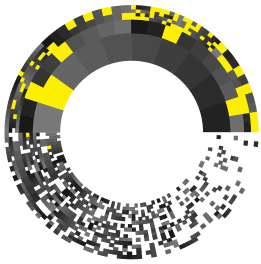

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PUBLIC DIGITAL INFRASTRUCTURE FOR EUROPE

RESPONSE TO THE PUBLIC CONSULTATION ON THE "HOW TO MASTER EUROPE'S DIGITAL INFRASTRUCTURE NEEDS?" WHITE PAPER

30 JUNE 2023

Open Future appreciates the opportunity to provide feedback on the European Commission's White Paper "How to master Europe's digital infrastructure needs?"

We welcome the fact that the Commission is actively exploring Europe's digital infrastructure needs and we agree with the overall assessment that further investment in digital infrastructure must be prioritized in the second half of Europe's 'digital decade'. However, in our view, much of the analysis underpinning the White Paper (and consequently most of the policy options identified therein) is flawed and fails to address the key digital infrastructure needs as they manifest themselves today. In the remainder of this response, we will explain why and propose an alternative scenario for addressing Europe's digital infrastructure needs.

EUROPE'S DIGITAL INFRASTRUCTURE DEPENDENCY

The White Paper rightly makes a number of references to the Declaration of Digital Rights and Principles. It is the Declaration that should serve as the overall guidance for EU interventions in the digital policy space, including the ambition to address Europe's digital infrastructure needs. As we have argued before, many of the rights and principles enshrined in the Declaration cannot be guaranteed in a digital environment built on digital infrastructure provided almost exclusively by commercial entities: Protecting the rights of Europeans in the online environment requires that they have access to public digital spaces that are built on public digital infrastructure. This right to "participation in the digital public space" is a central pillar of the Declaration.

With regard to the evolution of the digital infrastructure, the White Paper places a strong focus on the expected further convergence between the communications network infrastructure on the one hand and the computing infrastructure on the other (under the name "Connected Collaborative Computing" or "3C"). However, the elephant in the (server) room remains largely unaddressed: The fact that, as data processing / computation increasingly moves to the cloud, Europe is becoming increasingly dependent on cloud infrastructure provided by a very limited number of US-based hyperscale cloud providers that operate infrastructures (and their own services on top of these infrastructures) that are highly optimized for business models that depend on data extraction.

It is increasingly clear that Big Tech companies are leveraging their existing infrastructure power to expand into additional areas. These include new technologies (such as Generative AI, where European entrants seeking to operate at scale have no viable alternatives to the cloud computing services offered by their American competitors) and new markets, including in areas (such as healthcare and education) that have traditionally functioned as public services. In other words, Big Tech's infrastructural dominance in cloud computing is increasingly self-reinforcing.

It is this dependence on the infrastructure provided by Big Tech that stands in the way of realizing the goals of the Declaration of Rights and Principles. It follows that Europe's most important digital infrastructure need is the creation of viable alternatives to these systems, capable of providing the infrastructural basis for the delivery of digital public services and communication services that operate outside the commercial logics of data extraction and lock-in.

Instead of addressing the current need for infrastructure alternatives to hyperscalers that can reduce the dependence of the EU public sector and EU businesses on external infrastructure providers, the White Paper focuses on speculative future needs. Attempts to predict and shape technological innovation (such as the recurring insistence that the main driver of connectivity will come from virtual worlds and the related but ill-defined concept of Internet 4.0) and to predict and prescribe particular network architectures (the very detailed conceptual descriptions of various forms of cloud edge computing) are unconvincing. They also seem to have been chosen to fit the existing paradigm of technology funding as innovation funding and to justify existing policy programs and priorities of the European Commission. As a result, the focus on enabling Connected Collaborative Computing (3C) networks seems tailored to support Europe's telecom sector in developing the next generation of wireless communications infrastructure (6G), based on largely hypothetical use cases that are essentially the same use cases (virtual reality, telemedicine, autonomous cars, data-driven agriculture, on-device computing) that were previously used to justify investments in 5G technologies.

While the goal of ensuring high-quality broadband connectivity for all Europeans regardless of their physical location is an important one (and rightly enshrined in the Declaration of Rights and Principles), the overall focus on improving communications infrastructure seems ill-suited to address the fact that Europe's real infrastructural dependencies are not due to unequal broadband coverage, but rather to the dominance of non-European technology companies in hyper-scale cloud computing.

Overall, many of the technology choices made in the White Paper appear to be motivated by the goal of mobilizing support for the European telecom sector. Interestingly, as we will argue below, support for the telecom sector would also likely be an element of any strategy to invest in building alternative public digital infrastructure in Europe.

INVESTING IN PUBLIC DIGITAL INFRASTRUCTURE

So how should this need for a public digital infrastructure that serves the public interest be addressed? It first requires moving away from speculative needs for innovation, and focusing on the existing social demands for a sovereign, secure and non-extractive infrastructure that can be observed across Europe. From our perspective, digital infrastructure needs to be conceptualized more broadly than the White Paper's relatively narrow focus on communications and cloud/edge computing. In addition to this physical infrastructure layer, there are four other layers:

1. Applications that constitute the open Internet stack (including maintenance of key open source components),
2. Critical layers for access to digital public spaces (interoperable, standards-based communications and networking services),
3. Common components of government solutions for public service delivery (GovTech), and
4. Platforms and services that are critical in specific sectors for industry or intermediation between producers and consumers.

Currently, Europe's approach to supporting these non-physical layers of digital infrastructure is fragmented, and conversations about these elements are often siloed from the conversations about physical infrastructure. This is a mistake, given the interdependencies between them. A more holistic approach is needed, one that integrates discussions of both digital and physical infrastructure and recognizes the urgency of investing in digital infrastructure in light of current dependencies and existing needs for a sovereign, secure, and non-extractive digital space.

As far as support for the non-physical layers of the digital infrastructure is concerned, we have argued in our 2023 proposal for a European Digital Public Infrastructure Fund, there is a need to consolidate and bundle existing support for these layers that make up the open Internet stack.

As part of this, it will also be necessary to move away from the current innovation funding paradigm, which is unsuitable for supporting infrastructure, towards funding mechanisms that can provide sustainable support for the maintenance of applications, platforms and services with infrastructure characteristics.

One example of this approach is the German Sovereign Tech Fund that provides structural support for open source projects that provide key functionality as part of the open Internet stack. Another important development are the plans of a number of EU member states, led by France, the Netherlands, Germany and Estonia to establish a European Digital Infrastructure Consortium for supporting Digital Commons.

As we argue in our new report on Digital Commons as Providers of Public Digital Infrastructure, Digital commons can play an important role as providers of infrastructure at different levels of this open Internet stack. They can be instrumental in preventing the overcorrection of the shift from digital infrastructures dominated by a few corporations to a situation where the state has too much control over this space. In this context, the cooperation of public institutions with existing digital commons is an important mechanism to ensure that digital infrastructures are oriented towards the public interest and are deployed in accordance with the objectives set out in the Declaration of Rights and Principles. This also means that public investment and support must be made with the digital commons in mind as a delivery mechanism. Decentralized and federated solutions should be jointly developed, managed and supported by a wide range of actors, not only commercial but also public and civil society.

Overall, Europe should significantly increase its investment in these layers of the open Internet stack. Other observers have suggested that it will be necessary to mobilize €10 Billion over the duration of the next multi annual financial framework.

THE CASE FOR A PUBLIC CLOUD INFRASTRUCTURE

The above-mentioned report on Digital Commons as Providers of Public Digital Infrastructure also shows that Digital Commons are not suited to provide the capital-intensive digital infrastructures that are the focus of the White Paper. To provide a viable alternative to the dominant players, investments need to be made on a scale that can only be handled by a very limited number of actors. This is where the telecom sector comes back into the picture, as it seems to be the only viable candidate - in cooperation with other parts of the European ICT sector, including existing cloud service providers - to deploy such infrastructures on the scale required.

As the Commission's White Paper rightly points out, efforts to build the necessary infrastructure will require the mobilization of capital beyond the capacity of the telecommunications sector alone. However, as we have argued above, public support for the deployment of this infrastructure must be justified not by a desire to steer innovation towards particular technological outcomes, but rather by the goal of achieving societal outcomes that strengthen democratic control and agency over the digital infrastructure on which we increasingly rely.

In light of this, any public support for investment in European public cloud infrastructure deployed and operated by commercial entities (including from the telecommunications sector) must be subject to strong public interest safeguards:

- It must be built and designed from the ground up on sustainability criteria.
- It must adhere to the principle of net neutrality
- It must include strong privacy protections, including data minimization principles.
- There must be a clear separation between the operators of the infrastructure and the operators of the providers of the infrastructure that would enable fair competition and prevent the creation of new monopolies.
- It must be based on open source software, open standards and be fully interoperable to avoid lock-in effects.

Finally, the funding for these investments must come from public sources and should not be derived from network fees or similar mechanisms. Ideally, the funding needed to build and maintain such a public digital infrastructure should come from taxation of digital businesses, either more generally or in the form of a more targeted tax on digital advertising.

The aim should not be to facilitate the creation of another dominant platform, not even a European one, which would then operate under the existing rules of the game while relying on the same exploitative business models. Instead, decentralized and federated solutions should be

co-developed, stewarded and supported. Fostering a different architecture of the digital space requires engaging with a variety of actors, not only commercial but also public and civic in nature. It is also a matter of investing in new digital infrastructures.

In summary, it is high time to address Europe's digital infrastructure needs, but it would be a mistake to assume that these are driven by virtual worlds and other speculative technologies Europe's primary digital infrastructure need is to create systems that support our democracies, allow people to enjoy their fundamental rights, and prioritize the creation of public value while protecting the commons. This is as opposed to trying to recreate monopolistic and unsustainable business practices - but this time "made in Europe" - based on data extraction and excessive resource consumption in the name of an ever more elusive belief in the societal return on private sector innovation.

Postscript: It should also be clear from the above that the absolute least responsible intervention would be to further deregulate telecom providers so that they can compete more effectively with US cloud providers - as organizations representing the telecom sector have suggested in their response to the consultation.

ABOUT OPEN FUTURE

Open Future is a European think tank that develops new approaches to an open internet that maximize societal benefits of shared data, knowledge and culture.