EUROPE'S DIGITAL DECADE



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Research Initiative

Embracing Technology, Standing by Our Values:

Rights, Climate, and Equity in Europe's Digital Decade



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President's Note

Europe is deciding its digital future at speed.

Who builds Europe's infrastructure, who governs its data, and who has the skills to take part. These choices affect human development directly, determining whether digital progress narrows or widens existing inequalities. Policy research must keep pace. This is why we created the HDRI Gazette.

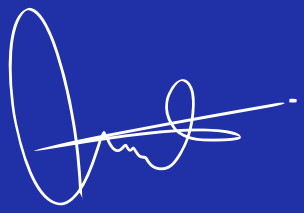
The Gazette replaces our Biannual Thematic Index, whose six-month cycle could no longer keep up with European policymaking. As a bimonthly publication, it brings together research, analysis and practical recommendations for policymakers, civil society and informed citizens. Each edition focuses on one Thematic Deep Dive, examined through HDRI's six thematic areas, because one question seen from six angles tells readers more than a quick look at many.

This first edition examines the EU's Digital Decade Policy Programme 2030 and its targets for digital skills, connectivity, business transformation and online public services. With the Programme now past its midpoint, we ask what these targets mean for people, and whom they risk leaving behind.

Most articles in this issue are written by HDRI's interns and early-career researchers. Their work reflects a conviction at the heart of HDRI: young people belong at the centre of the debates that will shape their future.

I thank everyone who made this first edition possible, and I invite you to join the conversation.

Gurgen Petrosyan



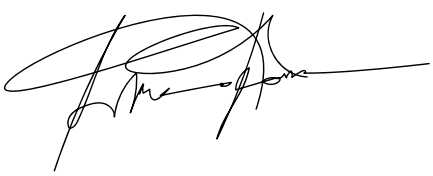
Editor's Note

I am pleased to welcome readers to our first issue, Europe's Digital Decade. In the youth sphere, the connection between digital life and real life seems deeply interlinked. Hence, we have set out to produce content that is not only relevant to youth voices, but meaningful in exploring what this digital era encompasses for the future, our future. In 2021, the European Union set itself a deadline. By 2030, it declared, Europe would have a digital transformation anchored in people, not just in platforms.

Five years on, Europe has become one of the world's most ambitious regulators of the digital sphere. The General Data Protection Regulation, the Digital Services Act, the Digital Markets Act and the AI Act have each, in their own way, tried to set the terms on which citizens meet technology. Yet regulation is not the same as capability. Europe still debates how to build, and not merely govern, its own digital infrastructure, and the gap between the continent's aspirations and its progress on skills, investment and connectivity remains wide.

This is the tension at the heart of this issue. A decade is a long time in technology, but it is also a generation's worth of formative years. In the pages that follow, our contributors explore what the Digital Decade has meant so far, where it has fallen short, and what it could still become. We hope the issue offers something beyond analysis, an invitation. The decade is not yet over, and its second half is still unwritten.

Renata Freeman
Research and Publications Director



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Youth-Led Monitoring for a Resilient Digital France

(YLM-RDF)

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European Citizen Action Service

Co-funded by the European Union

YLM-RDF PROJECT

DIGITAL RESILIENCE: GIVING YOUNG PEOPLE A VOICE IN FRANCE'S DIGITAL FUTURE

Digital transformation is accelerating across Europe, reshaping how citizens access public services, education, and economic opportunity. In France, this shift is supported by an ambitious €18.6 billion national strategy. Yet young people and civil society have had limited input in shaping it, and significant implementation gaps remain. Only **66%** of the population currently has basic digital skills, well below the EU's 80% target, while **13.5%** of rural areas still lack 5G infrastructure, compared to **22%** in urban centres. The pace of digital transformation is **not the same** for everyone.

At the end of September, HDRI brought together more than 60 young people from across Europe for two deliberative workshops on digital resilience in France and Europe: on **28th of September at the European Parliament, Strasbourg, and on 30th of September at Maison Étudiante, Paris.**

Participants engaged directly with our research team, policy specialists, and civil society leaders. Moving beyond traditional consultation, these gatherings empowered participants to serve as co-researchers and active monitors within national digital governance.

These workshops mark the pivotal second stage of HDRI's seven-month YLM-RDF initiative. Moving into the final phase, HDRI will bring the Youth Declaration alongside our comprehensive monitoring dataset directly to national decision-makers and digital governance bodies, ensuring that youth-driven priorities directly influence future policy updates and updates to the national digital roadmap.



YLM-RDF PROJECT

KEY FOCUS AREAS & YOUTH INSIGHTS

- **Overcoming Digital Marginalisation:** Discussions highlighted that digital exclusion is deeply social and educational, rather than a mere lack of hardware. Delegates stressed the urgent need to strengthen community-based support networks and embed essential digital rights, data protection, and online safety into formal education.

- **Confronting Territorial Disparities:** Youth representatives from rural regions voiced concerns over unequal connectivity and service access, demanding strict oversight on infrastructure delivery so that regional communities are not left behind as public services digitise.

- **Co-Authoring Policy Solutions:** Rather than offering passive feedback, attendees worked collaboratively to draft the upcoming 2026 Youth Declaration on Digital Resilience, a youth-led framework designed to directly address the "consultation gap" in national policy.



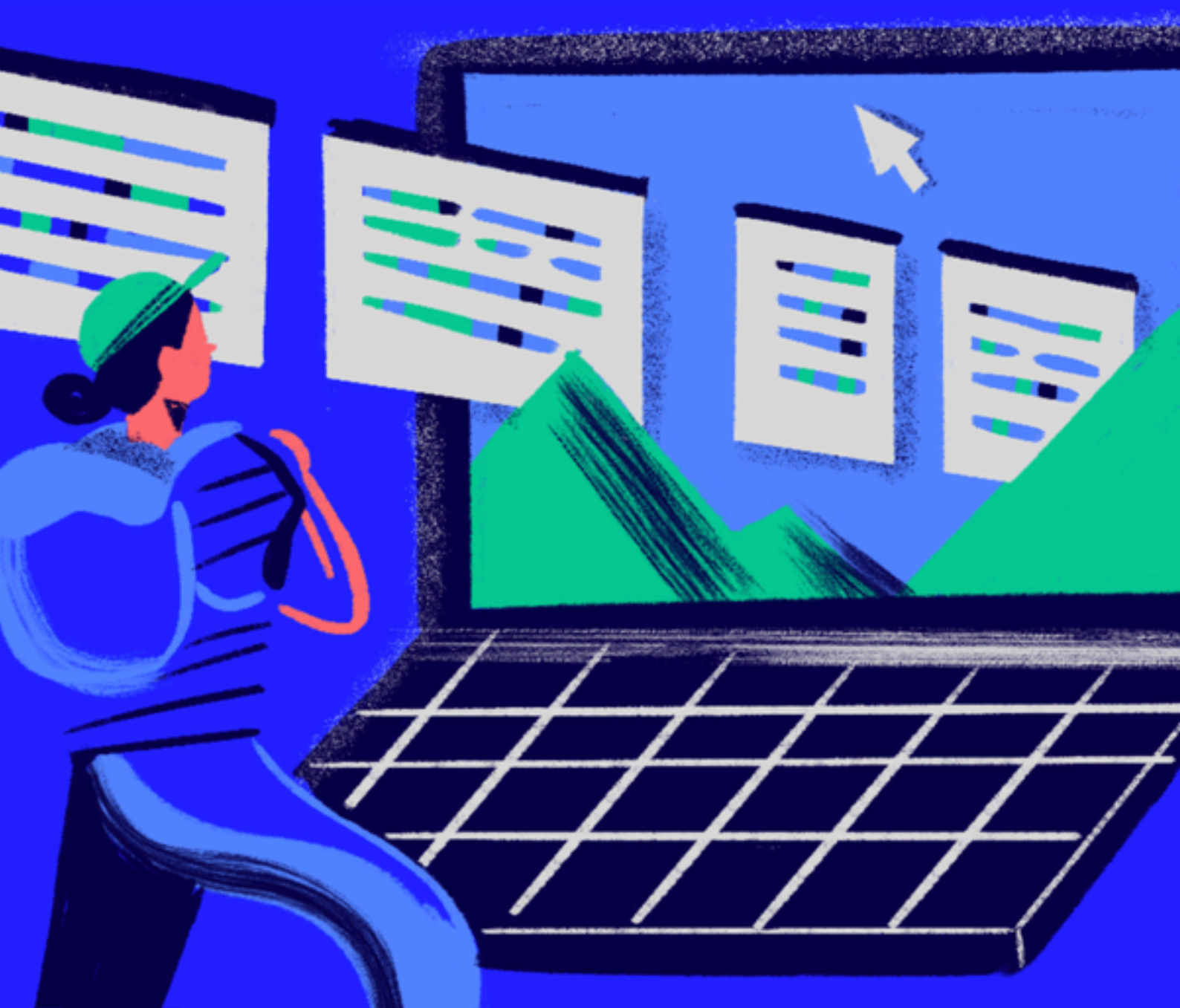
Thank you to ECAS and the European Union for their support, to our speakers, and to all the participants for contributing their time and their ideas to our YLM-RDF project!



Curious to learn more?

Scan the code to follow our ongoing project and see how young voices are shaping France's digital future!

Economic, Social, and Cultural Rights (ESCR)





CAN THE EU FULLY DIGITISE PUBLIC SERVICES WITHOUT DEEPENING THE EFFECTS OF THE DIGITAL DIVIDE ON VULNERABLE GROUPS?

By Armelle Le Pape

Established in 2022, the EU Digital Decade Policy Programme set out the ambitious goal of digitising 100% of Member States' public services by 2030 to promote citizens' access to fundamental rights. As of 2026, 85% of public services are available digitally to citizens, with an expected total of 92.3% by 2030.[1] However, the fast development of Digital Public Infrastructure (DPI) has given rise to a "digital first" approach in multiple EU countries, where administrative procedures are now expected to be completed digitally, creating significant barriers to rights for some marginalised groups.

This article sets out recommendations for a more inclusive Digital Decade, including the development of participative DPI design processes and digital skills programmes as conditions for receiving EU funds, as well as the legal protection of a right to offline access.

The Goal: Guaranteeing Continued Access to Rights in an Unstable Global Context

Following the COVID-19 pandemic, creating reliable digital pathways to key public services has become a priority for ensuring citizens' continued access to fundamental rights and services. In 2021, the creation of the European Recovery and Resilience Facility, an EU pandemic recovery fund, enshrined the development of DPI as a central goal in restructuring European societies post-pandemic. In a strained economic context marked by successive lockdowns and geopolitical conflicts, modernising slow bureaucratic processes also allows for potential efficiency gains and large governmental savings.[2]

[1] European Commission. (2026). State of the Digital Decade 2026: Closing structural gaps and mobilising investments for 2030 and beyond. Publications Office of the European Union. https://digital-strategy.ec.europa.eu/en/library/state-digital-de cade-2026-closing-structural-gaps-and-mobilising-investment s-2030-and-beyond

[2] European Commission. (2026). eGovernment and digital public services. Retrieved September 20, 2026, from https://digital-strategy.ec.europa.eu/en/policies/egovernment

With the increase of international migration flows, EU governments must further work in collaboration to provide citizens with uninterrupted access to interoperable national public services everywhere in the Union. This would enable a true form of European integration, where the circulation of persons within the EU does not restrict their access to basic administrative procedures.

Funding Member States' Digital Transformation

To fulfil these ambitions, the EU Digital Decade Policy Programme 2030 enunciates set targets for each of its focus areas, including digitising 100% of EU Member States' public services and providing 80% of its citizens with basic digital skills. The Programme relies on over €200 billion in EU funds provided for the most part by the Recovery and Resilience Facility and the Digital Europe Programme. Article 7 of the Digital Decade Policy Programme details how funds are allocated to Member States based on each country's "National Strategic Roadmap", a document compiling the measures they will implement to hit the 2030 targets, and their estimated costs. Some projects are developed through European Digital Infrastructure Consortia (EDICs), in which Member States can jointly fund and co-build digital tools, such as the European Digital Identity Wallet, to make DPI interoperable and allow citizens to use them across the European Union.

Progress on the programme's main targets is closely monitored by the European Commission through the release of an annual "State of the Digital Decade Report", in which recommendations are provided to adjust the Member States' national roadmaps every two years in order to reach the Decade's targets.

The "Digital First" Approach and the De Facto Exclusion of Vulnerable Groups

While the digitisation of public services progresses steadily towards its 2030 target, most Member States face significant struggles with bridging digital literacy gaps amongst their populations. The 2026 State of the Digital Decade Report stresses that only 60.4% of EU citizens currently possess basic digital skills, with an anticipated rate of 68% by 2030, falling short of the 80% target.[3] This digital literacy deficit disproportionately impacts vulnerable demographic groups: basic digital competency drops to 33% among citizens aged 65–74 and 38% among individuals with low educational attainment, while individuals with disabilities and foreigners also face significant challenges navigating DPI.[4][5]
Thus, the mismatched progression of DPI implementation and digital literacy initiatives contributes to the systemic exclusion of certain marginalised groups from accessing public services.

The rapid shift towards DPI in EU countries has introduced a "digital first" approach in Member States approaching the 100% digitising target, turning offline access into a rare exception. In France, for instance, online tax filing is now mandatory, and while paper filing remains permissible for those unable to use digital services, the procedure does not come without friction: paper forms are no longer systematically mailed to citizens, and those without internet access or home printers must travel to a local tax office to access physical documents.

Paradoxically, local administrative offices are increasingly closing due to digitisation.[6] Completing basic administrative procedures therefore becomes very challenging for vulnerable citizens.

[3] European Commission. (2026). State of the Digital Decade 2026: Closing structural gaps and mobilising investments for 2030 and beyond. Publications Office of the European Union. https://digital-strategy.ec.europa.eu/en/library/state-digital-de cade-2026-closing-structural-gaps-and-mobilising-investment s-2030-and-beyond

[4] Eurostat. (2026). Skills for the digital age. European Commission. https://ec.europa.eu/eurostat/statistics-explaine d/SEPDF/cache/124994.pdf?v=1646955941133016

[5] OECD. (2024). Digital public infrastructure for digital governments (OECD Public Governance Policy Papers No. 68). OECD Publishing. https://doi.org/10.1787/ff525dc8-en

[6] Défenseur des droits. (2022). Dématérialisation des services publics : trois ans après, où en est-on ? https://www.defenseurdesdroits.fr/rapport-dematerialisation-des-services-publics-trois-ans-apres-ou-en-est-265

Beyond Europe: Co-Designing DPI to Foster Inclusion

In these conditions, fostering inclusive access to public services is crucial. Looking ahead, digitisation processes in the Global South can become a source of inspiration for the EU. In Indonesia, inclusivity is central to the design of a new digital ID service. The World Bank's 2025 "Digital Public Infrastructure and Development" report outlines the organisation of consultations with women, citizens from low-literacy groups, and persons with disabilities to gather their input.[7] Marginalised groups were asked to test the technical layout of Indonesia's eID service and suggest amendments and recommendations to make public services more inclusive.

The Path Forward: Fostering Digital Inclusion at the EU Level

Despite the Digital Decade's ambitious goals and the progress achieved across all targets, the discrepancy between low digital literacy skills and rapid progression towards full digitisation of public services threatens the policy's expected outcomes in terms of inclusion. Access to fundamental rights and procedures decreases while the digital gap widens for vulnerable citizens.

The following recommendations are intended to enable progress towards a more inclusive Digital Europe:

- **Establishing a legal "right to offline access" to key public services:** to avoid the exclusion of vulnerable groups through "digital first" practices, the European Commission should amend the preamble to Decision (EU) 2022/2481 establishing the EU Digital Decade Policy Programme, to protect the right to parallel offline access to public services with no additional barriers.

- **Putting vulnerable groups' voices at the heart of the Digital Decade Programme:** based on the shortcomings observed in the 2026 State of the Digital Decade report, the European Commission should draft a legislative proposal to amend Article 7 of Decision (EU) 2022/2481 on the national strategic roadmaps mechanism, introducing new conditions for allocating EU funds to national DPI projects. All projects should identify specific vulnerable groups and set a precise plan to consult these groups in order to establish efficient and inclusive communication and technology design, as well as providing administrative support.

Furthermore, national roadmaps for DPI projects should include projects designed to address the digital gap in accessing DPI, following best practices like Mongolia's "AI Academy", where governments use educational levers to provide teachers in remote areas with digital skills they can then teach in schools. NGOs could receive similar training to bring digital skills to vulnerable populations.

These measures would enable the EU to fulfil its ambitious digital programme without leaving its citizens behind.



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[7] Clark, J., Marin, G., Ardic Alper, O. P., & Galicia Rabadan, G. A. (2025). Digital public infrastructure and development: A World Bank Group approach (Digital Transformation White Paper, Vol. 1). World Bank. https://ppp.worldbank.org/node/10205



A SEAT AT THE TABLE, NOT IN THE ROOM: DOES CIVIL SOCIETY ACTUALLY SHAPE THE EU'S DIGITAL DECADE?

By Ioana Bianca Popescu

Consultation Without Control

In December 2022, the European Union adopted Decision 2022/2481, establishing the Digital Decade Policy Programme 2030 (DDPP 2030).[1] This document sets the targets meant to guide the Union's digital transformation across infrastructure, skills, businesses and public services by the end of the decade. The Decision makes it clear who should help shape that transformation: Article 9 commits the Commission and Member States to solicit views from private and public stakeholders, including representatives of businesses, social partners and civil society throughout the process. But, being consulted and holding decision-making weight are not the same. The Commission must seek input from stakeholders on a regular basis on the Programme's direction. Nothing in that duty, however, or in the detailed rules governing how a project is proposed, selected, or run as a European Digital Infrastructure Consortium (EDIC) gives civil society a defined channel to shape what a specific EDIC actually does once it exists.

Building the Digital Decade, One EDIC at a Time

DDPP 2030 is the instrument that is currently setting the EU's digital course until 2030 and is actively being implemented through national roadmaps, ongoing multi-country projects (MCPs) and cooperation mechanisms between the Commission and the Member States. EDICs are legal instruments designed to develop the digital targets into concrete actions. They build infrastructure, deliver services and unite stakeholders around a shared project, which is why who governs that structure matters more than who was asked. Six EDICs are already established, spanning from language technologies and artificial intelligence to digital city planning and public administration interoperability, with more expected as the

[1] European Union. (2022). Decision (EU) 2022/2481 of the European Parliament and of the Council of 14 December 2022 establishing the Digital Decade Policy Programme 2030. Official Journal of the European Union, L 323, 4–26. https://eur-lex.europa.eu/eli/dec/2022/2481/oj

Programme evolves.[2]

The Decision builds a real commitment to stakeholder engagement. Article 9 requires the Commission to turn to both private and public stakeholders when developing policies under the Programme. The same requirement applies to Member States when drafting their national digital roadmaps. Together with the obligation of the Commission to publish the outcome of the engagement, this is a genuine duty, not just a formality.

Where Consultation Ends and Governance Begins

Despite the focus on stakeholder engagement, the dialogue requirement was never built to reach the structure of EDICs. Articles 10 through 21, which govern proposing, selecting, setting up, and running an EDIC, never mention civil society. Once a MCP becomes an EDIC, governance shifts to an entirely different framework. Article 16 establishes the leading bodies of an EDIC, namely the assembly of members and the director. The assembly of members is made up of the participating Member States, the Commission and other entities accepted, though under Article 15(4), Member States are guaranteed a majority of voting rights regardless of how many other entities are admitted. Even if a civil society organisation is formally seated at the table, it could never hold real power. A director, appointed by the assembly and responsible for the day-to-day operations, completes the structure with yet another post entirely outside civil society's reach. Article 21 then closes the loop of responsibility. It states that each EDIC's annual activity and financial report is approved by the same assembly that governs the project, then forwarded to the Commission.

A Voice Without a Function

The gap between consultation and control is more than technical once a project obtains a budget, infrastructure, and real consequences for for the people it serves. Civil society is the actor that is more likely to review and flag algorithmic bias, data misuse, or the exclusion of vulnerable groups, yet has no seat in the assembly that runs an EDIC and no formal role in reviewing the annual report meant to hold it accountable. Civil society keeps a voice on the Programme's general direction throughout its progress; yet, it never gains a defined, impactful function inside the structure that actually makes the binding decisions.

Young people are the best illustration of this shortfall. Across the Decision's roughly ten thousand words setting up a programme explicitly framed around the future, youth are named exactly once. This mention is made in a recital, not a binding article, mentioned as one of several stakeholders Member States should consult when drafting national roadmaps. They are missed in Article 9's consultation duty, Article 16's governing structure, as well as in Article 21's reporting cycle. This results in a structural blind spot built into the Programme's own framework: the demographic set to live the longest inside the digital future the Decision is creating has the thinnest formal presence of any group it names.

This gap has two distinct faces, and treating them as one problem risks solving neither. Civil society is defined by function, named in Article 9 as consultation partners. Youth, by contrast, is defined only as a life stage, but should be entitled to a say because it will live inside the Decision's consequences longer than anyone currently constructing it. Assuming that consulting civil society automatically integrates youth interests defeats the purpose of this Programme. Youth's near-total absence from the text highlights the idea that civil society is only mentioned in Article 9, and mentioned is not the same as empowered.

Steps Towards Closing the Loop Without Complete Governance Rewrite

Having identified these gaps, it is clear that both call for mechanisms the EU has already built. First, the Commission's own Youth Test, introduced to assess policy impact on young people, should be formally extended to future EDIC proposals and the Programme's

[2] European Commission. (2026). European Digital Infrastructure Consortium (EDIC). Retrieved September 25, 2026, from https://digital-strategy.ec.europa.eu/en/policies/edic

implementing acts.[3] The tool already exists; it has simply never been connected to this Decision. Alongside it, a future cycle of the EU Youth Dialogue could focus specifically on EDIC governance, with its Resolution going directly into the Commission's annual Report on the Digital Decade.[4]

Second, the annual EDIC reports should face a mandatory public comment window before finalisation, giving civil society a defined flagging role they currently lack, without altering who holds a vote in the assembly of members. A second step already has a working precedent. Article 67 of the AI Act establishes an Advisory Forum as a standing, non-voting body of civil society, academia and industry stakeholders that advises the AI Board.[5] A similar forum attached to each EDIC's assembly of members would give civil society a continuous channel to flag concerns, not only once a year when its report is published.

Both proposals take into consideration the real risks of a project of this magnitude. EDICs manage budgets and carry legal liability under Article 18. Therefore, granting outside groups full voting rights risks creating gaps in who is held accountable when something goes wrong. Consultation was never missing from the EU's Digital Decade; follow-through was, and both fixes proposed here supply it without asking the Decision to restructure its own governance framework.





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[3] European Commission. (2024, January 10). Commission gives young people a stronger voice in EU policymaking as a legacy of the European Year of Youth. https://commission.europa.eu/news/giving-stronger-voice-europes-youth-build-better r-future-2024-01-10_en

[4] Council of the European Union. (2026, May 11). Resolution of the Council and of the representatives of the Governments of the Member States meeting within the Council on the outcomes of the 11th cycle of the EU Youth Dialogue (ST 9131/1/26 REV 1). https://data.consilium.europa.eu/doc/document/ST-9131-2026-REV-1/en/pdf

[5] European Union. (2024). Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act), Article 67. Official Journal of the European Union, L 2024/1689. https://eur-lex.europa.eu/eli/reg/2024/1689/oj

Environment, Climate Change & Energy





WHO GETS TO PARTICIPATE IN EUROPE'S TWIN TRANSITION?

By Zinah H. Al-Maawi

The Digital Decade Promise of a Greener, and More Inclusive Europe

The EU's Digital Decade frames digital tools as essential to its "twin transition," which is the push toward a green digital economy that promises citizens a new means to monitor emissions, access green jobs, and shape climate policy. That said, this promise is not evenly delivered. Young people without access to retraining pipelines, and communities located near the infrastructure the transition depends on, such as its mines, data centers, and grid, usually experience digitalisation as exclusion rather than inclusion and development. Whether these tools narrow inequality or widen it is not an automatic outcome of going digital. It depends on a design choice of who is built into the transition from the start and who is left to catch up, or left out completely. The main question asked then is not whether digitalisation can speed the green transition, but who has the capabilities to participate in it, and who risks being left behind?

Why The Twin Transition Matters Now

Europe's green transition and digital transformation are joint missions. Meeting climate objectives requires better monitoring of emissions, more efficient energy systems, and greater capacity to manage growing complex infrastructures. Digital technologies can contribute to each of these objectives through collecting and analyzing environmental data, improving industrial efficiency, or helping households manage their own energy use.

This union has produced the idea of the "twin transition," which is the simultaneous transformation of the EU's economy through digitalisation and decarbonisation. The European Commission has recognised that digital technology can support the green transition while also acknowledging that digitalisation itself has an environmental ripple effect. Data centers, networks, and connected devices all require the consumption of a significant amount of energy and materials, meaning digital solutions are not environmentally neutral in themselves.

The distributional question is becoming more important as these transformations and developments grow. Digital tools can give some citizens a larger capacity to understand environmental problems or contribute to climate-related decision-making. Others may not have the connectivity, skills, financial resources, or the access they would need to take advantage of these opportunities.

In 2024, data centers consumed 22% of Ireland's total metered electricity, and that share rose to 23% in 2025 according to the Central Statistics Office. This pushed regulators toward a de facto moratorium on new data center grid connections in the greater Dublin area.

The challenge then is not whether digitalisation is good or bad for the environment. It is whether the benefits and burdens of digitalising the green digital transition are being distributed fairly.

What the Digital Decade Actually Promises

The Digital Decade Policy Programme 2030 sets out the framework for understanding both sides of this opportunity. Its 2030 targets include making sure that at least 80% of adults possess basic digital skills and that the EU has 20 million employed information and communications tech specialists, alongside the ambitions to spread digital connectivity, digitalized business and public services. The programme is not designed solely around technological competition; the Commission states explicitly that digital transformation should allow everyone to participate in digital opportunities.

The framework also connects digitalisation to environmental sustainability. The Commission's 2025 assessment of the digital decade treats "harnessing digitalization for the green transition" as one of its efficient production, energy management, and environmental monitoring, while the EU is also pursuing more sustainable digital infrastructure.

The employment aspect is especially important for younger EU generations. The green and digital transitions are expected to reshape the labor demand, by creating opportunities in areas ranging from renewable energy and energy efficiency to data analysis, AI, and digital infrastructure.

In principle, this is an inclusive model where digital technologies create new capabilities, while education and training allow people to use them. In practice however, these capabilities are unevenly distributed.

Efficiency does not equal Environmental Justice

The main tension is that digitalisation can make the green transition more efficient without necessarily making it more equitable. For instance, a smart electricity network may optimize consumption and help integrate renewable energy. Environmental sensors can also make pollution easier to measure. Digital platforms can give citizens access to information that was previously hard to get to. These are true improvements in environmental governance. But they don't answer the question of who controls these systems, who has the capacity to use them, and who experiences the physical consequences of their deployment.

The distinction between the two is important for communities affected by the infrastructure behind digital transition. Data centers require electricity and cooling, and Renewable energy installations require land. Digital networks depend on physical equipment and critical raw materials. The European Commission designated a proposed open-pit lithium mine in Covas do Barroso as a strategic project under the Critical Raw Materials Act, which granted it preferential approval despite evidence it could threaten the local water resource and disrupt the farming practices the community depends on. Since then, local groups and ClientEarth have taken the Commission to the European Court of Justice, arguing the strategic designation overrides the proper assessment of the risks to the residents. The environmental footprint of digitalisation can therefore be displaced geographically; the person benefiting from the place where the energy, water, land, or minerals required to provide those services are consumed.

The issue of political participation also comes up. Digital environmental platforms can increase participation by allowing citizens to access information, monitor environmental conditions, and respond to consultations. But access to a platform alone does not automatically produce influence. Participation depends on digital literacy, education, and the ability to understand technical information and navigate institutional processes. This means one community may be included in digital consultation while remaining substantively disadvantaged in determining the final outcomes.

Beyond the EU : What does Saudi Arabia Reveal?

The Saudi Arabia case lets us test the distributional question at the core of Europe's twin transition.

Under Saudi Vision 2030, the kingdom's long-term economic diversification strategy for digitisation, economic diversification, and environmental transformation is being pursued together. Vision 2030 aims to reduce the country's reliance on petroleum revenues by diversifying the economy with a specific focus on implementing technologies like AI across different sectors, including smart cities, healthcare, and finance. In order to achieve integration of intermittent renewable energy generation into the national grid, investment is required in transmission infrastructure and energy storage. With this, the Saudi Green Initiative commits the kingdom to planting 10 billion trees, protecting 30% of its land and sea areas, and even reaching net zero by 2060 through a Circular Carbon Economy framework.

These efforts can improve energy and water efficiency and expand lower-carbon industries, but the systems that are in place to deliver them are not cost-free. The IEA estimates that about two-thirds of data centers' water use comes from electricity generation, mostly affecting the already water-stressed regions. Renewable building is mineral-intensive, and large-scale green infrastructure projects are usually sited on land belonging to marginalized communities.

NEOM, Vision 2030's flagship smart city, certifies this. Human rights groups report the forcible eviction of the Howeitat tribe, with estimates of those affected ranging from roughly 6,000 to 20,000. The case shows a structural pattern where a transition can advance decarbonisation while the community whose land it sits on absorbs the disruptions.

Designing People Into The Transition

The EU does not need to choose between digitalisation and environmental sustainability. Digital technologies can provide valuable tools for reducing emissions, improving resource efficiency and strengthening public participation. The problem we face is when technological progress is treated as evidence of social progress in itself.

A more inclusive twin transition would measure more than digital connectivity, skills and emissions reductions. It would ask whether disadvantaged groups can actually access emerging green and digital employment, whether communities can meaningfully participate in environmental decision-making, and whether the material costs of digital and green infrastructure are fairly distributed. Skills policies should not only focus on aggregate targets but on the groups and regions least able to convert training into economic opportunity.

Most importantly, environmental assessments of digitalisation should take into account the resources and communities behind technological infrastructure. The question is not simply whether digital technologies make the transition greener, but whose environment, whose resources and whose labour make that transition possible.

Europe's twin transition can very well expand human capabilities, but this outcome is not automatic. A transition should be considered inclusive only when people have a meaningful capacity not only to consume its technologies, but to benefit from them, participate in decisions about them and avoid bearing a disproportionate share of their costs.

The success of Europe's Digital Decade should therefore be judged not only by how efficiently it transforms the economy, but by who gets to shape that transformation and who is left carrying its consequences.





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WHO BEARS THE ENVIRONMENTAL COSTS OF EUROPE'S AI AMBITIONS?

By Lena Charlotte Klinkmann

The EU's AI ambitions

In April 2025, the European Union (EU) launched the AI Continent Action Plan and aims to mobilize €200 billion in total to turn the EU into a global leader in the field of Artificial Intelligence (AI).[1] AI infrastructure, and especially data centres, have a massive influence on the environment and the neighbouring communities. On the other hand, these big data centre projects bring potentially high infrastructure investments, create jobs, and increase tax revenues for local communities, which could also improve the quality of life.

Data centres consume large amounts of water, especially due to cooling processes; they have a significant carbon footprint associated with their high energy consumption, and in addition, data centres have a high land use. Moreover, data centres are often planned and located in rural, sparsely populated areas where the available infrastructure is not designed for facilities as large as data centres. In an attempt to challenge these issues, in June 2026, the European Commission published the Strategic Roadmap for Digitalisation and AI in the Energy Sector.[2] It portrays how, on the one hand, the growing energy demand due to the AI Continent Action Plan, and on the other hand, achieving the clean energy goals at the same time.

The action plan pursues the goals of creating AI strategies that people and the economy benefit from, and targets strengthening the capacities of researchers and industry. It is also a reaction to the US-China AI development race. And to gain technological and data sovereignty, due to the current geopolitical pressure the EU faces while being dependent on Chinese and US-American data systems and technologies. The investments from the action plan involve scaling up to 19 AI factories across the EU. The AI continent action plan is also part of the Digital Decade Policy programme 2030.[3]

[1] European Commission. (2025, April). AI Continent Action Plan. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CE LEX:52025DC0165

[2] European Commission. (2026, June). Strategic Roadmap for Digitalisation and AI in the Energy Sector. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52026DC05 01

The AI Continent Action Plan

The policy includes €30 billion in investments for AI Gigafactories; €10 billion is directly invested by the EU and national funds, and €20 billion is unlocked through private business investors. The purpose is to at least triple the European data centre capacity within the next five to seven years to meet the business and administrative needs by 2035. It includes five main pillars:

> simplifying AI rules, data, skills, AI adoption, and computing infrastructure, which also includes enhancing and increasing the capacities of AI infrastructure.[4]

For the addressed issue, the following described last pillar of the framework is relevant. Firstly, to increase the infrastructure, in 2026 the EU expanded to establish up to seven AI Gigafactories to develop and promote frontier AI models, which are increasingly being developed by other AI actors such as China and the US. Secondly, to scale up to 19 AI factories to interlink and provide high computing capacity for researchers, entrepreneurs, and the private and public sector. And thirdly, boost EU cloud and data centre capacity through establishing the proposal of the Cloud and AI Development Act. The act claims to create an EU marketplace for cloud services, provide secure EU-based cloud capacity, and simplify permissions for data centres.

For a stronger global position in this targeted transformation, the EU seeks partnerships in this field with like-minded partners who share the ambitions of developing a human-centred, reliable and secure AI.

Tensions and costs the population bears

While the economic benefits that AI creates are often centralized, the associated damages are concentrated in the neighbouring population of data centres and put massive pressure on the local infrastructure and environment.

Recently, with data centres close to major financial centres such as Frankfurt and London, investors have shifted to locate data centres in rural areas due to lower energy and land costs and quicker connection times. These large-scale projects put big responsibilities on small communities in terms of environmental limits and energy security and often lead to rising prices and resource shortages for the population.

The EU's AI ambitions create a massive electricity demand which generally threatens and potentially undermines the settled climate targets. According to researchers at the Kiel Institute for the World Economy, the electricity system might not be capable of meeting the requirements of the planned digital infrastructure.[5] For example, in Ireland, data centre electricity consumption was 22% of the total consumption in 2024; in 2015 it was 5%.[6]

Furthermore, data centres have massive water usage for cooling processes and electricity production. Globally, AI could require up to 4.2-6.6 billion cubic meters of water by 2027 only due to cooling processes and energy generation.[7] This is also based on the chosen locations, which are often in areas that face more hot days, which can often lead to more water consumption. This can also lead to increasing competition for water

[3] European Commission. (2022, December). Digital Decade Policy programme. Shaping Europe's Digital Future. https://digital-strategy.ec.europa.eu/en/policies/digital-decade-policy-programme

[4] European High Performance Computing Joint Undertaking (EuroHPC JU). (2026, July). Call for AI Gigafactories. European Commission. https://commission.europa.eu/topics/competitiveness/competitiveness-coordination-tool-projects/ai-gigafactories_en

[5] Ciani, M. (2026, April). Running into a debacle: The mismatch between the EU's AI ambition and its energy planning (Kiel Policy Brief). Kiel Institut. https://www.kielinstitut.de/fileadmin/Dateiverwaltung/IfW-Publications/fis-import/89312b7a-273a-4ecb-8481-fa0576d8f06f-Running_into_a_debacle.pdf

[6] Central Statistics Office (Ireland). (2025, June). Data Centres Metered Electricity Consumption 2024. https://www.cso.ie/en/releasesandpublications/ep/p-dcmec/datacentresmeteredelectricityconsumption2024/keyfindings/

[7] Barnett-Itzhaki, Z. (2026, July). The water footprint of artificial intelligence: Emerging solutions and governance imperatives. ScienceDirect. https://www.sciencedirect.com/science/article/abs/pii/S0043135426005488



usage between industry, agriculture, and households.

Beyond the EU : The Nexus AI Factory Platform in Morocco

In April 2026, the Nexus AI Factory Platform Project was announced, with a total of 12 billion Moroccan dirhams.[8] The centre is intended to run on renewable energy due to cooperation with the United Arab Emirates-based energy company TAQA. At the same time, Morocco's electricity mix is 75% fossil-based according to OECD research data from 2024.[9] Morocco aims to be the connection between African and global markets in the technological sector and to serve the demand for state-of-the-art computational services in the Middle East, Africa, and Europe with its facility. This program aligns with the national strategy Digital Morocco 2030, which aims to transform Morocco into a regional tech leader and enhance the Moroccan digital economy.[10]

At the same time, the MENA region is the most water-stressed worldwide, so the region is already facing water shortages and severe droughts.[11] In the long term, the Nexus AI Centre aims to have a capacity of 500 megawatts (MW) in the long term. A 100 MW facility already consumes up to 2.5 billion litres of water.[12] This water consumption might exacerbate the already existing water shortages.

A possible path into the future

Finally, is it possible to combine the EU's AI ambitions with climate and social justice? Generally, we need to note that fulfilling the EU's environmental and AI ambitions is not naturally inherent due to high resource consumption. To successfully handle this double transition, AI data companies and investors need frameworks and policies that tie them to sustainable

[8] Bouzaroita, M. (2026, April). Nexus Factory launch at GITEX Africa positions Morocco as a future AI gateway. Morocco World News. https://www.moroccoworldnews.com/2026/04/286411/nexus-factory-launch-at-gitex-africa-positions -morocco-as-a-future-ai-gateway/

[9] Our World in Data. (2026). Electricity generation by source, Morocco, 2000 to 2025. https://ourworldindata.org/grapher/electricity-mix?facet=none&country=%7EMAR&source=total&metric=by_source&frequency=annual

[10] Ministry of Digital Transition and Administration Reform. (2024, September). National Strategy "Digital Morocco 2030". https://www.mmsp.gov.ma/sites/default/files/2024-09/Plaquet telnstitutionnel_18092024_Ang.pdf

[11] Belhaj, F. (2025, March). The water-energy nexus: The path to solving the water crisis in the Middle East and North Africa. Policy Center for the New South. https://www.policycenter.ma/publications/water-energy-nexus-path-solving-water- crisis-middle-east-and-north-africa

[12] Sassmanshausen, F. (2026, July). AI energy and water consumption compounds climate and pollution crises: Can it also be part of the solution? Health Policy Watch. https://healthpolicy-watch.news/ai-compounds-energy-water-crises/

commitments and transparent planning processes while planning these projects.

Furthermore, it is advisable that the local population benefits from the data centre and directly experiences positive effects of the facilities, for example through tax revenues that are directly reinvested in the hosting communities. Furthermore, companies need to contribute to the expansion of the electricity grid and the production of electricity to avoid an electricity shortage and rising electricity prices for the local population. In addition, the companies need to work and cooperate to develop cost-effective water recycling systems for the cooling processes.

Overall, while planning the facilities and assigning the data centre projects, investors and decision-makers should prioritize locations with favourable environmental conditions to guarantee energy-efficient cooling, and regions that are not already experiencing severe water scarcity.

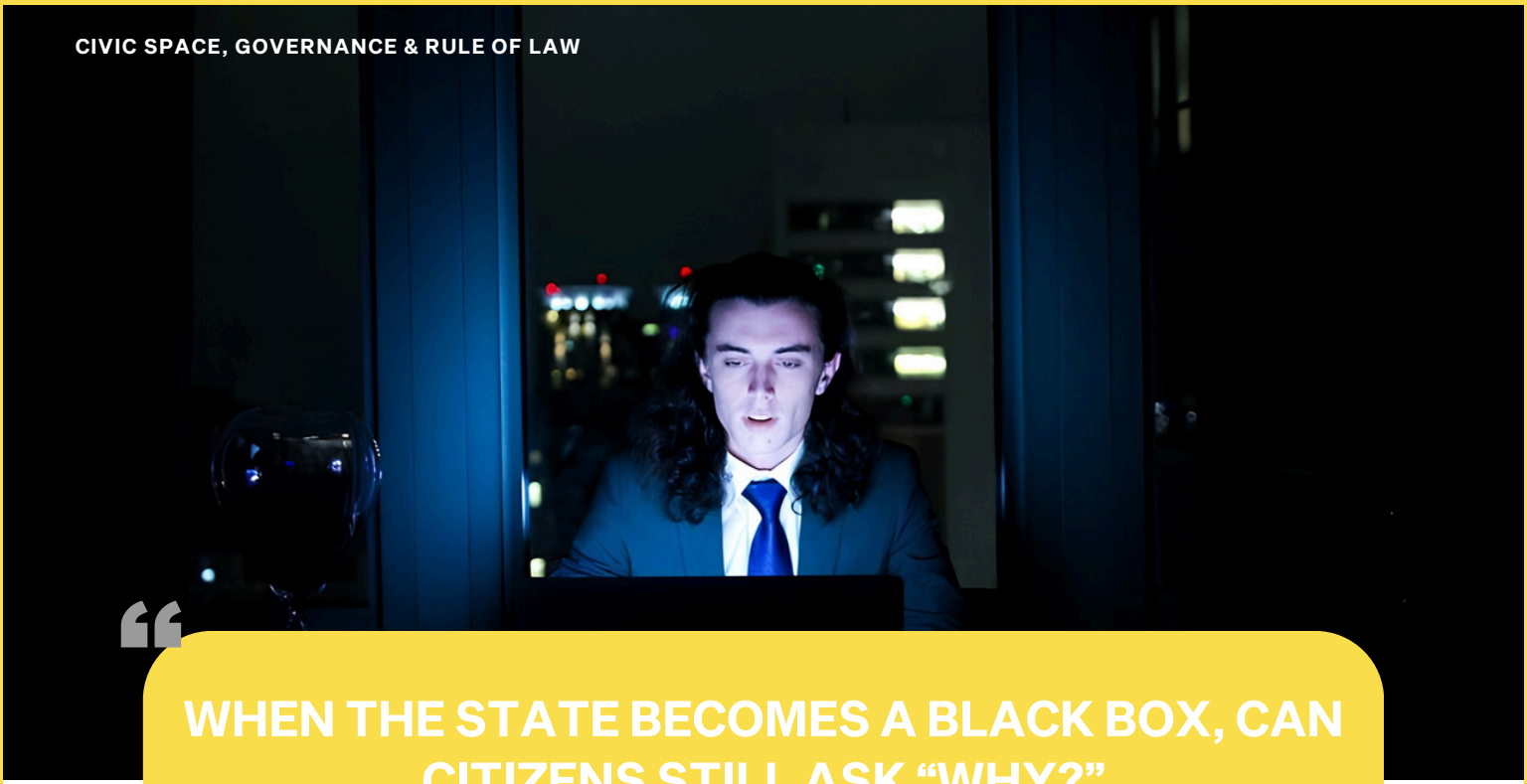




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WHEN THE STATE BECOMES A BLACK BOX, CAN CITIZENS STILL ASK "WHY?"

By Darina Nassyr

The digitalisation of public administration is one of the most significant changes in how modern states interact with their citizens. Connecting data and moving services online can reduce delays, remove bureaucratic bottlenecks, and make everyday interactions with government faster and easier.

The question, therefore, is not whether the state should digitise. **It is who explains a decision when a system shapes it, who justifies it when it is challenged, and who answers when it is wrong.**

Imagine a familiar administrative interaction. A citizen applies for housing support, a tax adjustment or a student allowance. Instead of speaking to an official, they receive a rejection or a request for further checks.

They ask: What information triggered this? Which criteria mattered? Why was I flagged?
The answer may simply be: "The case was flagged by the system."

That answer reveals the problem.

Traditional administration, despite all its imperfections, offered a relatively visible chain of responsibility:

Citizen → Official → Reasoned Explanation → Appeal

Digital administration can introduce a different chain:

Citizen → Data → Algorithmic Assessment → Administrative Outcome

The difference is not merely technical. It is a difference in visibility. As the state becomes more digital, citizens are becoming increasingly transparent to the system. Their income, employment, benefits, documents and interactions with public services can increasingly be processed and connected.

But is the system becoming equally transparent to them?

This is where the digital state risks becoming a black box: the citizen can see the outcome, but not always the reasoning behind it.

Europe is already moving towards increasingly digital public services. The EU's Digital Decade sets targets for the digitalisation of public services by 2030.[1] At the same time, the European Declaration on Digital Rights and Principles describes a digital transformation that should put people and their rights at its centre.[2]

That raises a simple question: **what does "human-centred" mean when a human being cannot meaningfully question a decision affecting them?**

The Dutch childcare benefits scandal shows why this question matters. Dutch tax authorities used an algorithmic risk-classification system to identify childcare benefit applications considered more likely to contain errors or fraud. Nationality was among the factors used to calculate risk.[3]

For the families caught in the system, this was not an abstract debate about algorithms. Parents selected for investigation could have their benefits suspended and be required to repay large sums of money. Amnesty International documented serious financial and social consequences for affected families.[3]

Imagine trying to prove that a system is wrong when you cannot even see why it decided you were suspicious. The problem was therefore larger than a biased algorithm. It was a problem of accountability. **The citizen was expected to explain themselves to the state, while the state struggled to explain itself to the citizen.**



The UK Post Office Horizon scandal shows a different danger: **what happens when an institution trusts the computer more than the person standing in front of it.**

The Horizon accounting system showed apparent financial shortfalls in Post Office branches. Information from Horizon was used when action was taken against sub-postmasters alleged to be responsible for those shortfalls. The official inquiry was established to examine the system's failures, the quashing of criminal convictions and the consequences for affected postmasters.[4]

For those affected, the consequences went far beyond a faulty number on a screen. The inquiry has examined financial, reputational, physical and emotional harm linked to apparent shortfalls, accusations and convictions.[5]

This is sometimes described as automation bias: the tendency to give computer-generated information more authority than it deserves.[6]

[1] European Commission. (n.d.). Digital Decade Policy Programme. Shaping Europe's Digital Future. https://digital-strategy.ec.europa.eu/en/policies/digital-decade-policy-programme

[2] European Commission. (2022, December 15). European Declaration on Digital Rights and Principles. Shaping Europe's Digital Future. https://digital-strategy.ec.europa.eu/en/library/european-declaration-digital-rights-and-principles

[3] Amnesty International. (2021). Xenophobic machines: Discrimination through unregulated use of algorithms in the Dutch childcare benefits scandal. https://www.amnesty.org/en/latest/news/2021/10/xenophobic-machines-dutch-child-benefit-scandal/

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[5] Post Office Horizon IT Inquiry. (2021). Terms of reference. GOV.UK. https://www.gov.uk/government/publications/post-office-horizon-it-inquiry-2020/terms-of-reference

[6] Mosier, K. L., Skitka, L. J., Heers, S., & Burdick, M. (1998). Automation bias: Decision making and performance in high-tech cockpits. The International Journal of Aviation Psychology, 8(1), 47–63. https://doi.org/10.1207/s15327108ijap0801_3



But the lesson is not that technology should never be trusted. It is that **"the computer says so" cannot become a substitute for institutional judgement and responsibility.**

The Dutch and Horizon cases are very different. Yet they expose two sides of the same problem. A digital system can become too opaque to explain, or too authoritative to question. Either way, responsibility becomes harder to locate. That matters because an appeal is only meaningful if a person can understand what they are appealing against. A review process may exist on paper, but it offers little protection if the original decision cannot be explained in terms a citizen can actually use. Digitalisation changes the speed and scale of administration; it should also make us ask whether the old safeguards still work when the path to a decision is no longer visible.

Europe's digital transformation should therefore be measured not only by how many services move online or how quickly decisions can be processed. It should also be measured by whether the people affected by those decisions can still understand them, question them and obtain a meaningful answer.

A human-centred digital state does not require citizens to understand algorithms. But when a system influences an important decision, there still needs to be a way back to something recognisably human: a reason that can be understood, a decision that can be challenged, and an institution that can be held responsible.

This matters because efficiency and accountability are not opposites. A modern state can use technology to process millions of interactions more quickly while still preserving the citizen's ability to question what happens to them. The danger begins when efficiency is mistaken for legitimacy—when "the system says so" becomes an acceptable end to the conversation.

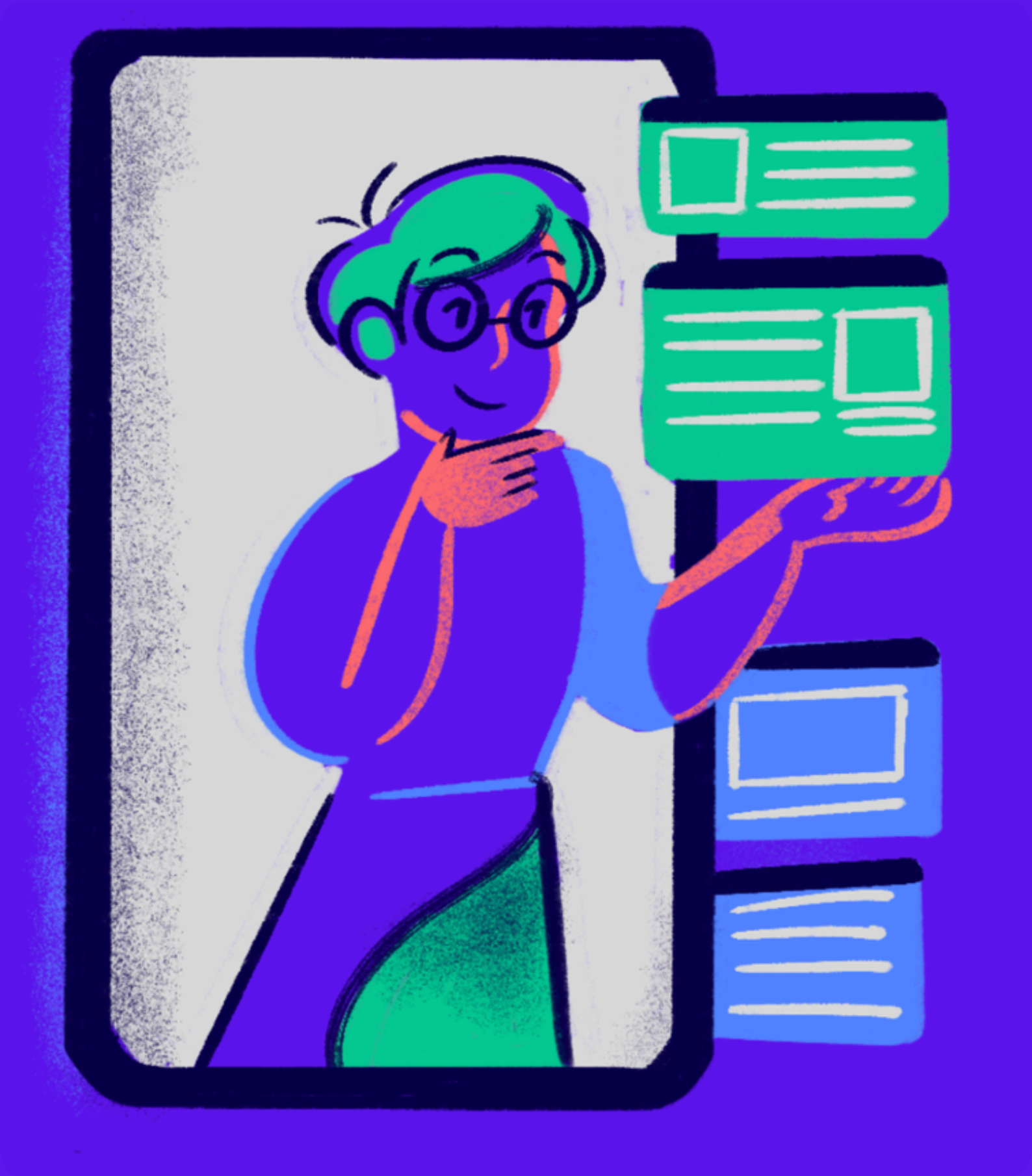
Europe's digital transformation should therefore be measured not only by how many services move online or how quickly decisions can be processed. It should also be measured by whether the people affected by those decisions can still understand them, question them, and obtain a meaningful answer.

A digital state should be faster. It should be smarter. But it should never become a state that citizens can only obey, but cannot question.



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A MAN-MADE FUTURE

By Liv Johanna Bubendorfer

Digitalisation has arrived, and it is here to stay. Globally, 77% of men and 71% of women used the internet in 2025, broadcasting a steady increase over the past decade.[1] However, growing digitalisation begs the question of whether everyone benefits the same way from the opportunities it creates, or if there are certain groups that are being left behind.

There are still disparities in who gets to enjoy digital access and the opportunities that come with it. This gap is also called the "digital divide" and describes the inequalities in access to digital skills and technology.[2] With access comes opportunity, which means missed chances for those who simply do not have the ability to be connected.

The Issue

One issue created by the divide is education. Online learning has grown in popularity, with over 30% of EU internet users said they used online learning materials or had taken an online course, and in 2025, three-quarters of EU-based youth aged 16-24 possessed basic digital skills.[3] Special attention needs to be paid to women and girls, as they are globally still almost ten percent less likely to own a mobile phone than men and are also behind their male counterparts in digital skills.[4] While there is almost no difference between the number of men and women using the internet in the EU, women only make up roughly one fifth of all Information and Communication Technology (ICT) specialists, a percentage that shrinks further with increasing age.[5]

[1] International Telecommunication Union. (2025). The gender digital divide. https://www.itu.int/itu-d/reports/statistics/2025/10/15/ff25-the-gender-digital-divide/

[2] UNESCO. (2025). Digital divides and inequalities. In AI and education: Protecting the rights of learners (p. 41). UNESCO. http://www.jstor.org/stable/resrep72544.9

[3] Eurostat. (2026). Skills for the digital age. European Commission. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Skills_for_the_digital_age; Eurostat. (2026). Online learning increasingly popular in the EU. European Commission. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/edn-20260319-1

[4] International Telecommunication Union. (2025). Mobile phone ownership. https://www.itu.int/itu-d/reports/statistics/2025/10/15/ff25-mobile-phone-ownership/; UNICEF. (2023). Bridging the gender digital divide: Challenges and an Urgent Call for Action for Equitable Digital Skills Development. https://data.unicef.org/resources/ictgenderdivide/

[5] Stahl, D. (2026). Closing in on the ICT gender gap: younger women account for a growing share of the ICT workforce. Digital Skills and Jobs Platform. https://digital-skills-jobs.europa.eu/en/latest/news/closing-ict-gender-gap-younger-women-account-growing-share-ict-workforce

This is not only important because this sector has shown continuous growth over the past years, but also because ICT specialists influence the EU's digital transformation and how digital solutions are constructed.[6]

Aiming for a stronger female presence in ICT is also crucial for combatting digital harm. This umbrella term refers to social, psychological, or emotional impacts resulting from digital experiences.[7] Digital violence describes acts "committed, assisted, aggravated, or amplified by the use of information communication technologies […] that results in or is likely to result in physical, sexual, psychological, social, political, or economic harm".[8] Common forms include cyberstalking, online harassment and image-based abuse, including Artificial Intelligence (AI)-generated deepfakes. Globally, the prevalence of this kind of violence against women is 85%, a rate that increases in countries with institutionalized or long-enduring gender inequality.[9] Especially AI deepfake abuse, which describes hyper-realistic AI-manipulated videos, images, or audio that show a person saying or doing something they never did, is being weaponized against women. Between 2019 and 2023, the number of deepfake videos on the Internet increased by 550%, and as of 2023, deepfake pornography accounted for 98% of all deepfake videos and a staggering 99% of deepfake pornography targeted women.[10] These striking numbers indicate that digital violence almost exclusively targets women, which raises the question of whether this is correlated with the lack of women in the ICT sector.[11] Creating more gender-balanced and diverse environments in digital jobs is expected to result in fairer technology solutions.[12]

Evidence & Insights

To tackle these and other issues, the EU implemented the Digital Decade Policy programme (DDPP) in 2022 with the aim of increasing digital literacy, overcoming the digital divide, and making the internet accessible to everyone. The DDPP's points of focus include the digital transformation of businesses, sustainable digital infrastructure and the digitalisation of public services. Furthermore, it intends to have 20 million working ICT specialists with an increased rate of women.[13] Other goals include combatting the geographical divide in connectivity with a particular note that everyone should have the possibility to participate online in democratic life, especially disadvantaged people. Furthermore, the DDPP sets the goal of 80% of people aged 16-74 having basic digital skills.[14] These steps are crucial for fair opportunities for all, and the DDPP's correct implementation will benefit EU citizens greatly, especially young people and women.

[6] Eurostat. (2026, May 27). Number of ICT specialists in the EU continues to grow. https://ec.europa.eu/eurostat/web/products-eurostat-news/w/ddn-20260527-2; European Commission. (2023, September 27). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Report on the state of the Digital Decade 2023, sec. 4.1.2, "Target: ICT specialists," https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:520 23DC0570

[7] Away From Keyboard. (n.d.). What is Digital Safety?. https://afk.org.au/what-is-digital-harm

[8] UN Women. (2025, November 18). Digital violence is real violence: One activist's fight for safety and human rights. https://www.unwomen.org/en/news-stories/feature-story/2025/11/ digital-violence-is-real-violence-one-activists-fight-for-safety-a nd-human-rights

[9] The Economist Intelligence Unit. (2021). Measuring the prevalence of online violence against women. https://onlineviolencewomen.eiu.com/

[10] Security Hero. (2023). 2023 State of Deepfakes: Realities, Threats, and Impact. https://www.securityhero.io/state-of-deepfakes/

[11] Eurostat. (2026, September 1). ICT sector- value added, employment and R&D. https://ec.europa.eu/eurostat/statistics-explained/SEPDF/cache/64771.pdf?v=7176079920300304

[12] Connecting Women in Digital. (n.d.). Connecting women in digital. https://widigital.eu/

[13] European Commission. (2026, June 17). Digital Decade Policy programme. https://digital-strategy.ec.europa.eu/en/po licies/digital-decade-policy-programme

[14] European Parliament & Council of the European Union. (2022). Decision (EU) 2022/2481 of the European Parliament and of the Council of 14 December 2022 establishing the Digital Decade Policy Programme 2030. Official Journal of the European Union, arts. 3(1)(g), 4(1)(a). https://eur-lex.europa.eu/eli/dec/2022/2481/oj

To track the development of the DDPP, the member states must present their plan to reach the goals to the Commission and adjust these so-called roadmaps every two years.[15] In the latest EU-wide report of 2026, it has been acknowledged that there have been advances in key areas, but stagnation in other aspects, especially in ICT specialists that only make up 5% of employment in 2025, half of the target set for 2030 and women continue to account for less than 20% of ICT specialists.[16]

Call to Action

- **Close the gender gap in ICT**

The EU and its Member States need to do more to close the gender gap in the ICT sector. Member States should set clear and measurable targets for increasing women's participation in ICT education, training and employment through their Digital Decade roadmaps. This could include financial incentives, funded traineeships and reskilling opportunities for women moving into ICT from related fields. Progress should be regularly monitored to see whether these measures are actually increasing women's participation and contributing to the EU's goal of having 20 million ICT specialists by 2030.

- **Make digital spaces safer**

Digital violence should not be treated as an unavoidable part of being online. Member States should fully implement Directive (EU) 2024/1385 by ensuring that victims can report technology-facilitated violence and access appropriate protection and support. Authorities should also make effective use of the powers available to them to order the removal of illegal material. At the same time, EU institutions and national authorities should make full use of the existing accountability mechanisms under the Digital Services Act to address platforms that fail to meet their legal obligations. This can help ensure that online violence does not silence women or prevent them from participating equally in digital society.

- **Give young people a meaningful voice**

Young people should not only be seen as users of Europe's digital future, but as participants in shaping it. The EU and its Member States could establish youth ambassador or advisory programmes that allow young people from across Europe to regularly share their experiences and priorities with policymakers. Their participation should be meaningful, with institutions reporting on how youth recommendations are considered in the development and evaluation of digital policies. This would help make sure that the people who will live with the consequences of today's digital decisions have a voice in making them.

Beyond the EU

An impactful example of what can happen when women have access to the internet is connected to a Facebook group originally intended to expose cheating husbands. Looking at a country notorious for struggling with the world's largest displacement crisis and a civil war that women and girls bear the brunt of, it is not easy to see how women and girls can contribute to politics and social life through the internet.[17] Sudan contributes to the striking statistic of two-thirds of the female population without mobile internet in low- and middle-income countries.[18] More than half of Sudan's population lives in rural areas, while on the whole continent only 21% of people in rural areas use the internet.[19] During

[15] European Commission. (2026). National Digital Decade strategic roadmaps. https://digital-strategy.ec.europa.eu/en/policies/national-strategic-roadmaps

[16] Lovguiden. (2026, June 17). EU Digital Decade 2026: Progress and Gaps on Road to 2030. https://www.lovguiden.dk/en/det-offentlige/europa-kommissionen-press-corner/2026-06-17-digital-decade-2026-fremskridt-og-mangler-i-eus-digitale-omstilling-mod-2030

[17] International Organization for Migration. (2025, April 15). Two Years of Conflict in Sudan: Visualizing the World's Largest Displacement Crisis. https://dtm.iom.int/reports/two-years-conflict-sudan-visualizing-worlds-largest-displacement-crisis; Equality Now. (2025, April 3). Women in Sudan: Silenced by War, Abandoned by Law. https://equalitynow.org/news/news-and-insights/women-in-sudan-silenced-by-war-abandoned-by-law/

[18] GSMA. (2026). The mobile gender gap report 2026 (p.10). https://www.gsma.com/wp-content/uploads/2026/07/The-Mobile-Gender-Gap-Report-2026.pdf

[19] Kemp, S. (2025, March 3). Digital 2025: Sudan. DataReportal. https://datareportal.com/reports/digital-2025-sudan; International Telecommunication Union. (2025). Internet use in urban and rural areas. https://www.itu.int/itu-d/reports/statistics/2025/10/15/ff25-internet-use-in-urban-and-rural-areas/

the 2018-2019 Sudanese Revolution, it is estimated that women accounted for around 60% of protestors.[20] However, physical participation was not the only thing women did. A private but highly influential women-only Facebook group called Minbar-Shat was initially intended to expose members' husbands' extramarital affairs and share beauty tips and tricks. However, its use was repurposed to identify members of Sudan's National Intelligence and Security Service (NISS), the repressive intelligence agency responsible for cracking down on protests and attacking demonstrators.[21]

This case is particularly interesting because it shows how women can use digital tools not only to participate in protests, but also to organise, mobilise others and make their voices heard. It highlights that women should not only be seen as victims of digital harm, but also as active participants who can use digital spaces to advocate for their rights, influence political discussions and contribute to social and political change.

Conclusion

Our world is becoming increasingly digital. This change is here to stay and it is crucial to keep up with it so as to not miss the opportunities it creates. Nevertheless, this change is not happening at the same speed for all countries, regions, and genders. Programmes like the EU's Digital Decade Policy Programme are a great start, but stronger implementation and monitoring are needed to ensure that no one is left behind. This includes setting clear targets to increase women's participation in the ICT sector and ensuring progress is regularly measured. Furthermore, digital violence needs to be taken seriously by fully implementing existing protections and making use of available accountability mechanisms to ensure that victims are protected and platforms meet their legal obligations. Finally, young people should have a meaningful role in shaping the digital policies that will impact their future.

Europe's digital future will only be truly inclusive when women, young people and marginalised communities are not only able to access digital opportunities, but are also able to participate in shaping them safely.





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[20] Nasreldin, I. (2021). Sudanese Women March for Protection Against Gender Based Violence. Chr. Michelsen Institute. https://www.cmi.no/publications/7766-sudanese-wo men-march-for-protection-against-gender-based-violence

[21] Wagner, A. (2019, April 11). Sudan Uprising- The Voice Of A Woman Is A Revolution. KANDAKA. https://kandaka.blog/2019/04/11/sudan-uprising-the-voice-of-a-woman-is-a-revoluti on/

Migration & Security





WHERE WILL THE DIGITAL TRAVEL CREDENTIALS TAKE THE EU?

By Maria Małgorzata Sikora

The European Union is going digital. By 2030, most everyday administrative tasks will be possible with a single swipe. As the target date approaches, new solutions are being tested; some, like digital national IDs, are already functioning in a few member states. Passports and other travel documents are also being digitised as Digital Travel Credentials (DTC). Policymakers described DTC as a convenient, secure tool to speed up border controls. The pilot programs are announced as successful, yet they point to technical and legal challenges for implementation. The planned introduction of DTC raises questions about data protection and potential exclusion: Would DTC be a tool that improves travellers' comfort and safety, or a policy that intensifies surveillance and leaves out the most vulnerable movers?

Stuck in lines waiting for progress

To travel outside the Schengen zone to the majority of destinations, a valid passport is essential. In 2023 alone, Frontex recorded a total of 593 million crossings at the Schengen borders. The majority of border crossings happen by air, accounting for approximately 65% of all traffic[1]. In recent years, as passenger traffic returned to pre-pandemic patterns, the time for border control lengthened, causing bottlenecks at major airports[2]. The idea of digitised travel documents was put forth by the European Commission in order to speed up border controls and increase the comfort and security of travellers crossing Schengen borders. The technology to create secure digital travel documents already exists. They are tested in multiple countries, including the USA, Singapore, and South Korea. One of the most advanced technologies was introduced by the International Air Transport Association (IATA). IATA proposed its own identity wallet, ONE ID. During test flights, it enabled travel between Japan and Hong Kong

[1] European Commission. (2023, June 30). Commission implementing decision (EU) 2023/1353 of 30 June 2023 setting out key performance indicators to measure the progress towards the digital targets established by Article 4(1) of Decision (EU) 2022/2481. Official Journal of the European Union, L 178, 1–23. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32023D1353

[2] EUROCONTROL Performance Review Commission. (2026, March). Performance review report 2025: An assessment of air traffic management in Europe. https://www.eurocontrol.int/sites/default/files/2026-03/eurocontrol-performance-review-re port-2025.pdf

without a physical passport, fully based on the processing of biometric data and using already established infrastructure[3]. Noticing high border traffic and technological advancement, the EU started testing its own system.

What is DTC?

DTC is a digital representation of travel documents. The standard was developed by the UN agency, the International Civil Aviation Organisation (ICAO). In the European Union, the framework was introduced by publishing a proposal for a regulation on establishing an application for the electronic submission of travel data and a council regulation on the issuance of and technical standards for digital travel credentials based on identity cards.

DTC is planned to be introduced by 2030. So far, the system has been experienced by voluntary travellers at Helsinki, Zagreb and Schiphol Airports[4], allowing them to forget about handing the burgundy red booklet to a border control officer and simply look at the camera and place the passport above the reader for just a few seconds to cross the border. The whole process was powered by a Traveller Router, allowing passengers to access and share that data through a pilot app, a predecessor of the EUDI Wallet and EU Digital Travel App. The input data was encrypted and forwarded to the border security guard.

In order to issue the DTC, passengers should have registered the physical passport at the authority office beforehand. Then, between 36 and 4 hours before the flight, passengers had to send the DTC information to the border guards, including the destination and flight number[5]. To confirm the identity, they needed to take a selfie, and the system compared it with the image retrieved from the passport's chip[6]. A similar process would be followed after the full introduction of the system. Travellers will be able to issue a digital version of their travel document via public authorities or by scanning it through the EU Digital Travel App, where it will be verified by the system supervised by eu-LISA, all free of charge[7].

Not the monetary costs of DTC

The DTC will be operating in a broader context of international standards, already-present European laws, policies, and border control systems, including ETIAS, EURODAC, SIS, VIS, and EES; GDPR; national laws; and private legal frameworks that coexist in an increasingly diverse spectrum of actors involved. The wide range of actors and regulations creates tension for the implementation and functionality of DTC.

The weakest actors in the system are the movers themselves. One of the selling points of the policy is its time efficiency at the border, shortening the time of crossing by approximately 16-20 seconds[8]. It is a time-saver for the authorities, while the average traveller must spend time creating the DTC and providing data for each pre-screening.

Besides the time burden, travellers are subjected to biometric verification of a selfie against the passport photo. While procedures minimise the risk of forgery, the authorities do not have a legal basis for collecting and processing face scans without explicit consent. Additionally, under the current Schengen Border Code (SBC), processing any information from the chip of the passport can be done only during the border

[3] International Air Transport Association. (n.d.). One ID: An interoperable, privacy-protecting ecosystem across airlines, airports & governments. https://www.iata.org/en/programs/passenger/one-id

[4] European Commission. (2026, February 11). Travel credentials: Digital Travel Credential manual. EU Digital Identity Wallet. https://ec.europa.eu/digital-building-blocks/sites/spaces/EUDIGITALIDENTITYWALLET/pages/930451772/Travel+Credentials

[5] Finnish Border Guard. (2024). DTC – Border control faster and smoother. The Finnish Border Guard. https://raja.fi/en/dtc

[6] Ministry of Justice and Security. (2024, July 1). Final report DTC1 pilot Netherlands. Dutch Ministry of Justice and Security. https://open.overheid.nl/documenten/dpc-0f859979b1b68ea0170398ea2f61a288986cb472/pdf

[7] European Commission. (2024, October 8). Proposal for a regulation of the European Parliament and of the Council establishing an application for the electronic submission of travel data ("EU Digital Travel application") (COM/2024/670 final). https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=cel ex:52024PC0670

[8] Ministry of Justice and Security. (2024, July 1). Final report DTC1 pilot Netherlands [Report]. Dutch Ministry of Justice and Security.

crossing itself, making prior DTC validation unlawful based on the existing law[9].

One of the strengths of the DTC, similar to digital national ID, is its voluntary character. However, based on Eurostat's data on digital ID adoption and a study in Finland[10], the most vulnerable groups, including immigrants, youth under 24, elders, and lower-income groups, are least likely to use digital documents[11]. Further studies have to be conducted to determine whether the disproportion is based on conscious decisions or systemic limits, to ensure that digitalisation, including DTC, can be accessible to all.

Beyond the EU

The application of DTC is larger than the EU itself. The potential user base for the Digital Travel Credential reaches hundreds of millions of people, as it can be issued for both EU and non-EU citizens, and unlike the pilots, coverage will extend to all borders, including land and sea[12]

The global development of digital travel documents and identification tools is unbalanced, as is the approach to personal data processing. Some countries struggle to digitise their identity systems, limiting or withholding ePassport issuance[13], making their citizens ineligible for DTC. Others, like Kenya, have invested in digital identity infrastructure, yet encountered significant public resistance to biometric data collection. Huduma Namba, which attempted to establish a biometric database of all citizens, was halted after the Kenyan High Court ruled it unconstitutional due to inadequate personal data protection[14]. This case showed how important it is to establish a proper legal framework and public trust before major technological change. In the case of DTC, establishing such a framework is even more challenging due to its innate international character, uneven technical development across nations, and fundamentally differing approaches to data privacy.

Next destination

Freedom of movement is one of the pillar values of the European Union. The 2030 Digital Decade aims to sustain that value in the context of ongoing technological advancement. The introduction of DTC can take the EU to a reality of safe and convenient travel. However, to reach that destination, significant amendments are needed.

Looking ahead, implementation of the DTC in the EU requires a more coherent legal framework. The current EU travel, migration and refugee registration system is spread across multiple tools and legislation, creating a state of uncertainty for all movers.

The Digital Decade aims to facilitate human-focused digitalisation that leaves no one behind. The introduction of the EU's DTC should focus on addressing digital exclusion and strengthening the legal position of movers in relation to border authorities, especially for the most vulnerable. As the policy addresses multiple actors at public and private levels, policymakers should incorporate a more collaborative approach to harmonise the development of DTC for the safety and convenience of all.



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[9] Matusiak, J., & Narożniak, A. (2026). Transforming travel in Europe: A critical analysis of the debate on EU Digital Travel. Smart Cities and Regional Development (SCRD) Journal, 10(2), 57–74. https://doi.org/10.25019/b2qc5a80

[10] Kemppainen, L., Kemppainen, T., Kouvonen, A., Shin, Y.-K., Lilja, E., Vehko, T., & Kuusio, H. (2023). Electronic identification (e-ID) as a socio-technical system moderating migrants' access to essential public services – The case of Finland. Government Information Quarterly, 40(4), 101839. https://doi.org/10.1016/j.giq.2023.101839

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[13] Signicat/ReadID. (2026, July 10). ReadID supported identity documents. Summary. https://resources.signicat.com/hubfs/ReadID-documents-summary.pdf

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