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Putting innovation at the heart of the twin transitions and the EU recovery

Orgalim's proposal for the way forward for sustainable and smart technology industries

The COVID-19 pandemic has had a significant impact on Europe's competitiveness. Although it is difficult at present to know how lasting and far-reaching the effects will be, it is already clear that the outbreak of COVID-19 has radically changed the conditions for conducting business and has revealed vulnerabilities in existing value and supply chains. On the other hand, the crisis has shown the power of innovation, technology, and the importance of having competitive and resilient industrial companies.

As outlined in Orgalim's 2021 [Spring economic report](#), European technology industries are showing positive signs of recovery. However, the crisis is far from over. The unprecedented financial injection that has been put forward to boost the European economy gives us an opportunity to increase the pace of the green and digital transitions. European technology industries play a key role in the successful rollout of the twin transitions and in pursuing global leadership in their implementation, particularly as Europe is striving to become climate-neutral by 2050.

Achieving this goal will require continued investment in research and innovation, together with an innovation-friendly regulatory framework that enables innovative solutions to reach the market. A well-functioning Single Market is of the utmost importance for European companies and a prerequisite for Europe's global competitiveness. To foster industry and business's renewal and sustainable growth and to make Europe more attractive for investments and talent, the European Union's approach to innovation needs to be an integral part of its industrial strategy.

Key Action Points

- Orgalim welcomes the European Commission's intensified plans to **remove existing barriers** to the Digital Single Market as indicated in the updated EU Industrial Strategy. A well-functioning Single Market fit for the digital age will accelerate European collaboration and investments and provide SMEs and new deep-tech companies with a platform to scale up their businesses.
- Europe is pursuing global leadership in the implementation of the twin transitions. The competition is however fierce, and we will only succeed if the whole innovation ecosystem is committed to, and involved in, the implementation of the transitions. There needs to be **rigorous monitoring of progress in R&D intensity, ensuring that the target of 3% of GDP will be reached at the latest by 2025**. To achieve the target, increased investment in RDI is required from the Commission and the Member States as well as the industry. **Innovation procurement must be further developed to allow European companies to offer the best solutions for combating climate change and speeding up digitalisation.**
- **To support scaling up research and new inventions into successful, exponentially growing business, the public and private venture capital funds need to be pooled together more effectively.** The various EU

instruments should support the different phases of the innovation process of businesses and industrial value networks.

- We welcome the Commission's recognition that advanced manufacturing is of strategic importance for the EU's industrial future. These **transversal technologies** (i.e. AI, Industrial IoT, digital twins, microelectronics, new materials, additive manufacturing, quantum technologies, cybersecurity etc.) are essential to **speed up industrial renewal and unlock value across different industry verticals**. However, to maintain Europe's leadership and avoid future dependencies, a stronger European focus in this field is needed. **Advanced manufacturing needs to be given a high priority in the implementation of the Horizon Europe and Digital Europe programmes including the HEU partnerships and European digital innovation hubs.**
- We further call on the Commission to complement the work on identified ecosystems and industrial alliances with a commensurate **focus on key transversal aspects** and to include such aspects **in the work of the Industrial Forum on the implementation of the EU Industrial Strategy**.
- We call upon policymakers to keep EU RDI programmes as open as possible and to keep restrictions to the absolute minimum. **EU RDI must remain an open and attractive platform** and not a playing field for protectionism.

European technology industries: facing fierce global competition

Competition in technology development, innovation and markets is global. Based on the World Bank's latest data¹, the EU's R&D intensity is less than 2.2% of GDP compared to 2.8% in the US, and in 2018 China has for the first time overtaken the EU. Furthermore, in the ranking of the top 2,500 businesses investing in R&D, European companies have lost ground (17%) compared to companies based in China (20%) and the US (30%)². Simultaneously, the European share in the global value chains has decreased as China has seen an increase of its share in the 21st century³.

One of the biggest challenges in Europe is the lack of ability to scale up research and new inventions into successful, exponentially growing business. Often, European inventions are transformed into lucrative business in the US or China.

A well-functioning Single Market fit for the digital age would accelerate European collaboration and investments, and provide SMEs and new deep-tech companies with a platform to scale up their businesses. We therefore **welcome** the Commission's intensified **plans to remove existing barriers to the Digital Single Market as indicated in the updated EU Industrial Strategy**. The identification of such barriers, together with their removal or the implementation of harmonising solutions, must be closely linked to the implementation of the Recovery and Resilience Facility (RRF) – the key element of the NextGenerationEU (NGEU).

¹ World Bank: research and development expenditure (2018 statistics)

<https://data.worldbank.org/indicator/GB.XPD.RSDV.GD.ZS?locations=CN-US-EU>

² EIB investment report 2020/21: Building a smart and green Europe in the COVID-19 era, key findings, 2021; p.10

https://www.eib.org/attachments/efs/economic_investment_report_2020_2021_key_findings_en.pdf

³ García Herrero, A. and D. Martínez Turégano (2020) 'Europe is losing competitiveness in global value chains while China surges', Bruegel Blog, 26 November 2020

<https://www.bruegel.org/2020/11/europe-is-losing-competitiveness-in-global-value-chains-while-china-surges/>

Dual transitions: need for multi-disciplinary and cross-border innovation

The European research development and innovation system must respond to the specific needs of the green and digital transitions.

European technology industries have great opportunities to create low-carbon and smart solutions that can also be exported and contribute to the global green transition. The climate-neutral and sustainable circular economy creates significant business opportunities for high-quality recycled materials and clean technology. Making energy-intensive sectors carbon-free and driving pioneering markets for business models in line with the circular economy offers significant international growth opportunities for technology companies developing low-carbon solutions. Already today, many technology companies are actively working on solutions for climate neutrality, and it is important to underline that Orgalim's technology and engineering industries are not only on the path towards a sustainable future for themselves, but also essential enablers and technology suppliers for making other sectors climate-neutral and circular (from automotive and energy to electronics and consumer products).

The pressure for change is high, global competition is fierce, and the transitions also involve risk-taking. For this reason, **it is important that the EU innovation ecosystem becomes more agile, allowing and encouraging multi-sectoral and multi-disciplinary collaboration and self-learning.** To be able to adapt to this highly competitive environment, we need to innovate by building upon our strengths, such as a culture of cross-border cooperation between businesses, universities, and research institutes. Technology industries' companies are increasingly looking for new collaboration platforms and innovation ecosystems where global firms, SMEs, start-ups, NGOs, and research institutes can jointly work on research, development, and innovation challenges.

The COVID-19 pandemic has hit the SMEs extra hard. Therefore, a special focus is required on speeding up the twin transitions in these companies. **With the pandemic, the need for increased digitalisation in SMEs has become even more acute.** The benefits of digitalisation for SMEs are evident not only in terms of improved operations, but also as they become more suited partners or subcontractors to larger companies, thereby strengthening digitalisation throughout the whole value chain. Digitalisation and technology development in SMEs can be increasingly revitalised through collaboration with technology-intensive start-ups, but today there is a lack of platforms and matching for this collaboration. **Investments in digitalisation and technology development, and uptake in SMEs, need to go hand in hand with the development of skills, competencies, and capabilities.**

Ways for businesses and industries to reform themselves are often digital. Europe needs to develop structures for a digital environment that help and support European companies to reap the benefits of digital solutions and utilise data to serve better efficiency, productivity and increased value creation for users and customers, thus also contributing to the green transition. In this context, **Europe needs to develop both hard infrastructure** (e.g. fibre networks, next generation cellular networks) **and soft infrastructure** (e.g. standards, data networks, contractual clauses and rulebooks, and APIs). The latter needs to be business-driven and to address the true needs of companies through balanced rules and practices, helping to build an environment that values competition and fosters a multi-player market.

Equally as important as developing new digital technology is to broaden the ability to adapt the technology into new solutions. **Europe needs to focus on cutting-edge research, development, and demonstration to design components and digital system solutions in areas where Europe today has a competitive advantage and the ability to lead the development.**

Investment is key

Increased public and private investments in research and innovation are necessary to seize global technological leadership and to become a trailblazer in the implementation of the twin transitions. **The ambition of the EU and Member States must be to at least align the investments in RDI with that of their main competitors.** There needs to be rigorous monitoring of progress in R&D intensity, **ensuring that the target of 3% of GDP will be reached at the latest by 2025.**

It is commendable that the EU has agreed to target at least 30% of the EU budget 2021-27 and 37% of the RRF towards the implementation of the European Green Development Programme (Green Deal).

However, the COVID-19 pandemic has highlighted the importance of digitalisation across all areas of the economy and society. New technologies have helped businesses and public services to keep functioning and have made sure that international trade could continue. The pandemic has triggered permanent social and economic changes: more remote working, e-learning, e-commerce, e-government. It has, therefore, become imperative for businesses and governments to increase their investments in digitalisation and data economy. **At least 20% of the NGEU funding should be used for catalysing and speeding up the digital transition of industries. Furthermore, by 2025 at least 10% of research and innovation spending in the EU should be targeted at ICT technologies and digitalisation as compared to the current 6.8%.**

To maximise the impact of the NGEU funds, Member States should use them to encourage cross-border and European cooperation between companies and other entities. **EU-wide open calls for public funding and fair public procurement procedures will allow European companies to offer the best solutions for combating climate change and speeding up digitalisation.** The potential of innovation procurement is not currently exploited despite the understanding of the need for increased innovation. Additional costs/risks with innovation procurement, for example the fact that value creation does not directly benefit the contracting party, must be managed. **Procurers/contracting organisations need a mandate and practical support for competence development and risk sharing.** Open competition improves Europe's competitiveness.

Besides public investment, private financial institutions will be key to mobilise around €470 billion per year in investments⁴ necessary to reach the EU 2030 climate and environmental policy goals. **Orgalim welcomes the ongoing work of the Commission on the EU Taxonomy framework (EU/2020/852) and believes that it should redirect much needed private capital into both the technologies and the economic activities that produce them, while rewarding and encouraging innovation and competitiveness.** However, we believe **the Commission should abstain from introducing the Taxonomy in other financial instruments**, such as the RRF, the InvestEU programme, Horizon Europe, public procurement, etc. **as the work on defining sustainable activities is still ongoing.**

Promote competitive European innovation and value creation networks and partnerships

To be able to foresee and adapt to the fast-moving changes in the operating environment and the technology developments, **Europe needs to become an agile innovator, enabling bottom-up and top-down approaches to interact and add value both to the quality and impact of science and research, and to the technology industries' competitiveness.**

Orgalim calls for a continued collaborative approach and strategic dialogue between the Commission, industry and the Member States on European cross-sectoral, industrial innovation and business networks. The Industrial Forum could serve as a platform for such a dialogue.

Several Horizon Europe partnerships relevant for technology industries and the Single Basic Act are being finalised. They will contribute to the identification and financing of the research and innovation needed to strengthen the European

⁴ European Commission, [Staff Working Document: Identifying Europe's Recovery Needs](#), 27 May 2020, p.16

technology industries' long-term competitiveness and bring low-carbon and digital technologies and processes to maturity. Nevertheless, it is important to note that industry partners are insufficiently represented in the different governing bodies of the joint undertakings, despite providing half or more of the funding (depending on the joint undertaking). **We encourage the updating of the governance aspects set out in the SBA proposal in such a way that secures a balanced representation of private members in joint undertaking bodies.**

The Innovation Fund provides critical support for the commercial demonstration of innovative low-carbon technologies in several sectors. According to a recent EIB study⁵, for example, the investment from venture capitalists into EU companies developing AI and blockchain technologies is well below the investment in US and Chinese firms. **To support scaling up research and new inventions into successful, exponentially growing business, the public and private venture capital funds need to be pooled together more effectively.** The various EU instruments should effectively support the different phases of the innovation process of businesses and industrial value networks.

From the technology industries' point of view, effective stimulus for participation in European industrial innovation and value creation networks could include qualifying for EU level regulatory sandboxes, fast-track access to Horizon Europe or the Innovation Fund based on excellence and expected impact, or prioritisation under other funding instruments.

The instrument of the Important Projects of Common European Interest (IPCEIs) has provided the Member States with a cooperation framework to invest in EU industrial priorities. The IPCEIs should bridge the gap between RDI and economically viable production. However, **IPCEIs need to be used only when market forces are not sufficient and an exemption from state aid rules is justified.** Furthermore, they must not be closed clubs, have European added-value and they need to drive investments in innovative areas.

Overall, there is a need for a more transparent governance model for the European industrial ecosystems and strategic value networks that clarify the roles and linkages of European partnerships, industrial alliances and technology roadmaps. In particular, it will be key to understand how the Industrial Forum can play a role in contributing to the identification, design, implementation, monitoring and evaluation of European innovation and business development interventions.

Finally, while embracing the principle of technology neutrality, a **focus on key transversal technologies** such as advanced manufacturing technologies, AI, Industrial IoT, digital twins, microelectronics, new materials, additive manufacturing, quantum technologies, cybersecurity etc. would **speed up the industrial renewal and unlock value across different industry verticals.** This would be the most effective way to decrease Europe's dependencies in critical areas and to maintain and strengthen Europe's leadership in the implementation of the twin transitions.

European RDI needs international collaboration

The goal of innovation policy must be to ensure technological leadership, to reduce strategic dependencies and to make the EU the leading location for the world's best researchers and innovative companies and start-ups. This objective might require increased protection of IPR and knowhow in some areas. Programmes such as Horizon Europe and Digital Europe play an essential role for mastering the green transition and maintaining the competitiveness of European companies.

It should not be forgotten, however, that **research excellence is the result of cooperation between the best brains across borders** and that the EU alone will not be able to meet the technological challenges lying ahead.

In this context, Orgalim welcomes the Commission communication on "[Europe's Global Approach to Research and Innovation](#)", in so far as it envisages the establishment of an RDI environment "open by default" and based on fundamental values (e.g. research ethics, gender equality, and evidence-based policymaking) while at the same time ensuring reciprocity, and a level playing field in international cooperation.

⁵ European Investment Bank, Report: Artificial Intelligence, blockchain and the future of Europe

Export- and technology-oriented industries such as those represented by Orgalim **benefit from international cooperation**. Reducing cooperation or even banning third-country partners from projects might not only reduce excellence in cutting-edge RDI, but also make the EU a less attractive place for innovation. **Long-standing and leading partners such as the UK, Switzerland or Israel must continue to contribute to the European RDI community**. Furthermore, we should also use the EU's International Partnership programme as a tool to expand European partnerships with developing countries to jointly create technologies and business models for the sustainable growth of their economies.

Therefore, Orgalim calls upon policymakers to keep the EU RDI programmes as open as possible and keep restrictions to the absolute minimum. **EU RDI must remain an open and attractive platform** and not become a playing field for protectionism.

Technology infrastructures and demonstration and testing facilities

Europe needs investments to build, strengthen and make technology infrastructure available for testing and demonstration. Schemes that require joint investments by businesses and public sector stakeholders are to be preferred, in that they provide a better indication of where investments are really needed and give more certainty on the effective utilisation of the facilities. As an example, such facilities can be located in technology parks and universities and thus facilitate interaction between business and academia. An advanced and open technology infrastructure for testing and demonstration provides good conditions for industrial pilots and dissemination in the European business community. **As technology infrastructures are the backbone for dynamic RDI ecosystems, it is important that the Industrial Forum and the European technology industry at large are actively engaged** in the implementation of the European technology infrastructure strategy now included in the new ERA strategy.

Orgalim represents Europe's technology industries, comprised of 770,000 innovative companies spanning the mechanical engineering, electrical engineering, electronics, ICT and metal technology branches. Together they represent the EU's largest manufacturing sector, generating annual turnover of €2,126 billion, manufacturing one-third of all European exports and providing 11.33 million direct jobs. Orgalim is registered under the European Union Transparency Register – ID number: 20210641335-88.

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