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European Association of the Machine Tool Industries
and related Manufacturing Technologies

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WHY B2B DATA SHARING IS IMPORTANT FOR THE MANUFACTURING SECTOR

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The upcoming Data Act aims at facilitating data access and data use in B2B and B2G relationships, while reviewing the rules on the legal protection of databases. Moreover, to facilitate data sharing across the EU and between sectors, the draft Regulation aims to strengthen the mechanisms that increase data availability and foster trust in intermediaries.

In order to guarantee SME's uptake of data economy opportunities, CECIMO believes that the following points of reflection need to be considered as fundamental when it comes to promoting data-sharing and boosting the use of data applications in industrial plants:

1. Foster market growth

Direct collaboration and sharing data between companies within the same value chain can help speed up the market growth of the sector.

Manufacturers can unlock additional value and accelerate growth by sharing data across companies. The most relevant benefits include:

- *Enhancing asset optimization – Better data to help machine learning and AI improve uptime, efficiency, and quality*
- *Tracking product or conditions along the value chain*
- *Exchanging information on the product specifications*
- *Improve supply chain transparency*

There are two major aspects to consider in the machinery sector when it comes to unlocking the potential of data and ultimately boosting market growth.

The first one is the life cycle of a machine, which can unfold over the course of many years. Therefore, collecting these data sets requires both time and precision to understand the system throughout its functioning, recognize the signs of any degradation process, and ultimately yield accurate insights.

Second, mechanical and software parameters are not the only data sets that need to be considered. It is crucial to keep a human-centred approach to machine monitoring in the manufacturing sector. Human error and operation of the machine need to be added to the equation.

For this reason, understanding and collecting data on how machines are used, e.g., whether maintenance is performed correctly, is equally relevant to collecting data during the device's operation.

2. Accelerate innovation through common EU standards

Inconsistency hurts any effort to use data. For this reason, it is important to set common standards for data collection, and data sharing at the EU level should enable new applications, foster collaboration, and expand functionalities.

Standardization in this area can improve any manufacturing process through increased data quality, better data integration and reusability, facilitation of data exchange with partners, increased use of software tools, improvements in team communication, and facilitation of regulatory reviews and audits.

One of the significant challenges in this area is to create standards in such a fast-changing environment. Therefore, it is important to try to reuse or adapt existing standards whenever possible. Otherwise, it would be crucial to fast-track the development of standards procedures by increasing the industry's commitment to developing the standards.

3. Develop the industry ecosystem

In a connected world, sharing data can be a powerful enabler for all sides: the parties who supply data and the providers developing new services or even disrupting markets with more attractive offerings.

The development of an industry ecosystem could fulfil the need to optimize existing processes and make new products and businesses possible based on data sharing.

By sharing and exchanging data in an ecosystem, manufacturers can:

- *Optimize existing processes*
- *Make new products and businesses*
- *Enable more efficient supply chain execution and production operations*
- *Achieve faster and better product innovation.*

Such an ecosystem would allow each company to enrich their existing data sets and apply data analytics that would ultimately help detect new correlations, dependencies, and risks in their production and value chain.

To succeed, the ecosystem should address these issues by developing a clear value proposition and rationale for data sharing, using mutually beneficial agreements, and applying secure technologies and common standards. In this regard, a provision that guarantees cloud users to have their data ported in a structured, widely used and machine-readable format would be welcome by the industry ecosystem.



Focus: Main barriers to data sharing collaboration: Trust and Technical

Trust

1. From a trust perspective, companies are primarily concerned about protecting valuable or sensitive data or losing competitive advantage. The trust issues are strictly related to a condition of legal uncertainty which must be filled in order to safeguard intellectual property rights, especially in the context of data processing by foreign cloud service providers. Currently, they do not respond to any EU law regarding non-personal data treatment, thus generating the risk of data acquisition by foreign governments.

Technical

2. Technical concerns include the challenges of sharing data securely, accessibility and interoperability issues and maintaining control. In most of the situations, companies do not own the data and it is quite unclear what kind of data they generate, where the data are stored and who owns the results of data processing. The reason stands behind the role of cloud service providers which do not have legal obligations on the use of non-personal data (while personal ones are processed in compliance with the GDPR). Businesses need to have a better access to the information regarding data they generate or co-generate.

4. New technologies and industrial data

Industrial Data are the core of the new industrial revolution for the European manufacturing sector. The acceleration of data sharing is generating a collaborative environment where industries can cooperate towards the development of new innovative solutions. Access to Data is essential when it comes to the competitiveness of European manufacturing industries, which are already experiencing a data-driven revolution.

New technologies such as Artificial Intelligence and the Industrial Internet of Things (IIoT) need big amounts of data sets to be fully exploited and that is the reason why the improvement of a real and integrated data economy is crucial for the manufacturing sector to emerge as the leading industry in the digital transition.

Currently, some new initiatives are trying to foster the mentioned industrial environment. Several IoT operating systems and ecosystem initiatives are developing effective and fast ways to quickly build IoT applications within an industrial ecosystem through advanced operating tools that address some of the problems highlighted in this document. Namely, technical solutions aimed at generating a trustworthy industrial ecosystem, for instance:

- technical protocols
- norms
- business models

Such ecosystems protect partners who can safely exchange their data through configurable contracts provided by the platforms through pre-validated templates that guarantee the protection of trade secrets and other sensitive data without imposing unfair contractual terms, especially on SMEs. Some of these service providers have wide participation from machine tool manufacturers, which benefit from this kind of collaboration model without excessively investing in legal and IT support.

Currently, some new initiatives are trying to foster the mentioned industrial environment. Several IoT operating systems and ecosystem initiatives are developing effective and fast ways to quickly build IoT applications within an industrial ecosystem through advanced operating tools that address some of the problems highlighted in this document. Namely, the service providers developed technical solutions which include technical protocols, norms and business models aimed at generating a trustworthy industrial ecosystem where partners can safely exchange their data because they are protected by configurable contracts, provided by the platforms through pre-validated contract templates, that guarantee the protection of trade secrets and other sensitive data without imposing unfair contractual terms, especially on SMEs.

Some of these service providers have a wide participation from machine tool manufacturers which benefit from this kind of collaboration model without excessively investing in legal and IT support.

According to a recent study conducted by the World Economic Forum and Boston Consulting Group, the right implementation of data-sharing can be a stabilising force for the global industry generating four direct consequences: improved productivity and quality, better customer experience, more resilient supply chains and environmental benefits. The study underlines that only 17% of surveyed manufacturing executives said they captured satisfactory value from data. Therefore, even if the report considers the industry perspective and the actions needed by the companies, the mentioned figure reveals a wide range of hurdles that companies are experiencing in exploiting data value.

Therefore, data sharing appears to be the core practice and the key enabler to boost productivity and fuel innovation across Europe through several data-driven applications in manufacturing. However, a better European legislative ecosystem appears crucial to enhance the transition towards data excellence.

Several questions arise when it comes to the management of these large amounts of data. Especially for the industrial ecosystem, company practices and operativity must be safeguarded from potential attacks or from the vulnerability of their trade and production secrets. Indeed, sharing data is possible when the process is totally secure for all the parties involved. In this regard, the priority should be to encourage data access and sharing through transparent contractual arrangements, which do not create unbalances between the different parties. In fact, the initiative is about ensuring fairness in the allocation of data value among actors of the data economy, including in business-to-business and business-to-government situations.

5. Policy Recommendations

Given the importance of the Data Act for the manufacturing sector, CECIMO recommends to:

- *Adopt a versatile policy approach to avoid loss of competitiveness for SMEs focusing on industrial and governmental data (B2B and B2G).*
- *Define standard contractual clauses that state the cloud users' right to have its data reported in a structured, widely used, and machine-readable format. Or develop guidelines which ensure data traceability for businesses that use cloud services.*
- *Establish a binding right on cloud service portability and EU legal framework for foreign cloud service providers.*
- *Freedom of contracts must be encouraged, and SMEs should benefit from guidelines on the most common risks to avoid, as well as from training and tools to identify and implement effective smart contracts. Voluntary, industry-driven model contract terms could be a fundamental driver of data sharing through smart contracts.*
- *Business providing data should be compensated through a preferential treatment regime in B2G relationships.*
- *Policymakers should enhance the potential of data-sharing in safeguarding the interests of manufacturers that have been pioneers in dealing with the risks and opportunities of the data economy.*
- *Avoid that the Data Act will indirectly require excessive administrative burdens.*
- *Protect SMEs from security breaches or trade secrets theft; the one primary focus area should be the topic of industrial data protection.*

CECIMO is the European Association of the Machine Tool Industries and related Manufacturing Technologies. We bring together 15 national associations of machine tool builders, which represent approximately 1500 industrial enterprises in Europe (EU + UK+ EFTA + Turkey), over 80% of which are SMEs. CECIMO covers 98% of the total machine tool production in Europe and about 33% worldwide. It accounts for approximately 150,000 employees and a turnover of around 22.5 billion euros in 2021. More than three quarters of CECIMO production is shipped abroad, whereas half of it is exported outside Europe.