region or manufacturing industry cluster would develop its own systems and platforms to introduce and support digitisation.

⁴⁶ <https://www.linkedin.com/pulse/europe-has-everything-takes-lead-technology-race-thierry-breton>

⁴⁷ Highlighted by one of the workshop participants in the European parliament.

⁴⁸ Advanced & Interoperable Digital B2B Platforms for Smart Factories and Energy: <https://ec.europa.eu/digital->

[single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and-energy](https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and-energy)

⁴⁹ Ibid

⁵⁰ Mentioned during the workshop in Brussels on October 24, 2019

2.3 POTENTIAL EXTENSION OF THE US AND CHINESE DOMINANCE IN B2C PLATFORMS TO DIGITAL INDUSTRIAL B2B PLATFORMS

CHALLENGE

The fragmentation of digital industrial B2B platforms remains high compared to B2C platforms. However, there are potential critical nodes that could become dominant players and therefore require strategic attention.

It is currently not possible to identify all the competitive implications for individual companies, but the new forms of competition in B2C indicate that there could be a rearrangement of the rules of competition for B2B that will affect industry intra- and inter-trade outcomes.

POLICY MEASURES

To avoid a potential extension of the US and Chinese dominance in B2C platforms to digital industrial B2B platforms, the following policy measures are proposed:

- The development of a shared strategic outlook and position by companies, branch organisations and policymakers.
- Industry and policymakers to stimulate digital industrial B2B platforms with decentralised and universal/standardised

architectures to avoid dependence on large cloud platforms.

- Industry and policymakers to stimulate the creation of a European cloud infrastructure like Gaia-X to avoid that Europe becomes dependent on the cloud infrastructures from the US and Asia. This is especially important since country legislations like the US Cloud Act raises not only legitimate concerns for European businesses, but also for citizens and public authorities over legal uncertainty and compliance with applicable EU law, including data protection rules.⁵¹
- Policymakers to develop adequate regulation to avoid a “winner-takes all situation” and to create a level-playing field (e.g. regulations for data lock-in).
- Policymakers to stimulate the development of technological solutions to enable data sovereignty to give data owners the control over their own data instead of letting large technology giants control the data.

⁵¹https://ec.europa.eu/info/sites/info/files/communication-european-strategy-data-19feb2020_en.pdf

2.4 REGULATORY DISCONNECT AND MISUNDERSTANDING

CHALLENGE

The General Data Protection Regulation (GDPR) has stopped many companies from sharing data, thereby creating a barrier to innovation.⁵² Understanding data policies and their interconnectedness poses a significant challenge both for companies in the EU and outside.

POLICY MEASURE

To mitigate against regulatory disconnect and misunderstanding, we propose that the European Commission enable awareness creation on the exact meaning and content of GDPR to avoid that companies stop sharing data. The European Data Strategy of the European Commission provided guidelines to stimulate data sharing.⁵³

2.5 DATA COMPLETENESS, DATA QUALITY AND DATA HETEROGENEITY

CHALLENGE

Digital industrial B2B platforms must provide their stakeholders with relevant, standardised and interoperable data and workflows for adoption. This includes addressing the challenges of data completeness, data quality and data heterogeneity.⁵⁴

POLICY MEASURE

To improve data completeness, data quality and data heterogeneity we recommend the European Commission to stimulate the development of modes to integrate different sources of data. This relates both to data sovereignty (retaining control over the sharing and use of data) and digital sovereignty (trusted data infrastructures). The taking onboard of such new modes of data sharing needs to be easy and user friendly, and the competitive offering and the stored data has to be curated to enable trust and stimulate data sharing.

⁵² Based on expert input.

⁵³

https://ec.europa.eu/info/sites/info/files/communication-european-strategy-data-19feb2020_en.pdf

⁵⁴ Himanen, L., Geurts, A., Foster, A. & Rinke, P. (2019). Data-driven materials science: Status, challenges, and perspectives. *Advanced Science*.

2.6 IDENTIFICATION OF ALTERNATIVE PLATFORM BUSINESS MODELS

CHALLENGE

A strategic challenge lies in the identification of alternative platform business models for incumbents and niche markets (rather than only those focusing on capturing mass markets).⁵⁵

POLICY MEASURE

Digital Industrial B2B platforms are recommended to stimulate the identification and application of alternative business models by investing in cooperative business model innovation.

2.7 B2B PLATFORMS INVOLVE LONG AND COMPLICATED SUPPLY CHAINS

CHALLENGE

The supply chains of digital industrial B2B platforms are much longer and more complex than those of B2C platforms. However, long supply chains with many links run more risks from disrupting influences, like trade wars or the Corona crisis, than shorter, more robust digital supply chains.⁵⁶

POLICY MEASURE

Critical European strategic supply chains can be shortened to decrease risks. This requires investments by industry and the European Commission in innovations and implementations to achieve the right cost and productivity level. In particular, since Europe has been lagging behind for years on investments in research, development and new technologies.⁵⁷ It varies greatly from country to country in Europe, but even frontrunners like Germany invest less in research and development than the US and China, with the difference in levels of investments in ICT and artificial intelligence being especially large.⁵⁸

⁵⁵ Ibid

⁵⁶ Flexibeler, robuster en slimmer werken in post Corona tijd (2020): <https://www.metaalmagazine.nl/wp-content/uploads/2020/07/smart-industry-Whitepaper-Flexibeler-Robuuster-en-Slimmer-werken.pdf>

⁵⁷ <https://www.nrc.nl/nieuws/2020/04/17/investeerder-ruchir-sharma-europa-is-de-zwakke-schakel-in-de-wereldeconomie-a3997062>

⁵⁸ Ibid

2.8 STRONG DEPENDENCY ON PARTNERS

CHALLENGE

Digital industrial B2B platforms stimulate supply chain collaboration and sharing of resources. However, this also makes the platform partners more dependent on each other. Supply chains are as strong as the weakest link.

POLICY MEASURE

Diversification of suppliers to spread risk is a strategy that is often applied by multinationals to mitigate potential supply chain issues (i.e. the strategy “*don’t put all your eggs in one basket*”⁵⁹).⁶⁰ Some firms are even willing to lose some efficiency gains to diversify suppliers. Digital industrial B2B platforms (e.g.

manufacturing as a service platforms) can enable this diversification strategy since they facilitate the digital connections between diverse customers and suppliers. Examples are 3D printing or CNC platforms like 3D hubs⁶¹ or Batchforce⁶².

2.9 LIMITED AWARENESS WITHIN THE WHOLE SUPPLY CHAIN

CHALLENGE

The challenges and opportunities of digital industrial B2B platforms are not well known among all supply chain participants including the final consumer.

POLICY MEASURE

Policymakers are well-placed to stimulate the clarification of the role of digital industrial B2B platforms among the supply chain participants. However, as these risks and solutions are not always easy to see, accessible and insightful narratives must be developed that clarify the implications and express the urgency for European industry and its customers of making the maximum and best use of such platforms.

⁵⁹<https://www.cognetik.com/blog/the-coronavirus-outbreak-disrupted-75-of-u-s-supply-chains-what-can-be-done/>

⁶⁰ <https://blogs.worldbank.org/psd/foreign-direct-investment-and-global-value-chains-wake-covid-19-lead-firms-gvc>

⁶¹ <https://www.3dhubs.com>

⁶² <https://www.batchforce.com>

3. SUGGESTED NEXT STEPS AND ACTIONS TO BE IMPLEMENTED

This section summarises the significant actions needed to realise the mission put forward in this position paper, that is to ensure that Europe keeps a good position on global B2B platform market, embracing the business opportunities that these digital industrial B2B platforms offer, and further shaping the platform landscape, while adopting and respecting European values.⁶³

RECOMMENDATIONS FOR EUROPE TO MAINTAIN ITS GOOD POSITION ON THE GLOBAL B2B PLATFORM MARKET

The European Commission to “take a proactive and innovative approach on B2B platforms for the European industry, which can also strengthen the European position in the B2C platform market”⁶⁴ by:

- Stimulating the development of underlying key enabling technologies, such as the quantum internet.
- Building on existing use cases (e.g. in logistics, manufacturing, health care)⁶⁵ and stimulating learnings from best practices across industries.

*“stimulating the setup of a Policy Support Facility by RTOs for monitoring of digital industrial B2B platforms and experimentation with underlying technologies”.*⁶⁶ Such a facility is important to monitor so that the critical infrastructures that enable agglomeration of big data do not become too powerful.

- The European Commission in cooperation with the World Trade Organization to

develop global regulation for B2B platforms to create a level-playing field for industry (e.g. concerning the dominant cloud infrastructures).

- Industry, stimulated by the European Commission and Member States, to develop a European cloud platform such as Gaia-X to mitigate against American or Asian dependency and to enable and maintain digital sovereignty.
- The European Commission and Industry to stimulate data agglomeration into big data via decentralised governance of platform ownership (e.g. like platforms based on blockchain or the International Data Spaces “which is an upcoming global data exchange standard that has the potential to form the basis for platforms based on European values and bring data sovereignty to artificial intelligence applications and to GAIA-X”⁶⁷).

⁶³ Workshop report

[Advanced & Interoperable Digital B2B Platforms for Smart Factories and Energy: https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and](https://ec.europa.eu/digital-single-market/en/news/workshop-advanced-and-interoperable-digital-business-business-platforms-smart-factories-and)

⁶⁴ Mentioned by Mohammed Chahim MEP (S&D)

⁶⁵ As suggested by one of the workshop participants.

⁶⁶ Mentioned by Mohammed Chahim MEP (S&D)

⁶⁷ Mentioned by ThyssenKrupp CTO and chairman of the IDSA, dr. Reinhold Achatz

RECOMMENDATIONS TO ENSURE THAT EUROPE EMBRACES THE BUSINESS OPPORTUNITIES OFFERED BY THESE DIGITAL INDUSTRIAL B2B PLATFORMS

Public and private partners to stimulate the use of digital industrial B2B platforms by supporting companies to reduce and overcome adoption barriers. Examples of such strategies are:

- Firms and platforms providing digital skills development and onboarding programmes for management and employees not familiar with digitisation or not welcoming digital industrial B2B platforms.
- European Commission and Member States to stimulate the involvement of (small and large) firms in collaborative (European and national) projects for digital industrial B2B platforms.
- Platforms demonstrating the return on investment of the adoption of digital industrial B2B platforms.
- Platforms demonstrating the added value of their enabling role in handling supply chain disruptions.

RECOMMENDATIONS TO FURTHER SHAPE THE PLATFORM LANDSCAPE, WHILE ADOPTING AND RESPECTING EUROPEAN VALUES (E.G. PROTECTING PERSONAL AND CONFIDENTIAL DATA)

- Standardization bodies and Industrial partners to align Industry 4.0 standards (especially for SMEs) that are relevant for digital industrial B2B industrial platforms.
- The European Commission in cooperation with Industry to develop regulation to determine what platforms and cloud owners can do with the data they obtain from the platform users.
- The European Commission in cooperation the Industry to develop a European code of conduct to guide industrial contract agreements where fair attribution of data flows (property rights and appropriate payments for platform participants) and a distributed governance model are the norm.
- The European Commission to enable safe and secure data transactions via a mix of regulation, self-regulation and/or technological means (e.g. such as sticky

policies, MPC, block-chain based smart contracts etc.)^{68, 69}

- The European Commission in cooperation with Industry to promote findable, accessible (universal), interoperable and reusable (FAIR) platforms by institutionalising standardised data workflows.
- The European Commission to enable a good balance between regulation and the stimulation of innovation⁷⁰ (e.g. create regulatory sandboxes to provide market participants, such as telecom companies, with room to develop innovations that are relevant for the platform economy).

⁶⁸ <https://ec.europa.eu/digital-single-market/en/news/cloud-stakeholder-working-groups-start-their-work-cloud-switching-and-cloud-security>

⁶⁹ <https://ec.europa.eu/digital-single-market/en/eu-cybersecurity-act>

⁷⁰ Based on input from the workshop in the European Parliament.