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Leveraging Open Source for an Open Digital Ecosystem

Response to the European Commission's Call for Evidence regarding the upcoming European Open Digital Ecosystem Strategy

At a glance

Leveraging Open Source for an Open Digital Ecosystem

Initial position

Open source is a key enabler for Europe's digital sovereignty, competitiveness, and cybersecurity. To be effective, EU policy must strengthen Europe's capacity to sustain, govern, and adopt open technologies as part of a global ecosystem, addressing existing barriers in funding, procurement, maintenance, and market integration.

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The initiative correctly identifies open source as a strategic asset for Europe's digital future. Further clarification is needed on how EU measures will support long-term sustainability, value creation, and market uptake, while avoiding fragmentation and preserving technology neutrality and global openness.

Key takeaways

- **Foster value creation and capture**

  While Europe is strong in open source development, value capture often occurs outside the EU. EU action should therefore focus on market integration and uptake, as well as the structural support of open source business models.

- **Foster sustainable maintenance and security**

  Critical open source projects depend on consistent maintenance. EU action should therefore focus on sustainable funding and strong market integration to support long-term project activities and maintenance.

- **Reduce adoption barriers through funding and procurement reform**

  Lifecycle-based procurement, outcome-oriented funding, and a strategic focus on existing solutions where available are essential to overcome adoption barriers and enable scalable deployment across public and private sectors.

- **Strengthen Europe's role in global open source ecosystems**

  EU measures should incentivize upstream contribution, private-sector engagement, and interoperability, ensuring that European actors can actively shape and benefit from global open source ecosystems without fragmentation.

Content

1 The European Open Source Sector

Open source software can serve as a strategic lever for strengthening Europe's digital sovereignty. However, digital sovereignty should not be understood as a narrow or protectionist concept equating to a 'Buy European' approach. Rather, it must be grounded in Europe's ability to act confidently and sustainably within global digital ecosystems.

A European strategy on open digital ecosystems should therefore treat open source not primarily as a European asset to be isolated, but as a global commons in which Europe must actively invest, contribute, and lead. Open source is inherently borderless and depends on globally distributed communities. EU measures should explicitly safeguard the global openness of its ecosystem and avoid isolationist or fragmenting approaches that could weaken existing international communities and undermine resilience and security.

The core strategic challenge lies less in creating alternatives in isolation and more in strengthening Europe's long-term capacity to sustain, govern, and rely on open technologies. When applied strategically, the open source model enables the efficient use of developer resources, fosters collaboration between European companies and global communities, and preserves competition within compliant markets. If focused on technology-neutral and objective requirements, interoperability, and measurable outcomes, a dedicated EU Open Digital Ecosystem Strategy can strengthen innovation capacity, skills, and capabilities across the European digital sector.

Key Strengths of the EU Open Source Ecosystem

The European Union benefits from a deep integration of its developers, companies, and public actors into global open source ecosystems and communities. European contributors play an active role across a wide range of widely used projects and foundations, giving the EU significant influence within international open source development processes.

In addition, Europe has developed strong competencies in sector-specific applications of open source software, particularly in areas such as logistics, automotive, and industrial systems. These strengths are complemented by a broad and diverse landscape of competent communities, small and medium-sized enterprises, and larger companies that successfully build and maintain open source solutions.

Open source technologies play a crucial role by enabling EU companies to collaborate on the foundational, non-differentiating layers of digital infrastructure and the implementation of common standards. This collaborative approach drives progress and efficiency across the EU industry, while safeguarding essential competition within the market.

Key Weaknesses of the EU Open Source Ecosystem

Despite these strengths, structural weaknesses persist. While a considerable share of open source software is developed within the EU, economic value creation and commercialization often occur outside Europe. As a result, the EU remains strong in development capabilities but comparatively weaker in capturing value and scaling successful solutions.

Furthermore, there are general reservations among European businesses to take on an active and sustained role in open source ecosystems, particularly with regard to upstream contribution and governance.

Although the strategic importance of open source is increasingly recognized at the political level, the EU still lacks a cohesive and operational strategy with clear priorities, practical objectives, and measurable KPIs. At the same time, collective investment in digital commons remains insufficient, especially with regard to foundational open source components that underpin Europe's digital infrastructure.

Barriers to Adoption and Maintenance

One of the most significant barriers to adoption lies in prevailing procurement and cost-evaluation practices. In both public and private sectors, procurement decisions frequently prioritize initial acquisition costs over comprehensive lifecycle evaluations. This approach often fails to account for long-term factors such as maintenance, security updates, support, and transition costs, thereby disadvantaging solutions that may offer more predictable and sustainable total cost of ownership.

In addition, deficiencies in market visibility and organization limit the uptake of open source solutions. A lack of transparency regarding available offerings and their capabilities reduces market awareness and makes it difficult for potential users to identify suitable solutions, particularly when compared to well-resourced proprietary vendors with established sales and marketing structures.

Regulatory fragmentation across Member States further complicates adoption. Heterogeneous legal and regulatory frameworks and insufficient harmonization create uncertainty for organizations seeking to deploy and scale open source solutions across borders. Additionally, initiatives developing partially redundant solutions (e.g. office software) across the EU complicate adoption and maintenance.

Barriers to sustainable contribution

Sustainable contribution to open source ecosystems is often hindered by a short-term focus on development cost savings and a limited appreciation of the long-term value of engagement. Incentives for sustained upstream contribution remain weak, both in public funding schemes and in corporate strategies.

These challenges are compounded by an overestimation of legal, intellectual property, and liability risks associated with open source contribution, affecting both individuals and companies.

In addition, the adoption of open source software stacks to sector-specific use cases frequently lacks sustained support, as existing funding models tend to focus on horizontal technologies and do not adequately address specific sectoral needs.

Public funding instruments often prioritize new projects, prototypes, and innovation phases, while long-term maintenance, security and operational support remain underfunded. This imbalance undermines the sustainability of widely used open source components that form part of critical digital infrastructure.

2 The Added Value of Open Source

From a strategic perspective, open source software contributes significantly to resilience and digital sovereignty. By mitigating vendor lock-in and enabling transparency, auditability, and verifiability, open source strengthens long-term reliability and trustworthiness, particularly in critical and high-dependency sectors.

Open source also supports more efficient cost allocation and scalability. Shared investment in foundational technologies allows organizations and public administrations to reduce duplication of effort and allocate resources more effectively across ecosystems and Member States.

In terms of innovation, open source accelerates time-to-market by enabling reuse, modular development, and collaboration across organizational boundaries. This allows companies and public actors to focus investments on differentiating features and core business innovation rather than rebuilding basic infrastructure.

At the same time, open source fosters market development and enables new European business models built around services, integration, customization, and long-term support. Enhanced interoperability and data portability further strengthen competitive and open markets within the EU.

In addition, the open source ecosystem serves as a vital commons for education, lifelong learning, and upskilling. EU companies and the EU public sector benefit from the practical training and hands-on experience that open source provides to future employees, while also supporting the continuous development of skills and expertise among their existing workforce. This ongoing engagement with open source strengthens the overall talent pool and enhances digital competencies across the European economy.

3 Measures and Actions

EU action should focus on strengthening the conditions under which open source software can be sustainably developed and maintained, governed, and adopted at scale. Priority should be given to long-term maintenance, upstream contribution, market integration, and the avoidance of fragmentation, rather than to the parallel development of isolated or duplicative solutions.

Sustain and Secure Critical Open Source Infrastructure

Funding and policy instruments at the EU level should systematically include sector-specific open source initiatives alongside generic digital infrastructure and generally aim to strengthen cooperation on security best practices. A European Sovereign Tech Fund should be established to sustain and secure critical open source technologies, with a clear focus on long-term maintenance, security, and resilience rather than short-term project funding.

In parallel, structured stewardship models such as EU open source maintenance cooperatives should be supported to ensure the reliable operation and continuous evolution of widely used components. The EU should also formally recognize and support Software Heritage, or comparable initiatives, as shared and reliable repositories for critical open source components, based on stable public-private partnership models for funding. Where necessary to ensure continuity and security, strategic patronage mechanisms for critical open source projects should be implemented. These mechanisms should generally avoid unnecessary fragmentation of existing ecosystems. Thus, the commission should initiate a structured dialogue with global open source software foundations.

Align Public Funding with Open Source Outcomes

Public funding mechanisms should be adapted to better support outcome-oriented and agile open source development. This requires shifting KPIs away from research-centric metrics toward measurable impact, reuse, adoption, and long-term sustainability. The goal should be to foster unbiased funding practices that evaluate potential solutions equally, based on objective requirements and case-based criteria.

Enable Market Uptake through Procurement and Standards

Public procurement represents a key lever for scaling open source in Europe and should be adapted accordingly. Procurement procedures should place greater emphasis on lifecycle-based evaluation rather than acquisition cost, focus on existing solutions where available in ‘Make or Buy’ decisions, and should explicitly include interoperability and avoidance of vendor lock-in as core criteria. In addition, tenders should recognize and reward the active participation of suppliers in upstream open source development of the solutions they provide.

EU-level and national procurement rules should be systematically reviewed to identify and eliminate any unintended discrimination against open source solutions and components. This includes reassessing preferences for offers with formal commercial support from vendors, ensuring that open source solutions with comparable informal support practices are equally considered. Tools such as the OpenSSF Scorecard can be employed to evaluate the maturity and reliability of open source projects, enabling fair and transparent comparison with proprietary alternatives.

The establishment and support of open source reference implementations for existing standards can further facilitate adoption and interoperability across sectors.

Create Incentives for Private-Sector Contribution

To strengthen Europe's role within global open source ecosystems, private-sector engagement must be actively encouraged. Targeted tax incentives and/or subsidies similar to established incentives for internal R&D efforts should be introduced to encourage sustained engagement by European businesses and to lower barriers to long-term contribution.

The EU has a significant opportunity to strengthen the acceptance of open source within the EU business culture. However, EU companies often remain risk-averse in adopting open source, influenced by factors such as intra-EU taxation rules – including and especially transfer pricing of multi-national development activities – and inconsistencies in national legislation on issues like intellectual property rights and liability exclusions. Additionally, the introduction of the Cyber Resilience Act (CRA) may have unintentionally increased uncertainty and hesitation, which should be proactively addressed to encourage broader open source adoption.

4 Key Technologies and Sectors

Technologies to be prioritized

Priority should be given to cross-sectoral software stack elements such as operating systems, databases, middleware, common data models and APIs, as well as to core digital platforms—which often carry a high risk of proprietary vendor lock-in. Furthermore, broad-use and high-sensitivity applications including office solutions, communications, IoT, and security software should be prioritized. Core internet protocols and advanced authentication technologies should also be considered strategic priorities.

Beyond horizontal technologies such as cloud, AI, and cybersecurity, particular attention should be paid to sector-specific open source stacks in areas where Europe has strong regulatory responsibility and long system lifecycles.

Sectors in which Open Source enhances Competitiveness and Resilience

Increased use of open source software would be particularly beneficial in sectors such as transport, energy, public administration, cybersecurity, and industrial systems, where shared open foundations directly strengthen cyber resilience, interoperability, and long-term competitiveness.

Semiconductor and hardware engineering, including microprocessors and IP blocks, also represent areas in which open approaches can contribute to strategic resilience and Europe's innovation capacity.

Bitkom represents more than 2,300 companies from the digital economy. They generate an annual turnover of 200 billion euros in Germany and employ more than 2 million people. Among the members are 1,000 small and medium-sized businesses, over 700 start-ups and almost all global players. These companies provide services in software, IT, telecommunications or the internet, produce hardware and consumer electronics, work in digital media, create content, operate platforms or are in other ways affiliated with the digital economy. 82 percent of the members' headquarters are in Germany, 8 percent in the rest of the EU and 7 percent in the US. 3 percent are from other regions of the world. Bitkom promotes and drives the digital transformation of the German economy and advocates for citizens to participate in and benefit from digitalisation. At the heart of Bitkom's concerns are ensuring a strong European digital policy and a fully integrated digital single market, as well as making Germany a key driver of digital change in Europe and the world.

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