

Brussels, 10 September 2015

From the Digital Single Market to a Single Market Ready for Tomorrow's Needs

Executive summary

In May 2015, the European Commission presented its Communication on the Digital Single Market Strategy. Whereas this strategy has a strong consumer focus, for us, the digitalisation of industry, often referred to as the “Industrial Internet of Things”, will be a key driver for European economies in the coming years. This is why we would like to comment on a number of aspects that are of particular importance for us and that were covered or touched upon by the Digital Single Market Strategy as well as to prepare the way for the forthcoming proposals on the Internal Market for Products and Services.

We are committed to providing our active input to this debate, as we believe that, with the Energy Union, the forthcoming Internal Market for Products and Services and the Circular Economy, the Digital Single Market is one of the core pillars, which if it is well-designed and part of a connected and coherent policy approach will contribute towards achieving overall jobs and growth, the core objective of the present Commission.

Orgalime's industry, with its output of 1825 billion euro in 2014 and 10.3 million employed in Europe, does attach significant importance to the development of the Digital Single Market which is integrated with all other policy areas being developed by the present Commission.

Orgalime also firmly believes that the jobs and growth objective of the present Commission must be at the core of the policy thinking and regulatory framework derived from the Digital Single Market.

In the present paper therefore:

- we provide our comments on the Digital Single Market
- we outline the main issues which from an industrial perspective need to be considered, most probably in the forthcoming Internal Market for Products and Services
- we include an annex with our main position papers related to the above issues

Orgalime, the European Engineering Industries Association, speaks for 43 trade federations representing some 130,000 companies in the mechanical, electrical, electronic, metalworking & metal articles industries of 24 European countries. The industry employs some 10 million people in the EU and in 2014 accounted for more than €1,850 billion of annual output. The industry accounts for over a quarter of manufacturing output and a third of the manufactured exports of the European Union.

Digital will be at the core of Europe's future growth and jobs, but only if it is based not only on consumer markets but even more so on Europe's core strength – manufacturing and physical assets. For Orgalime digitalisation is the key for success in the three main EU policies:

- Digitalisation connects companies, clients and suppliers, facilitating both the further development of the digital single market, and global value chains and systems.
- Digitalisation enables to manage the transition to a clean, low-carbon energy supply.
- Digitalisation is essential for the competitiveness of the European industry and therefore to the EU's core jobs and growth agenda.

By 2020, about 1 billion people will be connected, according to industry estimates. The same estimates also predict that then some 50 billion devices will be connected, be it machines, buildings, means of transport or other sensor-equipped installations. This is the reason, why a true Digital Single Market (DSM) must take into consideration the needs of the economy as a whole and cannot be focused purely on consumer needs or the “new economy”. Likewise it must clearly fit into the global economy.

Our vision is of an interconnected European economy that benefits the most from one of its biggest assets: a strong manufacturing industry, often embedded in regional clusters that are world-leading. That is why it is so important that digitalisation finds its way into the entire value chain along the production, starting from SME's to big global players.

Indeed, for Europe's economy a lot is at stake: The uptake of digitalisation, its successful deployment and roll-out will be the main drivers for investment in all economic sectors within the coming years. More than that, however, it is the precondition for Europe's economy to maintain its position as a world leader in many technologies and thereby to continue to provide more and better jobs every year.

For us, the Digital Single Market (DSM) Strategy is an important first step, however, in order to fully benefit from digitalisation, Europe must go beyond what is proposed now and

- Prepare for the “Internet of Things” taking into consideration the needs of industry
- Recognise data as the raw material of the future and, where necessary, adapt legislation accordingly in order to ensure that industry can use data in a responsible manner to develop new services and business models
- Seriously work on continuing to improve the overall regulatory framework, as has already begun under the Better Regulation programme and REFIT

The Digital Single Market must be ready for industrial needs.

It is increasingly being used for machine to machine communication. Connected devices will exceed connected humans at a 50:1 ratio within the next 5 to 10 years, according to estimates.

This is good news, as it will both lead to the creation of new types of jobs and more varied ones. Additionally, it will create new business models, especially based on “big data” analytics. Already today, “predictive maintenance”, value chain communication, environment friendly “precision farming”, etc., all based on huge amounts of collected data, are anticipating the future of management and production. But this is only the beginning as companies progressively learn how to exploit the mass of data they are collecting, how to organise their businesses to use it and thereby have new sources of wealth creation.

As a result, we must take into consideration, that communication will increasingly be used by machines and need to shape our physical and legal infrastructure accordingly.

Digitalisation has empowered the consumer to better compare offers for different services and has thus decisively contributed to complement the internal market. Still, the potential of digitalisation has not yet been exploited fully. Smart meters, e-health, solutions for ageing population in buildings and e-government promise to make life for citizens easier and more affordable. At the same time, they will create new business models.

In this context, it is first of all technology down to the electronic component level and software that play a core role: for example, cybersecurity is enabled by encryption, which means the mastery of electronic components technologies and combined hard-soft solutions for subassemblies. High speed networks could also not work without optic fibre, integrated micro photonics, electronic components, specialized cards, concentrators and computers. Furthermore the Internet of Things is also based on sensors, actuators, micro batteries and microcontrollers, with low energy consumption.

However, for Europe to profit from these new opportunities, we will need an enabling, forward looking regulatory framework, which may require progressive adaptation of the present framework, whether at the level of data ownership and protection, services and potentially the internal market for products.

We therefore suggest the Commission to start a structured, forward looking dialogue with the relevant sectors of the industry and its clients in order to see how far and where an update of the “acquis communautaire” may be useful above all to remove barriers in the existing regulatory framework which can hinder the development of new business models.

Some legislation may need to be adjusted, for example, in the areas of cybersecurity, for the development of demand driven electricity markets and potentially for Intellectual Property Rights (IPR) and data ownership. Likewise, in order to ensure fair competition, the application of competition law should evolve, taking into consideration the increasing role of globally active platforms and intermediaries.

Key recommendations:

- *Analyse the “acquis communautaire” in all areas to see where there is a need to adapt it to remove barriers for new business models and services based on digitalisation*
- *Adapt it, where appropriate in this context and after consultation, whether at the level of data ownership and protection, services and potentially the internal market for products*

A physical infrastructure ready for hugely increased data flows

The EU’s targets concerning communication infrastructures already outlined in the “Digital Agenda” are a precondition to establish a “thriving data-driven economy” in Europe. Especially, the overdue roll-out of broadband networks is a precondition to make infrastructure apt for a data-driven economy, most essentially, for providing SMEs and mid-cap-companies, which are often located outside metropolitan areas, with equal starting conditions in the digital economy, supporting industrial applications, cloud computing, the Internet of Things, digital industrialisation and e-infrastructures.

Reliable high-performance communication infrastructures are also a precondition for effective machine to machine communication. Industrial plants require reliable communication and must meet the most varied requirements, depending on the respective application. Fast response time (short latency), a coexistence management of diverse applications and availability of the radio link (robustness) must be ensured. The particular concerns of industrial production need to be taken into consideration at all times. Utilising the advantages offered by the development of the digital economy

is a core issue for the economic recovery of Europe and we therefore welcome the Commission's and Member States' support in this area.

Key recommendation:

- *Accelerate the development of coherent, interoperable robust and scalable fixed (for example fibre optic) and mobile broadband infrastructures, especially in rural areas, with the needs of the "Industrial Internet" in mind, which is in line with our letter addressed to Commission President Juncker (annex)*
- *Take the particular concerns of industrial production into account. Modernisation and simplification of the EU Telecommunication Framework*
- *Reinforce the usage of structural funds for communication infrastructure*

Platforms

The word "platform" as it is used today is often vague. It is also used in multiple contexts whether in the research area for European Technology Platforms (ETPs), in engineering for physical manufacturing, virtual design or digital manufacturing platforms, or as cited in the Digital Single Market Communication as examples, search engines, social media, e-commerce platforms, app stores and price comparison websites.

Orgalime does not believe that a single "fits all" solution applicable for all these types of platforms is possible. We would therefore welcome that a clear definition of what is meant whenever discussions on "platforms" are undertaken.

In the specific context of B2B or B2C search, sales or intermediation platforms, Orgalime would like however to specify certain principles we feel need to be respected in order to ensure fair competition:

The development of such platforms in the area of B2B is in the early stages and therefore any approach considered in this area should be preceded by proper consultation of the manufacturing industry so as to ensure that emerging innovative business models are not unduly hindered.

European Competition Legislation has not been designed for today's realities of cyber space. Unlike traditional fields of economic activity, the market is per se a global one and usually the leading competitor has a significantly higher market share than all its competitors combined. This is especially true for search and sales platforms.

If the rules on the misuse of a dominant position are not applied consequently, this has negative effects on the entire value chain. The dominant player may use their position as a sales channel in different fields of the economy and push competitors in those fields out of the market. This includes unfair practices such as opaque algorithms to determine that some privileged products will be displayed on search engines and platforms first. Furthermore, dominant platforms may hamper the development of new business models in an unfair manner.

Orgalime is keen to avoid the creation of de facto monopolies, whatever the sector is and that competition legislation is able to ensure fair competition in the market. A potential evolution of the legislation should be preceded by a proper consultation of the stakeholders active in the relevant market.

Key recommendations:

- *In any policy or regulatory activity, clearly define how the term "platform" is being used*
- *Modernise EU Competition Law to adapt it to the development of search, sales or intermediation platforms and apply it to ensure that fair competition can flourish in the market*

PPPs and virtual industrial “platforms”

Europe’s factories of the future will be embedded in connected value chains and digital innovation ecosystems which might cover the entire value chain along the production, starting from design, through suppliers to the producer and even further, to the provider of maintenance, post sales service and - finally - recycling. These ecosystems and platforms should be accessible for SMEs and big players alike.

For Europe, this offers a huge potential for re-industrialisation, strengthening regional clusters and regional production which is closer to the customer. This makes clean, urban factories - even in residential areas - a realistic vision.

While we widely trust in the market to create such platforms in a timely manner, PPPs, such as the “Factories of the Future” and “ECSEL” PPPs, have proven to work as an accelerator for certain sectors in the creation and uptake of innovative product design and manufacturing.

Key recommendation:

- *R&D funding: Support for industrial PPPs for market-driven innovation*

Data as raw material for manufacturing

EU legislation has concentrated on personal data protection, which has become increasingly relevant for the B2C environment. In B2B relations, however, the situation is different. Here, enormous amounts of different kinds of data is being collected and progressively the analysis of this data offers manufacturing companies ways to make significant improvements in efficiency in the area of resources, productivity both in the area of processes and service offerings and thereby generating new business opportunities.

Today in the manufacturing world, data ownership and access to data collected by sensors during the manufacturing and production process, as well as its usage whether for predictive maintenance, resource efficiency and performance improvement, is largely ruled by contracts between individual companies. So far, this has proven to be sufficient, providing significant benefits for all parties involved, in a B2B environment.

The amount of data available in the future will change business fundamentally. New business models and different forms of cooperation between business partners will emerge. In this changing environment the owners must ensure the right of use and disposal of their data. They must have the full right to decide to which extent they make data available to other businesses. Whether or not the current legal framework will be suitable to guarantee this right of disposal of the owner while at the same time allowing new business models to develop, still varies across sectors. A profound analysis of the legal framework on a case by case basis is necessary. Before this analysis has been concluded, Orgalime considers regulatory intervention in the B2B sector governing the ownership of data or access to collected data as premature.

In the longer term, it might be necessary to define more extensive rules for the ownership of different data, such as aggregated data or public data, which in most countries is freely accessible, and in how far such data may be used for applications, such as data mining. As business models and technical feasibility are evolving quickly, strict rules seem inappropriate at this moment. Nevertheless, we suggest the European institutions to assess developments in this field carefully and open a targeted dialogue with industry stakeholders.

Key recommendations:

- *Conduct a profound analysis on how the current legal framework impacts the development of new data driven business models, especially in the B2B area*
- *Allow business models to grow*
- *Avoid the multiplicity of different national regulatory approaches*

A trustworthy cyberspace and infrastructure

Our vision of future manufacturing in Europe is characterised by integrated digital production along the entire value chain and in production systems. This means that individual products, machines, entire manufacturing plants, supply chains and customers will be connected and communicate with each other, using digital and technology solutions provided by our European industry.

A decisive prerequisite for the successful roll-out of technology based on machine to machine communication is trust in the security of communication and networks. Companies will consign data flows carrying their know-how and the control of their production equipment and processes to digitally interlinked systems only if they can trust that those systems and cyberspace are secure. Likewise, the expansion of data driven business models will largely depend on the availability, integrity, authenticity and confidentiality of communication infrastructures. Here, sufficient capabilities ought to be established in order to strengthen cyber-resilience in Europe,

However, two reasons have limited this trust building process to this point:

Firstly, a lack of a strategy driven foresight of upcoming crucial technologies that will shape our communication and the way data is generated, transported, and managed for the next 10 to 20 years. It is important that industries and governments focus on integrating security from the start through “security by design”. Cybersecurity must anticipate tomorrow’s challenges, rather than reacting to yesterday’s shortcomings. Companies and policy makers need to work together in order to manage this new security paradigm. Yet, such a strategic consortium is missing.

Secondly, security solutions depend not only on technologies but also on available products and services in the market. We have a strong scientific security base in Europe. Strong algorithms for encryption exist. Yet, especially SME security providers struggle to place their technologies and products on international markets. The result is a highly fragmented market structure. We need a comprehensive initiative to strengthen the manufacturers and providers of security solutions in Europe that can meet customer needs accordingly. Depending on how it is shaped, the upcoming Cybersecurity PPP should build on this strategic asset and support the role of cybersecurity as an enabler for digital solutions.

Cyber security starts at private and company level. However, SMEs especially often lack resources to properly deal with cybersecurity. Awareness of risks and investment in cyber security must be raised. Besides this, national authorities should be better connected via the European Union Agency for Network and Information Security (ENISA), in order to effectively fight against cyber-crime and cyber espionage.

Key recommendations:

- *Establish sufficient capabilities in the areas of prevention, detection and reaction to threats in order to strengthen cyber-resilience in Europe*
- *Establish a dialogue between decision makers, operators and manufacturers of devices in order to quickly react to the rapidly changing technical environment*
- *Support Member States in realising more reference projects regarding security solutions and implementations*
- *Encourage the exchange of best practices among Member States concerning the combat against cyber-crime and cyber-espionage: legislation and execution*
- *Rapidly adopt the NIS directive with stringent application in mind*

Standards versus Regulation

Our companies are developing and providing more and more sensor-equipped machinery, smart production systems and intelligent products, which will make the manufacturing process and its products the biggest source of data and one of the most promising areas for data analytics.

Legislation in the field of products and IT is exposed to the danger of being made redundant by fast technological change after only a short time. Therefore, legislation, if deemed necessary, must be enabling, avoid detailed measures and rather focus on objectives or essential requirements and be forward looking and technology neutral. In most cases, therefore, Orgalime would opt for a focus on standardisation rather than on regulation.

A significant amount of work will therefore be required at the level of standardisation in order to facilitate interoperability between machines and systems all along the value chain. The development of the Digital Single Market but also operation in global markets as very much needed by Orgalime's industry, which is the EU's major manufacturing export industry, requires that such standards are open standards, developed timely and internationally applied.

Timely and quality standards are essential for our industry and have repeatedly proved to be an ideal instrument to ensure rapid penetration of markets, both in the internal market and on world markets. Orgalime has therefore always been a major supporter of standardisation: traditionally Europe's standardisation organisations and notably CEN and CENELEC which have and still continue to the serve the needs of our industry well in most areas. As companies are increasingly operating in global markets, the role of international standards (ISO, IEC) has increased in importance and served more as a basis for European standards.

In the area of ICT, given the fast development of digital applications and services in the manufacturing industry, the speed at which standards can be developed is essential. This has become more difficult to achieve since the adoption and implementation of Regulation EU 1025/2012: Orgalime has highlighted the increasing bureaucracy that has been imposed on the European Standardisation organisations which are reducing their ability to serve the needs of companies in this area. The decision by the Commission to ask these organisations to work increasingly on policy issues is also undermining the capacity of these organisations to provide the service that Orgalime's members, which are by far the major funders and users of standardisation in Europe, expect of them.

Orgalime therefore has drawn attention to this issue which is leading its membership to seek other standardisation platforms and fora for standardisation in the area of ICT, whether at IEC and ISO where international consensus standards are developed and where our members are already active, or in other fora.

In the context of the follow up of the Communication on the Digital Single Market, Orgalime is examining the proposals of the Commission to launch an integrated standardisation plan to identify and define key priorities in the area with a view to identifying how best to cooperate in this area.

Orgalime, moreover, believes that the Commission in its ongoing work on the forthcoming Internal Market for Products and Services has the possibility to adapt its strategy without changing the existing Regulation in such a way the right way as to sustain the needs of Orgalime's industry.

Key recommendations:

- *Our value chain is a global one. Therefore, standards and rules should be globally applicable, too.*
- *Standards live from being applied. The interface between manufacturing and ICT needs standards developed by manufacturing industries to make an interconnected European economy happen.*
- *Standardisation is overwhelmingly industry driven and funded. It cannot be a top down approach imposed by regulators. Standards need to be developed at the speed required by the market which will therefore choose the most appropriate standardisation platforms and fora. The Commission needs to take account of this in its forthcoming Internal Market for Products and Services package.*

Education and training curricula for tomorrow's needs

The digitalisation of industry will once again improve the working conditions considerably. The jobs of the future will be more varied, as even more monitoring and repetitive tasks will be performed by computers. Besides becoming even healthier and safer, the factories of the future will have such low emissions that the "urban factory" in residential areas will become increasingly frequent, which will be a major benefit for employees, the majority of whom live in cities.

However, just as was the case in previous changes in production, digitalisation requires people that have the necessary skills. As mentioned in the Communication, more than 800 000 ICT vacancies could be unfilled by 2020 in Europe. This is not a problem of the ICT industry alone. Due to the digitalisation of manufacturing, our companies are increasingly hiring people with ICT skills and they are facing problems to find sufficient qualified personnel. Nor is it a new problem since Orgalime has been highlighting the issue since it carried out a review of mechanical engineering over 10 years ago (EnginEurope) when we proposed, among others, that more prominence should be given to STEM (science, technology, engineering, mathematics) skills and teachers of these should be financially advantaged. At the same time, millions of young unemployed people cannot find a job: it is obvious that Europe suffers from a big qualification mismatch. Fostering STEM subjects from an early age on and allowing pupils to choose a specialisation on these subjects at a later stage of their curricula has proved to be useful to overcome this mismatch in many Member States. Additionally, ICT skills should be made a subject in many more education curricula.

However, ICT-skills alone are not sufficient. The digitalisation of factories means that virtual and real processes are merging. For the manufacturing industry it is therefore important to be able to employ people who have the right combination of skills to bring these worlds together.

Besides integrating digital and IT knowledge in school, apprenticeship and tertiary education, a particular focus shall be set on vocational training. Many employees are concerned of the effects that technological change may have on their personal employment situation. Our industry takes these concerns very serious. However, the solution is obvious. In recent decades, early and continuous adaptation of skills to these technological changes through vocational training guaranteed a high employability for workers - even at a higher age.

Key recommendations (essentially for Member States and regions):

- *Arouse interest in STEM subjects and in manufacturing from an early age on*
- *Fight the qualification mismatch by allowing specialisation in STEM, ICT subjects and mechatronics at a later stage of the school curricula*
- *Foster vocational training to update qualifications of the workforce and maintain employability at a higher age*
- *Share best practices among Member States (including ESF programmes) in these fields*

Better Framework conditions

In its Vision Paper “Technology for the Future Manufactured in Europe, Orgalime has commented extensively on what we see as the joined up policy approach and policy measures which we feel are necessary to kick start manufacturing investment in Europe today.

The framework conditions under which our companies operate does remain a central issue; we have already provided some detail of our views in our publication “Technology for the World – Manufactured in Europe “and count on the Commission to seriously consider the proposals we have made when moving towards the forthcoming Communication in the Internal Market for Products and Services.

We look forward to a focus on further measures to improve the functioning of the business service markets as we have proposed repeatedly. However, we trust that any measures proposed will essentially focus on the removal of barriers to the provision of services in the internal market, rather than focusing on standardisation of service offerings, which could both limit the capacity of our companies to develop new business models based on digitalisation, the use of data and data analytics, while at the same generating additional costs for companies through certification.

The scope of any initiative regarding contract law should be strictly limited to business-to-consumer sales. The B2B sector should fall outside its scope. Contracts covering digital content in the B2B sector are usually very complex and specific and therefore need to be governed by highly detailed contractual agreements. Therefore, freedom of contract, a fundamental rule of Contract Law in all European legal systems as a fundamental principle should prevail.

We have commented extensively on the issue of standardisation including in the present position paper. Standardisation remains a strategic issue for our industry, both in the context of the internal market, but also at a global level: in the context of trade negotiations, we strongly insist that the EU’s approach for developing the internal market where European standardisation, through the withdrawal of competing national standards, has strongly favoured the development of our industry both in the EU and on export markets.

As part of a follow up to our cooperation with the Commission on “Markets for Advanced manufacturing for Cleantech”, we have finalised our policy proposals for the Circular Economy in which we make proposals both for the development of new regulation, but also for the revision of existing regulation in order to enable the Circular Economy proposal to be good for the environment, good for manufacturing and good for employment.

Finally, since the beginning of the present Commission, we have requested the withdrawal of the Market Surveillance package adopted under the previous Commission: indeed, we felt it had moved, during discussions in the ordinary legislative procedures from a package designed by the Commission to improve market surveillance in the internal market in order to ensure a level playing field for companies, to one which imposed more burdens on companies for little obvious reason while reducing the obligations of Member States to effectively carry out market surveillance on the

ground. We would therefore prefer the proper implementation of the existing regulation (765/2008/EC) and the General Product Safety Directive.

It is an encouraging signal that Member States have agreed to take more effort for combatting illegal shipments and to set up inspection plans by January 2017 in the area of illegal shipment of waste. We would hope that such a move in the area of environmental legislation will also be applied more widely, in order to ensure that companies do not suffer unfair competition from products imported into the internal market of products which do not respect EU regulation as a whole. This is clearly damaging to the competitiveness of companies and therefore jobs and growth in the EU. It is essential that this should effectively happen and would be a clear indication that Member States also are respecting the decision they have taken in the European Council to mainstream industry competitiveness into all areas.

In practice, these in our view need to focus on carrying out physical controls on the grounds to be effective: Documentation and registration cannot be a replacement for physical checks - true free riders that did not properly document or register, would otherwise be even less controlled than today. These significantly increase the administrative compliance costs to legitimate manufacturers and widen the gap in sales prices with unfair competitors, while they do not ensure that authorities can effectively prevent misuse, fraud and avoidance to comply with legislation. On the contrary, registration procedures remove authorities' resources from actual controls on products which, if they were carried out as they should be, besides the obvious potential benefits for consumers and workers, would defend the interests of legitimate manufacturers in the EU.

Conclusion

The future of Europe's industry is indeed largely dependent on the successful digitalisation of the economy as a whole.

The Digital Single Market Strategy of the European Commission points in the right direction, and overall, in Orgalime's view, will contribute to establishing better framework conditions for the development of opportunities arising from digitalisation and the use of data.

However, its focus is mainly on consumer issues and does not address the digitalisation of real industrial value chains. In the B2B-context, we urgently need a debate on how the different business interests can be balanced: On the one side, there are huge expectations with regard to the use of data. On the other side, there is the legitimate interest of companies to protect their core knowledge and expertise which enables them to stay competitive in world markets. At the core of this debate is the question of "data ownership" and whether the legal framework is appropriate for a digital industry.

Before this debate has taken place, it is too early to move on with regulatory measures – at a time, when companies and policy makers are in the learning phase of the new opportunities and threats offered by digitalisation.

We have noted the Commission's proposal to become more involved in the identification and definition of key priorities for standardisation in the follow up to the adoption of the Communication on the Digital Single Market, but question whether the direction taken at the present time, following the adoption and implementation of Regulation EU 1025/2012, will enable this.

The framework conditions under which our companies operate remains a central issue. We have already provided some detail of our views in our publication "Technology for the World – Manufactured in Europe" and count on the Commission to seriously consider the proposals we have made when moving towards the forthcoming proposals on the Internal Market for Products and Services and on the Circular Economy.

Nevertheless, in the specific context of the digitalisation of industry, for our industry, the “Industrial Internet of Things” will be the key driver of industrial innovation during the coming decades. As we have specified in the present paper, therefore, the key prerequisites for our industry remain a safe infrastructure capable of transporting huge amounts of data via high speed mobile and fixed infrastructures and an enabling regulatory environment that keeps pace with technological progress but does not try to dictate the nascent innovative developments which we are seeing every day in order to fully profit from these new technologies. For this, we need a place where strategic monitoring of technology trends in Europe can take place and where the impact on cyber security could be estimated.

Well qualified staff are ever more a key framework condition which will allow the digitalisation of the economy to attract investment to Europe and create new and better jobs.

In combination, these will enable Europe to have a more competitive, cleaner and highly innovative economy which generates jobs and growth.

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Annex 1: List of relevant position papers Digital Single Market and mainstreaming industrial competitiveness

Digitalisation, data and research

[European engineering: the beating heart of a data-driven economy](#)

[Orgalime position paper on the proposal for a directive on the protection of 'trade secrets'](#)

[Orgalime letter addressed to Commission President Juncker on the 315 bn euro investment plan](#)

[European Fund for Strategic Investments](#)

[Orgalime views on the upcoming EIT KIC on value added manufacturing](#)

Internationalisation and global value chains

[Orgalime comments on the Commission's proposal for Regulatory Cooperation in the framework of the Transatlantic Trade and Investment Partnership \(TTIP\)](#)

[TTIP: joint statement by EU and US industry associations Orgalime and NEMA](#)

Standardisation and Internal Market

[Orgalime recommendations on the future of European standardisation](#)

[Concrete suggestions to improve the 'vision for the internal market for industrial products'](#)

[Call for the withdrawal of the Product Safety and Market Surveillance Package](#)

[Orgalime comments on standard EN 300 328 - Radio and Telecommunications Terminal Equipment \(R&TTE\)](#)

Global leadership in energy and clean technologies, circular economy

Orgalime position paper on the Circular Economy (ready by end of July)

[Policy Recommendations on the Circular Economy Package](#)

[E-mobility and Smart Charging](#)

[Comments on the Commission Communication on 'Energy efficiency and its contribution to energy security & the 2030 framework for climate and energy policy'](#)

[Orgalime Guideline: Article 4 of the Energy Efficiency Directive \(2012/27/EU\) regarding Building Renovation](#)

[Orgalime comments on the preparatory study to establish the Ecodesign Working Plan 2015-2017 under the Ecodesign Directive 2009/125/EC](#)

[Comments on draft standardisation mandate to CEN/CENELEC/ETSI on generic standards addressing material efficiency aspects in the context of the implementation of the Ecodesign Directive](#)

[Orgalime comments on the Commission preliminary proposals to streamline and simplify the REACH authorisation process](#)

[REACH Implementation and Spare Parts](#)

REFIT and better regulation

[Which are the TOP 10 most burdensome legislative acts for SMEs?](#)

[Technology for the World – Manufactured in Europe](#)

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Annex 2: List of examples from our industry for digitalisation based on manufacturing

Example 1: Preventive maintenance due to increased use of ICT: A Danish producer of wind turbines that exports to more than 70 countries offers its clients a comprehensive service, ranging from planning, construction to operations and maintenance. Every day, the 25 000 turbines installed send their performance and diagnostic data, which allow the producer to precisely plan maintenance and inspection. These may then be carried out during times of lower demand. Wind turbine down-times could be reduced considerably.

Example 2: Less fertiliser use due to increased use of ICT: Precision farming is increasingly used to ensure optimal growth and quality of crops. Instead of a plain, uniform application of fertilisers, which does not reflect the natural variation of nutrients that are already in the soil, a more advanced method is used: A real-time nitrogen-sensor, installed at the front of the tractor, measures automatically the exact amount of nitrogen in the leaves, be it day or night. Its computer then tells the fertiliser spreader (or sprayer, for liquid fertiliser) at the back of the tractor to deliver the optimal measure. Poorly grown areas of crop that require more fertilisation will obtain higher rates of fertiliser, while less fertiliser will be supplied to already well-growing areas of crop. Fertiliser savings of up to 14% and an average productivity increase of up to 6% result in direct benefit to the farmer while preserving the environment.

Example 3: Fine tuning of customers' production – new business models: A Latvian company produces nano-coating machinery for glass (non-reflecting art glass) or plastics. The value of such machines may easily reach 10 million euro. 80% of the value added is software. The company is connected to their machines at their customers 24 hours/day so as to continuously fine tune their customers' production processes and improve their software. They have negotiated with their customers which include major global groups how to share the value added generated by the 24 hour maintenance and software improvement programme since these improvements are of course incorporated in their next machine. The business of the company has grown significantly and largely thorough value added services built on their technology.

Example 4: Higher performance – higher quality through big data: The welding equipment and solution of a Finish manufacturer comprehensively monitors the welding process automatically, recording all necessary parameters of the welding procedure. A real time process and quality control makes the welding process safer by identifying faults at an early stage. The same data allows clients, for example construction companies, to plan buildings more precisely and have an overview of the manufacturing process of individual components along the entire value chain. For them, the need for quality audits is reduced and management of construction sites facilitated. The documentation required, for example by classification bodies in shipbuilding or offshore platforms can be provided automatically by the system. The company has made a successful transformation from a pure manufacturing company to a solution and service provider within ten years.

Example 5: Optimising production and down times: A manufacturer of sensors who is specialised in equipment of production machines includes sensors which analyse different parameters of, for example, plastic bottles production lines. First the individual machine was analysed – energy consumption, peak energy demand, cooling systems, machine wear and tear. Now, this supplier has started to offer to analyse the whole production. What are the benefits? First, production planning since this parameter is fed in and allows optimal use of equipment, optimisation of working time, the avoidance of energy and cooling peaks (energy consumption peaks each time a bottle is formed). Secondly, predictive maintenance allowing the temporary shut down for maintenance of the least efficient machines. So here we see a new business offering emerging, where the sensor manufacturer creates additional value added.

Example 6: Resource efficiency due to increased use of ICT: An Austrian skiing resort has equipped its snow groomers with sensors. In combination with GPS and a detailed, electronic map, this system measures the exact height of the snow coverage when operational on the slopes during the night. This system is interconnected with the operation system of the snow generators. The precise data transmitted allows the skiing resort to produce less additional snow, however, under ideal metrological conditions and precisely at the places where needed. Besides saving on capital through less equipment and a better maintenance schedule, the skiing resort managed to save per season up to 25% of the water and electricity previously used for snow production.