

DIGITAL EUROPE PROGRAM

Response by the Fraunhofer-Gesellschaft to
the Open Stakeholder Consultation of the
European Commission

September 11, 2023

Fraunhofer strongly supports Digital Europe Program's (DIGITAL) goal to drive the EU's digital transition for industry, citizens, and public administration. Historically, Europe's value creation has specialized in manufacturing, lagging behind the US or China in digital technologies. Today, these technologies are crucial for future value creation across all sectors. The gap in digitalization and the required competencies now poses a disadvantage in global innovation, security, and green transformation efforts for Europe. Therefore, Europe's digital deficit and its impact on competitiveness and sovereignty must be addressed urgently. The development and integration of key enabling digital technologies for and with industry necessitate the production, combination and transfer of knowledge, skills and infrastructure provided by collaborative European projects.¹ DIGITAL successfully funds close collaboration in key digital technologies between public and industry partners of all sizes and Research and Technology Organizations (RTOs), which deliver the required research and development activities. To ensure DIGITAL realizes its full potential in driving the EU's digital transformation and strengthening its open strategic autonomy in the future, Fraunhofer proposes the following actions:

Comprehensive Approach to Europe's Digital Transformation

DIGITAL's six specific objectives are crucial for addressing both current and future needs in Europe's digital transformation. By focusing on industrial applications and partnerships, the program aims to close the digitalization gap in Europe's economy and society. Recognizing previous efforts, Fraunhofer identified several areas for improvement in research and the implementation of digital transformation projects.

DIGITAL should focus on future-proof technologies and their application for a green and digital transition: artificial intelligence, microelectronics, optics and photonics, advanced materials, the internet of things (IoT), data spaces, cloud/edge, virtual worlds, digital twins (in particular material twins) and digital product passports, 6G and beyond, digital infrastructures and networks, and cybersecurity. Beyond technological development, projects funded by DIGITAL need to better integrate interdisciplinary approaches and consider taking into account legal, economic and environmental aspects in the projects. By achieving this, DIGITAL could contribute to the 85% target of EU companies using ICT to reduce their environmental footprint by 2030. To maximize the impact of investments made through DIGITAL, it is essential to simplify framework conditions and reduce legal burdens. This will facilitate the development, creation, and scale up of innovative digital business models, particularly within the platform economy and digital ecosystems.

Standardization and Public Control

Standardizing technologies and their applications are as crucial as Europe's research and innovation capabilities. Better integration of standardization activities by European research stakeholders and involvement in international standardization bodies are needed. Projects developing standards in emerging technologies, such as AI, data sharing, and cloud computing, should be supported. DIGITAL should also consider the benefits of public control over digital infrastructure through open-source software and hardware.

Supply Chains and Sectoral Digitalization

Beyond the demands for research and innovation and digital infrastructure, supply chains for digital technologies need more attention. The COVID-19 pandemic and the war in Ukraine have exposed vulnerabilities in Europe's industries. While the European Chips Act addresses semiconductor supply chains, the Commission should diversify supply chains for other critical materials and components essential for digitalization. Furthermore, digitalization and the integration of digital technologies must extend across all industry sectors. While some fields are highly digitalized, insufficiently addressed areas can benefit

¹ [The Contribution of RTOs to Socio-Economic Recovery, Resilience and Transitions](#), OECD, 2022.

from increased efficiency through digitalization, such as healthcare (medicine, therapeutics, medical diagnostics in a non-hospital environment, medical cloud), large scale sensor networks (smart cities), public administration, authentication services, and secured navigation signals. The application of digital technologies in these fields require not only the development of safe, secure, and reliable solutions, but also the establishment of optimal framework conditions for implementation, e.g., handling of sensitive data and defining product safety standards.

Environmental Impact

While realizing Europe's digitalization potential, attention must be paid to the environmental impact of digital technologies. Digitalization can drive resource and energy efficiency and support a circular economy. However, many AI and data-driven technologies have high energy and water consumption, which harms the environment and climate. To align with the twin transition approach and other European initiatives (FitFor55, Circular Economy Action Plan, Green Deal), it is essential to obtain and analyze comprehensive data across the entire lifecycle of these technologies and corresponding materials and their use in various value chains. This guarantees that digital technologies contribute to realizing Europe's climate goals.

Implementation of DIGITAL

While DIGITAL has made notable impacts in selected areas and delivered value in line with its objectives, it still falls short in bridging the gap between research, industrial application and commercial deployment of digital technologies. To secure the EU's strategic autonomy, the program must intensify its efforts in bringing technologies to market. Fraunhofer calls for a significant reduction of unnecessary bureaucracy to enable project partners to concentrate on the swift and effective realization of projects. RTOs like Fraunhofer are crucial in developing and adopting technical solutions for a digitalized Europe, acting as bridges between industry and academia, especially for SMEs and start-ups. Fulfilling this role successfully requires considerable effort, especially in project coordination. The content of the calls is fit for purpose, leading to a high participation of research organizations in DIGITAL. Nevertheless, funding conditions for research organizations are suboptimal in comparison to Horizon Europe. In the long run, the comparatively low funding rate of 50% will hamper the participation of a diverse group of stakeholders, inhibiting their ability to contribute expertise and state-of-the-art research facilities. To better harness the potential of the pre-competitive, collaborative projects conducted by RTOs together with industrial partners, optimal funding conditions within DIGITAL are necessary. To achieve this, Fraunhofer suggests harmonizing funding conditions in DIGITAL and Horizon Europe for research organizations, e.g. regarding overhead costs. The increase in management costs has led to a net loss for coordinators of EU projects. Because coordination does not result in direct knowledge gains, this has made project coordination increasingly unattractive although experienced coordination has a direct influence on project success. The coordination of projects by excellent research organizations must be reimbursed through full-cost funding for management activities in EU projects.

Fraunhofer proposes strengthening links between existing EU digital policies and Horizon Europe projects with DIGITAL to ensure beneficial interplay between projects, driving the digital transformation coherently. As DIGITAL is closer to industry and the concrete implementation of technology, careful consideration should be given to what types of projects are well-suited for DIGITAL in contrast to Horizon Europe and how their progress can benefit both sides. European research and innovation policy should be more strategically intertwined with digital policy initiatives to maximize the benefits emanating from respective European initiatives – especially in times of constrained public budgets.

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