CEPS EXPLAINER

TACKLING THE EU'S DIGITAL AMBITIONS OVER THE NEXT FIVE YEARS

From the 'Brussels effect' to the further development of Digital Public Infrastructures

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SUMMARY

As a new European Commission is about to take office, one of its key challenges over the coming five years will be to ensure the effective implementation of the large body of digital regulations passed during the last five years and to accelerate Europe's technological leadership. This was also strongly advocated for in the recent Draghi Report and clearly referenced in the mission letter to Henna Virkkunen, the new Commission Executive Vice-President for Technological Sovereignty, Security and Democracy.

As this CEPS Explainer outlines, to understand what's currently happening in the digital field and to confidently walk forward into the future, we need to know first where we've come from over the last five years. One of the major developments in the digital realm that has accompanied the EU's recent regulatory enthusiasm is the growth of Digital Public Infrastructures (DPIs), spurred by the need to quickly and effectively respond to two major crises – first the Covid-19 pandemic and then the outbreak of the war in Ukraine.

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INTRODUCTION

Finnish Commissioner candidate Henna Virkkunen has been given the high-profile post of Executive Vice-President for Technological Sovereignty, Security and Democracy and will be in charge of the 'digital and frontier technology portfolio', according to the mission letter sent to her by Commission President Ursula von der Leyen. At the heart of her mandate is accelerating Europe's technological leadership in all areas, to ensure that Brussels can compete with other regions of the world (as called for in the Draghi Report) and respond to 'increasingly complex security threats', as clearly expressed in her letter.

What's particularly important is 'the implementation of the European public digital infrastructure' by making maximum use of 'the EU's digital portfolio' and 'ensuring that businesses can make full use of technology to enable them to speed up and simplify operations and reduce administrative costs'. Von der Leyen has also instructed the Finnish Commissioner to set up a new European Research Council on Artificial Intelligence, to present a 'European strategy for the Data Union' and a 'long-term plan for EU quantum chips.' Virkkunen emphasised the importance of all these points during her recent hearing before the European Parliament (EP).

Reading Virkkunen's mission letter carefully, it's clear from the narrative – but above all from the content – that the digital domain over the last five years has taken a leading role in the conception, development and execution of European strategies across many different policy areas.

The historical urgency punctuated by global crises requires European decision-makers to consider innovative strategies and tools besides cherishing 'business as usual'. Here, it's no coincidence that Virkkunen, if confirmed by the EP, will be tasked with working on an 'EU Cloud and AI Development Act', as the Draghi Report proposed.

However, as this CEPS Explainer outlines, to understand what's actually happening in the digital policy domain, it's necessary to first understand what has happened over the past five years. Specifically, how first the Covid-19 pandemic and then the Russia-Ukraine war have led Brussels to define the digital ecosystem as a critical infrastructure capable of guaranteeing resilient, secure and internationally competitive public services.

THE DIGITAL TRANSITION AND THE BRUSSELS EFFECT

In recent years, the EU's regulatory *soft power* (or 'Brussels effect') has enabled the EU to position itself in the digital innovation race, as clearly seen by the impressive body of digital legislation recently produced in Brussels; the exponential growth of financial contributions to lobbying Brussels in the digital sector; the increasingly frequent

intercontinental trips to visit the European Commission by Big Tech senior executives; the decision by the European Commission to open a permanent representation only a few kilometres away from Silicon Valley; and last but certainly not least, the gradual fading of the media clamour around the combined multimillion-dollar fines dished out by the European antitrust system to the web giants.

However, such positioning has created – and not only in Europe – great expectations that the EU could become, at least in the medium term, a global digital power or 'digital empire'.

In this sense, the new EU political mandate over the next five years opens with two overarching questions for the EU policymaker – first, how can EU institutions and Member States implement all the legislation that has been adopted and second, how can regulatory *soft power* be integrated with technological and infrastructural constraints, the latter a prerequisite for being able to act as a global digital power?

THE DIFFICULTLY OF MANAGING EXPECTATIONS

The recent flurry of legislative interventions represents a major deviation from the *light-touch* regulatory approach adopted in the digital sphere over the past three decades. This has been a cause of tensions with those across the Atlantic, who for years based their business models on the rather lenient approaches contained in the Communications Decency Act[1] or the 1996 Telecommunications Act[2]. But now that the U-turn has been initiated, the EU institutions will face the immense challenge of having to now implement the rules. A not insignificant problem, since the necessary foot soldiers (i.e. the *tech* and *legal-tech* figures who will have to verify that what has recently been regulated is actually complied with) are difficult to find on the market.

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Assuming then that the EU manages to amass its regulatory army, it would still have much further to go before it becomes an effective global digital power. This is because those who produce technology are

1 Section 230 of the Communications Decency Act allows web operators – both large and small – to moderate speech and user content as they see fit. This strengthens First Amendment protection for publishers, who can decide which content to distribute.

2 This was the first significant revision of US telecommunications law in more than 60 years, amending the Communications Act of 1934, and represented a major change because it was the first time the Internet was added to US broadcasting and telephony regulation.

the ones who drive the digital race, while those who regulate are condemned to react to standards and products set by others.

Here, the EU is faced with a dilemma – either chase the outriders by trying to regulate the technologies and infrastructures created by non-European powers or turn the table by focusing on a different technological and infrastructural vision from those proposed by other world powers. This was a dilemma that the major political families of the 'Old Continent' did indeed ask themselves during June's EP elections. However, they were simply out of time, as History had already made this decision for Europeans a few years earlier when the whole world was struggling to overcome the Covid-19 pandemic.

THE ROLE OF RECENT CRISES IN SETTING THE PACE OF THE EU'S DIGITAL JOURNEY

The history of European integration teaches us that the EU tends to feed on the crises that cyclically confront it, each time strengthening its engine (policies) and its architecture (institutions) a little bit more. In the last five years, two global crises have come knocking at Brussels' door, namely the Covid-19 pandemic and Russia's full-scale invasion of Ukraine, both of which – albeit in different ways – have contributed to creating favourable conditions for accelerating Europe's digital transition. More specifically, the pandemic and Ukraine have highlighted the importance of digital infrastructures and decentralised user-centred solutions as solid pillars of resilience and opportunities to look ahead.

The pandemic was a defining moment for digital communications. One of the first glimmers of light at the end of the pandemic tunnel was the voluntary collaboration between European states to find a common toolbox for creating and implementing national contact tracing apps. And it's precisely from this network created around digital health that a major game changer was conceived and developed – the EU Digital Covid Certificate. This tool has, in fact, changed our lives in a much more pervasive way than we actually realise, thanks to new-generation methods, tools and infrastructures that will improve the quality of our lives from now on.

Once the Covid crisis was over, it was quickly realised that having found a way for the different European computer networks to 'talk' to each other had finally created the conditions for realising both an interoperable European framework and the systematisation of a universal European digital identity model, one capable of enabling European citizens to use public services anywhere in the EU.

ONE OF THE MAIN IDEAS THAT EMERGED FROM THE PANDEMIC CONCERNED THE NEED FOR NEW-GENERATION INTANGIBLE INFRASTRUCTURES CAPABLE OF SUPPORTING VALUE-ADDED SERVICES FOR THE BENEFIT OF ALL OF SOCIETY.

In this sense, the EU Digital Covid Certificate's multiplicative effect was not limited to generating portals that allowed different national databases talk to each other – it also gave a context to new-generation intangible infrastructures dedicated to creating public value that already existed but had yet to realise their potential. One of the main ideas that emerged from the pandemic concerned the need for new-generation intangible infrastructures capable of supporting value-added services for the benefit of all of society. During the pandemic, this meant vaccines distribution, providing social assistance, managing identity registers, sharing medical data, making payments or, more generally, enabling citizens to physically move around.

These infrastructures take the form of secure and interoperable shared digital systems built on open standards and specifications to provide equal access to public and private services on a social scale. There are three vectors against which these infrastructures are oriented – digital identity, payments and data sharing. To date, although there isn't an agreed definitive name for this infrastructural phenomenon, the provisional name that seems most likely to reconcile academics and experts is 'Digital Public Infrastructures' (DPI).

DPIs are probably the real karstic novelty underlying the pandemic crisis. Similar to those rivers characteristic of the Karst geographical area that alternate their course partly on the surface and partly underground, DPIs have arisen in a random order in both Europe [3] and the wider world[4] during the first two decades of the 21st century, always maintaining an 'underground' profile, only to fully emerge from below at the height of the pandemic, ensuring that the system would be resilient.

However, it was only when the emergency was over that DPIs' importance began to be recognised by the international community and be valorised as a vector for an inclusive digital transition[5].

To date, however, there is no specific DPI model but many DPIs with different characteristics scattered around the world and confined within their respective national borders. However, despite an apparent fragmentation among the different definitions, some common requirements are emerging, including some technological features such as the readiness for interoperability or the sharing of a digital identity as a gateway.

3 X-Road, which was founded in Estonia in 2001, is the pioneer of DPI in Europe but other countries including the Netherlands, Germany and Italy are also working hard in this direction.

4 Aadhaar, founded in India in 2009, is the world's most authoritative reference in terms of scalability.

5 In the concluding document of the Digital G7, held in Trento in March 2024, the concept of Digital Public Infrastructure, first presented the year before by the Indian G20 Presidency, was adopted. It effectively designates DPI as an asset of the international community and defines it as an 'infrastructure solution that could foster sustainable growth and promote more inclusive and equitable access to digital services'.

Similarly, there are also philosophical peculiarities, such as the vision of being oriented towards an anthropocentric and inclusive digital transformation.

The economic literature highlights several challenges and opportunities related to implementing DPI. Economic efficiency and productivity can be significantly improved through the digitisation of public services and DPIs are also important for promoting social inclusion and reducing the digital divide. From an opportunity perspective, adopting open standards in DPI can be a driver that stimulates innovation and economic competitiveness, while creating a favourable ecosystem for start-ups and technology companies.

These are all elements that cannot fail to create easy solutions for a European internal market that's capable of being a favourable breeding ground for a credible alternative to how the US and China are currently using digital technology. In this respect, the EU Digital Identity Wallet project seems by all intents and purposes to be one of the first attempts to give concrete form to such an orientation.

Specifically, the aim is to create a universal digital identity system for European citizens that would allow them to download and use a free and secure EU digital identity wallet to access a wide range of public and private services, based on identity verification and the authentication of other credentials stored in an app on their smartphone. Following the recent adoption of a basic legal framework, EU Member States are expected to issue the first EU digital identity wallet by the end of 2026[6].

Most crucially, unlike current national electronic identification systems, future national wallets will be recognised by all Member States[7]. Or, to put it another way, what is being attempted today is to create a system where different national wallet apps work *everywhere* in the EU.

It should also be added that it's the European intention is to make sure each Member State's wallet made available to its citizens is non-compulsory and privacy-friendly, with users being able to retain control, choosing which data to share and with whom.

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6 The EU has launched the Digital Identity Wallet system, supported by a legal framework (Digital Identity Regulation, May 2024) and an open-source technical architecture on GitHub. Work is continuing on standards, specifications, and implementation through future acts.

7 While national electronic identification systems have been available in some European countries for many years, it has only been since 2021 that European policymakers have had the goal to create the conditions for a digital identity system that works throughout the entire Internal Market.

Public online services and utilities would also be obliged to accept the European model, thus clearly presenting itself as a European alternative to existing (commercial) digital identity offers and consequently as an alternative to non-European business models. In this case, the policymaker seems to be responding to concerns about the power ceded to the various platform giants due to the key digital infrastructure they own and operate.

Not to be underestimated among the motivating factors is the idea that a European digital identity portfolio can operate both as a picklock to allow the removal of existing impediments in data sharing and re-use, and as a pioneering infrastructure to help create truly common European data spaces. Consequently, a universal EU digital identity framework that promises citizens privacy and autonomy could make Europeans more comfortable to share information, facilitating the flow of data in these strategic spaces – after all, it's only with citizens' trust that Europe will be able to create a truly single European data market.

A properly implemented portfolio would be the ideal candidate for the European DPI's pivotal role if only for its ability to reconcile the public and private sectors, rely on a federated user-centred environment, lean on a well-defined reference architecture and reduce the open-source approach.

In other words, DPI offers enormous development potential in all areas of society and the economy. Its possibilities are already coming to the forefront due to the ongoing war in Ukraine.

THE IMPORTANCE OF DPI IN THE RUSSIA-UKRAINE WAR

Although not an EU Member State, since the beginning of the conflict, Ukraine, due to a political choice made in Brussels, has the right to participate on an equal footing with all EU countries in all European competitive finance programmes in the digital sphere. Kyiv, for example, participates in the European Potential consortium, an influential French-led European grouping that won a call to verify that the legislation passed concerning the European portfolio project is in fact working in the correct way 'on the ground'.

In this sense, Ukrainian know-how is represented within the consortium. But more generally for the European digital world, the Ukrainians' specific DPI born in 2020 – Diia – has demonstrated its capacity in less than two years to adapt and provide its resilience in two different crises, first the pandemic and then the war. Diia is the result of a process that aimed to standardise and unify all e-services within a single, efficient digital user platform.

From the very beginning, the Ukrainian DPI was designed to offer a seamless and human-centred level of interaction between the state and citizens by combining[8] a mobile app with digital documents and a public services portal for citizens and businesses. Diia users can access personal documents such as their identity card, their driving licence, their passport, social security numbers and study documents.

FOLLOWING THE START OF THE CONFLICT IN 2022, THE UKRAINIAN GOVERNMENT SIGNIFICANTLY STEPPED UP DIIA'S IMPLEMENTATION, MAKING IT A REAL REFERENCE POINT FOR ALL UKRAINIAN PEOPLE BUT PARTICULARLY FOR DISPLACED UKRAINIANS WHO HAD LEFT THE COUNTRY.

Following the start of the conflict in 2022, the Ukrainian government significantly stepped up Diia's implementation, making it a real reference point for all Ukrainian people but particularly for displaced Ukrainians who had left the country. There were three axes to Diia's development, namely administrative and economic support for the victims of the conflict, fundraising for the war effort and communication.

On the first, Diia allowed the Ukrainian government to offer a wide range of services in several clicks, ensuring that essential services remained accessible even amidst the disruptions caused by the war. Diia made it possible to:

- Apply directly for monthly cash assistance, which was essential for meeting humanitarian needs when documentation was often lacking.
- Claim guaranteed benefits for those who lost their jobs due to the invasion.
- Survey in real time the damage inflicted on properties, thus facilitating compensation.
- Use eDocuments for identification.
- Obtain electronic pension certificates.
- Manage car registration and licence renewal.
- Receive court decisions and register a change of residence.

Diia also facilitates border crossings, access to social services in Poland and the issuing of driving licences in some non-European countries with Ukrainian emigrant communities.

As the war has progressed, Kyiv's DPI expanded its range of e-services by also directing them towards fundraising, such as the purchasing of military bonds or facilitating contributions to funds earmarked for military and medical equipment.

8 Key features include: the legal storage of digital documents in secure registers, register-linked verification and credential storage that retains depersonalised data only for operational needs and displaying state register information without storing personally identifiable information.

Finally, the Ukrainian DPI's contribution to communications is also of great interest. Diia has facilitated access to both information and entertainment, both radio and TV (including the European football championships and the Eurovision Song Contest), despite the loss of most radio and television repeaters.

Before the Russian invasion Diia had just over 14 million users – now it boasts over 20 million. It currently represents not only the most advanced form of European DPI in terms of development but also highlights how DPIs can all grow together in a truly transnational interoperable context.

In this sense, Ukraine's synergy with the EU – but particularly with Estonia (which has supported Ukraine's digital development since 2012) – has proven itself to be a great lesson. In recent months, however, it has been Estonia that has benefited from what the Ukrainians have achieved over the past two years due to Diia's rapid development.

CONCLUSIONS

The reason why Europe is now in the running to become a global digital powerhouse is that it has made much more of a regulatory effort in the digital sphere than any other major power. However, as far as regulation affects processes, it still doesn't determine them. Rather, it's those who produce technology and infrastructure that do this.

In this sense, feedback and findings from the initial field experiments to combat first the pandemic and then the outbreak of war in Ukraine have clearly shown just how decentralised technological and infrastructural solutions capable of empowering citizens and businesses are tantalisingly within reach. Properly implementing these findings represents a real window of opportunity for the EU to pursue an autonomous model of digital transition, capable of preserving its strategic autonomy and its technological sovereignty.

Considering the above, the authors of this CEPS Explainer believe that to ensure the success of the digital transition over the next five years, the EU must strategically invest in DPI, focus on strategic investments in advanced technologies and open standards[9] to build resilient and sustainable digital infrastructures. They also need to foster public-private collaboration to stimulate innovation and the co-creation of digital services, while

9 Indeed, open standards offer numerous advantages that could help the EU realise its regulatory ambitions, enabling greater transparency in code and processes, facilitating public audits and increasing the security of digital platforms. This is crucial to ensure that new regulations are implemented correctly and monitored effectively. Furthermore, adopting open and interoperable standards allows for greater flexibility when integrating different systems and platforms. This can facilitate compliance with new regulations such as the Digital Services Act and Digital Markets Act.

creating a clear regulatory framework and providing incentives to encourage the adoption of open standards – and all while ensuring data protection and privacy.

Managing the expectations created by many recent digital regulations will require the EU to make significant effort to now actually implement them. Adopting open standards and developing robust DPIs can play a crucial role in achieving this goal. By integrating the principles of transparency, interoperability and security, the EU can build a resilient digital ecosystem, spurring innovation and ensuring compliance with the new regulations.

In this sense, the recent Draghi Report is a clear wake-up call. One of its key aims was to make the EU fully aware of the scale of the challenge ahead and the need to put enabling factors in place for an effective and timely approach to meet this challenge. The mission letter sent to Commissioner-designate (at the time of writing) Virkkunen already provides ample evidence that Draghi's message has in fact been received loud and clear.

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