

TOWARDS A SOVEREIGN DIGITAL INFRASTRUCTURE OF COMMONS



Report of the
European Working
Team on Digital
Commons

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Introduction

In an increasingly digitalized world, our economy and daily use of digital tools rely on a multilayer Internet infrastructure built with countless software components, supported by standards, reusable data structures, ontologies, codelists, taxonomies, often governed by citizen communities on a voluntary basis and with limited resources. Rightly supported, digital commons can increase their role as a pillar of Europe's digital sovereignty – one which fosters innovation and empowers states and individuals, by increasing the European Union (EU)'s capacity to act and reduce dependencies and vulnerabilities with the aim of shaping the digital world in accordance with our values, norms and principles and along our European interests. From this point forward, a strong European commitment to help digital commons and free libre open source software (FLOSS) is much needed. Internet protocols, GSM-standards and many other pillars of digital society are openly shared and developed. However, a European initiative to steer efforts towards these strategic resources would send a political signal for our identity itself, as contributive tools aim at promoting Europe's core values and democratic principles by offering a new method of governance.

On 7 February 2022, the Declaration by the French Presidency of the Council of the European Union calling for a European Initiative for Digital Commons invited voluntary Member States to collectively imagine a project to promote and accelerate the development of digital commons. Belgium, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Latvia, Luxembourg, Malta, the Netherlands, Poland, Portugal, Slovenia, Spain, Sweden, as well as the European Commission and the European External Action Service, came together as a provisional working team.

Digital commons are non-rivalrous and non-exclusive resources defined by distributed and communal production, ownership and governance of informational capacities and technology. They intertwine collaborative governance and open data, open source as well as the principles of open standardization. As defined by 2009 Nobel Prize winner Elinor Ostrom, a commons is a resource designed and governed by a community with established access and sharing rules. Social researcher Mayo Fuster Morell proposed a definition of digital commons as "information and knowledge resources that are collectively created and owned or shared between or among a community and that tend to be non-exclusive, that is, be (generally freely) available to third parties. Thus, they are oriented to favor use and reuse, rather than to exchange as a commodity. Additionally, the community of people building them can intervene in the governing of their interaction processes and of their shared resources." Examples of digital commons can include wikis, open source libraries, free and open-source software, and open-source licensing, but not all of them are necessarily digital commons. The community of people building them can intervene in the governing of their interaction processes and of their shared resources, typically in order to improve their correctness and usefulness for the common good.

Under the right conditions, digital commons contribute to the preservation of the collective control and valuation of both quality and re-use of data and digital infrastructures, and consequently to foster innovation, social value and sustainability. Digital commons provides the community with free and easy access to information. Typically, data created within digital commons can be used for various purposes, such as designed to either remain in the digital commons or be reused for external purposes, by using various forms of open licensing. This data powers new usages and enables business models to flourish. Indeed, digital commons impose huge possibilities for European businesses, market, research and society, especially in relation to data economy and data science in areas such as computational infrastructure, software, AI models and data utilization in order to increase interoperability, cost effectiveness, inclusive access to market and information, and enhanced possibilities for small and medium-sized enterprises and citizens.

Linus's law considers that as they rely on open and collective intelligence, well maintained digital commons often improve the security of digital tools – or in Eric S. Raymond's words, "given enough eyeballs, all bugs are shallow" (*The Cathedral and the Bazaar*, 1999). On a strategic level, they can be regarded as a pillar of cybersecurity – an aspect that encouraged many digital services providers to launch FLOSS projects in order to detect software vulnerabilities. If a digital commons use collective intelligence by nature to improve the security of its code, some of them have scaled up this idea to ensure the security of key building blocks for a trusted software source code supply chain. Software Heritage, for example, collects, preserves and shares software source code. By doing so, it creates a universal archive of all software source codes.

Most of all, digital commons offer a unique opportunity to support a European digital sovereignty. By building upon collective intelligence and networking to contribute knowledge, digital commons challenge the enclosure strategies pursued by some governments and major digital services providers. Additionally, they constitute a significant lever for setting up multilateral governance - in the sense of mutual and mutually accepted constraint - of our data and the tools that use them, and for recovering a share of digital strategic autonomy. However, digital commons create vulnerabilities if they are not properly governed and structured by standards and security frameworks. At the best, open code is verified and quality-assured by peers, but at its worst, it is planted including a vulnerability.

In Europe, we all use digital commons daily to search information, navigate the web, buy products, turn on computers or cellphones, participate in the local democratic debate, etc. They provide ethically governed digital systems to associations and democratic initiatives.

For society, digital commons also offer a cost-effective means to build interoperable, scalable and cost efficient innovations, goods and digital public services. However, without a cultural shift on the understanding of the added value of commons, their sustainability is threatened by a lack of use and contribution. For the provisional European working team on digital commons, a new vision, accompanied by

a renewal of method, is needed for a more open, democratic and innovative digital Europe, as these resources set fertile grounds for public-civic-private cooperation. The European Union is a key level to steer efforts towards digital commons and make sure they remain accessible and part of the public good.

In line with the Union's values and principles, this paper aims at encouraging the European Union and its Member States to take a step forward by meeting the needs of digital commons and unlocking their full potential for Europe's economy, innovations, security, resilience, and democracy.

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Executive Summary

Europe is the birthplace of a free, open, neutral, interoperable and secure Internet, which is also the largest digital commons. These founding principles are at the heart of the European Union's values, rooted in the European treaties and emphasized in the Declaration on European Digital Rights and Principles. Alongside its Member States, the Union is becoming more and more mature regarding FLOSS and digital commons issues. They have increasingly taken stock of the tremendous opportunities offered by these models.

The EU's digital strategy aims to ensure digital transformation for people and businesses, while helping to achieve its target of a climate-neutral Europe by 2050. For medium perspective the Commission has outlined "Digital Decade" as a pathway towards 2030. As part of the strategic goals, the key for Europe to succeed is to strengthen its digital sovereignty and set standards, rather than following those of others – with a clear focus on increasing the usability of data and new technologies for the benefit of the society as a whole and harnessing the potential of data economy and innovation. As a result of a long experience of promotion of FLOSS since 2000, the European Commission initiated important undertakings under the Open source software strategy 2020-2023. Recognition and development of digital commons of strategic importance is directly linked to initiatives under these strategic objectives. The Commission is committed in financially helping « internet commons » and technology building blocks through the Next Generation Internet (NGI), which is the main European program supporting technology building blocks.

The European Union institutions, bodies and agencies are not the only ones to favor FLOSS and digital commons in their information technology internal architecture. Numerous public services across Europe have chosen to rely on these sovereign technologies. Member States have often launched national initiatives to support the development of digital commons in their administrations and the adoption of open source culture in the private sector. Other states have invested in teaching the role and the benefits to use and reuse FLOSS and digital commons in their academic programs. In some cases, governments have decided to make it mandatory to use digital commons and open source software. More significantly, the European governments are the spearheads to globally promote technologies based on the fundamental principles of the Internet. The launch of the GovStack initiative, or the United Nations Digital Public Goods Alliance are two examples of the leading role of Europeans in the field.

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Although we congratulate the ongoing efforts, the provisional working team has noticed a lack of infusion of the commons culture into public policies. The disparity in prioritization

among Member States is only reinforced by the multiplication of similar projects at national levels. In line with the EU's regulatory frameworks, Member States would greatly benefit from a pooling of resources, which would enable them to move from a procurement automatic logic to an investment method. That is why the provisional working team call for the creation of a flagship to steer efforts at the European scale. This collective initiative would aim to:

- i. Create a strong public-civic-private partnership and participate in the development of sustainable open data and open source ecosystems for public good to accelerate technology development, other essential components (e.g. ontologies, codelists, standards, reusable data structures, taxonomies), and digital commons adoption.
- ii. iPromote the use and creation of digital commons within the European institutions and Member States' public services.
- iii. Exploring opportunities to enhance the public contribution to strategic commons.
- iv. Improve the competitiveness of digital commons to enable large-scale adoption.
- v. Assess the potential of a public institutions participation to organizations ruled by commons-based principles.

There is not a unique way to promote and support the development of existing digital commons in Europe. Regardless of the form of the public initiative, public institutions need to always respect the balance and spirit of the commons' governance before bringing external resources. In fact, the bottom-up approach is deeply rooted in the digital commons' DNA: a community shapes up when there is a shared need to be addressed with a collectively governed digital resource. Governments and public administrations are encouraged to support commons, and even take part in their governance as active stakeholders, as long as it does not interfere in the sustainability of the digital commons. These elements in mind, the provisional working group has worked on different proposals for the future of digital commons in Europe:

A) Creating a digital commons one-stop shop

At the European level, the one-stop shop would be the go-to-place for the digital commons communities and would meet the need to easily find funds and government assistance. A common platform to the European Union and all involved Member States would tremendously smooth the digital commons' searching process to get public financing (orientating communities towards the right financing program, providing expertise and human resources to facilitate and accelerate the application process).

A unique one-stop shop would be the association and bedrock to launch any further European projects for digital commons in the future.

B) Launching a call for commons proposals

In order to accompany the building of the one-stop shop, a group of leading Member States could collectively launch a call for proposals targeting strategic digital commons with a European component and enhancing our common European digital sovereignty. Using the new one-stop shop, digital commons would gain large visibility before European public actors.

A call for proposals would start helping digital commons as soon as possible, starting with strategically important components. The vast majority of commons have limited resources that hinder their development or interfere in their quality, even if some of them could be considered as strategic for the European digital sovereignty. That is why we encourage to rapid action to steer funds towards thematic digital commons (research, eGov and strategic building blocks have been identified as priorities by the provisional working team).

C) Establishing a European foundation for digital commons

In the long-term, Member states could extend the role of the digital commons one-stop shop by setting-up an autonomous structure. The latter could take the form of a foundation, which would only become a true enabler, supporter and promoter of digital commons if its governance is open and shared with the related communities. A multi-stakeholder governance involving digital commons communities, Member States and the European Commission (e.g. EC OSPO), could ensure sustainable, appropriate funding and a coherent public-civic-private strategy for digital commons in Europe, while providing a single point-of-contact and in-kind support from the EU, consistent with the EC OSPO's strategy. Alternatively, the option of a Public-private partnership could be explored. The provisional working team invites Member States to dedicate a permanent team to the support of a European structure for digital commons. The organization would be ruled by processes and protocols for transparency and open engagement of all stakeholders to ensure, by design, its independency.

In coordination with the EU policy goals, the structure would aim at nurturing the development of digital commons ecosystems across Europe, in order to strengthen the existing communities and to foster the reuse of digital resources, besides facilitating the spread of the digital commons model by supporting the generation of new digital commons. Such an entity would provide targeted support for the continuity of the life cycle to ensure continuity and support free services and updates for viable digital commons. It would have indirect positive effects on digital security and innovation in Europe.

A European-based legal structure would ensure independence from organizations ruled by foreign laws and to promote the development of digital innovations based on European ethical values. It would aim at collaborating with the best actors around the world, according to digital commons' open nature.

The main challenge of this initiative would be to get trust from digital commons communities. One way to do it is to give trust by setting up the entity and its rules hand-in-hand with them. It should be noted that the initiative could build on existing long-running cooperation between some states and digital commons communities and open source developers. In the afterwards of the 2022 Digital Assembly, the first task of the initiative would be to setup a broad consultation and stakeholder-dialogue, coordinated with the launch of the call for proposals.

D) Digital commons first

In parallel with these efforts, the EU should establish a practice of first evaluating the possibility of using open source or open data solutions, and contribute to their development. Similarly, as many digital assets produced by Member states and the EU as possible should be released as digital commons to foster democratic contribution and reuse.

Establishing a public environment keen to operate with digital commons would increase the value of common solutions, contribute to the development of the ecosystem itself and foster non-predatory EU digital sovereignty.

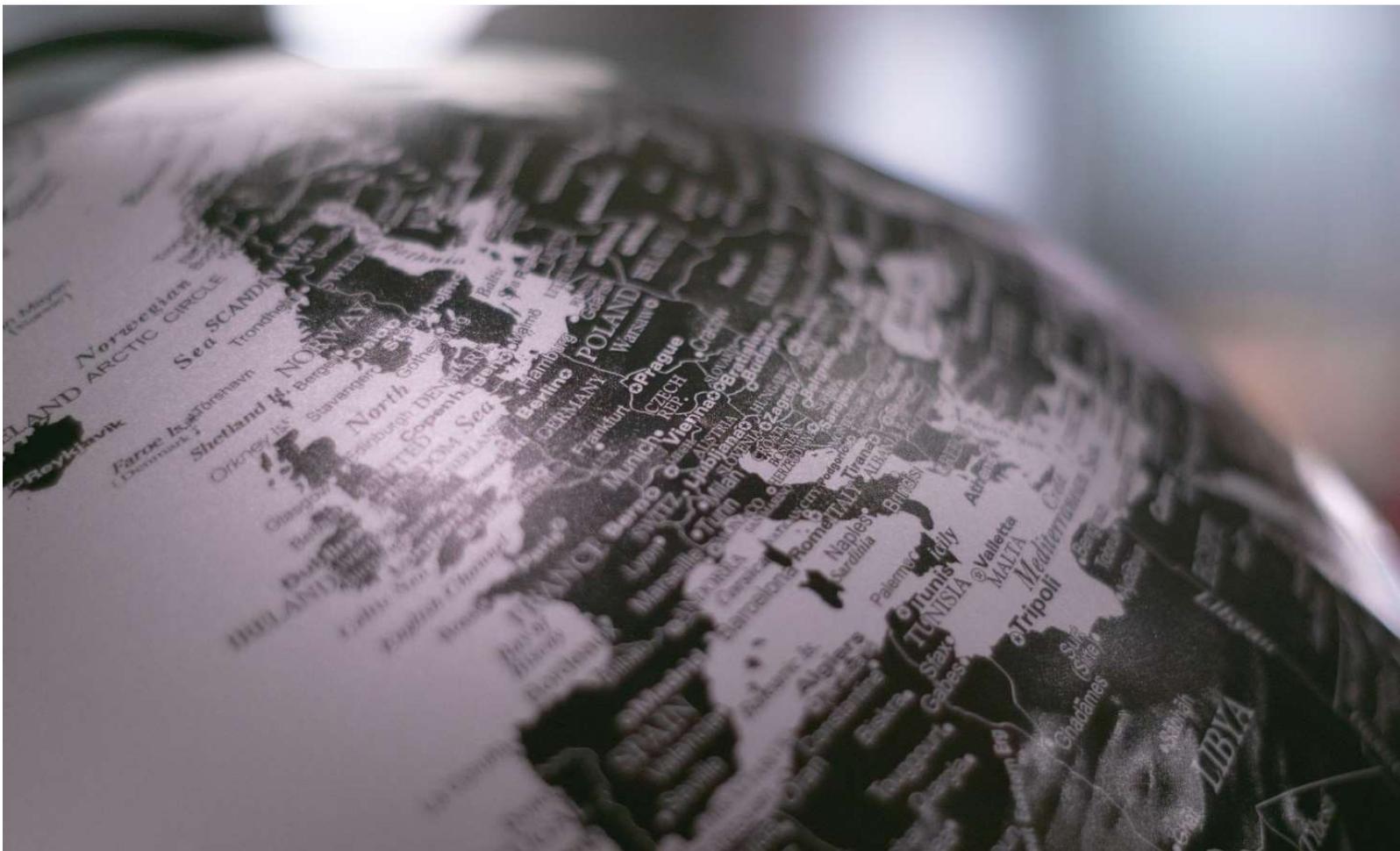


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A pool of ongoing initiatives

National projects

The development of digital commons is rooted in the democratization of the FLOSS movement's methodology and values. This one is based on a decentralized, peer production of source code allowing open collaboration, as well as possible modification and redistribution. Beyond FLOSS, digital commons enable the development of open data and open standards, to the benefit of knowledge sharing, democratic progress and economic growth. By pooling large communities and relying on open license, digital commons are tremendous generators and sharers of data. Which company could aggregate and make available in the public domain as much knowledge as Wikipedia? The community's vitality enables the provision of reusable data to society.

Before deepening the European initiatives to promote, use and support digital commons, a clarification on the definition of open work seems necessary, as a lot of them refer to open source, open data and open standards as well. According to the Open Definition, an open work must (i) respect the terms of its open license or its public domain status, (ii) be available online as a whole and without charge, (iii) be machine-readable so that the elements can be easily accessed and modified, and (iv) provide an open format that places no restrictions, monetary or otherwise, upon its use and can be fully processed with at least one free/libre/open-source software tool. The EU Member states have developed policies and national initiatives for digital commons and open work, in the wake of its historical role in the development of Internet. There is therefore no surprise that European countries occupy the first places in the global open rankings, such as the Open Data Barometer or the Open Knowledge Foundation's Global Open Data Index. Without being comprehensive, noteworthy national initiatives include:

ESTONIA

Openness, open source, and interoperability have been one of the guiding principles of Estonia's digital transformation over the past twenty five years. Estonia will continue contributing to the development and spread of digital public infrastructure (DPI) and digital public goods (DPGs) nationally and globally by:

- Funding DPGs to guarantee their sustainability. Together with the governments of Finland and Iceland, Estonia co-funds Nordic Institution for Interoperability Solutions (NIIS) that manages X-Road and other cross-border solutions of digital governance infrastructure.

- Developing a supportive ecosystem for the deployment of DPGs and DPI, such as creating a legal framework and looking into innovative procurement models to create a more efficient and agile governance.
- Developing new digital public goods: by 2023, 40 open-source re-usable AI solutions/building blocks, that can be integrated with other digital tools and services, will be developed and made available as DPGs. Among others, this includes the Estonian all-governmental chatbot Bürokratt.
- Co-initiating and contributing to the GovStack initiative together with the International Telecommunication Union (ITU), the German Ministry for Economic Cooperation and Development and the Digital Impact Alliance as well as through the membership of the United Nation's Digital Public Goods Alliance (DPGA).
- Driving the Trusted Connectivity framework to optimize cooperation among the world's democracies to deliver on the global demand for physical and digital infrastructure.

FINLAND

Digital commons to be a significant part of the bigger picture of data-driven economy and societies. Finland drives not only sector-specific data spaces but especially data-driven societies and global data economy that respects rights and responsibilities by enhancing transparency and trust in data. Finland is well involved in the work done in Europe to develop the data economy. This is the conclusion of a study on data spaces published and commissioned by the Finnish Ministry of Transport and Communications and conducted by 1001 Lakes.¹ The study includes a section on data spaces as commons among other things. Finland also strongly promotes the interoperability of data and data environments in various administrative and industry sectors.² Transformation needs a holistic approach that fosters the digital development and digital commons could be one tool in this regard. The idea of digital commons reflects the same vision as the principles³ produced for a human-centric, thriving and balanced data economy during Finland's EU Presidency:

¹ The study report "State of Data Spaces": https://api.hankeikkuna.fi/asiakirjat/b0cf8878-816f-4913-a917-ee9c0884f60d/e416beab-7752-49f3-a964-8226719de182/LIITE_20211108141220.PDF

² On March 17 2022, the Finnish Government approved the government resolution for the utilization and disclosure of data. There is also TIHA-project, led by the Ministry of Finance, on opening up and using public data: https://vm.fi/tiedon-hyodyntaminen-ja-avaaminen?p_p_id=com_liferay_journal_content_web_portlet_JournalContentPortlet_INSTANCE_QUNgkIUvIxCV&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&com_liferay_journal_content_web_portlet_JournalContentPortlet_INSTANCE_QUNgkIUvIxCV_languageld=en_US

³ Principles for a human-centric, thriving and balanced data economy: https://api.hankeikkuna.fi/asiakirjat/2d0f4123-e651-4874-960d-5cc3fac319b6/1f6b3855-fc1d-4ea6-8636-0b8d4a1d6519/RAPORTTI_20191123084411.pdf

- Human centric — We must transform the focus from organisation-centric and technology-centric to human-centricity.
- Thriving — We must ensure conditions that unlock the use of data for innovation and growth.
- Balanced — We must make sure that data sharing benefits all.

Data economy is based on data use that builds on the rights of individuals, on a fair operating environment for organizations and on a well-functioning society. The Finnish Innovation Fund Sitra promotes Fair Data Economy based on European values. Sitra's Fair Data Economy Framework, called IHAN Blueprint, is an open-source, technology-agnostic requirements framework for consent-based services in a data sharing ecosystem for end users, service providers and data providers. Sitra has also published rulebook for a fair data economy⁴. The rulebook is a guide for creators of fair data economy networks. Agreement templates and other tools make it easier to build and join new data networks which highlight transparency in data sharing. The rulebook contains model agreement templates for legal, business, technical and administrative rules, a range of control questions and a code of conduct templates.

In Finland, the actors of the traffic data ecosystem have co-operated in formulating and implementing such a rulebook based on Sitra's rulebook model. Fintraffic is leading a national project to build a traffic data ecosystem.⁵ One of the key sectors benefiting the enhanced data utilization is logistics. The Finnish Ministry of Transport and Communications launched in 2020 a strategy for digitalization of logistics to ensure the digitalization in the logistics sector.⁶ The cooperation is the key in order to streamline the data flow along the logistics corridors and between organizations. In Finland the cooperation is coordinated by an open association CaaS Nordic ry which consists of companies and authorities. There are currently on-going projects in Finland and cross-border regarding the digitalization of logistics. For example, OpenPeppol is a non-profit international association supporting digital data interoperability between businesses and public sector, where Finnish organizations are participating as well. Finland is additionally participating in Gaia-X as part of the European digital infrastructure.

Suomi.fi Service Management⁷ is part of the national architecture for digital services. It allows use and management of Suomi.fi services and provides support, all from one address. Suomi.fi services are digital services that have been created for public administration organisations and the private sector. They enable organisations to save costs and implement

⁴ Sitra, Rulebook for a Fair Data Economy : <https://www.sitra.fi/app/uploads/2021/07/rulebook-for-a-fair-data-economy.pdf>

⁵ Fintraffic, Traffic Data Ecosystem : <https://www.fintraffic.fi/en/trafficecosystem>

⁶ Logistics digitalisation strategy - Appendix (valtioneuvosto.fi)

⁷ Suomi.fi services for organisations: <https://palveluhallinta.suomi.fi/en>

their own digital services more easily – there is no need to reinvent the wheel every time. Suomi.fi Service Management serves as a platform through which organisations can commission and manage Suomi.fi services:

- Finnish Service Catalogue - Service and organisation details
- Identification - Strong identification for digital services
- Maps - Maps for the administrative web services
- Fees - Making payments to organisations
- Data exchange layer - Online transfer of organisations' data
- Suomi.fi Web Service - Suomi.fi-content and transactions for citizens
- e-Authorizations - Acting on behalf of a company or person
- Messages - Communications from the authorities to citizens
- Quality Tools - Data on the quality and use of services

In Finland, the Avoinkoodi.fi website has also been published. This brings together a list of IT systems in the domestic state administration, the municipal sector and the education sector, which source code is publicly available. The Finnish Centre for Open Systems and Solutions (COSS) maintains this and its information is available to all parties free of charge.

FRANCE

In November 2021, France launched the Free Software and Digital Commons Action Plan⁸ to accelerate the public service's digital transformation. Inspired by a parliamentary work, the Prime minister released on April 27th, 2021 the data circular n°6264/SG to have a renewed ambition in terms of exploitation, opening and circulation of data, algorithms and public source codes for the benefit of users, researchers, innovators and citizens. Building on the Prime minister's Guidelines for the use of open source software in the administration set up in 2012, the policy document has been the bedrock for the Action Plan designed by the Ministry for Public Transformation and Service, and supported by the national TECH.GOUV programme. The Action Plan aims at better knowing and using free software and digital commons in the public administration, at developing and supporting the release and opening of its source codes and at relying on FLOSS to strengthen the attractiveness of the state-employer towards digital talents, in particular by enhancing the value of public contributions to projects and communities concerned. More specifically, it focuses on listing the digital commons used across the administration to improve expertise sharing

⁸ <https://man.sr.ht/~etalab/logiciels-libres/plan-action-logiciels-libres-communs-numeriques.en.md>

across public services. Additionally, it focuses on accompanying public services in the creation of digital commons for digital policy. The Action Plan is being implemented by a new Free Software Unit⁹, within the Etalab department of the Inter-ministerial Directorate for Digital Affairs. It builds on the many initiatives spontaneously launched by local authorities and gathered together by the National Agency for Territorial Cohesion.

Alongside the Free Software and Digital Commons Action Plan, the French government is carrying out the Open Government Action Plan 2021-2023, which lists commitments for a more transparent, democratic and inclusive society according to the Open Government Partnership principles. Among other undertakings, France pledged for the development of digital commons to support specific public policies and committed to push for a European policy for digital commons under its Presidency of the Council of the EU.

GERMANY

Germany is dedicated to the promotion of digital commons, open-source and the overall aim of digital sovereignty in Europe. A variety of federal ministries is contributing to this aim. Whereas the Federal Ministry for Economic Affairs and Climate Action is focusing on digital sovereignty of European economy, the Federal Ministry of the Interior is focusing on the digital sovereignty of the public administration. Five initiatives of the German government feed well into the European initiative to strengthen digital commons:

1. The Sovereign Tech Fund (STF): The STF will promote open source basic technologies and will strengthen the open source ecosystem as a whole. The fund aims to become the go-to-place for the open source community on national and European level. Main tasks of the fund are: 1. Scouting and monitoring of critical open-source codes with a metrics-based analysis and the creation of a database that, among other things, acts as an early warning system for eligible software components; 2. Matching of funding-relevant and eligible codes with corresponding implementation partners in the open source community and 3. Material and immaterial promotion of individuals, SMEs and companies. The fund offers different funding opportunities and responds to the individual needs of different FLOSS basic technologies and the developers behind.
2. Centre for Digital Sovereignty of Public Administration ("ZenDiS"): In order to ensure availability of modern and scalable open-source software solutions as well as to promote the use of open-source software in the public administration, a new organization will be founded in 2022 as a central competence centre. As an expanded Open Source Program Office (OSPO), the center will act as a link between

⁹ <https://speakerdeck.com/bluehats/dinum-50b5bb2c-3e6c-4541-a988-b6fafcf446ca>

the public administration and the actors of the open source ecosystem and coordinate the development of open source IT solutions. As a first task, the centre will manage the projects "Open CoDE" and "Sovereign Workplace".

3. Open CoDE: Open CoDE is a platform for the public administration to ensure the exchange and reusability of open-source software. The platform offers, among other components, a central search engine, storage and ability to manage source code (code repository) as well as multiple collaboration tools for developers from within the public administration.
4. Sovereign Workplace: In order to ensure independence from proprietary software solutions (e.g. MS Office), the German public administration will be provided with an alternative to currently established workplaces. The Sovereign Workplace will cover all relevant functions required by the public administration on an open-source basis. These include, for example, productivity (e.g. word processing and spreadsheets), collaboration (e.g. joint editing of shared files) and communication (e.g. video and audio conferences). The main target is the provision of a user-friendly, functionally integrated Sovereign Workplace, which will be available to the public administration as a basic version by the end of 2023.
5. CRAF'd (the Complex Risks Analytics Fund)¹⁰ is a flagship financing instrument to unlock the power of data for crisis action. The fund will become fully operational in 2022 und connect partners in an open ecosystem – anchored in shared principles. It will boost critical data investments to spur anticipatory humanitarian action. CRAF'd is the result of a joint design process championed by Germany, the Netherlands, the United States, the United Nations, and partners across the globe in close collaboration with the UN Secretariat. The fund is managed by UNDP.

ITALY

In 2017, Italy launched Developers Italia, an initiative to allow all public and private developers to collaborate in an open source ecosystem dedicated to the development of public technologies and their integration in public and private services. The project is the go-to place for software development kits, documentation, examples and basic digital components needed to digitally transform the country, which are maintained by state agencies, companies, foundations, and even private citizens. Together with its fellow project Designers Italia, it can count on the participation of over 20.000 professionals. In 2019 this initiative was expanded to include a catalogue of hundreds of open source software and other digital commons which are today freely available to both public and

¹⁰ www.crafd.io

private entities. This development coincided with the release of national guidelines on how Public Administrations had to ensure digital initiatives, such as new software, would be released as digital commons. Since 2021 this catalog became European, with an open governance shared among several member states, creating what is a de-facto repository of European software which is released as digital commons. Italy also introduced an “open data by default” policy stating that all data produced by the public is, unless otherwise specified, automatically released under a permissive open license. This policy, part of the Digital Administration Code, aims to complement the existing mandate to prefer open source software whenever possible, and to force the release of all publicly commissioned code as open source.

IRELAND

Ireland’s Office of Government Chief Information Officer is currently working to align digital architecture with the open source GovStack initiative.

SLOVENIA

In 2019, the Ministry of Culture started a project for “Development of Slovenian language in the digital environment - language resources and technologies”. With that project, they contributed to a better use of the research potential in the field of language resources and technologies and to encourage the cooperation of research organizations with companies. The result of the project were products and services in the field of language technologies for research organizations, companies, public sector and the general public to overcoming linguistic boundaries in a digital environment. They ensured open access, use and reuse of work results.

1. Orange: in 1996, the University of Ljubljana and Jožef Stefan Institute started development of a machine learning framework. In 2022, Orange is a component-based visual programming software package. The program provides a platform for experiment selection, recommendation systems, and predictive modelling and is used in biomedicine, bioinformatics, genomic research, and teaching. In science, it is used as a platform for testing new machine learning algorithms and for implementing new techniques. In education, it is used for teaching machine learning and data mining methods to students. In a public sector and in professional courses across the world it is used for data analytics. Visual programming is implemented through an interface in which workflows are created by linking predefined or user-designed widgets, while advanced users can use Orange as a Python library for data manipulation and widget alteration.

2. COVID-19 Tracker: the project collects, analyzes and publishes data on the spread of coronavirus SARS-CoV-2 in Slovenia. Community wants to give the public a better overview of the magnitude of the problem and to properly assess the risk. They have been collecting data from various publicly available sources, and since Saturday, March 28, they have established a direct connection with health institutions. These send them structured data, which they then validate and form in a format suitable for visualization and presentation to the public, as well as for further work on model development and forecasting. Because data from the media and some other sources are also sometimes vague and inconsistent, the spreadsheet also includes notes on sources and conclusions based on incomplete data. Project was crowdsourced.
3. OPSI: the Open Data Portal of Slovenia, established based on the EU Directive on the re-use of public sector data and legislation on access to public information, is a single national website for publishing open data for the entire public sector. Presents the central catalogue of records and databases in the country, i.e., the central inventory of metadata on all records and databases kept by state bodies, municipalities and other public sector bodies. The second one is to represent a single website for publishing data from collections in open and machine-readable formats. OPSI portal also includes the publication of open data from local communities. The portal guarantees everyone the right to free and easy re-use of those freely accessible data that are published in the "open data" mode for any (non-profit / profit) purpose. The code of a portal is also published for reuse.

SWEDEN

Sweden currently has no national policy regarding open source, but *The Agency for Digital Government* (DIGG) – which is responsible for coordinating the digitalization of public administration in Sweden – has since 2019 had an open source policy stating that the authority should as a first choice consider an open source solution and that everything developed by the authority should be shared under an open source license if possible. Furthermore, for those authorities developing building blocks for the Swedish digital infrastructure it is highly recommended that they share their work as open source for others to re-use.

In 2020 an open collaboration network – *Network Open Source and Data* (NOSAD) – was established to help and inspire the public sector how to take the next steps to increase the availability and use of open data and source code. The Network is also open for private sector, civictech and academia. The network stands on three platforms:

- *The Swedish Public Employment Service (SPES)* hosts NOSAD¹¹;
- *The Agency for Digital Government (DIGG)* hosts the Swedish public data portal¹² with its Community forum¹³,
- The Swedish Internet Foundation hosts the video solution for on-line meetings.

Since September 2020 NOSAD has held monthly digital workshops with public and private organisations participating. NOSAD is a growing network with more than 500 members collaborating and sharing ideas. There have also been interactions with EC OSPO and other open source and digital commons networks, further expanding the horizon of collaboration. Within NOSAD there is ongoing work with compiling a list of open source software used or shared by the public sector. The main purpose is to help other organisations find suitable open source software and to benefit from public sector experience with it¹⁴.

One example of a successful open collaboration¹⁵ between SPES, several of the largest job-board sites and *Statistics Sweden* regards solving one of the major challenges with a fragmented labour market; the difficulty of finding a relevant advertisement when there are multiple platforms to look through and conversely knowing which job-board site to post to when attempting to hire someone. The success of the open data collaboration lies in four criteria for sustainable cooperation.

1. Reduce collaboration thresholds with public sector entities.
2. Respect the private sector business models and offer technical solutions which support them.
3. Design for contribution of both data and source code.
4. Share for transparency and reuse technology.

Today there are 30% more ads appearing in the Swedish national job board *Platsbanken* and external websites testify to more traffic as a result of the collaboration.

Other fields where the use of digital resources is being used and shared are within the mobility and transport sector and also open source collaborations between municipalities where larger municipalities helps the smaller by providing fully developed e-services,

¹¹ <https://nosad.se>

¹² <https://dataportal.se>

¹³ <https://community.dataportal.se>

¹⁴ <https://offentligkod.se>

¹⁵ <https://gitlab.com/arbetsformedlingen/joblinks/wiki/-/wikis/HOME-ENG>

maintenance of a technical platform and support in order for them to be able to drive their own process of change.

THE NORDIC INSTITUTE FOR INTEROPERABILITY SOLUTIONS

The NISS is a non-profit association with the mission to ensure the development and strategic management of X-Road¹⁶ and other cross-border solutions for digital government infrastructure. The republics of Estonia, Finland and Iceland are members of NIIS. NIIS is both a network and cooperation platform and executioner of IT developments in members' common interests. The institute focuses on practical collaboration, sharing of experience and promoting innovation. The operating model of the institute is something unique in the world.¹⁷

While the EU Member states have taken into account FLOSS and, in a more limited way, digital commons in their digital transition strategies, the European Union has made its digital strategy a lever of power and sovereignty that integrates the use, creation and purchasing of open work. Recently, digital commons have entered the field of vision of the European institutions.

European initiatives

Around the world, major powers have understood the central role of digital technologies in shaping tomorrow's world, with its new geopolitical balances, majority values and strategic independences. The European Union has reached a good level of maturity in assessing its current place in the global digital value chain and has laid the foundation stone to prepare the future according to its values and interests.

The 2030 Digital Decade sets digital targets to achieve for 2030 in four cardinal points: digital skills, digital infrastructures, digitalization of businesses, and digitization of public services. To that end, the European Commission's proposal for a decision of the European Parliament and of the Council of the EU to establish a Policy Programme, the Path to the Digital Decade, aim at offering steps towards "a digital transformation of our society and economy in line with the EU's values, reinforcing our digital leadership and promoting human-centered, inclusive and sustainable digital policies empowering citizens and businesses". Among other areas of activity, it suggests focusing on commons data infrastructure and services, connected public administration, blockchain services

¹⁶ <https://x-road.global/>

¹⁷ <https://www.niis.org/>

infrastructures, digital innovation hubs and high-tech partnerships for digital skills through the Pact for Skills. With its proposal on a Declaration on Digital Rights and Principles, the Commission is establishing the first stone of the Digital Decade. The Declaration will set the European principles for digital development and transition, while complementing the rights guaranteed by The Charter of Fundamental Rights of the EU and the European digital regulations, such as the General Data Protection Regulation (GDPR). The EU has built a digital policy architecture on which European public agents, businesses and citizens can rely to promote new democratic and collaborative methods to achieving digital targets.

The EU and its Member states “have recognized the need to update their public sector digital strategies to seize the opportunities offered by digital technologies”, as stated in the EU Digital strategy. That is why the Europeans have committed in improving eGovernment procedures in the EU eGovernment Action Plan and in the European Interoperability Framework. In the Tallinn Declaration on eGovernment during the Estonian Presidency of the Council of the EU on October 2017, Member states pledged to take steps to implement the digital-by-default, inclusiveness, accessibility, interoperability-by-default principles in their public administrations. It is in the wake of the Tallinn Declaration’s commitment “to expand and deepen the exchange and sharing of good eGovernment practices and successful domestic solutions, to speed up the digital transformation at all levels of government” that the provisional working team on digital commons have been created. Released in November 2018, the EU Digital strategy aimed at planning the digitization of the European Commission by 2022. The services needed to enter into the digital era to implement user-focused purpose and data-driven efficiency. Importantly, this Communication of the Commission sets the high-level principles to adopt to implement its digital transition: digital by default and once-only, security and privacy, openness and transparency, interoperability and cross-border, and user-friendly, data-driven and agile. Under the last principle, the Commission claimed to encourage co-creation and to prefer open-source solutions “when equivalent in functionalities, total cost and cybersecurity”.

Step-by-step, the policy framework of the EU has adopted the principles of the open movement. Among the existing policies, the European Commission’s Open Source Software Strategy (2020-2023) is the most accomplished to date. Its vision, “Think Open”, has opened up Europe to the tremendous opportunities of open work. In its October 2020 Communication, the Commission stated that it wants “to bring Europe’s people together in an inclusive, open approach, to find opportunities and transition to an inclusive, better digital environment that is ready for the realities of today’s global economy”. Beyond that, the Open Source Software Policy laid the first brick towards the recognition of the importance of inclusive, shared governance in stating that “to build Europe together, we have to get ready to contribute, and be ready to accept contributions from citizens”. In the meantime, the European Commission conducted a study about the impact of Open Source Software and Hardware on technological independence, competitiveness and innovation in the EU economy. The investigation shed light on the underestimated value of open

source into the economy. It is estimated that companies located in the EU invested around €1 billion in open source software in 2018, for an estimated €65 – €95 billion positive impact on the EU economy. Astonishingly, it evaluates that an increase of 10% in contributions to open source code would annually generate an additional 0.4% to 0.6% GDP. The economic impact of digital commons is yet to be measured, but regarding the low level of investment needed to set up digital commons as global benchmarks, whether they are libraries, strategic building blocks or widely adopted tools, there is good chance that it would be largely positive.

The European Union does not limit its action to statement and high-policy level, as evidenced by the programmes with dedicated budgets to digital economy run by the European Commission. Horizon Europe is the EU's funding programme for research and innovation that releases funds through calls for proposals. The Next Generation Internet (NGI) initiative aims at shaping a more trusted, secure, inclusive and human-and-values-centric Internet. It directly contributes to "internet commons", by supporting building blocks and FLOSS or digital commons technology solutions. NGI has budgeted 82 M€ for Horizon 2020, and committed an additional 62M€ in Horizon Europe for 2021 and 2022. Over its 3 years in operations, NGI has supported over 650 projects and more than 1000 highly talented innovators driven by meaning and influencing the course of the Internet. 80% of the funded projects are open source and 83% never received European Commission's funding before. In order to be as close as possible to the communities and their needs, the Commission's Directorate-General for Communications Networks, Content and Technology (DG CNECT) has chosen to call upon existing foundations as intermediaries of trust to allocate the NGI funds. Doing so, the initiative aims at supporting internet commons throughout their life-cycles, by putting at the center of concerns the maintenance and trust dimensions. Finally, NGI pilots its portfolio of projects with verticals, enabling thus the emergence of technologies ecosystems supporting the needs of specific sectors.

In her 2021 State of the Union Address, President of the European Commission Ursula Von der Leyen proclaimed that "Digital is the make-or-break issue. And Member States share that view. Digital spending in NextGenerationEU will even overshoot the 20% target. That reflects the importance of investing in our European tech sovereignty. We have to double down to shape our digital transformation according to our own rules and values." As estimated by the DG CNECT in the NGI, digital commons communities are highly talented, driven by meaning and change-enabler for the common good. They are building a more inclusive, ethical and innovative Internet. In one word, an Internet aligned with the European values and principles. Despite ongoing programmes aiming at meeting some of their needs, one is left with no choice but to observe that digital commons are still underappreciated. There is still work ahead before taking full advantage of digital commons at the European level.

International alliances and foreign initiatives

International alliances

If the concept, and support, of digital commons is being explored in Europe, several initiatives have been launched at the global scale to promote the usage of interoperable, open public goods. As a matter of facts, Europeans are often the leading voices behind these international projects, echoing with their long-standing open culture. The GovStack initiative is a multi-stakeholder initiative supported by the International Telecommunications Union (ITU), the Estonian government, the German Ministry for Development, and the Digital Impact Alliance. It aims to generalize the use of efficient, affordable, accountable and secure digital solutions to accelerate the digitization of partner governments. Such an initiative allows knowledge sharing and cost reduction, while increasing the efficiency of public goods maintainers, reducing security and fraud risks, and improving civic engagements.

The same philosophy is at the heart of the Digital Public Goods Alliance (DPGA), a multi-stakeholder initiative jointly supported by the Norwegian Agency for Development Cooperation (Norad), The United Nations Development Programme (UNDP), and the United Nations International Children's Emergency Fund (UNICEF). It gathers together various expertise from foundations and think-and-do tanks. Recognizing that good quality of data, as well as open work practices, are essential to the success of the 2030 Sustainable Development Goals (SDGs), the DPGA is committed in facilitating the discovery, development, use of, and investment in digital public goods for low to middle-income countries. The Digital Public Goods Standard defines digital public goods as "open-source software (OSS), open data, open AI models, open standards and open content that adhere to privacy and other applicable laws and best practices, [and] do no harm by design". In its 2021-2026 Strategy, the DPGA details four objectives:

1. Discover, sustain and make accessible high-potential digital public goods to government institutions and implementing organizations to the benefit of low and middle-income countries;
2. Develop knowledge, capacity and incentive in the UN-institutions, multilateral development banks and other public and private institutions to promote and support adoption of digital public goods addressing critical development needs;
3. Effectively implement (plan, deploy, maintain and evolve) digital public goods addressing critical development needs and their related digital public infrastructures;
4. Create vibrant commercial ecosystems in low and middle-income countries to create, maintain, implement and incubate digital public goods.

On the American continent, another ambitious initiative was set up under the leadership of the Inter-American Development Bank (IADB). Targeting Latin America and the Caribbean, the Code for Development is initiative programme spreading the vision of the software as

a public good. It mainly provides a platform to share open-source software and related resources for the digital public good community.

Private efforts

The private sector is more mature when it comes to understand the role of open source software and digital commons in their value chain. U.S.-based Big Tech companies are even very concerned by the vitality of the digital commons communities that operate and maintain the building blocks on which their codes rely. Major companies such as Apple, Google and Microsoft, engage a lot of resources in favor of open digital infrastructures and open-source software. For instance, Microsoft became a strong supporter of the open-source ecosystem in joining the Linux Foundation in 2016. Github's purchase in 2018 and integration of Linux at the core of Windows revealed the importance of FLOSS and digital commons for major digital companies. Known as an important open-source actor with Android, Kubernetes, Google created the Open Source Maintenance Crew, a developer team (such as the Project Zero team for critical zero-days exploits) dedicated to support critical open-source software and resources. This announcement comes in the aftermaths of this year's White House meeting with Big Tech companies to speak about open source after the discovering of the Log4j vulnerability on December 10, 2021. The company also announced to enhance its "Fuzz-OSS" and "open/source/insights" programmes, dedicated to detect unknown issues in open-source software dependencies.

However, these much welcome private efforts should not be naively seen as pure philanthropy. The hegemonic temptation remains significant, whereas variety makes the ecosystem strong and resilient.

Principles for a future initiative for digital commons

Limits of the existing initiatives

Deficit of coordination between existing initiatives

Europe welcomes several national initiatives, but the multiplication of separate efforts weakens the overall target: supporting vibrant, innovative and sustainable digital commons communities. The biggest limit to ongoing national policies is that they are nearly all focused at meeting the challenge at the national level, although digital commons are in essence open and not limited by frontier considerations (cross-border communities and international effect). The lack of coordination between public initiatives multiplies the efforts of the commons communities and dilutes the desired effects.

Open Food Facts, for instance, has difficulties in allocating human resources to find and respond to the different funding opportunities. Even though it was launched by volunteers, it employs 4 agents in order to maintain the quality of service, nurture the commons by developing new functions, taking care of the community (journalists, industrials, contributors, etc), ensuring data quality, and enable its internationalization. In order to successfully respond to funding projects from Next Generation Internet, Google Impact Challenge or Santé Publique France, Open Food Facts has to mobilize an employee for the paper work. Meanwhile, it acts like a global public service.

European digital commons communities could benefit from a clarification of ongoing initiatives dedicated to support them. The centralization of information would ease their ability to respond to call for proposals or funding programmes. Meanwhile, it would reduce their efforts to dedicate more of their available time on the development of the digital commons. To go further, the importance of foundations in sustaining coherent, integrated and thriving ecosystems should be considered at the European level. The FLOSS Foundations identifies 160 active foundations around, with an overwhelming majority located in the United States. It draws up a list of 19 foundations based in the EU, which represent 11.86% of the world's foundations. This calculation does not take into account the size of each foundation: major ones are located in the United States, such as Linux Foundation, Apache Software Foundation, WordPress Foundation or Wikimedia Foundation. Non-European foundations, often under foreign legislation, play an important role in setting up standards in a world more and more shaped by the rule of code. The EU and its Member states could encourage the development of existing and new European foundations in order to develop a driving European ecosystem.

Digital commons are developed by talented and committed citizen communities on a voluntary basis. But they rapidly need resources, first to develop the commons and add features and usages, second to maintain the quality of the commons itself. The commons

is used for the common good, often without contribution from its end-users. The discovery on December 10, 2021, of the Log4Shell vulnerability in Apache Log4J shed light on the consequences of an underinvestment in the sustainability of a free and community-maintained but essential building block of the Internet, broadly used in technology services and products.

Additionally, the provisional working team observed that communities suffer from a deficit of expertise in non-digital fields. For example, they could need legal advices when setting the status of the commons, or public affairs representation to make sure that public policies do not weaken digital commons' fragile balance. Wikimedia Foundation, which can employ experts, has drawn our attention on the risks the new EU legislation regarding the digital economy, such as the Digital Services Act (DSA) and the Digital Market Act (DMA), could pose to digital commons such as Wikipedia, if drafted without considering the special status of commons entities. Just like they need long-term economic security, digital commons need legislative stability.

Therefore, Software Heritage shared that in order to build a long-term infrastructure, it requires (i) a long-sight legal security in order not to endanger the work the archive has already gathered and to protect software development platforms from unintended side-effects of the European legislation. Additionally, it needs (ii) economic stability, with funding mechanisms for the long term (endowment and pooling of costs) and (iii) an independent, international and multi-stakeholder organization, with flexibility adapted to a digital world.

eGovernment centered solutions: brake or distribution belt?

It is striking to notice that the vast majority of the ongoing initiatives, at all levels, focus on encouraging and supporting the development, use and purchasing of FLOSS and digital commons in public administration. In fact, public administrations are important users of digital technologies. Public tenders are a significant lever for fostering public aid to digital commons as they participate in shaping a more open, interoperable and sovereign market. Member states and the European institutions could go further by including a reuse clause (for other public services or companies) in the specifications, in line with the interoperability-by-default principle of the 2017 Tallinn Declaration.

Another way to encourage the creation of digital commons would be for public administrations to contribute to existing commons. This commitment could improve the democratic quality of the development of public policies and the creation of tools to support them. On one hand, public agents could be tasked with developing new features meeting the needs of the administration to existing digital commons. On the other hand, public representatives could involve themselves in the governance of the commons. This way, the public contribution to the commons would be both material and strategic, in a balance public-civic alliance.

In a nutshell, public purchasing, public contribution to existing digital commons or creation of tailor-made resources aiming at becoming digital commons later are different, but complementary levers to support.

However, a strategy for digital commons cannot be designed through public services-centered lenses. The Open Knowledge Foundation documented the German Sovereign Tech Fund study. They found no specifically designed funds to target strategic resources run by individuals, communities and organizations working on digital infrastructure projects. Every proprietary software use parts of FLOSS and rely on a stack that is maintained by volunteers or not maintained at all. This critical weaknesses creates a security challenge that will grow massively in the future. The co-authors of the study believe we need to think proactively by identifying the emerging technology in the need of protocol language and software development. The EU and its Member states should be a proactive player in directing funds towards specific area and infrastructures we rely on. It is in our own interest to invest and support communities, even though they do not directly participate in the development of eGovernment tools.

Addressing the challenge with a European flagship

Digital commons need economic and legal stability. To partially meet these challenges, the EU has run several initiatives, but today they lack coordination to be fully efficient. In the face of this observation, the provisional working team underlines the need to bring coherence at the European level, without removing the most welcome programmes, action plans and dedicated funds that support European digital commons. It calls for the creation of a European flagship, which would steer resources towards strategic digital commons and a burgeoning open, collaborative, interoperable and inclusive digital ecosystem in Europe.

The provisional working team reminds digital commons do not only need support during the creation of resources, but also for their continued maintenance. Regarding the structural needs of digital commons, we encourage governments and European institutions to reevaluate the rules framing public production, public funding and public tenders to build sustainable, long-term financial, human and legal contributions.

In order to preserve and even strengthen our European digital and tech sovereignty, we urge the EU and Member states to include digital commons in their policies and to engage with digital commons communities. We believe in the force of working hand-in-hand with digital commons communities, which are breeding grounds of talents, to spread the use of digital commons among society.

The provisional working team considers particularly urgent to:

- i. Create a strong public-civic-private partnership and participate in the development of sustainable open data and open source ecosystems for public good to accelerate technology development , other essential components (e.g. ontologies, codelists, standards, reusable data structures, taxonomies), and digital commons adoption.
- ii. Promote the use and creation of digital commons within the European institutions and Member States' public services.
- iii. Exploring opportunities to enhance the public contribution to strategic commons.
- iv. Improve the competitiveness of digital commons tools to enable large-scale adoption.
- v. Assess the potential of a public institutions participation to organizations ruled by commons-based principles.

These goals, implemented by the proposals detailed below, would aim at meeting the needs of the digital commons communities. Europeans have interest in setting ambitious targets to put the human back into the picture of the digital revolution and to secure the unique market. By putting Europe on the map of digital commons communities, the continent will attract talents and benefit from foreign contributors' expertise. Last but not least, digital commons offer a more ethical future at the service of society as a whole.

As the future continent of commons, Europe could stand as an example. On May 23, 2021, the European Ambassadors for Digital and Cyber affairs met in Paris and discussed, among other topics, the opportunity to make digital commons the spearhead of a non-hegemonic influence policy. By putting the actors on an equal footing, digital commons offer a transparent and interoperable method multiplying cooperation actions while ensuring full sovereignty to all governments relying on them. During the June 1st 2022 DPGA event, "Creating an Inclusive Digital Future: Advancing the Digital Public Goods Charter", Sierra Leone stressed the importance of digital commons in accelerating the digitalization of low and middle income countries. Europe can pave the way for other governments.

Proposals for the future of digital commons in Europe

This section aims at detailing the steps Member states and the European Commission should put in place to foster coordinated actions towards a flourishing digital commons ecosystem. Like the rest of the document, it presents the results of a collaborative process. This methodology has been key to understand the needs of digital commons communities and to include the various perspectives brought by governmental representatives.

Importantly, the provisional working team draws attention on the underexploited opportunities offered by digital commons. We urge public services, governments and European institutions to include digital commons in their industrial strategies. It has become pressing to identify and represent digital commons communities, consult to establish priorities, define a strategy for the maturation of commons, elaborate governance models, and define mechanisms for smooth synergies with like-minded stakeholders.

The report aims at sending a political signal and initiating concrete actions.

Creating a digital commons one-stop shop

Before anything, the provisional working team assessed the need to ease digital commons' efforts to find public grants. Without calling into question the importance to increase public financial support to digital commons across the EU, we call for the launch of a minimum viable product aiming at orientating existing FLOSS and digital commons communities towards ongoing funding programmes.

At the European level, a unique one-stop shop would gather all the information about European-based public programmes and initiatives for digital commons. Doing so, it would facilitate and accelerate the application process. It would set an open catalogue of existing public programmes, grants, calls for proposals and upcoming digital commons policies.

In order to ensure the trustworthiness of the entity as well as the sustainability of the project, the one-stop shop should be established in consultation with the broader pool of stakeholders.

The one-stop shop will be set as an association in order to receive both private and public funds and to evolve into a foundation later, if necessary. Using the legal status available in Belgium, may present the opportunity to rapidly launch the first proposal and to convert it later into a foundation for additional purposes.

A unique one-stop shop would be the bedrock to launch any further European projects for digital commons in the future.

Launching a call for proposals

The vast majority of commons have limited resources that hinder their development or interfere in their quality, even if some of them could be considered as strategic for the European digital sovereignty. That is why we encourage voluntary Member states to take rapid actions to steer funds towards strategic building blocks.

In order to accompany the building of the one-stop shop, a group of leading Member States could collectively launch a multi-country call for proposals targeting strategic digital commons with a European component. France is determined to lead the way by circulating a first draft call for proposals in the coming weeks. Each participating Member state could then adapt the call to its own funding scheme, while maintaining as much compatibility as possible in order to keep a common spirit.

Although it would be supported first by a set of national budgets, the call for proposals would aim at evolving into a Multi-Country Project combining European, national and private investments, as introduced by the Digital Compass Communication. By pooling resources together, European countries would send a strong political signal towards commons communities.

The call for proposals would:

- **Target existing commons in the need of resources** to sustain themselves, preferring reuse and extension of existing software; **at a later stage, support the development of new digital commons;**
- **Strengthen critical infrastructures** linked to EU's digital sovereignty, to ensure FLOSS as well as digital commons continue to play a critical role in the economy;
- **Steer funds towards the usability of commons**, including translation efforts, to ease the internationalization of open source and digital commons projects;
- **Adopt an inclusive definition of digital commons**, in order to help (but not limited to) FLOSS, public APIs, open data projects.

Establishing a European foundation for digital commons

A European-based legal structure would ensure independence from organizations ruled by foreign laws and to promote the development of digital innovations based on European ethical values. It would aim at collaborating with the best actors around the world, according to digital commons' open nature.

The main challenge of this initiative would be to get trust from digital commons communities. The provisional working team advises to set the foundation with a shared

multi-stakeholder governance. Thus, the organization would be ruled by transparent and open processes and protocols to ensure, by design, its independence.

In the long-term, the set-up of an autonomous foundation with a multi-stakeholders governance involving digital commons communities, Member States and the European Commission (e.g. EC OSPO), would ensure sustainable funding and a coherent public-civic-private strategy for digital commons in Europe.

Acknowledging the variety of existing legal forms, the provisional working team recommends to conduct a thorough analysis on the best legal status to adopt before setting up a foundation. For instance, we would like to bring attention to the Public Private Partnership (PPP), a legal structure established by signing a Memorandum of Understanding between a private partner on one hand, a foundation established under Belgian law gathering digital commons communities and related stakeholders, and a public partner on the other hand, namely the European Commission. Such a legal structure has been used to create Photonics PPP.

Following the EU policies, the foundation would:

- Create an umbrella aiming at nurturing the development of digital commons ecosystems across Europe, in order to strengthen the existing communities and to foster the reuse of digital resources.
- Target support for the continuity of the life cycle to ensure continuity and support free services and updates for viable digital commons.
- Provide policy recommendations to European and national authorities in order to move from a procurement situation to an investment strategy.
- Provide security requirements and steer efforts towards audits to have indirect positive effects on digital security and innovation in Europe.
- Create a free European alternative for open source development to existing GitLab and Codeberg, to encourage GDPR-friendly and sovereign initiatives.

The provisional working team invite Member States to dedicate a permanent team to the European foundations for digital commons.

In the afterwards of the 2022 Digital Assembly, the first task in the initiative would be to setup a broad consultation, coordinated with the launch of the call for proposals.

Digital commons first

Building on the Tallinn Declaration, the provisional working team encourages Member states and the EU institutions, bodies and agencies to set a digital commons first principle. That is to say when choosing software or data sources, the EU should establish a practice of first evaluating the possibility of using open source or open data solutions, and contribute to their development. Similarly, as many digital assets produced by Member states and the

EU as possible should be released as digital commons to foster democratic contribution and reuse. Establishing a public environment keen to operate with digital commons would increase the value of common solutions, contribute to the development of the ecosystem itself and foster non-predatory EU digital sovereignty.

Learning to operate with ecosystems of digital commons can generate a network effect with a potential of exponentially increasing the value of common solutions. These ecosystems have the unique property that whatever improvement is introduced is immediately available for others to enjoy and improve upon. By preferring solutions which are digital commons the EU would not only make the best use of freely available resources, but would also position itself in the best place to receive all updates and improvements.

During the various pandemic lockdowns, the states which have adopted open source solutions, such as video conference system, were able to pool resources and create a collaborative ecosystem to address the ever changing need of the people, while ensuring a direct and transparent control over the solutions as well as privacy and technical quality. However, promoting digital commons as only consisting of freely available static assets, such as data, could just create more resources for unforeseen predatory uses. For example, producing large amounts of big data without addressing the need of good software, freely available AI models or services built upon it will only benefit those having the skills and huge computational resources to handle and exploit them. Therefore, a digital commons first policy should encompass a public infrastructural approach to make sure society as a whole benefits from the development of digital commons.

Additionally, scholarship and "public computational resources" should be envisioned in a long-term commitment to the development of digital commons.

As the world is shifting towards ever greater use of digital commons technologies, the EU can be at the forefront of innovation by supporting companies and economical players to become experts and lead contributors to the global digital commons ecosystem. A policy that supports adoption, remixing and creation of digital commons will generate expertise and innovation in this space.

Conclusion

We aspire to a model in which democratic values and human rights are fully integrated in digital practices.

In a fragmented world, digital commons offer a model of shared and collective governance over essential resources. It is no secret that Europe is paving the way when it comes to regulate digital market and services. Henceforth, we need to go beyond our current capacities. By fully including digital commons in its digital strategy, Europe is able to unlock the full potential of these resources while offering a new method to assert the Union's values and principles.

Europe has an unmatched opportunity to position itself at the forefront of the defense for a free, open, and democratic digital society: let's take action.



List of Member states and EU institutions supporting the report, in alphabetical order:

BELGIUM	LATVIA
CROATIA	MALTA
DENMARK	NETHERLANDS
ESTONIA	POLAND
FINLAND	PORTUGAL
FRANCE	ROMANIA
GERMANY	SLOVENIA
IRELAND	SPAIN
ITALY	

