NEXT GENERATION INTERNET

D3.2 STRATEGIC AGENDA

VERSION FOR STAKEHOLDER VALIDATION

Revision: v.1.0

Work package	WP3
Task	Task 3.2
Due date	31/07/2025
Submission date	29/07/2025
Deliverable lead	Open Future Foundation
Version	1.0
Authors	Zuzanna Warso, Aditya Singh, Paul Keller [OF]
Reviewers	Valerian Guillier [CNRS], Robbert Van Kranenburg [MIN], Karolina Gyurovszka [MAR], Adrienn Lawson, Paula Grzegorzewska (LF)

Abstract	This Strategic Agenda sets out a vision for embedding Digital Commons and public digital infrastructure into the European Union's next Multiannual Financial Framework (2028–2034). Drawing on research from the NGI Commons project, broader academic and policy debates, and stakeholder input, it outlines how commons-based approaches can strengthen Europe's digital sovereignty. The Agenda proposes key policy shifts (recognizing Digital Commons as providers of public digital infrastructure and moving beyond market-correcting approaches to actively advance public value, and identifies strategic policy interventions.

Keywords	Digital Commons, public digital infrastructure, digital sovereignty, European Union, Multiannual Financial Framework, MFF, Next Generation Internet

Grant Agreement No.: **101135279**
Type of action: **HORIZON Coordination and Support Actions**
Topic: **HORIZON-CL4-2023-HUMAN-01-14**
Call: **HORIZON-CL4-2023-HUMAN-01-CNECT**

Document Revision History

Version	Date	Description of change	List of contributor(s)
V0.1	02/07/2025	Version shared with reviewers	Zuzanna Warso, Aditya Singh, Paul Keller
V0.2	15/7/2025	Review	Valerian Guillier, Robbert Van Kranenburg, Karolina Gyurovszka, Adrienn Lawson, Paula Grzegorzewska
V1.0	29/7/2025	Final version for submission	Eugenia Kypriotis [MIN], Margherita Facca [MAR]

DISCLAIMER

Funded by the European Union

Project funded by
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra
Swiss Confederation
Federal Department of Economic Affairs, Education and Research EAER
State Secretariat for Education, Research and Innovation SERI

NGI Commons (*Open Source and Internet Commons for Europe's Digital Sovereignty*) project is funded by the European Union's **Horizon Europe research and innovation programme** under Grant Agreement number 101135279. This work has received funding from the **Swiss State Secretariat for Education, Research, and Innovation (SERI)**.

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

COPYRIGHT NOTICE

© 2024 - 2026 NGI Commons Consortium

Project funded by the European Commission in the Horizon Europe Programme		
Nature of the deliverable:	**R**	
Dissemination Level		
PU	*Public, fully open, e.g. web (Deliverables flagged as public will be automatically published in CORDIS project's page)*	✓
SEN	*Sensitive, limited under the conditions of the Grant Agreement*	
Classified R-UE/ EU-R	*EU RESTRICTED under the Commission Decision No2015/ 444*	
Classified C-UE/ EU-C	*EU CONFIDENTIAL under the Commission Decision No2015/ 444*	
Classified S-UE/ EU-S	*EU SECRET under the Commission Decision No2015/ 444*	

* *R: Document, report (excluding the periodic and final reports)*
DEM: Demonstrator, pilot, prototype, plan designs
DEC: Websites, patents filing, press & media actions, videos, etc.
DATA: Data sets, microdata, etc.
DMP: Data management plan
ETHICS: Deliverables related to ethics issues.
SECURITY: Deliverables related to security issues
OTHER: Software, technical diagram, algorithms, models, etc.

EXECUTIVE SUMMARY

This Strategic Agenda outlines a vision for embedding support for Digital Commons and public digital infrastructure into the European Union's forthcoming Multiannual Financial Framework (2028–2034). It addresses Europe's digital dependencies and proposes an approach to achieving digital sovereignty through commons-based infrastructure that upholds democratic values and fundamental rights.

With growing geopolitical instability and digital infrastructure's increasingly strategic role, the upcoming Multiannual Financial Framework represents a critical opportunity for Europe to correct course. The agenda emphasizes that without decisive action to build democratic, rights-aligned digital infrastructures, Europe risks perpetuating the very dependencies it seeks to overcome. Success requires not just new investments, but bold political choices and concrete financial commitments that align Europe's digital transformation with its foundational democratic values.

The Agenda identifies two fundamental policy shifts. First, it calls for the recognition of Digital Commons as legitimate providers of public digital infrastructure that deserve long-term public investment, policy support, and institutional integration. Second, moving beyond purely market-correcting approaches to actively advance public value alongside innovation and competitiveness, acknowledging that corporate models often fail to deliver long-term societal benefits.

Building on these shifts, the strategy outlines five key policy interventions. It recommends aligning EU funding instruments with the realities of Digital Commons by supporting full project lifecycles, not just early-stage development, including establishing long-term funding for critical open source projects and creating European Data Commons governed as public goods. It proposes reducing Europe's dependency on foreign hyperscalers by developing open, interoperable cloud infrastructure designed to prevent vendor lock-in and support commons-based solutions. It also emphasizes leveraging the EU's public procurement power to prioritize open and interoperable alternatives, focusing on long-term digital resilience over short-term cost efficiency. Further, the Agenda calls for investment in decentralized, transparent platforms for public discourse that resist corporate capture and foster algorithmic pluralism, drawing on both Digital Commons and public service broadcasting models. Finally, it advocates using the Digital Commons European Digital Infrastructure Consortium (EDIC) as a governance and coordination mechanism to provide the institutional continuity necessary to scale promising experiments into durable, operational systems.

In conclusion, the Agenda highlights the urgent need for sustained political commitment and strategic investment to overcome structural dependencies and secure Europe's digital autonomy. It also points to the value of international cooperation in advancing a resilient, rights-aligned digital ecosystem—one grounded in democratic governance, openness, and shared stewardship

© 2024-2026 NGI Commons

TABLE OF CONTENTS

© 2024-2026 NGI Commons

ABBREVIATIONS

DC	Digital Commons
EDIC	European Digital Commons Consortium
MFF	Multiannual Financial Framework
NGI	Next Generation Internet

© 2024-2026 NGI Commons

1 NOTE ON THE APPROACH

This Strategic Agenda builds on analytical and empirical work undertaken within the NGI Commons project, complemented by insights from external research, policy debates, and expert consultation. Drawing on this work, it outlines a policy-oriented vision for supporting European digital sovereignty through investment in Digital Commons and public digital infrastructure. Its aim is to inform and support the integration of such support into the EU's next Multiannual Financial Framework (2028–2034). This version (Deliverable 3.2, July 2025) serves as a draft for expert consultation and stakeholder validation. This Agenda draws on several core inputs produced within the project:

Digital Commons as Providers of Public Digital Infrastructure. This research paper reviews international literature and policy debates on public infrastructure. It identifies core features of Digital Commons and assesses their capacity to serve as long-term, rights-aligned digital infrastructure that supports democratic governance and collective control.

A **landscape mapping of EU funding for digital infrastructure** carried out to identify systemic gaps and opportunities for aligning investment with long-term public interest objectives.

From Open Access to Collective Governance: Two Decades of Digital Commons Policies in the EU (D3.1). This report traces the evolution of EU digital policy from early emphasis on openness and transparency to more recent focus on governance, infrastructure, and strategic autonomy. It situates Digital Commons within this trajectory and identifies their increasing relevance to the EU's digital sovereignty agenda.

A **compilation of policy proposals** (see Appendix A) that was developed to support strategic direction-setting. This document brought together ideas and interventions from across the policy ecosystem, clustered by relevance, feasibility, and alignment with EU instruments. It served as a working reference to guide the selection of priority areas and concrete interventions.

Active Communities of Commoners and Relevant Commons (D1.1). This report mapped the Digital Commons landscape in Europe based on desk research and 23 interviews. It analysed governance models, sustainability strategies, and the role of public actors. It also documented the diverse ways in which these communities operate, fund themselves, and relate to broader political and institutional contexts.

The Strategic Agenda reflects lessons drawn from this body of work, along with insights gathered from other relevant sources. It forms part of a broader process within the NGI Commons project, which will continue over the remainder of the project.

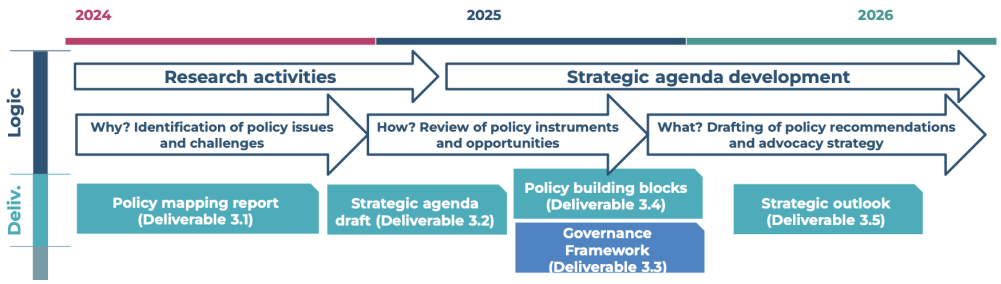

FIGURE 1: SEQUENCE AND LOGIC OF STRATEGIC AGENDA DEVELOPMENT IN THE NGI COMMONS PROJECT (2024–2026)

© 2024-2026 NGI Commons

2 INTRODUCTION

This document sets out a Strategic Agenda for integrating support for Digital Commons and public digital infrastructure into the European Union's next Multiannual Financial Framework (MFF), which will cover the years 2028–2034. It emphasizes the importance of ensuring that Europe's digital transformation is underpinned by infrastructure that upholds democratic values, ensuring economic resilience and strategic autonomy. This agenda will serve as a basis for further stakeholder consultation and validation aimed at refining and building consensus around a coherent and well-resourced agenda strategic outlook.

Digital commons are digital resources which are defined by distributed and communal production, ownership and governance. The governance includes access and sharing rules to ensure the development and sustainability of the resource and the community against exclusive use, exclusive profit or value extraction.[1] Currently, support for Digital Commons in EU funding programmes is concentrated under the Next Generation Internet (NGI) initiative. Although the NGI has fostered innovation and experimentation, the scope and scale of this initiative — and therefore its impact — remain limited. In order to realise the full potential of Digital Commons in reinforcing Europe's strategic autonomy and democratic values, the approach spearheaded in the NGI programme, characterized by support for openness, decentralization, and a commitment to building a rights-preserving digital ecosystem should be adopted more widely across a broader range of digital policies and funding instruments.

This agenda is aimed at EU institutions and member states involved in shaping investment priorities and governance models for Europe's digital infrastructure. It is structured around two core elements: policy shifts and policy interventions.

Policy shifts refer to the strategic adjustments needed to strengthen the resilience, democratic character, and sovereignty of Europe's digital ecosystem. These shifts aim to enhance the EU's digital transformation by more fully recognising the role of Digital Commons in providing trustworthy and open digital infrastructure. They also call for broadening the focus of public investment, moving beyond a purely market-correcting approach to one that actively advances the public interest alongside innovation and competitiveness.

Policy interventions translate these shifts into action. They focus on practical implementation mechanisms, such as aligning research and innovation funding with the realities of Digital Commons, leveraging public spending to drive adoption of open and interoperable solutions, establishing the Digital Commons EDIC as a long term governance and coordination mechanism, supporting democratic control over digital communication through public-interest digital infrastructure, and building sovereign cloud infrastructure.

This agenda responds to the urgent need not only to build and strengthen the Digital Commons ecosystem, but also to secure its long-term viability as a structural foundation of Europe's digital economy. Recognising the current moment as pivotal for transforming how digital infrastructure is constructed, managed and financed in the EU, it aims to integrate public values, democratic oversight and institutional safeguards into its core. The agenda positions Digital Commons and public digital infrastructure as central components of a renewed European industrial policy that treats digital infrastructure as a strategic domain essential to sovereignty. It thereby bridges two key imperatives: ensuring Europe's capacity to act

[1] This definition of the Digital Commons was developed during the establishment of the European Digital Infrastructure Consortium (EDIC) for Digital Commons, and has since been adopted by the NGI Commons consortium.

© 2024-2026 NGI Commons

autonomously in critical technological domains, and realising the values and principles set out in the EU Treaty and the Declaration on Digital Rights and Principles.[2]

This agenda takes the Next Generation Internet initiative as a point of departure and seeks to articulate a longer-term strategy that builds on its strengths. It extends the NGI's foundational work by connecting it to broader policy debates around digital sovereignty and the need for a distinctly European technology stack. In doing so, it complements and deepens current efforts to develop an open, interoperable internet infrastructure, while advancing a more integrated and ambitious vision of Europe's digital future. The proposals outlined here aim to demonstrate how these existing initiatives — such as NGI — can be scaled up and anchored within the EU's core infrastructure strategies, turning them into central building blocks of a European technology stack that reinforces democratic governance and strategic autonomy.

[2] See: https://digital-strategy.ec.europa.eu/en/library/european-declaration-digital-rights-and-principles

© 2024-2026 NGI Commons

3 POLICY SHIFTS

This section outlines the changes needed to align the EU's digital transformation with a fuller vision of digital sovereignty, one that includes not only political and economic autonomy, but also individual control, democratic governance, and fundamental rights. It argues that achieving this goal requires embracing Digital Commons as providers of public digital infrastructure, and recognising that traditional market-based approaches may fall short in delivering sufficient public value on their own.

3.1 CORRECTING THE COURSE OF THE EU'S DIGITAL TRANSFORMATION

Digital sovereignty – understood as the "independent and self-determined use and design of digital technologies and systems by the state, private organizations and individuals"[3] – is not merely a technological aspiration. It is the foundation of the European Union's ability to govern itself, safeguard democracy, foster prosperity, and lead the transition to a decarbonised economy.[4] Without sufficient control over its digital infrastructure, the EU is sidelined in critical decisions about its future.

At present, key digital infrastructures underpinning Europe's economy and society are concentrated in the hands of a few foreign technology firms, a concern explicitly acknowledged in recent EU-level assessments such as the Draghi report[5] and the ITRE Report on Technological Sovereignty and Digital Infrastructure.[6] This dependency, and the resulting lack of technical resilience, shifts wealth and decision-making power away from the EU and its residents. It has also left Europe increasingly vulnerable to external pressures: from U.S. extraterritorial measures, such as export controls and corporate sanctions, to growing cyber and hybrid threats.

To strengthen its ability to shape its digital future, the EU must launch a coordinated effort involving its institutions, member states, industry, civil society, and academia. It requires not only regulatory tools but sustained public investment and strong institutional leadership. To turn the ambition of digital sovereignty into reality, the European Commission and member states must make bold political choices and concrete financial commitments. They must translate the political vision of digital sovereignty into targeted, long-term investment. The upcoming Multiannual Financial Framework offers an opportunity for the EU to correct the course of its digital transformation. To do so, it must allocate substantial and sustained resources to build and maintain core digital capabilities that reduce strategic dependencies, strengthen technological autonomy, and enable Europe to shape its digital future on its own terms.

But digital sovereignty is not only about the state's ability to act independently; it also requires that individuals and communities have meaningful control over the technologies that shape their lives. Achieving digital sovereignty therefore depends not only on technical and economic

[3] This definition draws on recent interpretations, including those from the Sovereign Tech Fund Feasibility Study and the European Parliamentary Research Service, which emphasise autonomy, resilience, and democratic oversight as key pillars of digital sovereignty.

[4] See IPCC's *Climate Change 2022: Mitigation of Climate Change* (Working Group III) Summary for Policymakers, p.11: *"Digitalisation can enable emission reductions, but can have adverse side effects unless appropriately governed."*

[5] See: https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en

[6] See: https://www.europarl.europa.eu/doceo/document/A-10-2025-0107_EN.html

© 2024-2026 NGI Commons

autonomy, but on a clear commitment to the EU's foundational values: respect for human dignity, freedom, democracy, equality, the rule of law, and human rights, as set out in Article 2 of the Treaty on European Union.[7] These principles are further affirmed in the European Declaration on Digital Rights and Principles, which underscores their relevance in guiding Europe's digital transformation. In order to reclaim and strengthen digital sovereignty, the EU must go beyond rhetorical commitments to "European values" and embed respect for human dignity, freedom, democracy, equality, the rule of law, and human rights into the way it allocates funding, prioritises investment, and designs digital infrastructure. These values are not abstract ideals, nor can they be sidelined in the name of short-term competitiveness or geopolitical urgency. A digital transformation that neglects them risks creating systems vulnerable to capture, surveillance, and abuse, undermining democratic institutions rather than protecting them. For this reason, the EU should also reject models of digital sovereignty that originate in regimes with poor human rights records and weak democratic oversight. Emulating such systems may appear expedient, but ultimately weakens the Union's credibility and its potential for normative leadership.

3.1.1 Recognizing Digital Commons as Providers of Public Digital Infrastructure

Digital Commons are central to the vision of digital transformation that serves the public interest, enables democratic control, and respects fundamental rights. By fostering shared ownership and democratic governance, Digital Commons empower individuals and communities with greater control over the digital environments on which they rely. This model of stewardship is essential to realizing digital sovereignty at both collective and individual levels, ensuring that people have agency over their digital lives.

Already underpinning critical layers of the digital stack, Digital Commons have the capacity to scale and deliver public value.[8] Commons-based infrastructure projects such as Decidim (Barcelona's participatory democracy platform), DHIS2 (used by dozens of governments for public health data management), and the European Open Science Cloud show that digital commons can scale effectively and serve as resilient, adaptable infrastructure. Core components such as open-source operating systems (e.g. Linux), web servers (e.g. Apache, Nginx), and programming libraries and protocols (e.g. OpenSSL, PostgreSQL) form the backbone of many internet services and platforms, including those operated by governments and large private firms. Commons-based resources like Wikipedia or OpenStreetMap also illustrate the viability of collaborative models at scale. These examples demonstrate that Digital Commons are not theoretical alternatives but proven infrastructure solutions

Digital Commons represent a distinct approach to building and maintaining digital infrastructure that differs from both centralized state control and profit-maximizing corporate structures. Rather than replacing public institutions, they operate through transparent, participatory governance that can scale sustainably when supported by long-term public investment or institutional partnerships. As documented by the NGI Commons consortium, they frequently operate in hybrid formations, such as semi-commons or shared public infrastructures, that complement existing institutional frameworks, particularly where state capacity is limited or where collaborative governance proves more effective than traditional hierarchical models. Their open architectures enable external scrutiny, reduce surveillance and manipulation risks,

[7] See: https://eur-lex.europa.eu/eli/treaty/teu_2012/art_2/oj/eng

[8] The report "Digital Commons as Providers of Public Digital Infrastructure" explores how digital commons are increasingly recognised as a viable and valuable mechanism for providing digital infrastructure. This approach maximises public value by combining public *attributes*, such as unrestricted access enabled by openness and interoperability, with public *functions* that empower and support people and institutions, and public *ownership* through government or civic participation in the production, funding, and stewardship of the infrastructure. This model of providing digital infrastructure reinforces fundamental rights by ensuring greater transparency and democratic oversight in the design and operation of digital systems.
See: https://commons.ngi.eu/2024/11/14/digital-commons-as-providers-of-public-digital-infrastructures/

© 2024-2026 NGI Commons

and invite broader participation in development and oversight. This makes them particularly well-suited for the immaterial layers of infrastructure—protocols, libraries, standards, and knowledge systems—that rely more on sustained human contribution and collaborative maintenance than heavy capital investment. Their capacity to deliver public value extends beyond code reuse and cost savings to enabling autonomy, interoperability, and civic participation.

Their collaborative structure also makes Digital Commons well suited to address challenges that individual countries or private actors cannot solve alone. By enabling open standards, community-driven innovation, and collective governance, Digital Commons provide a model for developing public digital infrastructure at scale. They support interoperability across borders, allow for cost sharing among governments, and enable national adaptation without sacrificing coordination. In this way, Digital Commons are not just technical tools. They serve as a foundation for cross-border cooperation and a more inclusive, resilient digital ecosystem. Their ability to bridge public and private sectors, while aligning with public interest goals, makes them a key instrument for advancing Europe's digital sovereignty - but only with appropriate policy support.

Achieving this vision requires that Digital Commons be recognised as a key element of an EU strategy to build such resilient, rights-based, and democratic digital infrastructures that are sovereign and immune to capture. To achieve this, digital commons must be treated and supported as critical infrastructure, receiving sustained public investment, policy backing, and institutional support at the EU level to ensure their long-term viability, scalability, and impact.

Beyond recognition, realising the full potential of digital commons requires a paradigm shift in how public investment is conceived and deployed. While some digital commons may sustain themselves economically by provisioning services, some commons, given their open and foundational nature, may be unable to develop income streams from their activity, and require direct, long-term funding. Public funding should enable the development, maintenance, and democratic governance of such shared digital resources, over their entire lifecycle, recognizing that digital commons can provide foundational infrastructure, in the same way public utilities have served industrial and social development in the past. Public investment is distinctly positioned to support infrastructures that do not fully conform to market logic, enabling long-term, inclusive, and rights-based solutions.

In order to function effectively as public digital infrastructure, digital commons require several enabling conditions, including a clearly identified public need, often a certain level of formalisation (e.g. legal association, partnership with a university, or integration with a public research institute) and predictable, long-term funding for not only innovation, but also critical ongoing maintenance and participatory governance. Political will and policy frameworks must evolve to provide actors contributing to the commons with the recognition, reliability and institutional support required to create a more widespread impact. This also implies addressing potential issues, such as the risk of 'state-isation' of the commons, and meeting public infrastructure obligations regarding reliability, accessibility and security. Anticipating and addressing these challenges is crucial to sustaining the vitality and autonomy of commons-based models.

3.2 BALANCING MARKET LOGIC WITH PUBLIC PURPOSE

The EU's deepening dependencies across the entire digital technology stack and their far-reaching impact call for a strategic partnership between market innovation and coordinated public investment. Commercial models, grounded in the pursuit of profit, shareholder value and competitive advantage, are powerful drivers of innovation in some contexts. They can contribute to public goals when supported by well designed regulation and effective

© 2024-2026 NGI Commons

implementation. However, profit driven solutions often fail to deliver long-term value as they are not structurally aligned to deliver on public goals such as the maintenance of critical infrastructure or ensuring democratic accountability, environmental sustainability, or human rights.[9] Public investment, therefore, should be guided not only by the need to correct market failures or strengthen Europe's economic competitiveness, but also by a commitment to creating public value, that is the shared societal benefits that markets are not structured to deliver. A European approach to digital sovereignty must encompass more than narrow metrics of national or regional competitiveness. It must support governance and ownership models, such as digital commons, that decentralize control, safeguard fundamental rights, and respond to collective needs that commercial actors often overlook or deprioritize. These principles become particularly urgent when examining Europe's current digital dependencies.

While strategic vulnerabilities are present at nearly every layer of the digital stack[10] some of the most pressing risks to European democracies stem from the EU's reliance on foreign and proprietary service providers whose business models are based on data extraction and attention capture. The platforms they operate may ostensibly be free to use, but profit from market concentration, large-scale surveillance, algorithmic amplification, and behavioral manipulation. These dynamics are not accidental but rather structural features of the dominant digital business model.[11] As a result, they contribute to social polarization, information disorder, labour rights violations, and a degraded digital public space. Even when regulated, commercial platforms treat non-financial goals, such as maintaining the integrity of public life or the protection of fundamental rights, as secondary considerations and impacts outside the scope of their commercial responsibility.

This extractive model persists because of fundamental structural characteristics of digital markets. Economies of scale, network effects, and user lock-in, make monopolisation the default outcome.[12] While antitrust laws are an essential tool for addressing anti-competitive behavior, their reactive nature and traditional frameworks often struggle to keep pace with the rapid innovation cycles and complex dynamics characteristic of digital ecosystems. Moreover, antitrust interventions tend to address symptoms rather than the underlying systemic issues that encourage consolidation and dependency. Therefore, beyond enforcement of competition law there is a clear political responsibility to foster infrastructural diversity and reduce systemic dependency. Without a deliberate and forward looking intervention, and relying solely on existing measures such as antitrust law, there is a significant risk that market forces alone will continue to drive consolidation and deepen systemic dependency. Recognizing these structural realities points toward a different approach to European digital policy.

Addressing the vulnerabilities requires more than simply replacing non-European providers with European ones while maintaining the same underlying business models and market dynamics. Public funding and other policy interventions should not be used to replicate

[9] See for example: Mariana Mazzucato, *The Entrepreneurial State: Debunking Public vs. Private Sector Myths* (London: Anthem Press, 2013).

[10] Mario Draghi, "The Future of European Competitiveness," European Commission, September 2024, https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en. These dynamics are explored in detail in recent analyses of Europe's digital dependencies and platform risks. See: Bertelsmann Stiftung, ed., *EuroStack: A European Alternative for Digital Sovereignty*, by Francesca Bria, Paul Timmers, and Fausto Gernone (February 13, 2025).

[11] See for example Shoshana Zuboff, *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (New York: PublicAffairs, 2019). Zuboff defines surveillance capitalism as a new economic order that claims human experience as free raw material for hidden commercial practices of extraction, prediction, and sales.

[12] Lina M. Khan, "Amazon's Antitrust Paradox," *Yale Law Journal* 126, no. 3 (2017): 710-805; Cristina Caffarra, "Of Hope, Reality, and the EU Digital Markets Act," *TechPolicy.Press*, May 6, 2024, https://www.techpolicy.press/of-hope-reality-and-the-eu-digital-markets-act/. Khan demonstrates how digital platforms leverage structural market advantages to achieve dominance, while Caffarra provides critical analysis of the limitations of current EU regulatory approaches like the Digital Markets Act in addressing these fundamental structural dynamics.

© 2024-2026 NGI Commons

extractive business models under a “made in Europe” label. Instead, it should be directed toward building democratic, rights-aligned digital infrastructures that resist monopolisation and promote openness, transparency, and public accountability. Such infrastructures must be designed, governed, and funded according to priorities like pluralism, interoperability, and participation - creating space for institutions governed by public interest mandates. In short, if we want infrastructure that serves the public, it must be built in accordance with public values, with sustained public investment, appropriate governance, and clear alignment with long-term societal goals.

To achieve this, the EU must update its strategy for digital sovereignty to reflect the political economy of digital infrastructures, where power is concentrated in commercial entities operating beyond democratic reach. Meeting this responsibility requires concrete investment in models that can counterbalance market concentration and offer long-term public value. This is where Digital Commons must be recognised and supported not just as fringe alternatives, but as strategic assets in Europe’s digital agenda. Integrating such models into funding and governance mechanisms is essential to build a digital environment that reflects democratic values and aligns with public needs.

© 2024-2026 NGI Commons

4 POLICY INTERVENTIONS

Based on this broader rethinking of how the EU builds, sustains, and governs its digital foundations, this agenda identifies several policy interventions to advance digital sovereignty and integrate support for Digital Commons, as well as public digital infrastructure, into the European Union's long-term budget. It advocates for aligning research and innovation funding with infrastructural needs, a shift that encompasses stable support for open source ecosystems. The strategy also recognizes that public institutions hold significant power to stimulate adoption of alternatives and shape markets through procurement instruments.

To be effective, a comprehensive strategy for sovereignty must contend with the EU's layered digital dependencies, confronting both the risks of hyperscaler concentration in cloud infrastructure and the erosion of democratic discourse in digital public spaces. Such efforts require durable, cross-border institutional frameworks that can anchor coordination and commitment over time.

4.1 ALIGNING RESEARCH AND INNOVATION FUNDING WITH THE REALITIES OF DIGITAL COMMONS

Digital commons and public digital infrastructure have the potential to deliver long-term societal benefits, enhance resilience and reduce dependence on extractive, proprietary business models that prioritize data extraction and vendor lock-in over user control and interoperability. The Next Generation Internet (NGI) initiative under Horizon Europe[13] offers a positive example of how public funding can support a more pluralistic and rights-based internet. NGI has invested in a wide range of open-source, privacy-enhancing, and decentralised technologies across different layers of the digital stack. Importantly, it has also pioneered participatory grantmaking and bottom-up experimentation through mechanisms like NGI Zero. However, NGI remains relatively small in scale and isolated within the broader funding ecosystem. Its impact would be significantly amplified if similar principles, such as openness, interoperability, civic participation, were mainstreamed across the EU's digital funding landscape.

At the same time, Europe must also ensure that its funding architecture is capable of supporting digital commons initiatives not just at the innovation stage but throughout their entire lifecycle. As with other essential infrastructure, the digital systems underpinning social and economic life require sustained, predictable investment beyond initial development.[14] This demands a broader redesign of how research and innovation funding is structured and deployed across the EU's digital agenda.

EU funding for digital research and innovation is currently divided between several major programmes, most notably Horizon Europe and Digital Europe.[15] While these programmes support a wide range of projects, their short-term, project-based funding model - typically 2-4 years with no guaranteed follow-up - does not meet the long-term needs of maintaining and scaling digital infrastructures. For example, successful pilot projects for decentralized social networks or privacy-preserving tools often struggle to find operational funding after the initial

[13] See: https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe_en

[14] See also: Mariana Mazzucato, *Mission Economy: A Moonshot Guide to Changing Capitalism* (London: Allen Lane, 2021). Mazzucato emphasizes the importance of budgeting that focuses on clearly defining desired goals and identifying the necessary resources to achieve them, instead of restricting funding to short-term project cycles.

[15] https://digital-strategy.ec.europa.eu/en/activities/digital-programme

© 2024-2026 NGI Commons

development phases. Consequently, public investment often stops at the point where early-stage technologies must mature, stabilize and integrate into broader ecosystems.

Moreover, much of the EU's research and innovation strategy remains guided by the narrative of technological disruption.[16] This has led to a disproportionate emphasis on speculative or "frontier" technologies, at the expense of maintaining and improving the digital infrastructure that underpins Europe's economy,public services and digital public spaces. While disruptive technologies may offer transformative potential, they rely on the stability, interoperability, and accessibility of core infrastructure layers to be viable.

Addressing these structural limitations requires fundamental reform of EU funding architecture. The mismatch between funding design and infrastructure realities raises serious concerns about Europe's ability to build and sustain digital resilience. Promising alternatives to dominant platform models receive initial development support but lack follow-up funding for adoption, scaling, or long-term governance. This systemic gap not only undermines promising initiatives but also prevents the establishment of sustainable economic models for Digital Commons. Effective digital sovereignty requires not merely funded research projects, but robust professional pathways and economic frameworks that enable skilled practitioners to sustain careers while maintaining and scaling commons-based infrastructure. Without viable economic models for the human capital essential to this work, Digital Commons remain dependent on precarious grant cycles rather than becoming self-sustaining components of Europe's digital economy. Consequently, this structural deficit can compel promising initiatives toward extractive monetisation models, such as data extraction, which replicates the very dynamics they seek to challenge. Successful alternatives like cooperative ownership models, public utility approaches, or community-governed platforms require sustained institutional support that current funding mechanisms don't provide. To support a sovereign digital ecosystem, funding must go beyond technical development and also include the often-overlooked work of maintenance and governance that sustains Digital Commons over time. Funding instruments that support the entire lifecycle of Digital Commons, from initial development to long-term sustainability and democratic stewardship, are critical.

To meet the EU's goals of digital sovereignty and competitiveness, research and innovation funding must move beyond speculative technology trends and be guided by technology assessment and societal needs.[17] This means funding should prioritize technological openness, interoperability, and democratic governance rather than pursuing specific technological outcomes or hypothetical network architectures. Only by aligning funding mechanisms with the long-term requirements of digital infrastructure can Europe build the resilient, rights-based digital ecosystem that its sovereignty strategy demands.

4.1.1 Establishing Long-Term Funding for Critical Open Source Projects

The open-source ecosystem underpins much of today's digital infrastructure and services, offering alternatives to proprietary models not only at the infrastructural level (e.g. operating systems, protocols, libraries) but also through end-user applications and platforms. Open source technologies span many sectors, with several types of actors and diverse governance approaches. This ecosystem enables companies, governments and regions to build on existing resources rather than duplicating investments. However, despite its scale and importance, many critical components of open-source infrastructure are maintained by a small number of volunteers. A lack of funding for the maintenance and security of critical open-source

[16] Warso, Zuzanna, and Meret Baumgartner. 'Putting Money Where Your Mouth Is? Insights into EU R&I Funding for Digital Technologies'. Amsterdam: critical infrastructure lab, 22 April 2025. https://doi.org/10.5281/zenodo.15263223 .

[17] See also: Sheila Jasanoff, *The Ethics of Invention: Technology and the Human Future* (Cambridge, MA: Harvard University Press, 2016). Jasanoff argues that democratic societies must move beyond technocratic approaches to innovation and instead assess societal needs and democratic values before technological deployment.

© 2024-2026 NGI Commons

infrastructure leaves the users exposed to systemic risks, such as the Log4j vulnerability that affected millions of systems globally.[18]

Recognizing this vulnerability, the EU should ensure sustained, long-term support for critical, widely used open source projects and libraries, rather than reactive responses to crises. Sustained investment in open source requires the creation of an EU-level instrument, drawing from and scaling national models such as the German Sovereign Tech Agency, which has successfully funded critical open source infrastructure projects.

By treating open source as a strategic asset and managing critical open source projects as Digital Commons that require stewardship, the EU can safeguard technological sovereignty and accelerate innovation. Without such a commitment, foundational technologies risk fragmentation, vulnerabilities, and increased dependence on private actors.

Building on the need for sustained support, such an instrument should help scale existing efforts to track and mitigate critical dependencies in open technologies and ensure sustainable funding for their maintenance. This requires tracking and identifying dependencies across critical infrastructure and public services within the EU; evaluating potential vulnerabilities related to underfunding or under-maintenance, and strategically investing in their development and support. Funding should have low barriers to access and flexible models for distribution, particularly for small-scale maintainers and contributors, while remaining scalable and proportionate for larger infrastructures. Governance should be participatory, transparent, and aligned with broader policy objectives like digital sovereignty and the protection of democratic values. This instrument must prioritize funding for the development and maintenance of a foundational open source ecosystem. This includes targeted investments in the development of core open source libraries, including open source components for encrypted communications, secure web infrastructure, anonymization technologies, and privacy-enhancing protocols. A coordinated strategy is essential to sustainably manage and secure open source ecosystems and to integrate them systematically into public infrastructure. This strategy must be grounded in direct engagement with open source communities and public institutions to accurately assess and address needs at the grassroots level.

4.1.2 Developing and Managing European Data Commons

What is now broadly labeled as *data*, including shared and collectively managed knowledge, cultural resources, creative works, and scientific datasets, represents a key component of the Digital Commons. These resources embody public value that should not be captured or managed through purely commercial models. Control and governance of this data are essential not only for driving innovation and competitive advantage but also for safeguarding rights. Together these factors strengthen Europe's digital sovereignty both economically and socially.

Current EU data strategies often emphasise the sheer volume of data collected rather than the broader ecosystem needed to make data genuinely useful, ensure its fair and ethical use, and align it with specific societal goals. This ecosystem encompasses governance and management frameworks that determine how data is stored and shared, as well as the technical infrastructure required for processing and exchanging data. Equally important is building the necessary human and institutional capacity. Crucially, data collection and use must be guided by clear, publicly beneficial objectives and purpose-driven use cases. Without

[18] Knut Blind, Mirko Böhm, Paula Grzegorzewska, Andrew Katz, Sachiko Muto, Sivan Pätsch, and Torben Schubert, The Impact of Open Source Software and Hardware on Technological Independence, Competitiveness and Innovation in the EU Economy: Final Study Report (Luxembourg: Publications Office of the European Union, 2021), https://data.europa.eu/doi/10.2759/430161. The report recommends that the EU establish institutional capacity and funding mechanisms to support open source as a strategic asset.

© 2024-2026 NGI Commons

considering these interconnected factors, resources can be used inefficiently and rights violated.

While Europe has a long-standing tradition of supporting open data frameworks, particularly in scientific research, public sector information, and cultural heritage, these efforts often lack the governance mechanisms and community involvement needed to ensure sustainable and equitable reuse.

To address these challenges and build on existing initiatives, the EU should invest in establishing a European Data Commons, curating and managing high-quality datasets as public goods under a system of commons-based governance. This approach would complement open data initiatives by embedding them within governance structures that promote long-term stewardship, collective agency, and responsible reuse. By prioritising targeted, well-managed data initiatives, Europe could reduce its reliance on external actors and support a digital ecosystem that reflects its values and regulatory frameworks. This approach would enhance collective control over essential data resources, ensure transparency and accountability in data use, protect privacy and other fundamental rights, and promote fair working conditions for those involved in data processing and management.

4.2 THE IMPORTANCE OF THE CLOUD AS AN ENABLER OF THE DIGITAL COMMONS

The dominance of a handful of global cloud[19] providers - Amazon Web Services, Microsoft Azure, and Google Cloud - represent one of the most fundamental bottlenecks in Europe's digital infrastructure.[20] These platforms control the underlying computational resources that power everything from government services to startup innovations, creating a chokepoint that extends their influence far beyond their direct services. Control over the cloud layer means outsized control over the entire stack of digital services. When European institutions rely on these providers, they do not just risk dependency. They also help entrench the power of platforms that can dictate terms or restrict access for users.Cloud infrastructure is therefore not a neutral utility but the foundation of digital sovereignty, and currently, it is controlled elsewhere.

This cloud infrastructure is crucial for maintaining the Digital Commons and public digital infrastructures and for providing the digital foundations that enable essential applications and services underpinning society and the economy. Paradoxically, Digital Commons, which are key to digital sovereignty, depend on infrastructure that may itself be shaped by closed, proprietary systems. Ensuring the sustainability and autonomy of the Digital Commons therefore requires cloud infrastructure that aligns with commons-based principles: openness, interoperability, and freedom from vendor lock-in.

To secure Europe’s digital sovereignty, it is therefore necessary to address the limited scale and competitiveness of European cloud providers. This requires targeted interventions on both

[19]The term “cloud” refers to a layered architecture, from infrastructure (IaaS) to platform (PaaS) and software (SaaS) services, each with different implications for control and sovereignty. A core challenge is the fact that providers increasingly bundle infrastructure, platform, and software services into vertically integrated offerings, making it harder for users to maintain control or switch between layers independently. See also: Bert Hubert, “The (European) Cloud Ladder: From Virtual Server to MS 365,” March 14, 2025, https://berthub.eu/articles/posts/cloud-ladder/

[20] Open Markets Institute. *Engineering the Cloud Commons: A Blueprint for Resilient, Secure, and Open Digital Infrastructure*, 2025, https://static1.squarespace.com/static/5e449c8c3ef68d752f3e70dc/t/6821f7382ff99f2baf2e8212/1747056440491/Engineering+the+Cloud+Commons+FINAL+2.pdf

© 2024-2026 NGI Commons

supply and demand sides, with a focus on fostering alternatives that are not geared towards locking customers into proprietary systems.

Initiatives such as the Important Project of Common European Interest on Next Generation Cloud Infrastructure and Services (IPCEI-CIS),[21] represent an important step toward strengthening the EU's position in cloud technologies. These efforts aim to support the development of competitive, interoperable, and energy-efficient cloud and edge solutions. To truly serve the public interest, such initiatives must go beyond a narrow focus on industrial competitiveness and scaling of European providers, towards serving as the foundation for public digital infrastructure and Digital Commons.

The European Union must develop a clear strategy aimed at reducing reliance on hyperscalers while fostering strong sovereign and interoperable alternatives. This strategy should recognize the market need for solutions that provide enhanced control over data and mitigate the risks associated with dependence on a few dominant providers. It must accelerate the development of sovereign, reliable cloud services that adhere to EU rules and standards, providing secure and autonomous infrastructure to support public services, democratic governance, and the needs of people and businesses. Building on frameworks like the Data Act, cloud users must have the ability to switch providers easily by removing contractual and technical barriers. Enforcing interoperability and data portability requirements, along with developing technical standards for them, remains critical to preventing vendor lock-in.

Creating a stable market for sovereign cloud solutions is essential. The Commission should use public procurement rules to require that public sector services and projects funded by public money prioritize European cloud providers that meet these criteria. Strategic procurement at both EU and Member State levels should be leveraged to stimulate demand and drive investment into trusted sovereign solutions. This approach would generate the demand necessary to scale sovereign offerings and compete with global hyperscalers.

Efforts to develop sovereign cloud infrastructure must align with the Commission's commitment to make data centers climate-neutral and energy efficient by 2030. Building cloud infrastructure that is both sovereign and sustainable will support Europe's technological independence while meeting environmental objectives.

4.3 LEVERAGING PUBLIC SPENDING TO DRIVE ADOPTION OF SOVEREIGN SOLUTIONS

To secure the long-term viability of sovereign digital assets, the EU and its member states should adopt a comprehensive and coordinated approach that addresses both the development of new technologies (the supply) and the creation of sustainable markets for their adoption (the demand). While investing in innovation is essential, it is equally important to ensure that these technologies find pathways into practical, real-world use. Public procurement plays a crucial role in this effort.[22] As a key demand-side lever, public procurement can help to scale up digital assets, enhance their competitiveness and attract greater investment from the private sector.

Public procurement has the potential to be a powerful driver of digital sovereignty, but this demands a shift in approach. Current practices that prioritise short-term cost savings would

[21] https://www.8ra.com/

[22] With approximately €2 trillion spent annually (around 13.6% of EU GDP) it represents one of the EU's most powerful tools for steering the economy. European Commission, *Public Procurement Data Space (PPDS),* https://single-market-economy.ec.europa.eu/single-market/public-procurement/digital-procurement/public-procurement-data-space-ppds_en

© 2024-2026 NGI Commons

have to be replaced with strategies that emphasise long-term resilience and digital autonomy. This would require rethinking procurement rules so that they promote broader public objectives, including the strengthening of Europe's digital sovereignty. With the EU's Procurement Directives in the process of revision, along with the upcoming Cloud and AI Development Act, the strategic deployment of public funds can be a key lever. Aligning procurement policies with digital sovereignty objectives could transform public spending into a powerful means of supporting sustainable, secure, and independent digital infrastructure.

In addition, approaches such as pre-commercial procurement[23] allow public institutions to leverage their spending power to more actively shape the development of technology alternatives. They can invest in the research and development of solutions before they become commercially available. Multiple suppliers can be funded through phased processes, including design, prototyping and testing. The model allows distributed investment in early stage innovation, which also remains directed at addressing specific needs. Pre-commercial procurement enables public institutions to move beyond isolated 'research and innovation' activities towards a more integrated approach that links early-stage innovation funding to the actual adoption of new technologies into public infrastructure.

Sovereignty entails more than the mere presence of a company's name or physical servers within Europe. It necessitates the integration of genuine control within the design, governance, and ownership structures. A procurement policy aligned with digital sovereignty should, therefore, prioritise open source, which promotes transparency, adaptability, and collaborative development of technological solutions, and open interoperability standards, which ensure the possibility of integration across diverse systems and prevent vendor lock-in. These procurement conditions are vital to prevent public investments from reinforcing monopolistic or extractive business models. Instead, they can help cultivate an open, interoperable, and sovereign digital ecosystem in Europe.

The emphasis on diversity and openness is especially critical in the context of cloud infrastructure. Sovereignty at this level is essential to mitigating risks associated with concentrated control, including single points of failure, systemic vulnerabilities, and unauthorized access. The entire digital ecosystem depends on this foundational layer (see previous section), making control over cloud infrastructure a cornerstone of digital resilience and autonomy. For these reasons, European public authorities should adopt procurement criteria that intentionally steer demand toward sovereign cloud infrastructure. Mechanisms such as multi-sourcing requirements or quotas, ensuring that at least one primary provider in any system is EU-based, can help diversify the cloud landscape and reduce overreliance on a handful of dominant foreign providers. Procurement rules should ensure that cloud service providers are only eligible when they maintain a structural separation between infrastructure, platform, and software services.

Procurement rules should also embed conditionalities that align market outcomes with broader societal goals, using public spending as a strategic tool to generate positive spillovers and ensure public value. As part of its climate commitments, the Commission has set a target for data centres to be climate neutral by 2030. To support this objective, cloud providers should be required to report sufficiently granular data on resource consumption, energy usage, and emissions and to demonstrate compliance with recognised sustainability standards. These criteria are essential to ensure that the development of sovereign cloud infrastructure does not undermine Europe's climate ambitions.

When designed with intent, public procurement can be a powerful tool for shaping markets and technology in accordance with democratic values. By incorporating principles of sovereignty, openness, interoperability and sustainability, the EU can transform procurement into a

[23] See: https://research-and-innovation.ec.europa.eu/strategy/support-policy-making/shaping-eu-research-and-innovation-policy/new-european-innovation-agenda/innovation-procurement/pre-commercial-procurement_en

© 2024-2026 NGI Commons

foundation of its digital and societal resilience. This approach ensures that public expenditure provides strategic public value across the entire digital landscape, not just services.

4.4 SUPPORTING DEMOCRATIC CONTROL OVER DIGITAL COMMUNICATION SPACES

An essential dimension of digital sovereignty is who governs the digital communication spaces that structure public life in Europe. Unlike public squares or public service broadcasters, today's digital platforms lack democratic governance. Content moderation, data governance and algorithmic transparency remain internal corporate functions rather than matters of public deliberation. So far, Europe's focus has been on mitigating the negative impacts of private platforms rather than establishing structural alternatives. Regulatory pressure can reduce harm, but it cannot substitute for public ownership and governance of core communication infrastructure.

Given the continuous information warfare, polarization and falling trust in institutions, the EU must see sovereign digital communication spaces as critically important digital infrastructures. It must commit to developing and maintaining publicly governed infrastructure, covering protocols and algorithms, that fosters democratic discourse, civic participation, and knowledge sharing. The infrastructure supporting social media services must be designed to prevent capture by corporations, individuals or states. These systems should be built on open standards and ensure interoperability, empowering users and institutions to make independent choices without being locked into dominant platforms. Decentralization is a critical safeguard for democracies, mitigating risks posed by monopolies and their unilateral control over information access. Transparency is vital - algorithms and content moderation policies must be publicly auditable with source code available for inspection and regular algorithmic impact assessments published to guarantee accountability.

Achieving this requires dedicated and sustained funding focused on creating and deploying decentralized, open-standard infrastructures that prioritize transparency and interoperability and are governed as commons. Strategic investment is necessary to build resilient systems that counter monopolistic influence and protect democratic access to information. EU institutions should adopt federated, open source communication platforms and engage with citizens through these digital public spaces, reinforcing public trust and setting a standard for transparent, democratic communication.

Protecting the integrity of these systems is no longer a matter of consumer choice or digital regulation but a matter of societal resilience. Just as media pluralism is essential for democracy, algorithmic pluralism is becoming essential for the infrastructure of search, recommendation, and social feeds.[24] Current recommendation algorithms optimized for engagement often amplify divisive content, while users have no meaningful choice over how their feeds are curated. Users must be able to understand, choose, and switch between the systems that shape what they see and how they interact online, similar to how they can choose between different news sources or television channels.

To operationalize this vision and put it into practice, the EU can draw on and support two complementary models. The first is the Digital Commons approach, in which infrastructures are collectively stewarded and maintained as public goods. In this case decentralised governance models encourage user control, community governance and resilience, as

[24] Christian Fuchs and Klaus Unterberger, eds., *The Public Service Media and Public Service Internet Manifesto* (2021), https://doi.org/10.16997/book60. This collection proposes adapting the institutional logic of public service media (public funding, editorial independence, and accountability) to the digital sphere, offering a normative framework for developing non-commercial, democratic alternatives to dominant platform infrastructures.

© 2024-2026 NGI Commons

demonstrated by federated platforms like Mastodon or Matrix. The commons approach is particularly well-suited for enabling open, participatory social spaces where users help shape the norms and architecture of interaction. The second approach is based on a public service broadcasting model.[25] In this case institutions receive public funding but operate independently from both state control and market pressure. This model is suited for curated content environments, such as news feeds, where editorial standards, public accountability, and professional integrity are of essence.

4.5 HARNESSING THE POTENTIAL OF THE DIGITAL COMMONS EUROPEAN DIGITAL INFRASTRUCTURE CONSORTIUM

While the EU's research and innovation funding has helped seed promising initiatives, existing instruments have struggled to support the maintenance and deployment of the digital tools and services that have been funded. Without stable, durable frameworks for cooperation and stewardship of digital assets, Europe risks undermining its own investments and repeating a cycle of funding without lasting impact or uptake.

European Digital Infrastructure Consortia (EDICs),[26] introduced under the Digital Decade Policy Programme 2030, offer a promising new mechanism to address these structural shortcomings. EDICs provide a legal and operational framework for member states to co-develop, govern, and sustain digital infrastructure jointly. They enable cost-sharing and policy alignment across borders, while still allowing flexibility for national implementation.

The establishment of the Digital Commons EDIC marks a significant step forward in operationalizing this vision.[27] It is based on the idea of supporting digital commons as essential, publicly governed infrastructure for a democratic digital future. The Digital Commons EDIC has been designed to ensure the long-term sustainability, institutionalisation and deployment of these commons-based infrastructures. Moving forward, to meet Europe's long-term digital needs, the Digital Commons EDIC should serve as a governance vehicle for Digital Commons and public digital infrastructures projects. Such a consortium of member states can take on coordination roles, facilitating multi-country collaboration, supporting cross-border digital services, and anchoring open-source initiatives within democratically accountable institutions.

The Digital Commons EDIC must also be seen as the instrument through which sustainable, long-term support for critical infrastructure is organised. It can offer a structural solution to the sustainability gap: the recurring challenge in which promising infrastructure projects are piloted through EU programmes but lack a long-term institutional home or financing model. It should serve as a vehicle between research and implementation, aligning R&I funding with necessary deployment and sustainability mechanisms. Beyond channeling financial support, the EDIC should coordinate and centralize non-financial forms of support for Digital Commons. These initiatives must often navigate complex legal, financial, administrative and tax-related

[25] While public service broadcasting models vary significantly across Europe—including in their degree of independence, reliance on advertising, or vulnerability to political influence—they nonetheless share a foundational principle: the provision of publicly mandated services, insulated from both commercial and state pressures, with a commitment to public value. It is this principle, not any specific national implementation, that can inform the development of publicly funded and independently governed digital communication infrastructure. See also: Ethan Zuckerman, *The Case for Digital Public Infrastructure* (New York: Knight First Amendment Institute, January 17, 2020) https://knightcolumbia.org/content/the-case-for-digital-public-infrastructure

[26] See: https://digital-strategy.ec.europa.eu/en/policies/edic

[27] https://www.euractiv.com/section/tech/news/quartet-of-eu-countries-to-cooperate-on-building-sovereign-digital-infrastructure/

© 2024-2026 NGI Commons

questions, and would benefit from coordinated access to essential professional services and organizational guidance.

By hosting and maintaining shared digital tools, such as identity frameworks, public sector cloud platforms, secure communication tools, or civic engagement platforms, a Digital Commons EDIC can provide the continuity and scale needed to transform experimentation into durable, operational systems.

To unlock the potential of the Digital Commons EDIC, the EU must create stronger financial and political incentives to encourage public administrations and new member states to actively participate in this effort. This means significantly increasing EU funding earmarked for EDIC-led initiatives and using that support to launch ambitious, multi-country projects, such as a sovereign digital workplace for European governments, built on open and interoperable components.

© 2024-2026 NGI Commons

5 WAYS FORWARD: OVERVIEW OF STRATEGIC POLICY INTERVENTIONS

This document presents the first version of the strategic agenda to integrate support for Digital Commons and public digital infrastructure into the next Multiannual Financial Framework.

This draft agenda asserts that the European Union should acknowledge Digital Commons as valid and integral elements of public digital infrastructure and abandon a market-fixing approach in areas crucial to public discourse, access to information and civic life. Without such policy shifts, even the most well-intentioned interventions risk perpetuating the very dependencies they aim to dismantle. These strategic shifts are not optional: they are the necessary preconditions for meaningful and lasting reform. Translating them into action requires a coherent, well-resourced agenda that prioritises structural transformation and institutional continuity. This agenda entails several interventions.

A key priority is to **align research and innovation funding with the realities of Digital Commons**. Public funding must, where necessary, support the entire lifecycle of Digital Commons, from initial development to democratic stewardship and institutional sustainability, recognising their function as foundational infrastructure akin to public utilities. This requires targeted, sustained investment in the open-source ecosystem and managing EU data commons.

Another priority is supporting sovereign cloud infrastructure and embedding democratic governance and ownership into its architecture. Without these foundational measures, efforts to build a resilient and democratic digital ecosystem will remain incomplete.

To ensure that sovereign and rights-aligned solutions find viable paths to adoption, **leveraging public spending becomes essential**. Public procurement, representing a significant share of the EU economy, must be deployed strategically and it must favour open and interoperable alternatives to the big tech solutions.

Another crucial intervention concerns **ensuring democratic control over digital communication spaces**. As key infrastructures of public discourse and social cohesion, these platforms require investment in decentralised, transparent, and standards-based alternatives that ensure public accountability.

Finally, addressing the structural sustainability gap also requires new institutional vehicles. **Harnessing the potential of the Digital Commons European Digital Infrastructure Consortium provides a concrete path forward**. As a legal and operational mechanism, EDICs enable cross-border collaboration among member states to jointly govern and sustain digital infrastructure.

While sovereignty is generally understood in terms of independence and autonomy, there remains a strategic opportunity for global cooperation. The open internet is a shared, global, infrastructure, and many countries have an interest in preserving its openness, integrity, and long-term sustainability. Democratic governments worldwide face similar challenges from dependencies on foreign and proprietary infrastructures which can limit their capacity to uphold democratic norms and effectively govern within a globally interconnected digital environment. Open source ecosystems and digital commons offer a critical foundation for coordinating investment and mutualising benefit. Building on the EU's International Digital Strategy, which identifies key frameworks for cooperation, the EU and its member states should leverage their convening power to foster meaningful alliances and collaborative responses to shared challenges.

The urgency of these interventions is further underscored by growing geopolitical instability and the increasingly strategic role that digital infrastructure plays in economic resilience,

© 2024-2026 NGI Commons

democratic security, and global power dynamics. As questions of technological sovereignty move to the center of Europe's political agenda, the EU should act decisively to ensure that its digital foundations are governed in the public interest and aligned with democratic values. This requires not only new investments, but also the consolidation and expansion of institutional lessons already learned, particularly through the Next Generation Internet initiative.

The NGI initiative has contributed to validating key hypotheses about the viability of digital commons, the power of open source,[28] and the potential of participatory governance. These insights now need to be carried forward and integrated with broader industrial policy objectives, especially the development of sovereign European cloud infrastructure. Without this alignment, Europe's digital ecosystem risks remaining fragmented and overly reliant on extractive, non-European solutions. A more cohesive strategy should link support for open digital infrastructure with mission-driven investment in critical layers of Europe's technological stack.

Realising this ambition within the framework of the next Multiannual Financial Framework requires a strategic mobilisation of resources at a scale that goes significantly beyond both the NGI initiative and the current scope of the Open Internet Stack. While the motivation behind the Open Internet Stack with its emphasis on openness, interoperability, and public interest utility is directionally correct, its impact will remain limited unless its scope is broadened. Rather than anchoring the concept in support of a specific network architecture, it should be redefined as a foundational enabler of a diverse range of digital services. In this way, the Open Internet Stack can evolve into a strategic component of Europe's sovereign digital infrastructure that is capable of supporting a pluralistic, rights-aligned digital ecosystem that reflects and reinforces European values.

[28] Deliverables from the NGI Commons Consortium, (D1.1) Active Communities of Commoners and Relevant Commons, and (D1.3) The impact of NGI funding on Digital Commons/Internet Commons (forthcoming) explore this in further detail.

© 2024-2026 NGI Commons

APPENDIX A

INTRODUCTION

This document brings together a range of policy proposals that informed the development of the NGI Commons Strategic Agenda (Deliverable 3.2). The goal of the Strategic Agenda is to support investment in the Digital Commons as a key pillar of European digital sovereignty, and to lay the groundwork for securing a sustained commitment to funding public digital infrastructure in the next Multiannual Financial Framework (MFF).

The compilation served as an internal working document to guide discussions on possible policy directions and priorities. The proposals included here were collated through an ongoing review process (up to February 2025) of reports, initiatives, and expert contributions that engage with themes of digital sovereignty, digital commons, and public digital infrastructure.

Proposals were clustered based on several criteria: their relevance to the digital commons in terms of collective governance; their significance as public infrastructure or for reducing strategic dependencies; their resonance with EU policymaking discourse and stakeholder interest; the technical layers of the digital stack they address; and the type of policy instruments they would require.

While not exhaustive, this compilation reflects the broad landscape of ideas that shaped the strategic orientation of the agenda. It served as a reference point to help identify the most promising and actionable proposals for inclusion in the final strategy.

OVERVIEW OF PROPOSALS

Policy proposals (clusters)	Relevance for digital commons (collective governance)	Relevance as public digital infrastructure and sovereignty	Level of acceptance (among EU policy and stakeholders)	Stack layers involved (technical components)	Type of policy instruments required
1. Creating a public digital infrastructure fund to protect our democracies	✅	✅	🤝	💻	🏗️💶
2. Leveraging open source and digital commons to close the innovation gap	✅	🟡	✅	📊🤖💻☁️📱🔌🌐🧩⚡💧⛏️	💶💼
3. Building european public goods through new multi-country collaborations	🟡	✅	✅	💻	🗺️🏗️
4. Developing an industrial strategy to build a stack of sovereign technologies	🟡	✅	🤝	☁️🌐🧩	💶💼
5. Identifying critical dependencies and ensuring the secure maintenance of shared open technologies	✅	✅	🧠	💻☁️📱🔌🌐🧩	💶💼

© 2024-2026 NGI Commons

6. Mobilising data commons for competitiveness and strategic autonomy	✅	🟡	✅	📊🤖💻	🗺️
7. Building strategic digital capacities in the public sector	🟡	✅	🧠	📊🤖💻☁️📱🔌	🗺️🏗️
8. Leverage open clean technologies for the green transition	✅	✅	🧠	📊🤖💻☁️📱🔌🌐 🧩⚡💧⛏️	💵💼
9. Finding new sources of funding for Europe's digital future	🛑	✅	🤝		🗺️⚖️

Relevance for digital commons (collective governance): ✅🟡🛑
- Link with distributed modes of production?
- Link with collective ownership and stewardship?
- Link with non-exclusive modes of access?

Relevance as public digital infrastructure / for sovereignty: ✅🟡🛑
- Requires public forms of ownership / governance?
- Link with public goals and critical functions?
- High economic potential of openness and mutualisation?

Type of policy instruments required:
Strategy and collaboration	🗺️
Private investments	💼
Legislation	⚖️
Public funding program	💵
Public deployment and maintenance	🏗️

Level of acceptance (among EC and stakeholders):
1	✅	Already on the EU policy agenda
2	🤝	Strong interest groups pushing for it
3	🧠	Identified recommendation in expert circles
4	🥷	Not part of the public discourse

Stack layers involved (technical components):
Data and Artificial Intelligence	📊🤖
Software	💻
Cloud	☁️
Internet of Things & Devices	📱🔌
Networks	🌐
Chips	🧩
Critical Resources: Raw Materials, Energy and Water	⚡💧⛏️

© 2024-2026 NGI Commons

CREATING A PUBLIC DIGITAL INFRASTRUCTURE FUND TO PROTECT OUR DEMOCRACIES

Historically, European countries have invested in public media to ensure pluralism and protect democratic values. However, in today's digital landscape, social media monopolies control much of the public discourse, operating under opaque, profit-driven algorithms that shape political engagement without democratic oversight.

While the EU has responded with regulatory measures such as the General Data Protection Regulation (GDPR), Digital Markets Act (DMA), and Digital Services Act (DSA), these laws primarily regulate existing private platforms rather than providing true public alternatives for civic engagement, knowledge sharing, and cultural exchange. Unlike physical public spaces, where governance is based on democratic principles and social contracts, most digital platforms lack basic democratic agreements, leaving content moderation and information flows in the hands of private corporations.

Proposals take inspiration from both commons-based shared governance and from the public service broadcasting model—such as the BBC—to advocate for publicly funded but independently governed digital platforms. Such institutions are meant to support open and interoperable messaging services, social networking tools, and digital media platforms that operate on transparent, publicly auditable standards. Decentralisation is seen as a part of protection for democracies against the risks associated with monopolies and their unilateral power over access to information.

Proposals	Source
A Public Digital Infrastructure fund run by an independent foundation with a 100 million euro annual budget, with income from a dedicated tax on digital advertising revenues.	European Digital Public Infrastructure Fund White Paper, Open Future https://openfuture.pubpub.org/pub/public-digital-infra-fund-whitepaper/release/2
Public and government institutions should be required to establish a presence in the Fediverse. Review DMA interoperability provisions to encompass social networking platforms.	A Public, Interoperable Social Media Space. Policies for the Digital Commons, Open Future https://openfuture.eu/policies-for-the-digital-commons/interoperable-social-media/
Invest in a public stack based on public values, participatory governance, and decentralized technology.	Waag Society, A Public Stack. https://publicstack.net/domains/government
A pluriverse consisting of existing platforms alongside a flourishing ecosystem of Very Small Online Platforms (VSOPs)	Ethan Zuckerman, Initiative for Digital Public Infrastructure at UMass Amherst. https://publicinfrastructure.org/2023/03/29/the-three-legged-stool/
Mandatory interoperability and openness for recommendation algorithms for social media platforms.	AI Forensics, several organizations. https://aiforensics.org/algopluralism
A pan-European platform for trustworthy news and information in all European languages based on public service media content.	Matthias Pfeffer: Infrastructure for a Democratic European Public Sphere. https://feps-europe.eu/publication/time-to-build-a-european-digital-ecosystem-2/
Set up a democracy fund to support civil society and media organizations via a central and independent body funded by a European tax	Positions of the F5-Alliance on the 2024 European Elections. https://buendnis-f5.de/assets/data/EN_EU_Positionen_F5.pdf
Support decentralized digital infrastructure for a network of public platforms that allow cultural	Positions of the F5-Alliance on the 2024 European Elections. https://buendnis-

© 2024-2026 NGI Commons

institutions, educational establishments, or even local governments to host and share information, projects, initiatives, and exchanges online	f5.de/assets/data/EN_EU_Positionen_F5.pdf
Develop new spaces of citizen participation — both online and off — to allow communities to have input on the development and use of digital tools. This should also include the development of public education initiatives to allow citizens to develop the necessary knowledge, skills, and sense of empowerment to defend their digital rights and participate in the governance of public technology.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
European digital infrastructure must avoid replicating surveillance models that undermine privacy and trust.	The EuroStack Manifesto: a Vision for European Digital Independence. https://euro-stack.com/pages/manifesto
Launch a comprehensive funding program for digital public spaces that are organized decentrally, embedded in society, designed to be interoperable, and programmed as open source.	Eine digitale Brandmauer errichten. Chaos Computer Club, German civil society. https://www.ccc.de/en/updates/2025/ccc-fordert-digitale-brandmauer

LEVERAGING OPEN SOURCE AND DIGITAL COMMONS TO CLOSE THE INNOVATION GAP

Commons have been an important driving force for the development of digital technologies, alongside state support and entrepreneurial forces. They continue to play a major role in research and innovation policies. Research has shown that investments in open source are key elements of building an innovation ecosystem and the local skills it requires.

Several proposals advocate for strengthening the role of open source and digital commons in Europe's innovation ecosystem. Digital commons are seen as the basis for coordination between public and private actors while fostering global cooperation with regions investing in shared technological resources. It is argued that open innovation models can democratize access to cutting-edge research and technology, reducing reliance on proprietary systems and accelerating European technological sovereignty.

Proposals	Source
Cross-border and unbureaucratic funding for open source communities: the loose composition of open source communities require flexible funding programs	Positions of the F5-Alliance on the 2024 European Elections. https://buendnis-f5.de/assets/data/EN_EU_Positionen_F5.pdf
Support innovation through low-threshold, needs-based funding that is open to many target groups. Lift innovation power to build secure and scalable open basic infrastructures.	Sovereign Tech Fund Feasibility Study. https://www.sovereign.tech/public/files/SovereignTechFund_FeasibilityStudy.pdf
A €300 billion Sovereign Tech Fund (STF) functioning as a DARPA-style agency.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Prioritize open hardware architectures, providing incentives for advanced manufacturing in areas such as RISC-V, photonics, neuromorphic chips, and quantum chips.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/

© 2024-2026 NGI Commons

Prioritize cross-stack synergies by promoting collaboration among European chipmakers, software developers, and cloud providers to align design and manufacturing capabilities.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Creating a digital commons one-stop shop.	Report of the European working team on digital commons: Towards a sovereign digital infrastructure of commons. https://openfuture.eu/wp-content/uploads/2022/07/220624digital_commons_report.pdf
Easing the access for SMEs, Start-Ups and Individual Developers to ICT-related Open Source funding.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Providing relevant education and establishing a culture to foster Open Source based start-ups.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Promoting partnerships between small Open Source players, trusted intermediaries and larger companies.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Increasing the level of public R&D funding of specific Open Source projects and launching research awards or prizes for OSS and OSH communities or for students and academics, linked to the specific objectives, e.g. of the European Green Deal and European industrial strategy.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Promoting entrepreneurial and management skills among Open Source based micro companies and SMEs.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Promoting the inclusion of Open Source (development, business models and licensing) in the programmes of Higher Education Institutions.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Supporting the creation of Open Source platforms and networks in the EU.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Supporting directories for OSS solutions so that European start-ups and SMEs can easily make use of the available OSS solutions suited for their needs.	FOSS4SMEs Policy Recommentions. https://ec.europa.eu/information_society/newsroom/image/document/2019-51/1_sivan_paetsch_presentation_policy_recommenda

© 2024-2026 NGI Commons

	tions_for_ec_workshop_94903FF1-9BE0-2117-7F77FA2FC04B7070_63841.pdf
Moving away from teaching specific product knowledge toward generic sovereign digital competences.	FOSS4SMEs Policy Recommentions. https://ec.europa.eu/information_society/newsroom/image/document/2019-51/1_sivan_paetsch_presentation_policy_recommendations_for_ec_workshop_94903FF1-9BE0-2117-7F77FA2FC04B7070_63841.pdf
Supporting the scale and growth by increasing capital flow into SMEs.	FOSS4SMEs Policy Recommentions. https://ec.europa.eu/information_society/newsroom/image/document/2019-51/1_sivan_paetsch_presentation_policy_recommendations_for_ec_workshop_94903FF1-9BE0-2117-7F77FA2FC04B7070_63841.pdf
Providing business training opportunities for the many technically-educated open source entrepreneurs.	FOSS4SMEs Policy Recommentions. https://ec.europa.eu/information_society/newsroom/image/document/2019-51/1_sivan_paetsch_presentation_policy_recommendations_for_ec_workshop_94903FF1-9BE0-2117-7F77FA2FC04B7070_63841.pdf
Set an independent research agenda that is not driven by the hype or pressures of technological solutionism but requires focusing on relevant outcomes for people and the planet, moving away from a market-oriented approach.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
Promote public knowledge networks led by a new public international research agency (or regional agencies) that can counterbalance the expanded concentration of private and closed science.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty

BUILDING EUROPEAN PUBLIC GOODS THROUGH NEW MULTI-COUNTRY COLLABORATIONS

The rationale for EU public goods lies in the added value of collective action, addressing challenges that are insufficiently attractive for private investment or individual EU member states. Ensuring interoperability and efficiency for the provision of such goods may require cross-border collaboration. Digital commons are presented as a framework for achieving this by fostering shared standards, leveraging community-driven innovation, mutualizing costs across governments, and enabling collaborative development while allowing national customization.

Proposals advocate for accelerated collaboration among governments to develop shared components for public service delivery and key intermediation services in digital transactions. European Digital Infrastructure Consortiums (EDICs) are proposed as a framework that can be expanded to govern digital commons effectively.

Proposals	Source
Establishing a European Foundation for digital commons	Report of the European working team on digital commons: Towards a sovereign digital infrastructure of commons. https://openfuture.eu/wp-content/uploads/2022/07/220624digital_commons_report.pdf

© 2024-2026 NGI Commons

Launching a call for proposals for sovereign commons digital infrastructure	Report of the European working team on digital commons: Towards a sovereign digital infrastructure of commons. https://openfuture.eu/wp-content/uploads/2022/07/220624digital_commons_report.pdf
Launch European-wide "Minimum Viable Products" for public digital cross-border services, focusing on scalability and interoperability.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Digital Euro: Accelerate the rollout to enable secure, fee-free cross-border transactions across services.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Sovereign Digital Identity Wallet: Develop a privacy-preserving, interoperable wallet integrating electronic identification, payment systems, and access to public and private services.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Federated data spaces: Build GDPR-compliant platforms for secure cross-border data sharing in healthcare, education, mobility, and climate. Foster a coalition of cities and regions to adopt common procurement frameworks for implementing these standards.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Design of a secure personal data wallet and self-governed online identity.	Towards a sustainable and resilient future internet. Katja Bego. https://feps-europe.eu/publication/towards-a-sustainable-and-resilient-future-internet/
Create a new Directorate or at least a new Unit under DG Connect to offer guidance and promote collaborations.	A Pitch - EuroStack. Cristina Caffarra et al. https://euro-stack.eu/a-pitch-paper/
Develop sovereign digital identities, implemented and controlled within Europe, as well as secure, interoperable, and European-managed payment systems.	The EuroStack Manifesto: a Vision for European Digital Independence. https://euro-stack.com/pages/manifesto
Develop government-controlled, democratically accountable, safe national digital payment systems that are supported and hosted in public, non-profit data centres.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
Consider the creation of Central Bank Digital Currencies (CBDCs) and central bank e-wallets, but ensure that any implementation is citizen-centred and public to reduce systemic reliance on private banks.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
Create a Public Digital Infrastructure Agency, a new, fully-independent, multi-stakeholder governance body focused on setting shared open standards around, for example, data governance, collaborative interoperability, and identity management.	Towards Public Digital Infrastructure: A proposed governance model. NGI Forward. https://openfuture.eu/wp-content/uploads/2022/12/TowardsPublicDigitalInfrastructure_v0.2.pdf
Construct a more universal identity model and counter the increased privatisation of online identity management.	Towards Public Digital Infrastructure: A proposed governance model. NGI Forward. https://openfuture.eu/wp-content/uploads/2022/12/TowardsPublicDigitalInfrastructure_v0.2.pdf
Invest in the integration of DPI solutions with established private platforms, including through the	CEPS. Building the European Digital Public Infrastructure: rationale, options, and roadmap.

© 2024-2026 NGI Commons

embedding of 'secure elements' in existing hardware–software platforms. For example, Apple recently announced that any third-party wallet will be able to build on its Near Field Communication and Secure Element architecture. Storing private keys in the embedded components of hardware can lead to a much more user-friendly development of DPI solutions. It will also be key for the Digital Euro, as access to the Secure Elements is critical for mobile device-based offline payments.	https://www.ceps.eu/ceps-publications/building-the-european-digital-public-infrastructure-rationale-options-and-roadmap/
Move from asynchronous to allowing synchronous payment solutions as well. As it stands, given the complexity of achieving interoperability between various national systems that differ in degrees of openness, API specifications, and protocols for authentication, the EUDI Wallet can at best aim at achieving asynchronous transactions. This is despite the fact that the EU model for data exchange layers supports both asynchronous and synchronous communication. Enabling real-time operations would be crucial for services like eID validation or eHealth.	CEPS. Building the European Digital Public Infrastructure: rationale, options, and roadmap. https://www.ceps.eu/ceps-publications/building-the-european-digital-public-infrastructure-rationale-options-and-roadmap/
Embed the DPI in Europe's global digital offer. The deployment of a European DPI would be a perfect way to project Europe's approach to digital markets around the world and offer self-sovereign solutions to partner countries, for example, as part of the Global Gateway (see Renda et al. 2023). An investment in the European DPI would therefore also become an investment in Europe's 'actorness' in the global governance of digital technologies, as well as in the future of digitally enabled democracy and public services. This compelling vision requires further stewardship and investment by the Commission yet promises far-reaching returns and rewards for the EU, its society, and businesses.	CEPS. Building the European Digital Public Infrastructure: rationale, options, and roadmap. https://www.ceps.eu/ceps-publications/building-the-european-digital-public-infrastructure-rationale-options-and-roadmap/
Enable a third-party market for complementary services on the DPI. A DPI should be designed as an open ecosystem that allows third-party providers to build and offer complementary services. This would foster innovation, competition, and diversity in the services available to society and businesses. For example, third-party developers could create specialised applications for eHealth, education, or local government services that integrate seamlessly with the DPI. Clear rules and standards for third-party participation would be necessary to ensure security, privacy, and interoperability while encouraging a vibrant market for value-added services.	CEPS. Building the European Digital Public Infrastructure: rationale, options, and roadmap. https://www.ceps.eu/ceps-publications/building-the-european-digital-public-infrastructure-rationale-options-and-roadmap/

DEVELOPING AN INDUSTRIAL STRATEGY TO BUILD A STACK OF SOVEREIGN TECHNOLOGIES

Mario Draghi's report on European competitiveness calls for an €800 billion competitiveness boost and a radical rethinking of how the EU coordinates its regulatory, trade, and industrial policies.

© 2024-2026 NGI Commons

Several initiatives echo this call for investments and highlighted needs across the stack of digital technologies, including hard/physical Infrastructure (semiconductor production, compute power, and communications networks), soft/logical infrastructure (modular, reusable software and services that align with European standards and ensure interoperability), as well as intermediation platforms (sector-specific digital platforms).

Proponents also argue that investments have been diluted across too many small-scale projects with weak governance structures. An integrated could should allow the EU to move beyond fragmented digital investments and adopt a more focused, long-term industrial strategy to build sovereign digital infrastructure.

It is proposed that investments should be coupled with a reform of state aid, conditionalities and public procurement rules. This can create incentives for European cloud providers and stimulate the development of federated cloud ecosystems across member states. Procurement rules can mandate the use of open source solutions and interoperability standards, to ensure that public funds support open, transparent, and accountable digital infrastructures.

Proposals	Source
A €300 billion Sovereign Tech Fund (STF) functioning as a DARPA-style agency.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Expand decentralized cloud systems, such as IPCEI-CIS and European Open Clouds, to ensure critical data remains within Europe's jurisdiction.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Require that 50% of processors and accelerators used in critical infrastructure, defense, public administration, and strategic systems be European-made by 2030. Use defense and strategic digital technology procurement to create sustained demand for domestic production.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Build and financially incentivize demand supply partnerships that link semiconductor advancements to key sectors like automotive (37% of Europe's semiconductor consumption) and expand to emerging sectors such as biotech, gaming, space economy, and advanced manufacturing.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Develop and implement sovereign AI solutions by prioritizing decentralized training of AI models across diverse hardware environments.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Strengthen FDI scrutiny and controls to protect critical European IP and startups, particularly in quantum and AI chips. Establish a database of strategic assets within the EuroStack to ensure resilience and maintain European control over critical technologies.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Promote and, where feasible, mandate preferential public procurement for European cloud solutions using a comply-or-explain framework. The goal is to ensure that 50% of public cloud spending is allocated to EU-based providers by 2030. To support the initial phase of adoption and infrastructure development, governments should commit to €500 million	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/

© 2024-2026 NGI Commons

annually over 5-7 years for the procurement of European cloud solutions.	
Provide public procurement guidance to boost adoption of GDPR-compliant and energy efficient EU-based solutions.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Establish a pan-European Multi-Provider Cloud-Edge Continuum (8ra Initiative) to reduce latency by up to 50% and improve resilience by decreasing reliance on centralized infrastructure.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Promote and require open APIs for cloud providers to ensure interoperability, support cross-border data flows, and prevent vendor lock-in.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Promote and, where necessary, mandate open source software for public services and critical infrastructure by 2026 at both the member state level and (ideally) EU levels.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Prioritize European open-source solutions through preferential procurement and incentives for private adoption.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Establish public-private-commons partnerships to manage federated AI platforms, supported by €1 billion funding to ensure transparency and alignment with EU values, and continued support for common EU services.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Simplify EU regulations to remove barriers, reduce complexity, and avoid premature restrictions on emerging technologies.	EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. Digital Europe. https://www.digitaleurope.org/resources/the-eus-critical-tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/
Enhance public-private partnerships (PPPs) to accelerate critical technology development and align innovation with public policy objectives.	EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. Digital Europe. https://www.digitaleurope.org/resources/the-eus-critical-tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/
Improve access to funding by prioritizing commercialization and simplifying EU financial instruments to encourage business participation.	EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. Digital Europe. https://www.digitaleurope.org/resources/the-eus-critical-tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/
Invest in large-scale digital infrastructure such as AI data centers and semiconductor manufacturing to strengthen European technological capabilities.	EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. Digital Europe. https://www.digitaleurope.org/resources/the-eus-critical-tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/
Expand education and upskilling programs to attract top global talent and address skills shortages in AI, quantum computing, and other key fields.	EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. Digital Europe. https://www.digitaleurope.org/resources/the-eus-critical-tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/
Strengthen international partnerships to coordinate economic security, enhance technology collaboration, and ease data localization restrictions.	EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. Digital Europe. https://www.digitaleurope.org/resources/the-eus-critical-

© 2024-2026 NGI Commons

	tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/
Create a common EU procurement framework to increase economies of scale, foster competitiveness, and integrate the European market.	EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. Digital Europe. https://www.digitaleurope.org/resources/the-eus-critical-tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/
Introduce tax incentives to encourage R&D investment, boost manufacturing, and support technology adoption across the EU.	EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. Digital Europe. https://www.digitaleurope.org/resources/the-eus-critical-tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/
Apply trade restrictions carefully by maintaining a balanced export control policy that protects European businesses while ensuring fair competition.	EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. Digital Europe. https://www.digitaleurope.org/resources/the-eus-critical-tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/
Use trade defense measures selectively to shield EU industries from unfair competition without undermining overall competitiveness.	EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. Digital Europe. https://www.digitaleurope.org/resources/the-eus-critical-tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/
Develop EU-based cloud and data infrastructure to reduce reliance on foreign providers.	Open but Secure: Europe's Path to Strategic Interdependence WEF https://www.weforum.org/publications/open-but-secure-europe-s-path-to-strategic-interdependence/
CERN for AI in Science - an 'organisation and hub at the centre of a broad network of AI competence centres throughout the EU and associated countries', which could "offer extensive computational resources, a sustainable cloud infrastructure and specialised AI training for scientists" but also "access to AI sandboxes, real-world testing"	Towards a European Large Scale Initiative on AI. CEPS. https://cdn.ceps.eu/wp-content/uploads/2024/07/2024-10_ID-A_Towards-a-European-large-scale-initiative-on-Artificial-Intelligence.pdf
Industrial strategies should implement conditionalities such as public value creation, profit-sharing, strategic sector development, performance-based targets.	Industrial Policy with Conditionalities: A Taxonomy and Sample Cases. Mazzucato, Rodrik. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2023/oct/industrial-policy-conditionalities-taxonomy-and-sample-cases
Reform the operation of European public procurement markets to enable Member States to reserve their strategic markets for European companies that meet sovereignty criteria.	European Parliament's Committee on Industry, Research, and Energy (ITRE) own-initiative report on technological sovereignty and digital infrastructures. https://www.contexte.com/medias/pdf/medias-documents/2025/2/projet-de-rapport-souveraineté-numerique.pdf
Align the highest level of certification ('High' level) of the European cybersecurity certification scheme for cloud services (EUCS), which is still under discussion, with the requirements of SecNumCloud certification, to ensure that hosting providers are not subject to legislation outside Europe.	European Parliament's Committee on Industry, Research, and Energy (ITRE) own-initiative report on technological sovereignty and digital infrastructures. https://www.contexte.com/medias/pdf/medias-documents/2025/2/projet-de-rapport-souveraineté-numerique.pdf
Revising the legal framework for Important Projects of Common European Interest (IPCEI), to	European Parliament's Committee on Industry, Research, and Energy (ITRE) own-initiative report on

© 2024-2026 NGI Commons

include exemptions for strategic mergers and acquisitions when a project responds to a sovereignty issue.	technological sovereignty and digital infrastructures. https://www.contexte.com/medias/pdf/medias-documents/2025/2/projet-de-rapport-souverainete-numerique.pdf
Invest in open source hardware for chip designs to reduce reliance on non EU third parties, drive competitiveness, enable greater and more agile innovation and improve security.	Recommendations and Roadmap for European Sovereignty in Open Source Hardware, Software, and RISC-V Technologies Report from the Open Source Hardware & Software Working Group. https://digital-strategy.ec.europa.eu/en/library/recommendations-and-roadmap-european-sovereignty-open-source-hardware-software-and-risc-v
Introduce a 'comply or explain' regime for the mandatory use of EU-regulated cloud infrastructures in the public sector and other services of public interest.	Towards a sovereign digital future – the Netherlands in Europe. TNO. https://vector.tno.nl/en/articles/digital-transformation-europe/
"Digital Commons first" principle in public procurement.	Report of the European working team on digital commons: Towards a sovereign digital infrastructure of commons. https://openfuture.eu/wp-content/uploads/2022/07/220624digital_commons_report.pdf
Mandate Government Procurement Policies That Favor Worker-Owned Platform Cooperatives	Policies for Cooperative Ownership in the Digital Economy. Platform Cooperativism Consortium, the Berggruen Institute. https://platform.coop/blog/policies-for-cooperative-ownership-in-the-digital-economy/
Create loan programs focused on social innovation alongside technological innovation to ensure platform cooperatives have access to funding.	Policies for Cooperative Ownership in the Digital Economy. Platform Cooperativism Consortium, the Berggruen Institute. https://platform.coop/blog/policies-for-cooperative-ownership-in-the-digital-economy/
Encourage public sector engagement in cooperative initiatives by allowing policymakers to become active members or hold shares in platform cooperatives.	Policies for Cooperative Ownership in the Digital Economy. Platform Cooperativism Consortium, the Berggruen Institute. https://platform.coop/blog/policies-for-cooperative-ownership-in-the-digital-economy/
Reform public procurement rules to encourage cooperation over privatization through "calls for commons."	Regagner notre souveraineté technologique par les communs numériques. Société des communs. https://societedescommuns.com/wp-content/uploads/2023/05/LIVRET-2-REGAGNER-NOTRE-SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12.pdf
Support cooperative platforms as economic, ecological, and social alternatives to platform capitalism.	Regagner notre souveraineté technologique par les communs numériques. Société des communs. https://societedescommuns.com/wp-content/uploads/2023/05/LIVRET-2-REGAGNER-NOTRE-SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12.pdf
Establishing tax incentives related to Open Source contributions.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Establishing a European scheme for high-risk,	The impact of open source software and hardware on

© 2024-2026 NGI Commons

R&D-intensive Open Source based start-ups including their growth phase.	technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Fostering the potential of (pre-)commercial public procurement to support innovative Open Source based companies.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Promoting Open Source in European public procurement.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Considering Open Source explicitly in SME Policies.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Public procurement policies must enforce open standards, creating a level playing field for businesses of all sizes, and counter the dominance of proprietary solutions.	The EuroStack Manifesto: a Vision for European Digital Independence. https://euro-stack.com/pages/manifesto
Public procurement must prioritize local and SME-driven solutions, creating opportunities for growth and innovation.	The EuroStack Manifesto: a Vision for European Digital Independence. https://euro-stack.com/pages/manifesto
Establish systematic dialogue with, and involvement of, industry. Establish an industry body to evaluate new digital initiatives to validate EC proposals. Ensure involvement of industry in new projects, and make investments proportional to industry real uptake of developed solutions or standards.	A Pitch - EuroStack. Cristina Caffarra et al. https://euro-stack.eu/a-pitch-paper/
Identify first existing industrial assets, including those that may be imported if needed, at each level of the stack (Physical, Logical, Intermediation layers, and Skills) before investing in new non-industry grade projects.	A Pitch - EuroStack. Cristina Caffarra et al. https://euro-stack.eu/a-pitch-paper/
Federation - Overcome size gaps: fill the gap in capacity and offering by endorsing the creation of multi-supplier marketplaces and commercial federation.	A Pitch - EuroStack. Cristina Caffarra et al. https://euro-stack.eu/a-pitch-paper/
Standardisation: identify strategic technology protocols and interoperability standards that serve the purposes of the EuroStack layers, mandate their use in public procurement and incentivise their use in the private sector. Coordinate the contributions of European industry and of the public sector in international standards setting organisations.	A Pitch - EuroStack. Cristina Caffarra et al. https://euro-stack.eu/a-pitch-paper/

© 2024-2026 NGI Commons

"Buy European": Set aggressive rules to prioritize procurement from European suppliers, preferably of open solutions. Provisioning from non-EU suppliers will be required to be transitory, and include transition plans, and guarantees of no lock-in.	A Pitch - EuroStack. Cristina Caffarra et al. https://euro-stack.eu/a-pitch-paper/
Europe must define a common scheme for competences and certifications that can be adopted by our education system to create the next generation of digital professionals. A European Scheme for Digital Competences could identify technologies and common standards with a balance of incumbent non-EU platforms, EU platforms, and open platforms.	A Pitch - EuroStack. Cristina Caffarra et al. https://euro-stack.eu/a-pitch-paper/
Encouraging or mandating the use of open standards as part of procurement and grant conditions.	Towards Public Digital Infrastructure: A proposed governance model. NGI Forward. https://openfuture.eu/wp-content/uploads/2022/12/TowardsPublicDigitalInfrastructure_v0.2.pdf
Building a truly public, state-led cloud composed of public data centres interconnected through public infrastructure.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
Developing public universal platforms, such as public search engines or public e-commerce marketplaces, that centre the public good rather than shareholder returns.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
Create a public marketplace for the development of digital services that will run on top of the publicly provided layers of material infrastructure and platforms.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
Direct procurement and channel state subsidies to -develop and adopt- applications that will run on top of the state-led cloud, based on free software, open protocols and the promotion of interoperability.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
The EuroStack must be built on principles of modularity, scalability, interoperability, and openness, creating a flexible and adaptable digital infrastructure.	The EuroStack Manifesto: a Vision for European Digital Independence. https://euro-stack.com/pages/manifesto
Increase the EU's computing capacity for AI training by expanding the Euro-HPC initiative to include more cloud and storage capabilities, accessible to innovative SMEs against financial returns.	The future of European Competitiveness. Mario Draghi. https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en
Develop a federated AI model based on cooperation between public and private infrastructures to enhance AI training power and cloud services.	The future of European Competitiveness. Mario Draghi. https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en
Develop a competitive domestic cloud industry that meets the demand for secure, sovereign cloud solutions, and preserve encryption and security for EU providers.	The future of European Competitiveness. Mario Draghi. https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en

© 2024-2026 NGI Commons

Consolidate and upgrade the European federated cloud. Gaia-X has progressed too slowly yet has given life to a myriad of initiatives that need to be brought into a coherent framework, oriented towards European values and policy goals – not least those nested in the Digital Decade communication.	CEPS. Building the European Digital Public Infrastructure: rationale, options, and roadmap. https://www.ceps.eu/ceps-publications/building-the-european-digital-public-infrastructure-rationale-options-and-roadmap/

IDENTIFYING CRITICAL DEPENDENCIES AND ENSURING THE SECURE MAINTENANCE OF SHARED OPEN TECHNOLOGIES

Digital Commons form the backbone of many of our contemporary digital infrastructures. However, their adoption and integration into European policy frameworks remain inconsistent, and the necessary structures for their long-term maintenance and security are often lacking.

The risks of relying on underfunded and volunteer-driven digital infrastructure have been widely recognized, particularly following critical security vulnerabilities such as Heartbleed, which exposed weaknesses in globally used software maintained by a handful of developers with minimal resources. The lack of dedicated European funding for the maintenance and security of key open source software (OSS) leaves critical government and industry infrastructure exposed to systemic risks.

Recognizing these challenges, various initiatives have attempted to address open source security gaps. The EU-FOSSA program demonstrates the importance of systematic audits and collaboration between EU institutions and OSS communities. National programs such as Germany's Sovereign Tech Fund and France's BlueHats initiative have sought to provide direct support for software maintainers and cybersecurity resilience. Several proposals advocate for a European-level mechanism to track and mitigate critical dependencies in open technologies and ensure sustainable funding for their maintenance.

Proposals	Source
Include the development and maintenance of open basic technologies in public services - expand the German Sovereign Tech Fund at a European level.	Positions of the F5-Alliance on the 2024 European Elections. https://buendnis-f5.de/assets/data/EN_EU_Positionen_F5.pdf
Create a knowledge hub on critical basis infrastructures and strategies for their further development, maintenance, security and scaling.	Sovereign Tech Fund Feasibility Study. https://www.sovereign.tech/public/files/SovereignTechFund_FeasibilityStudy.pdf
Strengthening European hardware and software supply chains is crucial for resilience and security.	The EuroStack Manifesto: a Vision for European Digital Independence. https://euro-stack.com/pages/manifesto
Public funds must be strategically allocated to maintain and scale existing Open Source solutions that are critical for European digital sovereignty.	The EuroStack Manifesto: a Vision for European Digital Independence. https://euro-stack.com/pages/manifesto
The European Commission should help reduce the fragility of the internet's underpinning infrastructures by promoting the adoption of open technology and supporting its maintenance – especially of key underlying protocols and frameworks, and provide funding to support auditing, issuing of trustmarks, and other security-enhancing mechanisms.	Towards Public Digital Infrastructure: A proposed governance model. NGI Forward. https://openfuture.eu/wp-content/uploads/2022/12/TowardsPublicDigitalInfrastructure_v0.2.pdf

© 2024-2026 NGI Commons

Advocate for open software principles in global standards-setting bodies to position the EU as a leader in shaping digital governance.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Allocate financial resources and encourage companies to increase EU representation in international IoT standardization bodies.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Reiterate Europe's commitment to secure, user-centric, open-source solutions. As already mentioned, commitment to open source is uneven across Member States. The need for enhanced security of open-source solutions is triggering important changes in the community of developers, away from unmanaged products and towards secure, containerised applications.	CEPS. Building the European Digital Public Infrastructure: rationale, options, and roadmap. https://www.ceps.eu/ceps-publications/building-the-european-digital-public-infrastructure-rationale-options-and-roadmap/
Speed up the implementation of key EU legislation, including the Data Act, Data Governance Act, and Data Spaces, to ensure the emergence of intermediaries and regulatory certainty on data exchanges.	CEPS. Building the European Digital Public Infrastructure: rationale, options, and roadmap. https://www.ceps.eu/ceps-publications/building-the-european-digital-public-infrastructure-rationale-options-and-roadmap/

MOBILISING DATA COMMONS FOR COMPETITIVENESS AND STRATEGIC AUTONOMY

As one of the world's largest markets and data sources, the EU has a significant opportunity to leverage data as a strategic asset for industrial competitiveness and digital sovereignty. The Common European Data Spaces initiative represents an important first step, offering sector-specific frameworks for secure and interoperable data sharing in key areas such as mobility, energy, healthcare, and public administration. These efforts align with the Data Governance Act, which seeks to establish trusted intermediaries—including data cooperatives and public-interest data trusts—to ensure fair access to critical datasets while maintaining strong governance and security standards.

Training large-scale AI models requires extensive, high-quality datasets, yet current practices rely heavily on unregulated data scraping and extraction, often controlled by non-European platforms. Proposals argue for structured collaborations between AI developers, data stewards, and content creators, ensuring that training datasets reflect European regulatory norms and public interest.

Proposals	Source
Ensure democratic data governance between data collectors, data processors, platforms and data subjects.	Digital Commons as Public Digital Infrastructures. Time to Build a European Digital Ecosystem. Sophie Bloemen. https://feps-europe.eu/publication/time-to-build-a-european-digital-ecosystem-2/
Sensitive data must be hosted on sovereign infrastructures, protected from foreign extraterritorial laws.	European Parliament's Committee on Industry, Research, and Energy (ITRE) own-initiative report on technological sovereignty and digital infrastructures. https://www.contexte.com/medias/pdf/medias-documents/2025/2/projet-de-rapport-souverainete-numerique.pdf
European business data must remain under European jurisdiction, ensuring legal certainty and protection.	The EuroStack Manifesto: a Vision for European Digital Independence. https://euro-stack.com/pages/manifesto

© 2024-2026 NGI Commons

Extending the concept of data spaces to not just include industrial, but also personal data.	Towards Public Digital Infrastructure: A proposed governance model. NGI Forward. https://openfuture.eu/wp-content/uploads/2022/12/TowardsPublicDigitalInfrastructure_v0.2.pdf
Opening up, where responsible, their data through new commons and trust mechanisms, and function as trusted intermediaries in providing identity credentials.	Towards Public Digital Infrastructure: A proposed governance model. NGI Forward. https://openfuture.eu/wp-content/uploads/2022/12/TowardsPublicDigitalInfrastructure_v0.2.pdf
Address fragmentation in data processing regulations to enable the creation of large, integrated data sets for AI.	The future of European Competitiveness. Mario Draghi. https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en
Establish EU-wide Data Trusts to treat public interest data as a shared resource, enabling secure data pooling and public-private data sharing while ensuring GDPR compliance.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Clarify the use of large European data assets and evaluate the benefits of preferential access in EuroStack for European innovators.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Promote cooperation and provide incentives for the development and deployment of federated data platforms to ensure secure, sovereign data sharing across IoT, cloud, and AI ecosystems.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Facilitate a concrete, multistakeholder standardisation effort to create more legal certainty on data quality and management, and to define the standards that will shape data flows, digital identity and wallets, and full data interoperability in the years to come. Beyond technical interoperability, semantic interoperability is essential to ensure that the data exchanged between systems are understood in the same way by all parties. This requires the development of common data models, ontologies, and vocabularies that enable seamless communication and understanding across different systems, sectors, and Member States.	CEPS. Building the European Digital Public Infrastructure: rationale, options, and roadmap. https://www.ceps.eu/ceps-publications/building-the-european-digital-public-infrastructure-rationale-options-and-roadmap/
Launch a specific initiative on data stewardship aimed at fostering the needed skills and competences for collecting, storing, reusing, and protecting data as it flows among stakeholders and leverages service provision in the territory of the EU. Alongside this initiative, it would be important to promote actions aimed at establishing a 'social licence' for the privacy-preserving circulation of data within the single market, also given the review of the GDPR.	CEPS. Building the European Digital Public Infrastructure: rationale, options, and roadmap. https://www.ceps.eu/ceps-publications/building-the-european-digital-public-infrastructure-rationale-options-and-roadmap/

© 2024-2026 NGI Commons

BUILDING STRATEGIC DIGITAL CAPACITIES IN THE PUBLIC SECTOR

While the EU has made strong commitments to openness, such as the Tallinn or the Berlin Declaration, their implementation remains inconsistent across member states. Without a systematic approach, public administrations risk becoming increasingly dependent on proprietary technologies, leading to vendor lock-in, reduced transparency, and higher costs.

Despite the growing economic and strategic relevance of open source software (OSS) and open hardware (OSH), the institutional expertise and coordination necessary to leverage them effectively remain underdeveloped. Many large corporations have successfully established internal Open Source Program Offices (OSPOs) to manage open source contributions, yet similar structures in public administrations are fragmented and lack dedicated support.

Proposals	Source
Integrating OS in European digital indicators.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Create a knowledge hub on critical basis infrastructures and strategies for their further development, maintenance, security and scaling.	Sovereign Tech Fund Feasibility Study. https://www.sovereign.tech/public/files/SovereignTechFund_FeasibilityStudy.pdf
Expanding the Open Source Observatory by components of strategic intelligence.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Increase institutional capacity for open source by creating OSPOs across the EU public sector.	The impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. DG CNECT. https://op.europa.eu/en/publication-detail/-/publication/29effe73-2c2c-11ec-bd8e-01aa75ed71a1/language-en
Invest public funds that flow into software development and procurement primarily in open source technologies to create resilient and secure software solutions and to use resources more efficiently.	Positions of the F5-Alliance on the 2024 European Elections. https://buendnis-f5.de/assets/data/EN_EU_Positionen_F5.pdf
Avoid state functions becoming dependent on corporate clouds and other forms of digital technologies lock-in. State agreements with digital giants should be made public and open to consultation.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
Public money should fund public code, ensuring that publicly funded software is open, transparent, and accountable.	The EuroStack Manifesto: a Vision for European Digital Independence. https://euro-stack.com/pages/manifesto
Maintain an updated register of digital commons used by public administrations and involve civil society in its governance.	Regagner notre souveraineté technologique par les communs numériques. Société des communs. https://societedescommuns.com/wp-content/uploads/2023/05/LIVRET-2-REGAGNER-NOTRE-

© 2024-2026 NGI Commons

	SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12.pdf
Revise public accounting rules to classify digital commons as investments rather than operational expenses.	Regagner notre souveraineté technologique par les communs numériques. Société des communs. https://societedescommuns.com/wp-content/uploads/2023/05/LIVRET-2-REGAGNER-NOTRE-SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12.pdf
Develop incentives for resource sharing and mutualization among administrations and local governments.	Regagner notre souveraineté technologique par les communs numériques. Société des communs. https://societedescommuns.com/wp-content/uploads/2023/05/LIVRET-2-REGAGNER-NOTRE-SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12.pdf
Recognize the right of public employees to contribute to digital commons as part of their official duties.	Regagner notre souveraineté technologique par les communs numériques. Société des communs. https://societedescommuns.com/wp-content/uploads/2023/05/LIVRET-2-REGAGNER-NOTRE-SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12.pdf

LEVERAGING OPEN CLEAN TECHNOLOGIES FOR THE GREEN TRANSITION

The digital transformation of the European economy must align with sustainability objectives to ensure that technological progress contributes to, rather than undermines, environmental goals. Open source hardware (OSH) and software play a crucial role in repairability, energy efficiency, and circular economy practices. Open technologies enable decentralized and sustainable production, allowing for more localized and resilient manufacturing while minimizing dependence on extractive supply chains. Despite their potential, these technologies remain underfunded and overlooked in EU sustainability policies.

Proposals note that the EU has yet to develop a unified policy to tackle the environmental and energy sustainability challenges posed by digital technologies. Existing measures remain fragmented and do not form a cohesive strategy. A key challenge is the high energy consumption of digital infrastructures, including data centers, which are responsible for a growing share of global carbon emissions. While the EU has taken steps, such as mandating energy performance monitoring for data centers, existing measures lack enforceable requirements to improve efficiency.

Proposals	Source
A comprehensive ICT sustainability policy	Policies for the Digital Commons. Open Future. https://openfuture.eu/policies-for-the-digital-commons/ict-energy-sustainability/
Set clear targets and provide financial incentives for optimizing energy, water, and critical raw materials within the EuroStack, aligning with EU Green Deal goals, and support these efforts through robust monitoring mechanisms.	“EuroStack – Building a European alternative for technological sovereignty”. Francesca Bria et al. https://www.euro-stack.info/
Procurement standards: Mandate energy efficient, recyclable, and circular-compliant	“EuroStack – Building a European alternative for technological sovereignty”. Francesca Bria et al.

© 2024-2026 NGI Commons

technologies at the national level to benefit from public support.	https://www.euro-stack.info/
Link funding to clear climate and resource efficiency outcomes, leveraging EU instruments such as Horizon Europe and Green Bonds.	"EuroStack – Building a European alternative for technological sovereignty". Francesca Bria et al. https://www.euro-stack.info/
Right to Repair for Sustainable Digital Hardware	Contributions to a framework approach for sustainable digital infrastructures. CODES. https://www.codes.global/resources/shaping-a-just-and-sustainable-digital-future-insights-pathways-and-global-collaboration
Include openness and interoperability as standards for software and hardware ecodesign regulations	Contributions to a framework approach for sustainable digital infrastructures. CODES. https://www.codes.global/resources/shaping-a-just-and-sustainable-digital-future-insights-pathways-and-global-collaboration
Support localised and distributed manufacturing for sustainable hardware production as part of the EU's Circular Economy Action Plan	Contributions to a framework approach for sustainable digital infrastructures. CODES. https://www.codes.global/resources/shaping-a-just-and-sustainable-digital-future-insights-pathways-and-global-collaboration
Directly promote open hardware initiatives and realign existing subsidies	Positions of the F5-Alliance on the 2024 European Elections. https://buendnis-f5.de/assets/data/EN_EU_Positionen_F5.pdf
Promote open hardware and local manufacturing to reduce reliance on centralized industrial production.	Regagner notre souveraineté technologique par les communs numériques. Société des communs. https://societedescommuns.com/wp-content/uploads/2023/05/LIVRET-2-REGAGNER-NOTRE-SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12.pdf
Create a cooperative "Climate Data Hub" to help local authorities combat climate change.	Regagner notre souveraineté technologique par les communs numériques. Société des communs. https://societedescommuns.com/wp-content/uploads/2023/05/LIVRET-2-REGAGNER-NOTRE-SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12.pdf
Extend the lifespan of digital devices by promoting low-tech solutions and free software.	Regagner notre souveraineté technologique par les communs numériques. Société des communs. https://societedescommuns.com/wp-content/uploads/2023/05/LIVRET-2-REGAGNER-NOTRE-SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12.pdf
Establish regional governance bodies for telecommunications infrastructure to ensure environmental sustainability.	Regagner notre souveraineté technologique par les communs numériques. Société des communs. https://societedescommuns.com/wp-content/uploads/2023/05/LIVRET-2-REGAGNER-NOTRE-SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12.pdf

© 2024-2026 NGI Commons

FINDING NEW SOURCES OF FUNDING FOR EUROPE'S DIGITAL FUTURE

In his report, Mario Draghi calls for an €800 billion investment push, including €150 billion in public-private investment in the tech sector. Several proposals note that Europe's fragmented equity markets, risk-averse venture capital environment, and lack of sovereign wealth funds hinder the continent's ability to scale transformative digital projects. Addressing these structural challenges demands a comprehensive funding approach that blends public investment, innovative taxation mechanisms, and enhanced private sector engagement.

Proposals	Source
Refocus the EU's MFF on a smaller number of strategic priorities and larger, pan-European projects, reducing the focus on cohesion.	The future of European Competitiveness. Mario Draghi. https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en
Increase the EU's budget by increasing MS contributions, creating direct sources of EU funding or issuing common EU debt.	The future of European Competitiveness. Mario Draghi. https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en
Increase funding for disruptive innovation, and reform the European Innovation Council (EIC) to support high-risk, breakthrough projects.	The future of European Competitiveness. Mario Draghi. https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en
Implement a tax on large digital companies, targeting their total revenues. Force companies to pay country-by-country withholding taxes for their monetization of freely harvested data, with considerations for the percentage of the population with internet connectivity and the number of hours spent on the internet.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
Pressure the World Trade Organization to rescind its moratorium on digital tariffs, which prohibits countries from taxing digital imports.	Reclaiming digital sovereignty. Cecilia Rikap et al. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty
To boost public funding for innovation, the European Innovation Council could tap into pension and insurance funds and develop schemes to coordinate investments across member states to unlock the advantages of the single market.	Open but Secure: Europe's Path to Strategic Interdependence WEF https://www.weforum.org/publications/open-but-secure-europe-s-path-to-strategic-interdependence/
To entice more private sector funding, the EU could minimize investor risk by introducing robust de-risking tools, such as loan and guarantee programmes backed by EU institutions.	Open but Secure: Europe's Path to Strategic Interdependence WEF https://www.weforum.org/publications/open-but-secure-europe-s-path-to-strategic-interdependence/

© 2024-2026 NGI Commons

LIST OF SOURCES

[1] Blind, K., Pätsch, M., Muto, S., Böhm, S., Schube, T., Grzegorzewski, T., & Andrew, P. S. (2021). Study about the impact of open source software and hardware on technological independence, competitiveness and innovation in the EU economy. https://digital-strategy.ec.europa.eu/en/library/study-about-impact-open-source-software-and-hardware-technological-independence-competitiveness-and

[2] Bündnis F5. (2024). Positions of the F5-Alliance on the 2024 European Elections. https://buendnis-f5.de/publikationen/2024%E2%80%9305%E2%80%9321-positionsonthe2024europeanelections

[3] Caffarra, C., & Bal, R. (2025). Eurostack: European strategic sovereign digital infrastructures. https://euro-stack.eu/a-pitch-paper/

[4] Centre for European Policy Studies. (2024). Tackling the EU's digital ambitions over the next five years. https://www.ceps.eu/ceps-publications/tackling-the-eus-digital-ambitions-over-the-next-five-years/

[5] Centre for European Policy Studies. (2024). Towards a European large-scale initiative on Artificial Intelligence. https://www.ceps.eu/ceps-publications/towards-a-european-large-scale-initiative-on-artificial-intelligence/

[6] Chaos Computer Club. (2025). Eine digitale Brandmauer errichten. https://www.ccc.de/en/updates/2025/ccc-fordert-digitale-brandmauer

[7] Deloitte Consulting. (2022). Development of a Funding Mechanism for Sustaining Open Source Software for European Public Services. https://interoperable-europe.ec.europa.eu/sites/default/files/news/2022%E2%80%9304/Development%20of%20a%20Funding%20Mechanism%20for%20Sustaining%20Open%20Source%20Software%20for%20European%20Public%20Services.pdf

[8] DIGITALEUROPE. (2024). EU's Critical Tech Gap: Rethinking economic security to put Europe back on the map. https://www.digitaleurope.org/resources/the-eus-critical-tech-gap-rethinking-economic-security-to-put-europe-back-on-the-map/

[9] Draghi, M. (2024). The future of European competitiveness. https://commission.europa.eu/topics/strengthening-european-competitiveness/eu-competitiveness-looking-ahead_en

[10] Dutch Government. (2024). Agenda Digitale Open Strategische Autonomie. https://open.overheid.nl/documenten/5cb9749c-7efa-40db-9328%E2%80%935da7fa5fcb7c/file

[11] European Commission. (2025). A Competitiveness Compass for the EU (leaked version). https://www.contexte.com/medias/pdf/medias-documents/2025/1/commission-competitiveness-compass-17dc681636fa4e15bfcb42686c103506.pdf?utm_source=briefitemalert&utm_medium=email&utm_content=23353&go-back-to-briefitem=216172

[12] European Commission. (2024). White Paper -How to master Europe's digital infrastructure needs?. https://digital-strategy.ec.europa.eu/en/library/white-paper-how-master-europes-digital-infrastructure-needs

[13] European Innovation Council and SMEs Executive Agency (EIC). (2024). 2024 EIC Tech Report. https://eic.ec.europa.eu/news/2024-eic-tech-report-identifies-watch-list-34-emerging-technologies-could-change-future-european-2024%E2%80%9312%E2%80%9318_en

[14] European Working Team on Digital Commons. (2022). Towards a Sovereign Digital Infrastructure of Commons. https://openfuture.eu/wp-content/uploads/2022/12/report_of_the_european_working_team_on_digital_commons_digital_assembly_june_2022_wnetherlands_cle843dbf.pdf

[15] Fermigier, S. (2024). Eurostack Manifesto. https://euro-stack.com/pages/manifesto

[16] Foundation for European Progressive Studies. (2025). FORGING THE NEW EU AGENDA: Progressive Inputs for European Economic Policy. https://library.fes.de/pdf-files/international/21833.pdf.

© 2024-2026 NGI Commons

[17] Foundation for European Progressive Studies, Brantner, F., et al. (2024). Time to Build a European Digital Ecosystem. https://library.fes.de/pdf-files/bueros/bruessel/21688%E2%80%9320250108.pdf

[18] French Ministry of Economy. (2024). Important Projects of Common European Interest, a European Industrial Policy Tool.

[19] https://www.entreprises.gouv.fr/files/files/Publications/2024/themas/2024-themas-dge-n17-piiec-eng.pdf

[20] Greis, K. (2022). Towards a sustainable and resilient future internet - the case for public digital infrastructure. https://feps-europe.eu/wp-content/uploads/2023/02/FEPS_PB_Towards-a-sustainable-and-resilient-future-internet_digital.pdf

[21] Julien P. (2024). Proposals to support the economy of the commons. https://julien_p.gitlab.io/the-librery-docs/en/proposal/main_proposals

[22] MacMillan, T., Osborn, C., & Pickerin, J. (2024). A UK Open-Source Fund to Support Software Innovation and Maintenance. https://ukdayone.org/briefings/a-uk-open-source-fund

[23] Mazzucato, M., & Rodrik, D. (2024). Industrial Policy with Conditionalities: A Taxonomy and Sample Cases. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2023/oct/industrial-policy-conditionalities-taxonomy-and-sample-cases

[24] NGI Forward, & Greis, K. (2022). Towards Public Digital Infrastructure: A Proposed Governance Model. https://openfuture.eu/wp-content/uploads/2022/12/TowardsPublicDigitalInfrastructure_v0.2.pdf

[25] NGI Forward, Open Future, & Common Networks. (2022). Generative Interoperability -Building Online Public and Civic Spaces. https://openfuture.eu/wp-content/uploads/2022/03/InteroperabilityReport.pdf

[26] Open Forum Europe. (2019). FOSS4SMEs Policy Recommendation Report. https://openforumeurope.org/publications/foss4smes-policy-recommendation-report/

[27] Open Future. (2024). Investing in Public Digital Infrastructure -Four Recommendations for Rebalancing Power in the Stack. https://openfuture.eu/wp-content/uploads/2024/09/240923Investing_in_Public_Digital_Infrastructure.pdf

[28] Open Future. (2024). Policies for the Digital Commons. https://openfuture.eu/wp-content/uploads/2024/01/240130_policies_for_the_digital_commmons.pdf

[29] Open Future. (2023). Digital Public Space Primer. https://openfuture.eu/wp-content/uploads/2023/10/231024DPS_primer.pdf

[30] Open Future. (2022). European Public Digital Infrastructure Fund White Paper. https://openfuture.pubpub.org/pub/public-digital-infra-fund-whitepaper/release/2

[31] Renda, A. (CEPS). (2025). Building the European Digital Public Infrastructure: rationale, options, and roadmap. https://www.ceps.eu/ceps-publications/building-the-european-digital-public-infrastructure-rationale-options-and-roadmap/

[32] Scholz, T. (2021). Policies for Cooperative Ownership in the Digital Economy. https://platform.coop/blog/policies-for-cooperative-ownership-in-the-digital-economy/

[33] Siewicz, K. (2023). Regulatory requirements for establishing the European Public Digital Infrastructure Fund. https://openfuture.pubpub.org/pub/regulatory-requirements-epdif/release/3

[34] Société des Communs, & Sébastien. (2023). Regagner notre souveraineté technologique par les communs numériques. https://societedescommuns.com/wp-content/uploads/2025/03/LIVRET-2-REGAGNER-NOTRE-SOUVERAINETE-TECHNOLOGIQUE-PAR-LES-COMMUNS-NUMERIQUES-12-3.pdf

[35] Sovereign Tech Fund. (2021). Feasibility Study to Examine a Funding Program for Open Digital Base Technologies as the Foundation for Innovation and Digital Sovereignty. https://www.sovereign.tech/public/files/SovereignTechFund_FeasibilityStudy.pdf

[36] TNO, Sejtes, V., Segijn, C., van der Linden, M. P., de Jong, T., van Amsterdam, J. R. H., & Simon, D. R. (2024). Towards a sovereign digital future – the Netherlands in Europe.

© 2024-2026 NGI Commons

https://publications.tno.nl/publication/34642268/o5remY/TNO%E2%80%932024%E2%80%93R10300.pdf

[37] Valenzuela, C., Parna, C. E., & Marx, G. (2024). Reclaiming digital sovereignty: A roadmap to build a digital stack for people and the planet. https://www.ucl.ac.uk/bartlett/public-purpose/publications/2024/dec/reclaiming-digital-sovereignty

[38] Vinogradov, K. (2024). What Open Source can learn from universities to fix its funding. https://kvinogradov.com/oss-universities/

[39] World Economic Forum (WEF). (2025). Open but Secure: Europe's Path to Strategic Interdependence. https://www.weforum.org/publications/open-but-secure-europe-s-path-to-strategic-interdependence/

[40] Working Group on Open Hardware and Software. (2022). Recommendations and roadmap for European sovereignty on open source hardware, software and RISC-V Technologies. https://digital-strategy.ec.europa.eu/en/library/recommendations-and-roadmap-european-sovereignty-open-source-hardware-software-and-risc-v

© 2024-2026 NGI Commons