
Brussels, 2 June 2016

**Orgalime comments on the European Commission
Communication on
*'Digitising European Industry: Reaping the full benefits
of a Digital Single Market'*
(COM(2016) 180 final)**

Orgalime welcomes the presentation on 19 April by the European Commission of its Communication on *'Digitising European Industry: Reaping the full benefits of a Digital Single Market'*, as a further step to implement its Strategy on the Digital Single Market.

Building on the comments we made on the occasion of two roundtables with industry organised by Commissioner Oettinger in the course of 2015, Orgalime presents below a first analysis which will be complemented by a more detailed review, focusing on the documents accompanying the Communication.

Executive Summary

Orgalime welcomes the proposed balanced approach announced by the European Commission in its Communication of 19 April 2016 on "Digitising European Industry: Reaping the full benefits of a Digital Single Market": "boosting Europe's digital innovation capacities" on the one hand and "boosting digital innovation in all sectors across Europe" on the other hand are the two hands with which the EU can envisage the Renaissance of its industry, building on its digital and non-digital industry sectors. The views developed below by Orgalime concern:

- Investment, where we trust that the development of Digital Innovation Hubs will help in disseminating digitisation in all EU regions and throughout the entire value chain. Examples can be found from the Factories of the Future Public Private Partnership
- Standards, which should always remain industry-led market-based tools both for enhancing competitiveness and for demonstrating compliance with regulatory requirements
- Governance: Orgalime is available to contribute to the success of the High Level Roundtable, and would have supported a more straight forward annual report from the Commission to the European Spring Competitiveness Council on the EU industry's digitisation
- The regulatory framework, which should be carefully analysed and reviewed before being updated where it is needed (notably in the areas of data and safety and liability)
- The need for an industry data protection regime, which should be based on contract law, Intellectual Property, and trade secrets protection

Orgalime, the European Engineering Industries Association, speaks for 41 trade federations representing the mechanical, electrical, electronic, metalworking & metal articles industries of 24 European countries. The industry employs some 10.9 million people in the EU and in 2015 accounted for more than €1,900 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.

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- Infrastructure and cybersecurity, which are not sufficiently highlighted in the Communication as backbones of any digitisation policy, and not only from a standardisation perspective: broadband networks must be deployed throughout the EU for companies to profit from the opportunities offered by ‘big data’ and the Internet of Things

And

- Skills, where the needs in terms of workforce are not only digital skills, but people who can integrate and professionally use ICT and mechanical, electrical and other engineering disciplines, to which an entrepreneurial mind-set should be added; the social dialogue should focus on the benefits of digitisation, notably at the work place.

1. INTRODUCTION

The pace at which all sectors of the EU economy, and more particularly its manufacturing industry, are embracing digitisation as part of their overall design, production, marketing & sales, and maintenance processes is not slowing down: digitisation has become one of the major drivers of industry’s competitiveness. As Orgalime’s statistics for last year show output in our industry the results are already being felt: output compared to 2014 has risen by some 100 billion euro (+1.3%) and employment is up to 10.9 million (+0.7%). This is encouraging.

In general, Orgalime welcomes the proposed balanced approach announced by the European Commission between “boosting Europe’s digital innovation capacities” and “boosting digital innovation in all sectors across Europe”: indeed, if the EU is to succeed with its Industrial Renaissance it has to build its digitisation strategy as part of an overall coordinated industrial policy. Engineering industries are at the centre of digital transformation which affects products and processes, work organisation, and entire business processes and can provide strong tools for innovation and competitiveness based on new business models.

Moreover, Orgalime is pleased to note that the European Commission acknowledges Europe’s strengths in such engineering and industry areas as embedded and business software, telecommunication equipment, robotics, automation, laser and sensor technologies, electronics for automotive, the security and energy markets. Indeed our strengths are based on a combination of ICT and the electrical, mechanical, automotive, energy and other manufacturing technologies.

We welcome that the Communication proposes to act in key areas, namely, boosting Europe’s digital innovation capacities, providing an innovation-friendly legislative environment, market-driven standardisation and skills while establishing an inclusive governance framework.

However, we regret that two highly important (and intertwined) aspects are not addressed in a sufficiently comprehensive manner in this Communication, namely physical infrastructures and cybersecurity.

We therefore comment hereafter on our industry’s priorities.

2. REGULATORY FRAMEWORK

For our industry, the EU Single Market has been one of the main sources of competitiveness here and internationally. This has therefore led to a development of our companies and with it jobs, prosperity and affordable goods and services for the EU citizens. The New Legislative Framework of 2008, encapsulating the principles which facilitate the free circulation of goods - and of services as a result of the mention of the New Approach as benchmark in Regulation 1025/2012 - should underpin the drafting of any legislation required to complete the Digital Single Market: it is a must to avoid any risk of fragmentation of the Single Market and a directive requiring Member States to notify planned national legislation for services should be put in place, on the model of Directive 2015/1535 on goods.

Orgalime has noted the European Commission's thoughts on regulating in two areas: data and safety and liability rules.

With regards to data, the Communication rightly points out the need to foster on the free circulation of data and to remove localisation requirements imposed upon by national legislation: if data and big data is the crude oil of industry's digitisation, an *'Internal (Big) Data Market'* should be put in place. The flow of industrial data (as opposed to personal data) is one of the preconditions for a digitised and connected industry. However, it has to be taken into account that, in an industrial context, data are not just raw material but representations of real-world businesses cases. The implications are manifold: Industrial data may contain trade secrets, may be relevant for the operational safety of machines or be linked to personal data of employees and customers.

But it is also important to tackle another issue, that of data ownership: Orgalime welcomes the European Commission approach consisting in clarifying the issues first, before proposing any legislation. Indeed, whereas, so far, EU legislation has concentrated on personal data protection, which has become increasingly relevant for the B2C environment, B2B relations are largely ruled by contracts between individual companies. This has so far has proven to be more than sufficient, providing the necessary flexibility between supplier and customer and thereby significant benefits for all parties involved.

Data flows nowadays have a larger impact than the flow of goods on global GDP. This makes the issue of data ownership a crucial matter to be solved and an in-depth, case-by-case, study is needed, analysing the current legal framework's capacity to ensure that the data owners have the right to use and dispose of their data (and notably to make it available to other businesses), while ensuring that new business models can be developed. Orgalime suggests that such a study should be carried out in cooperation with industry stakeholders, and is ready to contribute.

A specific aspect of the accompanying Communication on the European Cloud Initiative raises concerns: the proposal to **open up "by default" as of 2017 all scientific data** produced by future projects under Horizon 2020. The distinction between *'ideas'* and *'knowledge'* proposed by the European Commission is not enough as long as a company participating in a project is not allowed to protect what it considers as being an idea. We are pleased to read that *"The existing opt-out options, where open access to data would be contrary to future commercial application or data privacy and personal data protection, security and protection of EU classified information will be maintained."* However, this "opt out mechanism" should not be written in a "simple footnote", should be easy to use and should guarantee that companies can decide to protect ideas and knowledge which they create. Finally, we strongly warn against the possibility that universities needing Horizon 2020 research results from companies could bypass the opt-out mechanism and ask for data for the general purpose of their research. Industrial leadership and competitiveness of Europe's industry is crucial for growth and jobs. The EU should therefore not be naïve: it must not offer research results arising from the collaboration between companies investing in such research and research providers and its resulting IP to global competitors.

In any case, outside the domain of pre-competitive research, policy makers must refrain from obliging enterprises to grant access to data from their business context. In industrial value networks, enterprises must be able to decide and to negotiate to what extend and under which conditions they share data. The intervention of legislators might interfere with already growing data ecosystems, expose sensitive trade secrets and undermine the legal certainty and trust needed for investments in connected factories and data-driven business models.

With regards to safety and liability, several innovations that come along with increasing digitisation of products, processes and systems may affect the way how we apply laws: conformity assessment procedures and product guarantees need to be applied in a way that they take into account software updates of machine controls and systems. Safety laws need to be applied in a way

that autonomous processes, such as autonomous driving, and automation, collaborative robots, etc., can be rolled out on a large scale. While safety may not be compromised, the application of relevant laws and procedures must leave room for new technical solutions, so that our companies can innovate and remain competitive. Orgalime recommends that the European Commission launches a structured, forward looking dialogue with the relevant industry sectors in order to see how far and where an overall update of the Single Market “acquis communautaire” may be useful to remove barriers which can hinder the development of new products, services and business models. The REFIT programme should include a screening for technologically obsolete legislation and build upon the ideas of the INNOVREFIT analysis.

The Communication also refers to possible large scale testing in real life environments, building on ongoing European Commission services work on the relationship between innovation and regulation (including the pilot work on Innovation Deals). Orgalime is open to such regulatory experimentation as long as the basic principles of fair competition are respected.

Finally, Orgalime welcomes the inclusion of the new e-Government Action Plan as part of this Communication: our companies will only benefit from interacting with modern, user-friendly, paperless public services which apply the “once-only principle” and are interconnected at EU level.

3. INVESTMENT

In general, Orgalime recommends that the EU innovation policy, with regards to the digitisation of industry also, should be based on the following elements:

- All public authorities’ levels (European, national, regional) should commit and follow-up on an innovation strategy that is comprehensive, well thought out and progressive, with clear milestones; they should also commit to coordinate among various instruments
- EU framework programmes should generate European added-value and focus on activities where national initiatives cannot have an impact (lack of scale and lack of cross-border cooperation)
- Instruments should be put in place to stimulate the creation and/or the development of eco-systems, especially at regional levels. Such eco-systems that will generate innovations may be more effective than targeting special innovation process phases. Indeed, distance matters in technological transfers, these eco-systems should be backed by appropriate physical infrastructures and information/education exchange tools and fora
- Demand side innovation would also help foster innovation all the way of the innovation cycle. This supports the placing on the market and diffusion of products incorporating emerging technologies. Public procurement for product innovation (not only IT) should be developed
- A “virtuous” coordination between RDI and industrial policies is required: process and products innovation are intertwined. However industrial policy should not be prescriptive of technologies through public research and innovation programmes
- In terms of financing and funding, there is a need to discuss how public R&I management and the EU funding-systems could themselves innovate and how public funding reaches real-life economy.

The proposal to devote €500 million from the Horizon 2020 budget to “Digital Innovation Hubs” as described in the Communication, to be reinforced or developed in all regions, is in line with Orgalime’s vision 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. This is why we believe that it is so important that digitisation finds its way into every region and throughout the entire value chain along the production, starting from SMEs to big global players.

Orgalime also recommends building activities for transferring R&D results to the market and translate them into new business, such as new services for manufacturing and new opportunities for

companies. These activities would similarly transfer the needs of the companies to the R&D centres so that commercial interests are understood and a direction given to making R&D. This would help to support SMEs and midcaps to adapt to new technologies. The broad implementation of results from research and innovation projects in industry is crucial. This can be put into action directly in companies (including start-ups and SMEs) and can involve university incubators, science parks or research institutes, test-beds and demonstrators. A very good start has already been developed in the past years with the very first hubs launched within the Factories of the Future PPP, namely the FoF-I4MS instrument. These activities, jointly implemented by stakeholders and the European Commission, lead to the creation of several hubs providing services to manufacturing SMEs. Many more regions would like to profit from this instrument.

Regarding the Commission's ambition of creating a framework that supports the emergence of European digital platforms, Orgalime welcomes the launch of such a debate at pan-European level. We support further stimulation through PPPs and similar initiatives as long as stakeholders and regulators work together. The connected Smart Factory, connected and automated transport and the horizontal internet of things (IoT) opportunity are also from Orgalime's point of view indeed the most pressing sectors where coordination and support would be helpful.

4. STANDARDS

The European Commission puts a strong emphasis on standardisation in its Communication, which is accompanied with a specific Communication on "Priorities for ICT Standardisation for the Digital Single Market".

Orgalime has for a long time stressed the need for industry standardisation to be market led: in the area of ICT standardisation, standards, as a peer-assessed codification of best engineering practices, establish a basis for the interoperability of products. In this sense, they facilitate innovation since they allow new solutions to be functional with given product or service definitions. On the contrary, externally imposed standards at the early stages of innovation may be counterproductive: a key element of innovation is thinking beyond the current status quo.

Therefore, Orgalime welcomes the European Commission's acknowledgement of the valuable national initiatives such as *Industrie 4.0* (DE), *Smart Industry* (NL), *Catapults* (UK) and *Industrie du Futur* (FR) and commitment to improve solution sharing and networking at European and global levels between these various national initiatives, especially on standardisation and interoperability matters.

It matters to Orgalime industries to stay a leader in advanced manufacturing, which does not necessarily imply "*that the EU becomes a leader in the global digital economy*"; it requires the EU to provide for an improved regulatory framework of supportive legislation which will leave our industry find its market-led solutions based on standards where it sees them fit to meet its market needs. In this respect, we acknowledge the importance of the five identified priority areas for ICT standardisation that are 5G communications, cloud computing, the internet of things (IoT), (big) data technologies and cyber-security. However, relevant ICT standards to support future interoperable applications tailored for our many sub-industry sectors already exist to a large extent at international level or would require to be developed in close co-operation with industrial Internet standardisation fora and consortia, which can offer the necessary speed and agility in what is a fast-moving area. For Orgalime, the Commission rightly highlights the importance of reference architecture models, which could build on the experience gained in the German Industrie 4.0 Platform (RAMI 4.0).

Orgalime industry members are the prominent representatives of advanced manufacturing technologies, where product, processes and systems are already making an extensive use of existing European and international standards. Hence for our small, medium and large industries, standardisation is not a challenge, but a useful means to interface their products, processes and systems with their world clients' needs. The origin of standards does not matter, as long as our

industries remain free to use them according to their own business priorities, in fair, open, predictable and transparent Single Market rules.

Therefore, we welcome the European Commission's efforts to set up concrete actions under a Joint Initiative on European Standardisation, and in particular Action 6 – Improve the exchange of information and dialogue with industry through a Standards Market Relevance Roundtable ("SMARRT"). This is in our view the best way to ensure that future European Commission requests for standardisation work in support to the application of European policies and legislation will be relevant for the market of the advanced manufacturing industries.

5. GOVERNANCE

The European Commission proposes to set up:

a) A High Level Roundtable which would meet twice a year, and would involve industry representatives, including from the PPPs, Member States initiatives representatives, and social partners. Orgalime recommends that the industry representation includes all manufacturing sectors, and that all PPPs (and not only the digital PPPs) are invited. We particularly welcome the involvement of national initiative representatives, as we believe that synergies and cross-fertilisation between national programmes (Industry 4.0, Smart Industry, Catapult, Industrie du Futur, and others) with the EU initiatives are extremely helpful to develop new ideas in a very fast moving environment. It is also essential (but is it enough?) to avoid that diverging ideas lead to diverging legislation and harm the Digital Single Market.

b) A European Stakeholders Forum which would meet once a year. This Forum also will be very useful if it allows for a maximum of experiences, initiatives and exchanges of ideas between as many stakeholders from all industry sectors, from all company sizes and from the public and private sectors.

In a spirit of transparency and in order to get commitment from Member States, Orgalime would have welcomed the inclusion of a report by the European Commission to the Spring Competitiveness Council on the progress of the actions set out in this Communication: the digitisation strategy must be seen as a part and at the core of the EU Industrial Renaissance.

6. INFRASTRUCTURES & CYBERSECURITY

In this Communication, the European Commission only partially includes the question of physical infrastructures (in the Communication on a European Cloud Initiative, which essentially focuses on scientific infrastructures). Moreover, its approach of cybersecurity is limited to standardisation (proposed as one of the priorities described in the accompanying Communication on ICT standardisation priorities), whereas cybersecurity must be seen as a key enabler providing trust in products and services.

Orgalime recalls that the roll out of broadband networks is a precondition to make infrastructures adapted to data driven economy, Reliable high performance communication infrastructures are also a precondition for effective M2M communication and, most essentially, for providing SMEs and mid cap companies with equal starting conditions in the digital economy. The development of high speed broadband infrastructures will become even more important as estimates consider that the number of connected devices (such as sensors, machines, etc. will far outweigh the number of persons connected, namely, we expect by 2020, by a factor of 50:1. Additionally, a good 5G network is essential for the deployment of connected cars

It is therefore essential that the Commission considers as part of its digitalisation strategy a close monitoring of all telecommunication-related policies and legislation, including for example the

implementation of directive 2014/61/EU “on measures to reduce the cost of deploying high-speed electronic communications networks”.

Beyond electronic communications, a European Strategy for Digital Industrial Leadership must also embrace the digitisation of energy and transportation networks, where the European engineering industries, through their technological advance, can at the same time answer societal challenges, create many jobs and successfully compete on international markets.

On cybersecurity, Orgalime considers that at least two aspects should be included in the strategy:

- A close monitoring by the European Commission of the harmonised transposition and implementation of the Directive on Network and Information Security (NIS) as soon as it has been formally adopted
- The set-up, based on the outcome of the dedicated public consultation closed early March 2016, of a contractual Public-Private Partnership (cPPP) on cybersecurity, covering both the cybersecurity issues and the cybersecurity markets in terms of products and services.

In its answer to the cybersecurity contractual PPP, Orgalime provided a comprehensive set of ideas on the subject in the Commission’s recent consultation, summarised hereafter:

A significant number of European companies are active and innovative in the cybersecurity sector. The European cybersecurity market is however very fragmented on the provider’s side. As a consequence these small companies are not competitive enough at international level. There exist good European products, however rather in niche markets. Europe lacks big platform and system providers as exist in the USA. For European start-ups, it is difficult to find a first (reference) client. A possible solution would be to encourage more risk taking in public procurement, so that public projects can serve as reference projects. Europe should draw up a plan defining which sectors are strategic and thus worth supporting with adequate means. Support must be concentrated – it makes no sense to try to cover all fields.

In its answer to the consultation, Orgalime also made the following recommendations:

- Establish sufficient capabilities in the areas of prevention, detection and reaction to threats in order to strengthen cyber-resilience in Europe
- Check for gaps in cyber security and particular needs of the different economic sectors in terms of cyber security solutions
- Improve testing and evaluation capacities for software
- Promote cyber security maturity in private and public entities
- Regarding international ICT platforms: support “IT security replaceability”
- 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

Finally, work on cybersecurity will have to take into account progress in quantum technology developments, which will make widely used data-encryption techniques vulnerable once quantum computing becomes available

7. SKILLS

It is our understanding that the European Commission will present a Skills Communication and a Digital Skills Strategy in the course of 2016. While acknowledging that education (general, technical and vocational) is a competence of the Member States or of their components, Orgalime believes

that the EU should focus more on delivering results where it has competences, such as ~~rightly~~ providing an overall analysis, encouraging benchmarking and above all organising and financing exchange programmes in the area of education and training. We encourage the development of the 13 existing “National Coalitions for Digital Jobs” and the creation of such a platform in the remaining Member States. It might be appropriate to call them “National Coalitions for Digitised Jobs” since, as proposed in the Communication, their scope is extended.

Education

In the engineering industries branch, whose markets are global, skilled staff are the most valuable source of prosperity, as our industries are exposed to international competition from areas with lower wages, cheaper raw materials and lower energy costs. Additionally, there is global competition for the best skilled people.

The main challenge for our industry in the EU is to acquire and/or to (re-)train electrical or mechanical engineers and technicians who also master ICT tools to integrate them in our manufacturing processes and product and service development. The question goes beyond the scarcity of an ICT skilled workforce, but of a workforce which can integrate and professionally use ICT and other engineering disciplines. Moreover, fostering an entrepreneurial mind-set is crucial to transform technical knowledge in valued products and services.

This requires new curricula to be developed by education providers with the advice of industry where relevant (for example in vocational training). It starts with a transformation of the teaching of science, technology, mathematics, and computer science in primary and secondary schools. Mathematics should make sense to children, active pedagogy can be a way to achieve this and foster interest. Particular attention should be given to girls in primary schools, as the “I do not belong here” syndrome starts very early. STEM courses should generate interests and creativity and not generate both people applying formulas and others that hate STEM. These curricula should be re-thought at all education levels, and be able to attract and retain young people and women, and to retrain unemployed and elderly workers, all of whom are needed as Europe’s demography is declining.

A number of tools and funds are already available at EU level, notably in the framework of the Grand Coalition for Digital Jobs: it is important that they are more focused, and that marketing efforts are undertaken, notably towards SMEs, to promote them.

In this framework, Orgalime strongly supports the launching by the European Institute of Innovation and Technology of a call for proposals on a new KIC on “Added-Value Manufacturing “. We are pleased to see that the call for proposals recognised that *“one of the major challenges for reaching the (proposed) aims is the availability of a highly qualified workforce (...). A KIC would therefore have a very important role to play in re-shaping the education landscape in (the manufacturing) field”*.

Social Dialogue

In its Communication, the European Commission announces the organisation of a social dialogue as of 2016: in this context Orgalime supports any dialogue that contributes to develop strong facts, figures, and arguments which go towards highlighting that the digitisation of industry creates more jobs than it destroys, in many existing and new areas within and beyond industry, so as to counter-argue what is sometimes put forward.

Another aspect to underline is that the digitisation of industry will improve working conditions considerably: future jobs will be more varied as more and more monitoring and repetitive tasks will be performed by computers.

8. CONCLUSION

As recognised by the European Commission in this Communication, the EU can and is further building on its strengths, but also has to tackle its weaknesses if it wants to fully “master” the growth potential and the societal promises of this “fourth industrial revolution”, as highlighted during the 2016 Annual Meeting of the World Economic Forum. This next step in the implementation of the Digital Single Market Strategy, as it considers industry as a whole as player, is an important step in the right direction.

To conclude then, the present paper is an initial contribution to discussions which Orgalime would appreciate to further develop and nurture with the European Commission services and MEPs. It will be complemented by more detailed positions on the various accompanying documents.

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