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State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

State of the Digital Decade 2025:

Keep building the EU's sovereignty and digital future

1. Introduction

The **EU's digital transformation** is a central driver for ensuring that Europe remains competitive, resilient, reduces its excessive dependencies and enhance its technological sovereignty, while reinforcing its strategic autonomy[1]. To this effect, the Digital Decade Policy Programme (DDPP)[2], adopted in 2021, has provided the EU with a structured, strategic and legally binding governance framework, enabling it to navigate an increasingly volatile geopolitical, economic, and technological landscape. This demonstrates the EU's determination and commitment to **decisive, long-term action, driving forward its vision for a digitally transformed Europe.**

In the face of today's geopolitical challenges, the DDPP has become more vital than ever. Strengthening Europe's technological sovereignty and resilience is key to protecting strategic interests and reinforcing the EU's global leadership and competitiveness. The DDPP plays a crucial role in this context, fostering coordination among Member States, aligning their efforts, and addressing the urgent need for an accelerated digital transformation.

Through the Digital Decade, the EU sets and monitors digital objectives and targets, aligns initiatives through national roadmaps, and enhances joint investment. This demonstrates the EU's determination and commitment to **decisive, long-term action, driving forward its vision for a digitally transformed Europe.** Furthermore, the Digital Decade fosters **cooperation** across EU, Member State, regional and city levels, accelerating digital transformation and supporting the implementation of the Competitiveness Compass[3]. By adopting a broader, integrated perspective, the Digital Decade connects competitiveness, sovereignty, sustainability and democratic values. It underlines how the **digital transformation is not only a matter of fuelling innovation and growth but also of fostering the most important strategic assets for Europe's sovereignty, stability, and global influence,** as illustrated in Figure 1.

This Communication describes the **State of the Digital Decade in 2025**, examining relevant digital policy developments and progress with the EU's digital transformation since the last report published in 2024. It also lays the groundwork for the review of the DDPP in 2026, with possible changes to targets, objectives and governance in view of technological and EU policy developments.

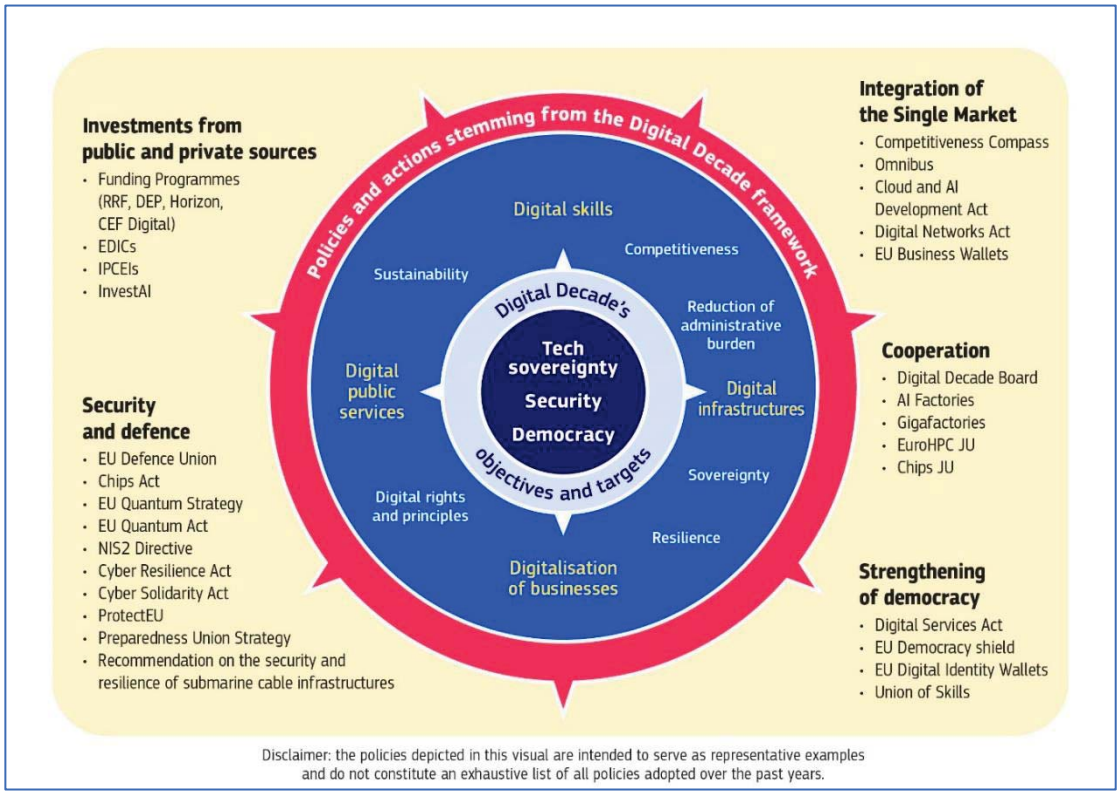
More detailed analyses, including EU level recommendations, are presented in the Annexes to the Communication and in supporting documents, specifically Staff Working Documents, Eurobarometer and studies[4] which, **all together, constitute the 2025 State of the Digital Decade report**.

In particular, this Communication is accompanied by 28 Annexes:

- **Annex 1**, an extensive analysis of the progress made towards the Digital Decade objectives and targets, and includes horizontal recommendations addressed to all Member States;
- **Annexes 2-28**, summaries of the analysis made for each of the 27 Member States, including country-specific recommendations.

[1] See notably COM(2025) 30 final A Competitiveness Compass for the EU, as well as the 2024 Progress Report on the Implementation of the Strategic Compass for Security and Defence.
[2] DECISION (EU) 2022/2481
[3] A Competitiveness Compass for the EU, COM(2025) 30 final.
[4] Please see the following page: https://digital-strategy.ec.europa.eu/en/policies/2025-state-digital-decade-package.

Figure 1: The Digital Decade and EU digital priorities



2. Tracking the EU's Digital Decade overall progress

a. 2025: a defining year for the EU's future

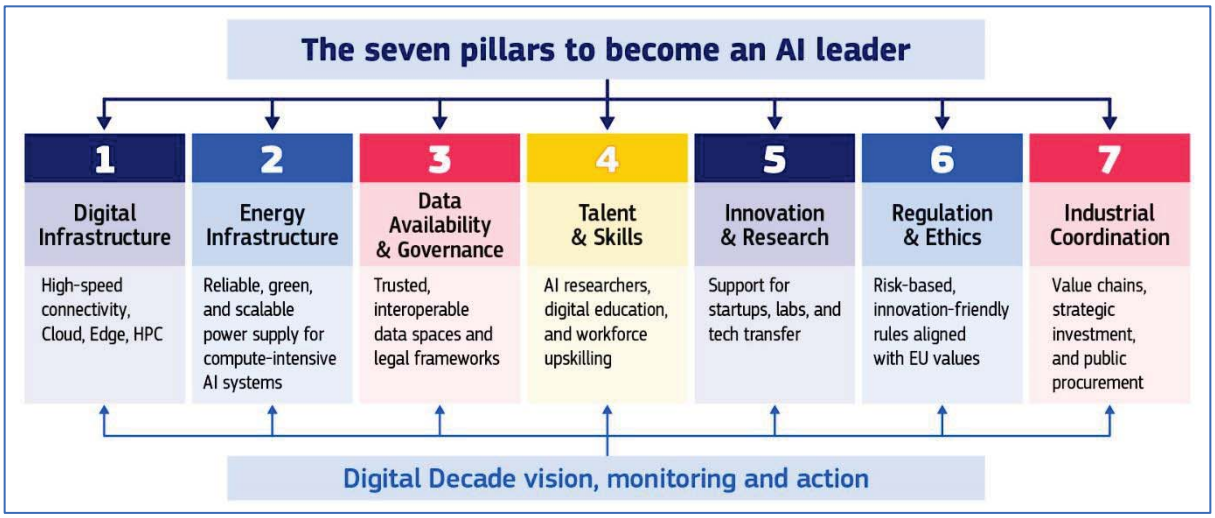
In 2025, **the global Artificial Intelligence (AI) revolution is gaining further momentum with breakthroughs** in foundational technologies, which are reshaping innovation frontiers, redefining competitiveness, and changing people's everyday lives. Workers now use AI tools to boost productivity – from factory-floor assistants in manufacturing to AI office software development – streamlining tasks and supporting decision-making. Meanwhile, autonomous car fleets are starting to scale, notably in the US and Asia, with self-driving taxis and delivery services setting new standards for urban mobility and economic efficiency. Furthermore, AI is revolutionising healthcare, making it more effective, accessible, and economically sustainable. AI is also a game changer for the green transition. enabling real time environmental monitoring, underpinning circular economy, streamlining industrial processes, and supporting smarter resource management across sectors such as water, energy, transport, and agriculture. Amid these rapid advances, a key emerging issue is how to harness the power of AI through effective policy and democratic governance to **advance societal progress**—promoting broad-based prosperity, inclusive growth, and public benefits[5].

Establishing EU leadership and positioning Europe as a true AI continent is a paramount priority, requiring a comprehensive set of assets, capabilities, and infrastructures — from advanced skills to robust ethical frameworks — as illustrated in Figure 2. It includes notably highly efficient digital infrastructure – from connectivity to quantum computing – to support the current surge in AI innovation. **A major boost in computing power, data storage, and fast, secure, low-latency**

[5] Daron Acemoglu and Simon Johnson, *Power and Progress: Our Thousand-Year Struggle Over Technology and Prosperity* (2023)

connectivity is also essential to train foundation models and develop vertically integrated AI applications.

Figure 2: The seven pillars for becoming an AI leader and the role of the Digital Decade



These foundational technologies are crucial for defence and cybersecurity, enabling real-time data analysis, battlefield situational awareness, autonomous decision-making, cryptanalysis, secure communications and next-generation cybersecurity solutions.

This has spinoff value, as **10% of the EU's defence spending is expected to be channelled into European deep tech**, potentially generating an annual market impact of EUR 245 billion, as a powerful catalyst for innovation and industrial renewal[6]. **Meanwhile, geopolitical shifts are turning the EU's digital supply chain dependencies into strategic vulnerabilities**. As supply chains are increasingly weaponised through overreliance on high-risk-vendors or restrictions and tariffs, **technological sovereignty has moved to the forefront of the EU agenda**, driving the need for a more coordinated industrial policy, deeper public-private partnerships, and targeted investments with the objective of positioning the EU not as a mere passive consumer of global technology, but as a proactive, competitive force, spearheaded by its digital and industrial transformation. Excessive **dependence on foreign entities is also exposing the EU's financial system's** resilience, including in critical areas such as payment systems and crypto assets, which is becoming increasingly vulnerable to external influence and disruptions, sometimes beyond the reach of European regulation**.** The prospect of a **digital euro** is becoming a cornerstone of Europe's digital finance strategy and economic security, strengthening Europe's financial ecosystem, innovation capacity and strategic autonomy.

The growing **sophistication of the threats** we face – including disinformation, cyberattacks, deepfakes, and algorithmic manipulation – requires **widespread digital literacy and a skilled ICT workforce**. These threats, whose creation and dissemination are amplified by AI and online platforms, also have the potential to **distort electoral outcomes, deepen societal polarisation, erode public trust in democratic institutions and compromise critical infrastructure**. They also challenge the rule of law by undermining the integrity of democratic processes, weakening institutional accountability, and disrupting the enforcement of legal norms online — particularly when harmful or illegal content spreads unchecked across platforms. Additional risks are emerging from complex use patterns of algorithms and digital tools, such as online platforms, and their impact on children's safety and

[6] Dealroom.co. The 2025 European deep tech report, March 2025.

wellbeing[7]. If left unchecked, these online threats could put the very foundations of democracy at risk – undermining the rule of law and disrupting evidence-based public debate and policymaking.

The 2025 Digital Decade Eurobarometer[8].:

*- A significant majority of European citizens (88%) believe that **combating fake news** and online disinformation should be a priority.*

*- **Nine out of ten** consider **protecting children online** to be an urgent concern.*

*- Three out of four Europeans consider that the digitalisation of daily services makes their lives easier. However, conversely this still indicates that about **100 million people find it makes their lives more complicated**.*

*- 85% of respondents consider it important for public authorities to ensure that European companies can grow and become **European champions** able to compete globally, while 89% believe equally in the **importance of increasing research and innovation for more secure and strong digital technologies**.*

Events in 2025 have thus underscored the urgent need for Europe to innovate, compete and grow while assuming greater responsibility for its strategic autonomy, resilience, security and defence, developing its own sovereign technologies not just as a matter of competitiveness, but as a strategic imperative.

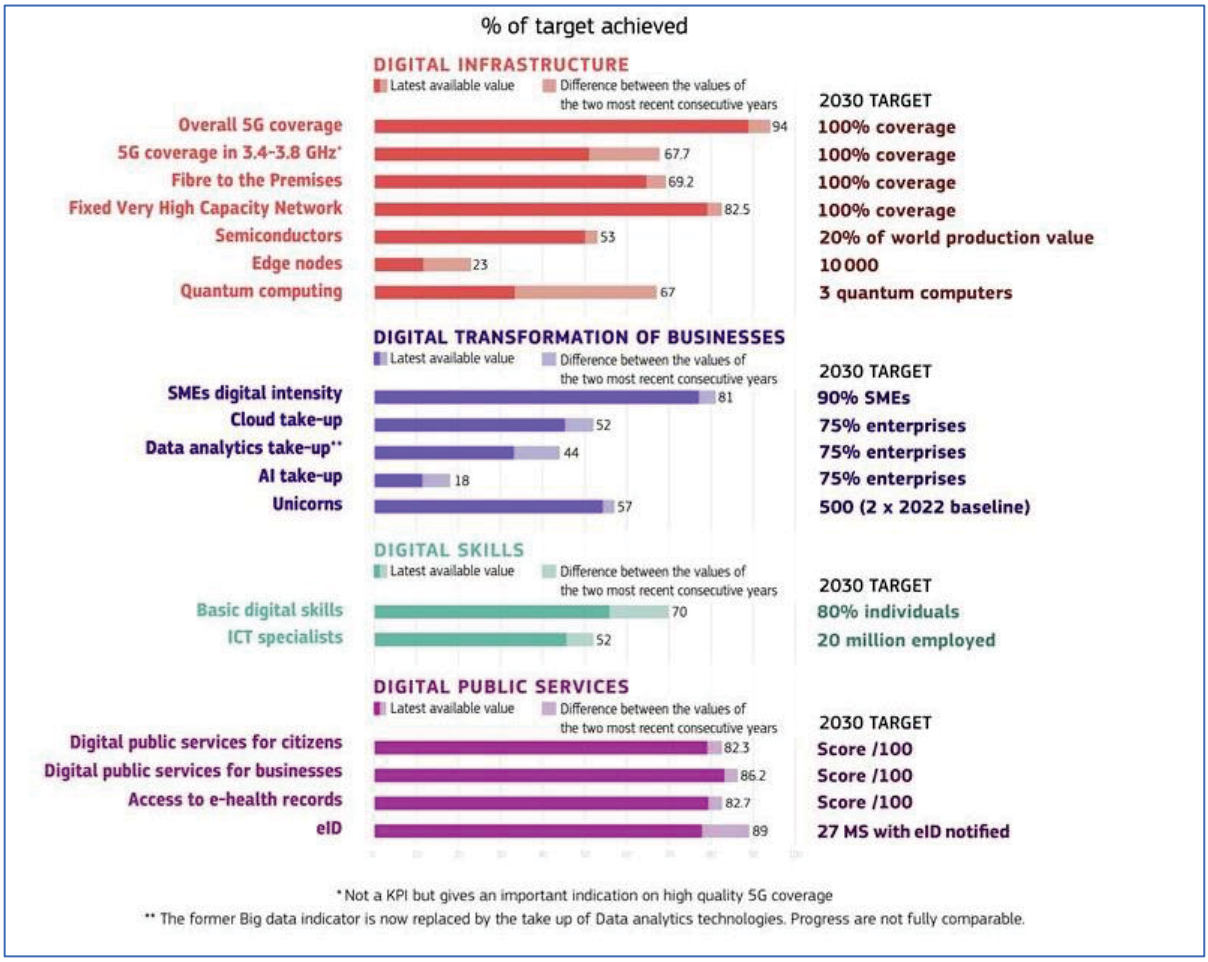
b. From metrics to meaning: what 2024 reveals about the EU's digital trajectory

Since July 2024, **the EU has shown uneven progress across DDPP targets and objectives**. Certain areas, such as the deployment of edge nodes, the availability of e-Health services, and 'basic' 5G radio coverage, are demonstrating comparatively high levels of target achievement. In contrast, several key domains – particularly **foundational digital technologies** such as AI, cloud services, data analytics, along with **ICT specialists and basic digital skills** – **are showing deeply unsatisfactory progress**. While improving at a slow pace, the **digitalisation of public services** and the roll out of **Very High-Capacity Networks** (VHCN) are showing signs of increased maturity, while deployment of **Fibre to the premises** is progressing but not enough to reach 100% by 2030.

More generally, the monitoring of general objectives shows that the EU is still facing **major challenges to harnessing the digital transformation for its productivity and competitiveness**. The deployment and integration of these technologies across the EU economy are still too limited, while **regulatory fragmentation** and **administrative complexity** continue to pose significant challenges for start-ups, SMEs, and innovators[9]. The EU still lacks sovereign**, pan-European digital connectivity and cloud computing infrastructure,** as well as integrated management systems needed to support its development and a good level of security. With the **increase in cyberattacks,** which surged by 150% in 2024, **security has become paramount**. This need closely aligns with the priorities of most European citizens: around four out of five Europeans think that improved cybersecurity and stronger protection of online data and safety would significantly facilitate their daily use of digital technologies[10]. A widespread lack of digital skills remains a systemic barrier to the EU's digital transformation. In particular, persistent shortages of ICT specialists are slowing progress towards the Digital Decade targets in key areas like AI, cybersecurity, and semiconductors. This shortage is compounded by the continuous gender imbalance among ICT specialists.

[7] See Annex 1 to the Communication, related recommendations and Staff Working Document.
[8] Eurobarometer Digital Decade 2025.
[9] A Competitiveness Compass for the EU, COM(2025) 30 final.
[10] Eurobarometer Digital Decade 2025.

Figure 3: Taking stock of KPIs progress toward 2030[11] [12]



Meanwhile, the EU's digital future is becoming increasingly dependent on stable energy production. In 2024, global electricity demand grew by more than twice the annual average increase over the past decade. Global **Data centre electricity consumption is set to more than double to around 945 TWh by 2030,** equivalent to Japan's current total electricity consumption[13]. The data centre industry must grow and evolve to accommodate inter alia the explosive growth and evolution of AI, generative AI and future AI iterations already in the making. This trend alone is set to represent 40% of the total energy demand in 2030 for data centre capacity[14]. Exponentially rising energy demands are rapidly outpacing the development of clean and reliable energy supply and grid capacity across the EU. **This discrepancy is emerging as a potential significant barrier to the scaling of key digital technologies** and delaying the EU's ability to fully leverage AI and data-driven innovation for economic competitiveness. These trends further underscore the imperative to strengthen the alignment

[11] The current KPI for the 5G target does not reflect the actual quality of service experienced by users. It monitors areas where a 5G signal is available, regardless of the network performance. Therefore, the current stage of 5G deployment can be considered only as 'basic 5G'. Regarding quantum, data is based on: Strategic Advisory Board of the European Quantum Flagship, Key Performance Indicators for Quantum Technologies in Europe, , March 2025. Note that it is expected that six additional quantum computers will be deployed until the end of 2025 as several procurement procedures are currently ongoing.

[12] No 2024 data is available for Cloud take-up, Data analytics take-up and Basic digital skills. The 2024 value of SMEs digital intensity is compared with the 2022 value. Full details on the KPIs in DESI 2025 Methodological note at https://digital-strategy.ec.europa.eu/en/policies/2025-state-digital-decade-package

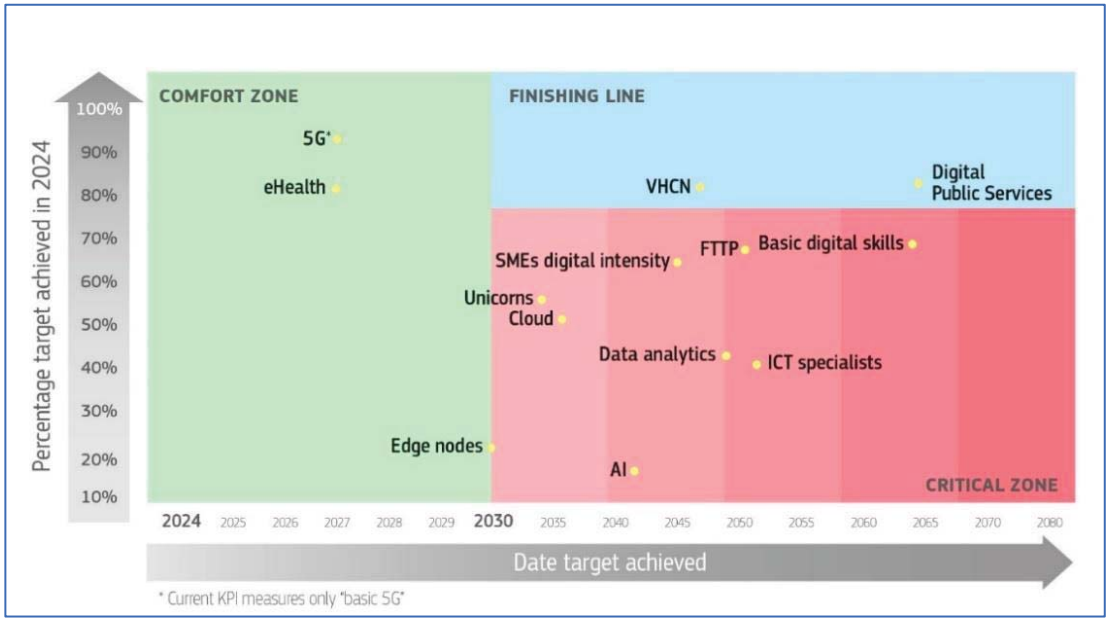
[13] Estimates at global level, on annual basis. Source: International Energy Agency, AI and Energy, April 2025.

[14] McKinsey, AI power: Expanding data center capacity to meet growing demand, October 2024.

between the green and digital transitions, as a key driver of the EU's long-term competitiveness and security[15].

In order to see current perspective of achieving the 2030 targets, Figure 4 below tracks the progress of KPIs toward their EU targets, benchmarking achievement levels against projected timelines. The horizontal axis displays the target year for each KPI (based on the baseline trajectories where available), while the vertical axis shows the percentage of the target already attained as of 2024. The chart categorises KPIs into three groups: those ahead of schedule, on track (approaching targets), or delayed (falling below expected progress).

Figure 4: Tracking KPIs progress and expected timeline



c. Halfway through the Decade: momentum is building among Member States and EU institutions, with some early signs of concrete progress

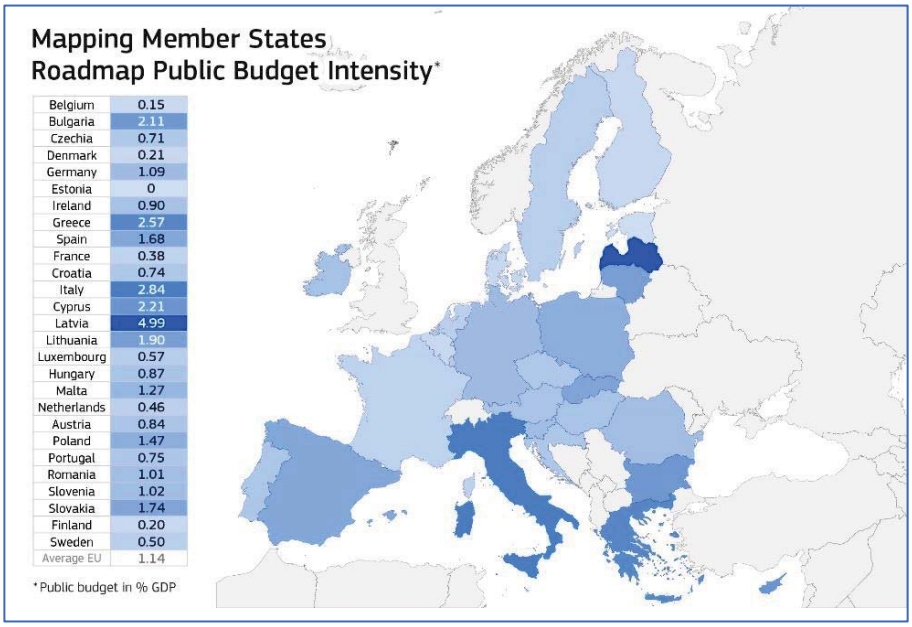
Two years after its entry into force, the **DDPP is now in full implementation mode** with concrete and ambitious action taken by the EU and Member States.

Collective ownership by all Member States of the Digital Decade targets and objectives is essential to achieving them and ensuring a consistent, impactful, and inclusive digital transformation across the EU. Member States are proactively implementing the DDPP, which is first and foremost a collaborative framework for Member States to work together, align and pool resources on digital policy.

All Member States have developed **National Digital Decade strategic roadmaps** (National Roadmaps), outlining the policies, measures and actions being taken from 2024 onwards to drive the EU's digital transformation from 2024 on. The adoption of the roadmaps represents a significant milestone, as Member States are collectively committing to a total of **1 910 measures with a total investment of EUR 288.6 billion**, comprising EUR **205.1 billion from public budgets** (equivalent to 1.14% of the EU's GDP).

[15] Digitalisation, environmental sustainability and resilience are mutually reinforcing transformations, as digital solutions could cut 15–20% of global greenhouse gas emissions by 2030 across sectors, notably through improved efficiency in buildings, energy, transport, and manufacturing sectors. Digitalisation can also help resource optimisation, water resilience, pollution and waste reduction as well as create new market opportunities for example through products meeting high eco-design standards or in boosting circularity.

Figure 5: Public budget intensity in Member States Roadmaps[16]



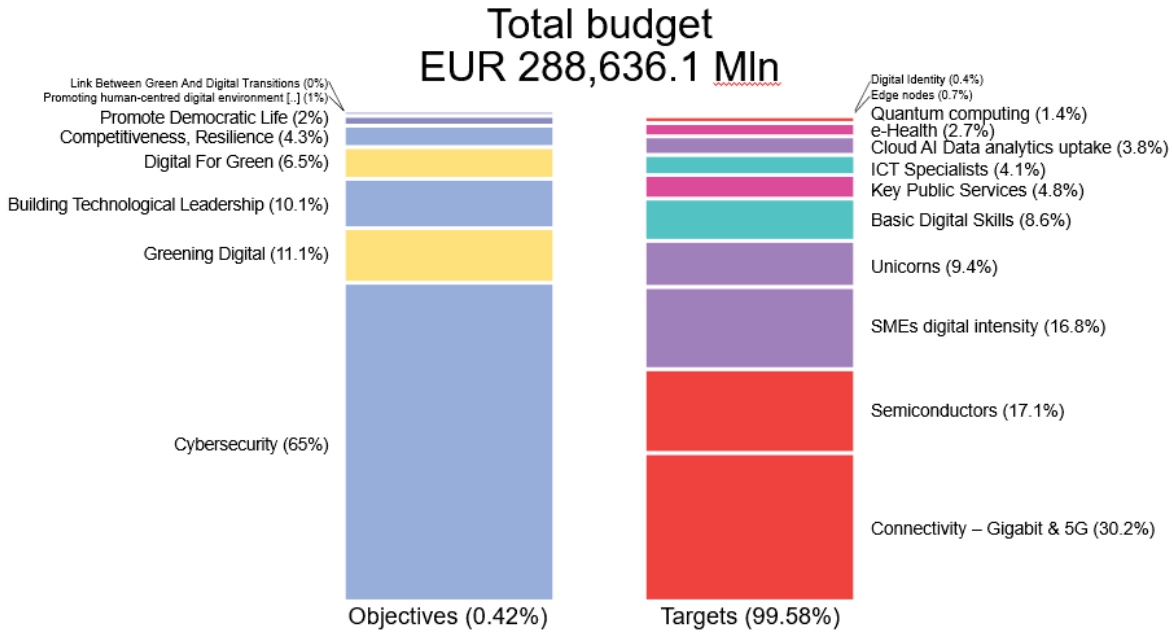
Following the 2024 State of the Digital Decade report recommendations, 21 Member States have updated their National Roadmaps and added roughly 20% of new measures[17]. **Over half of the measures indicating a timespan are planned to end in 2026,** likely reflecting national budget cycles and the conclusion of the Recovery and Resilience Facility (RRF) plans and investments, suggesting a potential decline in support starting in 2027.

Member States are demonstrating their commitment to collective action through the implementation of annual recommendations. Member States addressed 57% of the 306 country-level recommendations issued by the Commission in 2024, either by implementing significant policy changes (12%) or making some changes (45%) through new measures. 19 Member States have addressed at least half of their recommendations through new measures. Among the EU-level recommendations, over **45% show either notable** (35%) **or significant progress** (10%), with strong results in the areas related to the development of human-centred AI and safeguarding of digital rights and principles**.** On the other hand, **48%** of the EU-level recommendations issued in 2024 have only seen **limited progress**, and **7%** show **no progress**. This mixed picture highlights that, while there is clear momentum toward achieving some of the Digital Decade targets and objectives, there remains a continued need for structured and bolder policy action to accelerate and improve EU's trajectory in the Decade.

[16] When referring to national roadmaps, data used in this report are those declared by the Member States in their national roadmaps, on the basis of the Commission's guidance (C(2023) 4025 final). Data might reflect possible variations in reporting practices and methodological choices across Member States. No systematic assessment was made of the extent to which Member States followed the guidance.

[17] Roadmap adjustments submitted by 31/03/2025 are taken into account. In accordance with Article 8 of the Decision (EU) 2022/2481, which establishes the Digital Decade Policy Programme 2030, Member States are required to submit adjustments to their national roadmaps to the Commission every two years, starting within 5 months of the publication of the second Report on the Digital Decade. If a Member State believes that no updates are necessary, it must provide a justification for this to the Commission.

Figure 6: National Roadmaps: budget breakdown per target and general objective[18]



Through the European Digital Infrastructure Consortia (EDICs), concrete multi-country cooperation is advancing to develop large-scale projects that a single Member State cannot tackle alone, covering key strategic areas such as AI, smart cities, health, mobility, and agri-food. Three EDICs have been established in 2024: the **Alliance for Language Technologies EDIC**, the Local Digital Twins towards the **CitiVERSE EDIC** and the EDIC for European Blockchain Partnership and European Blockchain Service Infrastructure (**EUROPEUM-EDIC**).

Member States are also supporting **Important Projects of Common European Interest (IPCEIs) in the digital field**. In 2024, IPCEI on Cloud Infrastructure and Services (CIS) was launched, with the participating companies advancing on their projects and the IPCEI ecosystem extending to include new indirect partners. In 2024, several Member States decided to enter into the design phase of three potential IPCEI candidates in the area of digital: one focusing on innovative AI services, one on advanced semiconductor technology applications and one on deploying computing infrastructure. Work is ongoing between the interested Member States and the Commission to shape those IPCEI candidates.

The **Digital Decade Board** (DDB), which brings together national representatives, has emerged as a key platform for coordination and exchange on issues related to digital transformation. It is well positioned to take on a growing role in advancing the EU's digital transformation by strengthening cooperation, facilitating the implementation of digital policies, and supporting the development and adoption of solutions that simplify processes and reduce administrative burden, as well as advising on how to better link the targets and objectives with financing possibilities.

Furthermore, the Digital Decade Best Practice Accelerator, launched in July 2024, has been instrumental in further fostering collaboration among Member States through a combination of regular workshops and a dedicated online platform. This platform serves as a central hub for the exchange of information, challenges, and best practices related to achieving the goals of the Digital Decade. It features a repository that has compiled 52 best practices and organised eight workshops

[18] Number of measures and budgets as reported by the Member States. The budget in the graph is split between targets and objectives, most of the budget (99.58%) is allocated towards the targets which are often related to some of the objectives. The budget breakdown shown for objectives (0.42%) only shows the breakdown of the budget allocated towards objectives that are not associated to the targets.

focusing on thematic clusters (**Digital skills, Green IT, Tech Uptake**, led respectively by Slovenia, France and Finland, Belgium), which enable in-depth exploration of specific areas crucial for the digital transformation of the EU. Additionally, discussions are ongoing for the launch of three new clusters in 2025, focusing on reducing **administrative burden, digital rights and principles, and digital sovereignty.**

The monitoring the Declaration on Digital Rights and Principles[19] shows increasing commitment among Member States to take action, with over 2000 initiatives – 80% of them led by government organisations – identified across the EU. Member States are most active in the area of digital education, training and skills, as well as in working towards a better protected, safe and secure digital environment.

Finally, **cities are vital enablers of the EU's Digital Decade**, serving as key implementation hubs that bring digital transformation directly to citizens, public services, and businesses—especially SMEs—through their proximity, innovation ecosystems, and local leadership. The report shows that there is still further potential to be unlocked through deeper cooperation with cities as part of EU's digital governance, investment in local digital capacity, and alignment of local strategies, leveraging tools such as local observatories, and multi-country projects such as LDT-CitiVERSE.

d. Despite recent efforts, public and private investment levels are not yet fully aligned with the Digital Decade's ambition and scale

In recent years, the **EU has achieved some progress** in strengthening its digital infrastructure and technological capabilities. Significant investments have been made in strategic areas, notably through initiatives like the Digital Europe Programme. Some examples of these achievements include:

- Over the past eight years, eight supercomputers have been acquired, three of which ranked among the world's top 10 fastest supercomputers and were also recognised as being among the greenest and most energy-efficient.
- More than 150 European Digital Innovation Hubs are currently operational across the EU, covering nearly 90% of European regions, providing important support to both public and private organisations, in particular SMEs[20].
- The European Digital Identity Wallet, which is currently being piloted across the EU, will provide a secure and user-controlled tool enabling citizens to prove their identity, share documents, and sign digitally.
- In the semiconductor sector, four state-of-the-art pilot lines have been launched to test and validate advanced chip technologies.

In line with the priorities outlined in the Competitiveness Compass[21], on 9 April 2025 the Commission adopted the **AI Continent Action Plan**, outlining a set of actions relating to computing infrastructure, data, the development of AI algorithms and adoption, skills, and regulatory simplification. The action plan signals the EU's ambition to become more competitive on the global stage by harnessing the potential of AI technologies and fostering strategic investments such as the AI Gigafactories, as well

[19] See SWD 'Monitoring of the European Declaration on Digital Rights and Principles'.
[20] See De Nigris, S., Kalpaka, A. and Nepelski, D., *Characteristics and regional coverage of the European Digital Innovation Hubs network, Publications Office of the European Union*, Luxembourg, 2023, doi:10.2760/590526, JRC134620, and European Commission: Joint Research Centre, Carpentier, E., D'Adda, D., Nepelski, D. and Stake, J., *European Digital Innovation Hubs Network's activities and customers*, Publications Office of the European Union, Luxembourg, 2025, https://data.europa.eu/doi/10.2760/7784020, JRC140547.
[21] A Competitiveness Compass for the EU, COM(2025) 30 final.

as launching targeted initiatives like **Invest AI** to scale public and private financing and **Apply AI** to accelerate the deployment of trustworthy AI across key sectors of the economy and public services.

Despite those achievements it is clear that continued and reinforced effort is essential to meet the scale of the digital transition and secure Europe's technological sovereignty.

As the EU reaches the **midpoint of its Digital Decade**, this report—together with recent estimates from institutions including the EPRS, ECB, and the Draghi report using different scopes and methodologies[22] show that the EU's digital objectives will not be achieved without a **transformative shift in its investment landscape**. The Draghi report sets out that the additional effort of the EU should amount to EUR 150 billion a year for digital technologies. Similarly, the European Central Bank (ECB) stresses the importance of focusing EU finances on future-oriented investments, warning that **failure to scale digital capabilities could compromise the EU's long-term competitiveness and financial stability**.

According to estimates by the European Parliamentary Research Service, only advancing high-tech digital innovation (HTDI) alone across Europe will require between **EUR 212 and 380 billion** annually[23], more than triple the EU's current yearly total investment in digital technologies and infrastructure. A large part of the investment needs will have to come from private investments, mobilised through a deepened Capital Markets Union[24], increased risk financing, and industrial partnerships[25] (see below). A quarter of that estimate will need to come from public channels, including national budgets, EU programmes[26], at a time when fiscal space is constrained across many Member States and medium-term budgetary pressures remain elevated, despite the increased flexibility of the new EU fiscal framework.

Strategic public procurement, notably thanks to the forthcoming revision of the Public Procurement Directives, will be crucial to achieve the EU's objectives on resilience, innovation, simplification, and EU preference through public investment. When combined with measures outlined in the AI Continent Action Plan and the upcoming Cloud and AI Development Act and the support of GovTech[27], this revision will ensure that highly critical public sector develops highly secure, EU-based cloud capacity. Another unexplored opportunity is to make digitalisation eligible for sustainable (climate) financing demonstrating the energy and material efficiency gains of digitalisation in major industries, building notably on the recent work of the European Green Digital Coalition[28].

Analyses also converge on the critical areas where investment needs to be channelled to, from the roll-out of advanced **connectivity infrastructure in fibre, 5G – in particular stand-alone and mid-band, including full coverage of transport corridors**[29] **–** to the development of next-generation **semiconductors**, including AI-specific chips, the scaling of secure and **sovereign cloud and data**

[22] See European Parliamentary Research Service, *Cost of Non-Europe in High-Tech Digital Innovation: Investment Needs and Economic Benefits*, July 2024; European Central Bank, *Mind the gap: Europe's strategic investment needs and how to support them*, ECB Blog by Othman Bouabdallah, Ettore Dorrucci, Lucia Hoendervangers and Carolin Nerlich, 27 June 2024; Draghi, M., *The future of European competitiveness*, 2024; World Economic Forum, *Europe's Digital Transformation: Time for Bold Action*, July 2024.

[23] European Parliamentary Research Service, *Cost of Non-Europe in High-Tech Digital Innovation: Investment Needs and Economic Benefits*, July 2024, pages 56-57 and 60-61.

[24] What is the capital markets union? - European Commission.

[25] EPRS (2024) estimates that around one fourth of the required HTDI investment would need to come from public sources. The study also provides an overview of other estimates for the public-private split from comparable analyses.

[26] Other estimates concur, for example estimating that creation of sovereign, interoperable, and secure digital infrastructure stack alone would represent a total investment of EUR 300 billion over ten years (Bria, Timmers, Gernone, EuroStack – A European Alternative for Digital Sovereignty. Bertelsmann Stiftung, 2025).

[27] Public sector engagement with start-ups and SMEs to procure innovative solutions.

[28] European Green Digital Coalition's Net Climate Impact Assessment of digital solutions– www.greendigitalcoalition.eu

[29] For connectivity infrastructure**,** the EU requires over EUR 200 billion by 2030 for gigabit connectivity and 'full 5G'. White Paper, how to master Europe's digital infrastructure needs, COM(2024) 81 final.

infrastructure, the advancement of **trustworthy AI and quantum computing technologies,** and the development of **robust cybersecurity capacities**. Equally important is the sustained investment **in training more digital technology specialists, digital literacy and upskilling**, without which the benefits of innovation will remain inaccessible to many regions and sectors.

The cloud **computing capacity gap** between Europe and competitors like the US and China is expected to widen, unless significantly more capital is directed towards expanding edge and cloud computing capabilities. This report also identifies more precise **mismatches between digital priorities and the funding allocated through EU public instruments** (cf. figure 7), showing notably that insufficient attention is paid to the general objectives and the digital principles, skills development, foundational technologies, gigabit connectivity infrastructure deployment and digitalisation of SMEs. In this context, it is crucial to focus and align public spending as much as possible with strategic priorities and maximise its impact and efficiency[30].

Structural obstacles remain to foster the financing of the EU's digital transformation. On the public side, persistent fragmentation of national strategies, limited coordination at EU level, and slow absorption of EU funds impede the effective deployment of available resources. There is also a need to better coordinate action, in order to channel more public funding into sovereign digital assets, including trusted clouds, AI models, chips and cybersecurity while fostering **joint projects between Member States.**

Mobilising private capital at scale will be critical to bridge the gap—through a deeper Capital Markets Union, better-aligned public-private instruments, and stronger mechanisms for de-risking and blended finance. Recent analysis by the ECB[31] also highlights the need to focus not only on headline investment targets but also on improving **delivery conditions**, investment absorption, and project quality.

The **fragmentation and underdevelopment of the EU's financial markets, along with the tendency in the EU to avoid high-risk endeavours**, **still limit the flow of investment into high-growth and innovative sectors,** with a large share of household savings not channelled towards productive investment. The EU also lacks a mature venture capital ecosystem, which limits access to finance for high-growth and innovative companies[32]. The EU accounts for only 5% of global Venture Capital (VC) fundraising in innovation, compared to 52% for the US and 40% for China[33]. European AI startups raised about EUR 11 billion in venture capital funding in 2024, more than six times less than in the US (about EUR 71 billion)[34]. These gaps are particularly critical for high-risk, high-impact investment in **deep tech**, where traditional bank financing is often insufficient. For cybersecurity, EU venture capital totalled just EUR 814 million[35] concentrated in a few Member States, compared to EUR 15 billion in the US. Leveraging public resources to crowd in private investment – particularly through **risk-sharing mechanisms and financial instruments** – is therefore essential to scale innovation across the continent.

[30] These priorities are central in the context of the Competitiveness Compass (COM (2025) 30 final) and the Communication 'Road to the next multi-annual financial framework' (COM(2025) 46 final). Moreover, higher alignment between funding and key digital needs was advocated by a recent ECA report on the Recovery and Resilience Facility (ECA Special report 13/2025).
[31] European Central Bank, *Mind the gap: Europe's strategic investment needs and how to support them*, ECB Blog by Othman Bouabdallah, Ettore Dorrucci, Lucia Hoendervangers and Carolin Nerlich, 27 June 2024.
[32] EIB, Investment Report 2024/2025: Innovation, integration and simplification in Europe, 2025.
[33] Competitiveness Compass (COM (2025) 30 final).
[34] Dealroom.co, Opening moves in global AI - AI, startups & venture capital, AI Action Summit, Paris, February 2025.
[35] European Commission, European industrial technology roadmap for the next generation cloud-edge offering, 2021.

Figure 7: Comparison between gaps identified and EU funding from selected programmes in 2020-2027 (JRC estimates)[36]

	Budget (Million EUR)	Target achievement	Comparison budget/urgency
Other DD objectives	29 577	NA	
Basic digital skills	15 303	70%	+
ICT specialists	10 887	51%	--
Gigabit network coverage	14 158	69%-82%*	-
Basic 5G coverage	3 010	94%	+
Semiconductors	18 423	53%	--
Edge nodes	621	23%	++
Quantum computing	1 982	67%	--
Cloud computing services	8 419	52%	--
Data analytics	7 514	44%	--
Artificial intelligence	10 684	18%	--
SMEs digital intensity	19 817	81%	-
Unicorns	19 481	57%	+
eID	670	89%	+
Digital public services	31 339	82%-86%**	++
Electronic health records	15 184	83%	+
Total	**207 067**		

Comfort Zone | Finishing Line | Critical Zone

* 69% is referred to FTTP coverage; 82% to VHCN coverage.
** 82% is referred to digital public services for citizens; 86% to digital public services for businesses.

The report's findings also underscore the need to establish **a larger pool of public capital to leverage private investment** in the European economy and reduce financing costs for European businesses**.** Decisive action is needed to significantly increase the **funding opportunities for all EU businesses**, from the start-up phase right through to more mature companies building on the recently adopted EU Startup and Scaleup Strategy[37]. The main challenges to be addressed include the reinforcement and deployment of **blended finance tools** to de-risk private investment (e.g. InvestEU, expected to mobilise more than €372 billion of public and private investment through an EU budget guarantee of €26.2 billion), as well as the establishment of a **Savings and Investments Union**[38] to scale private investment across borders, including through the simplification of Initial Public Offering (IPO)

[36] Data on budget in the first column are based on estimates by the Joint Research Centre (JRC) based on the mapping of five major programmes—RRF, CEF Digital, Horizon Europe, DIGITAL, and Cohesion Policy—and their contribution to the Digital Decade targets. Estimates are referred to the multi-annual financial framework 2021-2027, with the Recovery and Resilience Facility covering the period 2020-2026. Amounts should be regarded as broad estimates. See also Annex 1 to this Communication (section 5.b), and SWD 'Digital Decade in 2025: progress and outlook' (section 4.2.2). Source: European Commission: Joint Research Centre, Nepelski, D. and Torrecillas, J. Mapping EU level funding instruments 2021-2027 to Digital Decade targets – 2025 update, Publications Office of the European Union, Luxembourg, 2025, JRC141966.
[37] COM(2025) 270 final Choose Europe to start and scale.
[38] Savings and Investments Union A Strategy to Foster Citizens' Wealth and Economic Competitiveness in the EU, COM(2025) 124 final.

pathways and the unlocking of pension fund capital for digital investments, to accelerate scale-up trajectories.

Next to investments, **reforms play a crucial role for the advancement towards the digital transition**. The Recovery and Resilience Facility (RRF) was designed with this dual focus, supporting not only investments but also structural reforms, in connection with the European Semester[39]. In the digital domain, on a total of about 2 500 milestones and targets, about 600 (24%) qualify as reforms[40]. They include, for instance, reforms to facilitate network deployment, strengthen cybersecurity, to modernise labour market policies and education systems, or implement the once-only-principle.

In their national roadmaps, Member States were invited to also include 'regulatory and reform-oriented measures'[41], but so far, they have provided little information on which roadmap measures qualify as reforms. As a first step, the relevance of reforms is reflected in the recommendations issued in this report at both horizontal (please see Annex 1) and Member State level, such as establishing enabling framework conditions and ecosystems that support commercialisation and technology transfer, in the area of digitalising SMEs and start-ups as well as the uptake of advanced technologies.

Finally, the Technical Support Instrument (TSI) has provided targeted expertise and capacity-building assistance to Member States in designing and implementing reforms, including in the area of digital. For instance, with the 2025 flagship 'ComPAct - Capacity for Europe's Digital Decade', public administrations in the Member States get support in creating the technological foundations for data-driven policies that integrate interoperability and AI technologies.

3. Addressing digital weaknesses and excessive dependencies

While global access to innovative and affordable technology, infrastructure and services is vital for EU competitiveness, the EU's reliance on foreign digital technologies, infrastructure and services exposes it to several risks. While digitalisation is a driver of innovation, productivity and global competitiveness, **persistent strategic dependencies threaten the EU's economic security and technological sovereignty**. Excessive dependencies are particularly acute in the areas of semiconductors, cloud and data infrastructure and cybersecurity technologies.

The EU still lacks a **significant domestic semiconductor manufacturing capacity**. It lacks capacity to manufacture advanced node fabrication (below 10nm), essential for both civilian and military applications[42]. This capacity is mainly concentrated in East Asia and in the US: 80% of the EU companies' suppliers are headquartered outside the EU, with 35% located in the US, 12.4% in Taiwan, 11.7% in China or Hong Kong and 10% in South Korea[43]. In the event of geopolitical turmoil in East Asia affecting Taiwan – currently producing over 90% of the world's most advanced chips – particularly with the intention of controlling its semiconductor industry (most notably TSMC, the world's most advanced chipmaker), the consequences would be severe. Most European industries – from automotive to aerospace, from medical equipment to defence – would face critical production deadlocks.

[39] The RRF regulation required that he recovery and resilience plan 'contributes to effectively address all or a significant subset of challenges identified in the relevant country-specific recommendations' (REGULATION (EU) 2021/241 establishing the Recovery and Resilience Facility, article 18.4).
[40] Recovery and Resilience Facility Scoreboard.
[41] Guidance to the Member States on the preparation of the national Digital Decade strategic roadmaps, C(2023) 4025 final.
[42] IC Insights, McClean Report, May 2Q Update of The McClean Report 2022.
[43] Ciani, A., Nardo, M., The position of the EU in the semiconductor value chain: evidence on trade, foreign acquisitions, and ownership, European Commission, Ispra, 2022, JRC129035.

Foundational AI model development is also dominated by the US, notably because of the US access to vast computing power through US hyperscalers who are also devolving much of their capital investments into cloud development. This situation presents several risks for the EU, starting with the lock-in of users to proprietary ecosystems, as well as the critical risk of EU user companies and citizens being exposed to the application of US laws such as the US Cloud Act. Currently, the largest EU **cloud operator** holds a mere 2% share of the EU market. This trend is expected to persist, with US hyperscalers projected to drive 65% of data centre demand in Europe by 2028[44]. **Cybersecurity** technologies taken up in Europe often originate from outside the EU, potentially exposing European networks to foreign influence or backdoor vulnerabilities.

Risks have also been identified in quantum technologies, particularly regarding the potential transfer of expertise through unmonitored foreign direct investment, talent poaching and collaborations lacking proper safeguards. On the other hand, it is also to be considered that the EU possesses significant strengths and leads in quantum science and research excellence, has a highly skilled workforce as well as one of the world's most dynamic startup ecosystems in quantum technologies. Initiatives such as Quantum Flagship, the Chips Joint Undertaking, and the new Quantum Pilot Lines also build on these strengths. Safeguarding these assets while fostering innovation remains a priority for sustaining Europe's competitiveness in this critical domain.

Europe is not yet harnessing the full power of **open source**[45] - a public good that can be freely used, modified, and redistributed allowing all to use the technology at will - and the vibrant community of European open source developers, which could be an important avenue for tech sovereignty to reduce Europe's dependencies from third countries. Digital dependencies and vulnerabilities relating to **research security** intersect with broader economic security concerns, especially in the current geopolitical context. Key risks include the weaponisation of dependencies and economic coercion for political leverage.

In addition to this, **no pan-EU digital platform** is today among the most visited in Europe and 'European citizens are served mostly by non-EU commercial platforms'[46]. These large platforms are often a gateway for a large number of business users to reach end users everywhere in the Union and control important ecosystems in the digital economy. Their position and the rules they set on their platforms can lead to unfair practices conditions for businesses using them, and harm users, as well as limit contestability and create an uneven playing field for other companies. Another concern in the digital landscape is the trade and exchange of illegal goods, services and content online, as well as the misuse of online services to amplify the spread of disinformation and for other harmful purposes. **Modern connectivity is no longer a collection of separate technologies – satellites, submarine cables, mobile and fixed networks –** but a deeply interconnected ecosystem. To respond to the growing demand for critical, low-latency applications - such as autonomous vehicles and remote surgery, increasingly higher amounts of data[47] need to flow seamlessly across all these domains, as disruptions in one can affect the entire network's performance and security. This will require in the near future a global approach ranging from orbital assets to terrestrial infrastructure, linking together

[44] McKinsey. The role of power in unlocking the European AI revolution, 2024.
[45] According to Open Forum Europe, open-source software is estimated to contribute between EUR 65 to EUR 95 billion to the European Union's GDP. Open-source software is today the basis for most software solutions, as open-source represents about 70% of all codes. But whilst Europe annually spends between EUR 10 and EUR 24 billion of public funds on software, only a minor fraction directly supports the European open-source industry, which comprises primarily of small and medium-sized enterprises (SMEs), start-ups, and individual developers (Blind, K.; Böhm, M., Grzegorzewska, P., Katz, A., Muto, S., Pätsch, S., Schubert, T. (2021). The impact of Open Source Software and Hardware on technological independence, competitiveness and innovation in the EU economy, Final Study Report. Brussels).
[46] Draghi, M., *The future of European competitiveness*, 2024.
[47] Statista, 2025 (Volume of data/information created, captured, copied, and consumed worldwide from 2010 to 2023, with forecasts from 2024 to 2028).

in a unified, resilient, and globally optimised system. And for that we need to build the basis now, with full coverage of fibre and accelerated development of stand-alone 5G. The resilience and security of **Europe's connectivity infrastructure** is increasingly challenged by the geopolitical and technological complexities of today's digital landscape. The full implementation of the **EU 5G Toolbox** and the promotion of **standalone 5G networks** are essential for mitigating security risks associated with **mobile connectivity**. Furthermore, core infrastructures like **submarine data cables** remain vulnerable to physical sabotage, risks and challenges that are addressed by Cable Security Action Plan[48]. In parallel, the EU's autonomy in the field of communications is undermined by the EU's heavy reliance on **non-European satellite systems**, a critical dependency starkly revealed during the war in Ukraine, when SpaceX threatened multiple time to interrupt the delivery of Starlink satellite services.

Finally, the risk of digital dependency is also **critical in systemic sectors such as the financial sector**. Today, the EU lacks a unified payment system, and while only seven countries of the Euro area have their own national payment systems[49], **the EU as a whole relies heavily on international card schemes, representing over 64% of all card-initiated transactions in the euro area[50].** In addition, mobile app payments, dominated by non-European tech firms (such as Apple Pay, Google Pay and PayPal), now account for nearly a tenth of retail transactions and are showing double-digit annual growth. These developments are exposing the EU to geopolitical and cybersecurity risks. The Commission's legislative proposal on the digital euro, adopted in June 2023, continued its path of interinstitutional negotiations in 2024. The final decision on its issuance rests with the European Central Bank, following the conclusion of the legislative process.

4. Harnessing digitalisation for the EU's defence capacity

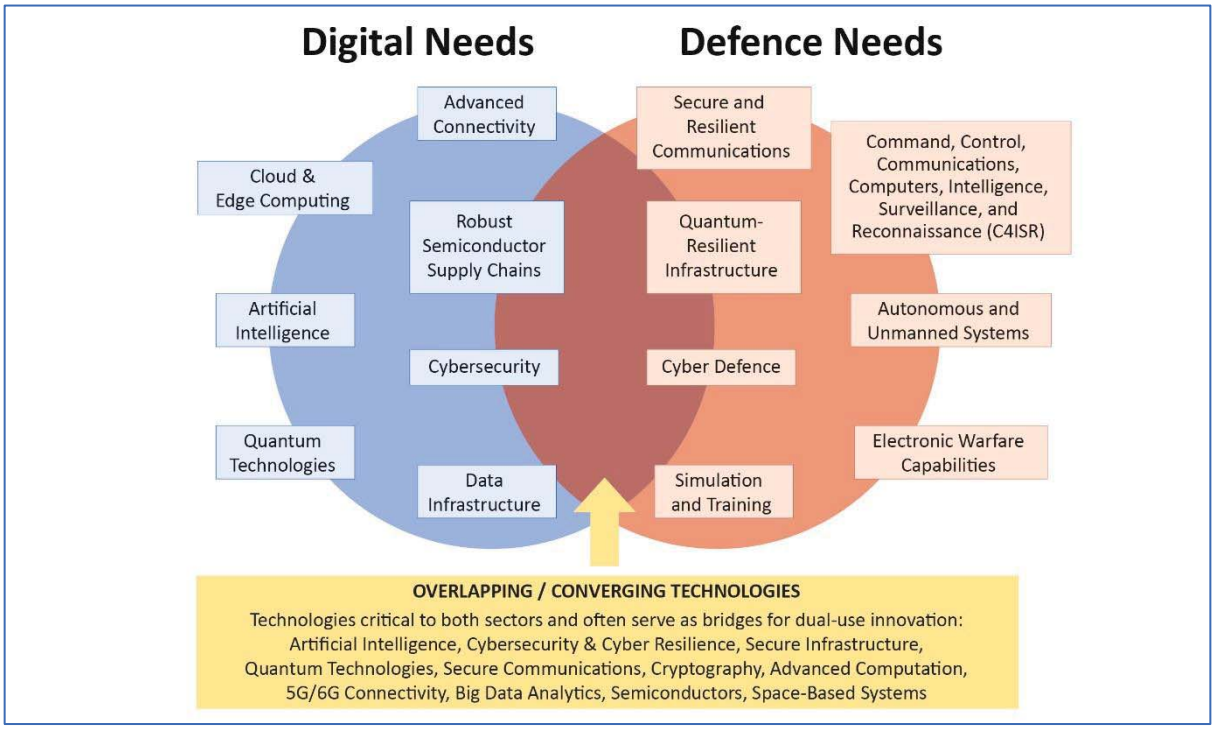
Digital technologies are a cornerstone of the EU efforts to reinforce its security, strategic autonomy, and defence capabilities. By harnessing the potential of synergies between civilian and defence AI applications, the EU can unlock new opportunities for innovation, enhance Europe's competitiveness and reinforce its strategic autonomy in this critical domain.

Robust and secure communication networks are essential for modern defence operations. Sovereign satellite communication infrastructure is vital for independent defence and crisis response. Integration of 5G and 6G technologies will further enhance secure, real-time operational capabilities across domains. In parallel, sovereign cloudified networks are critical to ensure that sensitive defence data is securely stored, processed, and protected within the EU jurisdiction. **AI** represents a transformative force in both civilian and military contexts as AI-enabled systems are key to accelerating threat detection, improving decision-making, and supporting autonomous operations.

Semiconductors underpin nearly all modern defence capabilities. As global supply chains remain vulnerable to geopolitical tensions, the Commission is committed to supporting a secure and sovereign European semiconductor ecosystem building on new five pilot lines with a total investment of EUR 3.7 billion, now **able to also serve** defence applications.

[48] EU Action Plan on Cable Security, JOIN(2025) 9 final.
[49] The digital euro: maintaining the autonomy of the monetary system, Keynote speech by Philip R. Lane, 2025.
[50] Volume share of international card schemes in total electronically initiated card payments with cards issued in the euro area and transactions acquired worldwide for the first half of 2023. Based on data collected under Regulation (EU) No 1409/2013 of the European Central Bank on payments statistics (ECB/2013/43), as amended.

Figure 8: The increasing overlap between digital and defence policy areas



Quantum technologies will increasingly shape the future of secure communications, sensing, and computing. Through initiatives such as EuroQCS, EuroQCI, and the Quantum Flagship, the EU is investing in quantum computing for complex problem solving, ultra-secure communications, gravimetry sensors, and precise positioning, navigation and timing -to mention just a few that serve both defence and civilian applications and critical infrastructures.

The development and **scale-up of dual-use start-ups and unicorns** are essential to ensuring Europe's long-term strategic competitiveness. However, a **EUR 1.25 trillion defence investment gap** since 2006 is indicative of chronic underinvestment, particularly for deep tech startups which includes an EUR 4 billion shortfall for SMEs, hindering innovation[51]. Bridging this gap requires sustained investment, better integration of digital and defence strategies and targeted support for **dual-use technologies** and innovation ecosystems. **Persistent barriers to private investment**, including outdated exclusion policies, constraints related to Environmental, Social and Governance (ESG) standards, and a lack of defence-focused financial instruments[52] have hindered the growth of digitally intensive SMEs and start-ups developing defence or dual solutions. About 40% of defence SMEs still face difficulties in accessing sources of financing, especially during the growth phase[53].

In conclusion, amid an evolving geopolitical landscape and the changing nature of warfare, the Commission's efforts to integrate digital technologies into the defence ecosystem—and vice versa—are essential to strengthening the EU's security, resilience, and technological leadership. Civilian-focused initiatives have laid important groundwork for harnessing advanced digital technologies such as AI, quantum computing, and semiconductors in support of defence capabilities. Nonetheless, key challenges persist, including the need for deeper policy integration, addressing digital infrastructure

[51] European Commission, Defence Investment Gaps Analysis and Way Forward, 2024.
[52] Dealroom.co & NATO Innovation Fund, Defence, Security and Resilience in Europe: The state of startups and venture capital, February 2025.
[53] European Commission, Report on "Access to equity financing for European defence SMEs", November 2023.

gaps, and accelerating innovation through targeted investment in dual-use technologies and enhanced coordination between digital and defence strategies.

5. International aspects of the Digital Decade

The digital transformation is reshaping economies and societies across Europe and globally, reinforcing the EU's strategic interest in securing technological competitiveness as the foundation of long-term political sovereignty. Building on the EU's strengths and internal policies and actions, the **International Digital Strategy for the European Union**[54] seeks to (i) boost the EU's tech competitiveness through economic and business cooperation with trusted partners (ii) promote a high level of security for the EU and its partners and (iii) shape global digital governance and standards in line with the EU values-based approach.

The Commission has continued to develop its **network of Trade and Technology Councils (TTC) and Digital Partnerships**. The EU has also expanded its growing portfolio of free trade agreements and digital trade agreements, which set high-standard digital trade rules and provide a platform for cooperation on digital trade issues. **The Global Gateway strategy** is playing a key role in promoting digital infrastructure investment, notably of secure 5G networks provided by trusted vendors and secure and resilient submarine cables. More broadly, the Global Gateway strategy is strengthening **Europe's role as a trusted partner in global connectivity.** Additionally, the Commission is supporting digital transformation efforts in **enlargement countries and the EU's neighbourhood**, while also engaging in **multilateral forums to drive progress on key issues,** such as the governance of AI (including the G7 Hiroshima AI Process and the Council of Europe Convention), Council of Europe Convention) or the promotion of secure and data protection compliant Digital Public Infrastructures (notably in the G20).

Finally, the **Declaration on Digital Rights and Principles**[55] has had a significant impact on international discussions, serving as inspiration for several international declarations[56] and contributing to the first comprehensive framework for global digital governance. By promoting its values and standards globally, the EU is helping to shape the future of the digital economy and ensure it is aligned with its strategic interests and values.

6. Conclusion

Amid intensifying geopolitical pressures, rapid technological change, and rising global competition, **the Digital Decade anchors the EU's resolve to shape a digital future** rooted in technological sovereignty, competitiveness, innovation, sustainability and resilience.

As the EU reaches the pivotal midpoint of the Digital Decade, **2025 can be the moment when ambition turns into lasting impact.** The choices made now will determine whether Europe completes its shift from a regulatory pioneer to a global leader in sovereign, secure, and ethical digital technologies. The report underlines the importance of responding with **unity, determination, and sustained effort.**

While the EU has sharpened its strategic focus and made real progress**, major challenges** continue to undermine the pace and resilience of its digital transformation. **Skills shortages, infrastructure gaps** – especially in connectivity and foundational technologies – and **increased security and sovereignty concerns** all demand urgent attention. Fragmented markets, overly complex regulations, possible

[54] An International Digital Strategy for the European Union, JOIN(2025) 140 final.
[55] European Declaration on Digital Rights and Principles for the Digital Decade (2023/C 23/01).
[56] The OECD Declaration on a Trusted, Sustainable and Inclusive Digital Future and discussions for a United Nations Global Digital Compact (GDC).

tensions on energy capacity, and insufficient **societal resilience and safeguards** are also limiting the EU's ability to scale innovation and unlock the full potential of its private capital.

The findings of this report highlight the importance of **acting more consistently, focusing on these internal barriers** and prioritising the acceleration of innovation cycles, the scaling of strategic technologies across the Single Market, and investment into the sovereignty and security of its digital ecosystem. In this regard, the National Roadmaps adopted by Member States mark a crucial turning point. Their success depends not only on ambition, but on coherent, long-term execution and alignment across all levels of governance. This also means **making full use of the enabling instruments –** from EDICs and the coming AI and Cloud Development Act, the EU Wallet, the GDPR, the DSA, DMA and AI Act **–** to the upcoming '28th Regime' proposal **–** as well as **better aligning investments with actual needs.**

The stakes are high. Without decisive and further coordinated action, **the EU risks missing out on substantial gains.** According the EPRS study, an ambitious, coordinated policy could potentially increase the EU GDP by 1.84% compared to the baseline, based on increased productivity, more efficient public services, and a thriving innovation ecosystem[57]. By turning its collective strengths into strategic advantage and sustaining coordinated action over time, Europe can not only meet the goals of the Digital Decade but lead the way in shaping a digital future grounded in resilience, trust, and shared prosperity.

Achieving this vision requires strong, collective ownership from all Member States, and cooperation with all parties involved, including cities, local and regional groups, to deliver digital policies that have tangible impact for citizens, businesses, and public services.

Considering the evidence presented in this report, the Commission will continue discussing with Member States, the European Parliament, and stakeholders on how to progress together, leveraging the Digital Decade's governance mechanism, notably the Digital Decade Board. The report will also inform the co-operation with stakeholders and partners outside the EU.

As set out in the DDPP, **the Commission will monitor and assess the implementation of these recommendations and report on the progress made in the State of the Digital Decade 2026.** The Commission will also start preparing the review of the DDPP, planned by June 2026. This will provide an opportunity for a strategic reflection on the Digital Decade's framework, objectives, and governance, to better address shifting geopolitical, technological, and societal realities.

[57] EPRS, Benefit of an EU strategic innovation agenda, Cost of Non Europe, 2025.

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ANNEX 1

ANNEX

to the

Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

{SWD(2025) 290 final} - {SWD(2025) 291 final} - {SWD(2025) 292 final} -
{SWD(2025) 293 final} - {SWD(2025) 294 final} - {SWD(2025) 295 final}

European Commission

State of the EU digital transformation in 2025: progress and horizontal recommendations

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5. Building coherence, efficiency and simplification 37

1. Introduction

This annex forms an integral part of the State of the Digital Decade 2025 report. It retains the four-chapter structure of the 2024 report, focusing on: technological sovereignty, security, and competitiveness; protecting and empowering people; harnessing digitalisation for the green transition; and a horizontal chapter on building coherence, efficiency and simplification.

The analysis provides an overview of the state of play, identifies key strengths to build on as well as gaps and shortages, and offers targeted recommendations to all Member States in areas requiring stronger collective action. The analysis primarily relies on the monitoring conducted through the Digital Economic and Society Index (DESI). It is further supported by relevant studies, expert analysis, and the National Digital Decade Strategic Roadmaps submitted by Member States.

2. Reinforcing technological sovereignty, security, and competitiveness

a. A continent supporting digital innovation and sovereignty

i. Closing the innovation gap

- *Research and Innovation (R&I) for a digitally transformed Europe*

The trends identified in the 2025 State of the Digital Decade are still very much demonstrating the EU's weakness in digital innovation, particularly the limited scale of **investment in R&D** and the insufficient focus on breakthrough innovation[1]. According to data from the EU Industrial R&D Investment Scoreboard, the US dominates digital R&D, accounting for around 40% of all digital companies and 53% of total R&D investment among those identified in 2023[2].

Overall, while Europe remains a global hub for scientific exchange, it **lacks critical mass** of top-performing players, reflecting a fragmented ecosystem with limited specialisation[3]. The latest available Eurostat data shows that the percentage of the ICT sector in gross value added is relatively low and grew only marginally in recent years, from 4.86% in 2019 to 5.46% in 2022[4]. While **European organisations excel in producing high-impact scientific publications, they struggle to transform this knowledge into patented innovation.** Compared to the US and China, **the EU lags behind in patent filings, with fewer applications submitted.**

Digital technologies also play a crucial role in the EU's efforts to innovate, compete and grow to ensure its freedom and reinforce its **security, strategic autonomy, and defence capabilities**, with a significant potential for leveraging synergies between civilian and defence applications. Start-ups and innovative companies in the field of dual-use technologies also play a key role, but their potential is limited by a long-standing defence investment gap—especially for deep tech and SMEs. Barriers like outdated policies and limited financing options further restrict growth.

To drive growth and cross-border investment in defence-related innovation, the European Commission has launched several dedicated instruments, including the EUDIS Matchmaking and Accelerator Programmes, and mobilised new funding channels through the European Innovation Council (EIC) and the TechEU Scale-up Fund. In January 2024, via the European Investment Fund, the Commission launched a EUR 175 million **Defence Equity Facility**, designed to leverage up to EUR 500

[1] Draghi, M., The future of European competitiveness, 2024, Part A – A competitiveness strategy for Europe.
[2] Joint Research Centre, Nindl, E., Napolitano, L., Confraria, H., Rentocchini, F., Fako, P., Gavinan, J. and Tuebke, A., The 2024 EU Industrial R&D Investment Scoreboard, 2024.
[3] Joint Research Centre, Eulaerts, O., Grabowska, M. and Bergamini, M., Weak signals in Science and Technologies - 2024, 2025.
[4] Source: Eurostat (Statistics | Eurostat). This indicator measures the importance of the ICT sector in the economy, reflecting the strength of the innovation ecosystems.

million in venture capital for defence technologies with dual-use potential. This complements European Defence Fund investments in advanced digital domains and innovation-driven initiatives. One of these initiatives is the EUDIS Hackathon, which gathered over 275 participants from 16 Member States and generated more than 70 innovative solutions to address pressing defence challenges.

Technological leadership - Recommended policies, measures and actions

R&I for a digitally transformed Europe

Member States should increase their public digital R&I expenditure, prioritising R&I investment in digital technologies that play a strategic role in the EU's competitiveness, resilience and sovereignty.

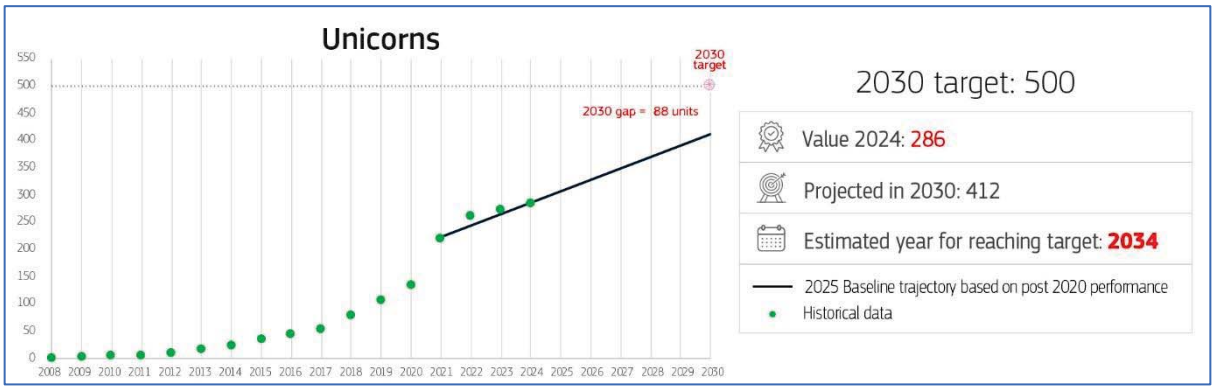
Harnessing digitalisation for EU's defence capabilities

Member States should:

- *strengthen their support to innovative actors, including start-ups proposing disruptive digital applications and services[5];*
- *boost the development of digital infrastructures that contribute to societal resilience in crisis contexts;*
- *better connect the defence and digital innovation communities, foster a new mindset towards preparedness and security culture across the digital sector, identify synergies between defence and digital programmes, investments, and applications.*

- *Boosting the scale-up capacity of Europe*

The 2025 data on **unicorns in the EU** reflects a slowing down of the dynamic that characterised COVID times in 2021 and 2022. **In 2024, the number of unicorns established in the EU rose by 12 units**, reaching 286 unicorns**.** The target of 500 unicorns is expected to be reached in **2034** if no further actions are taken[6].



There are significant variations among Member States – with Germany (69 unicorns), France (48) Sweden (39), and the Netherlands (32), topping the list. However, the EU still lags significantly behind China (397) and the US (1687), the latter demonstrating a higher annual growth rate (6% against 4.4% in the EU).

[5] In compliance with EU rules.
[6] European Commission based on Dealroom data.

Despite its vast economic potential, the Digital Single Market remains fragmented, with a complex landscape of national regulations, administrative procedures, and obstacles to data and knowledge sharing that leaves a large potential untapped.

First and foremost, there is a **need for a substantial development of EU capital markets**. The lack of private capital for 'big ticket' investments still prevails. This forces too many EU startups to seek late-stage growth capital from venture capital funds outside the EU, which can often result in them moving their corporate headquarters outside the EU. The **Savings and Investments Union**[7] will be crucial to improving how the EU financial system **channels savings into the real economy, and uses those savings for productive long-term investment**.

To foster the rise and development of scaleups, the EU is set to adopt an **EU Startup and Scaleup Strategy in 2025**. This strategy aims to address financial, regulatory, and administrative barriers that hinder startups from scaling up into mature, profitable companies–an urgent priority to prevent them relocating outside the EU. For innovative companies to emerge and existing ones to scale up, the **single market plays a crucial role**. As part of this effort, the Commission will present a **'28th regime'** to make it possible for innovative companies to benefit from a single, harmonized set of EU-wide rules, wherever they invest and operate in the single market. At the same time, the implementation of the **Digital Markets Act** is creating and opening up significant opportunities for startups and scaleups by imposing specific obligations on gatekeepers and thereby ensuring that small businesses that use such platforms benefit from fair and open markets.

However, EU-level action alone is not enough to address these challenges, and cooperation with Member States will be critical, especially to attract and retain talent, foster access to finance, promote tech transfer policies and the public procurement of innovative products and services. It can build on the Member State-led **Europe Startup Nations Alliance**[8] (ESNA), which supports national innovation policy makers in sharing and implementing best policy practices for startups.

Unicorns - Recommended policies, measures and actions

Member States should support coordinated action across the single market to address financial, regulatory, and administrative barriers and mobilise public policies tackling a comprehensive range of domains:

- *promote tech transfer, facilitate the creation of spinoffs from universities and research centres;*
- *mobilise public procurement budget to procure innovative products and services from startups;*
- *increase the amount and diversity of private capital (for example from national pension funds) available for co-investing in high-growth startups;*
- *identify and support tech innovators in their countries (e.g. identified through the innovation radar, or EIC or the Strategic Technologies for Europe Platform Seal of Excellence).*

[7] European Commission, Savings and Investments Union, A Strategy to Foster Citizens' Wealth and Economic Competitiveness in the EU, COM(2025) 124 final, 2025.

[8] Website: https://esnalliance.eu/.

ii. Fostering Ecosystems and infrastructure for an AI continent

Connectivity

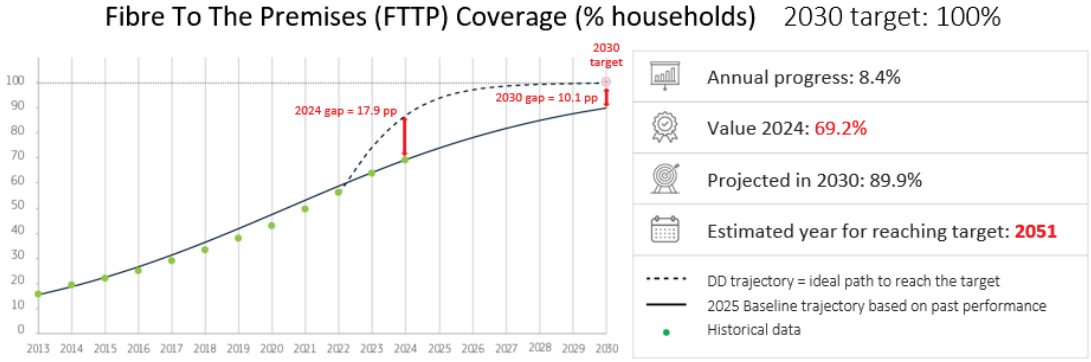
Modern connectivity is no longer a collection of separate technologies— satellites, submarine cables, mobile and fixed networks—but a deeply interconnected ecosystem. To respond to the growing demand for critical, low-latency applications, such as autonomous vehicles and remote surgery, higher amounts of data[9] need to flow seamlessly across all these domains, as disruptions in one can affect the entire network's performance and security. This requires a global approach, spanning from orbital assets to terrestrial infrastructures in a unified, resilient, and globally optimised system. The EU must already lay the the foundation for this approach, with full coverage of fibre and accelerated development of stand-alone 5G.

Regarding **fixed connectivity**, accelerated action is needed to meet 2030 targets. Very high Capacity Networks (VHCN) coverage reached 82.5% in 2024, with a growth rate of 4.9%, while fibre coverage stood at 69.2% of households in 2024, marking an 8.4% annual increase. However, at the current pace, **full coverage would only be achieved by 2051.** In particular, rural deployment of fibre lags behind, with just 58.8% coverage in 2024.

Data on the uptake of gigabit connectivity and 5G shows an upward trend, although there is still room for improvement. In 2024, only 22.3% of fixed broadband subscriptions were at speeds of 1 Gbps or higher (up from 18.5% in 2023). Overall, basic 5G coverage[10] across the EU reached 94.3% in 2024, which is comparable to the 97% estimated coverage in the US and 95% in China and India[11]. Rural 5G coverage in the EU and in the US are comparable with the EU at 79.6% and the US at 82%. Both regions have lower rural coverage compared to China (85.2% estimated) and India, which leads with 92.1% rural coverage. 5G take-up (share of the population using 5G SIM cards) increased in the EU from 21.7% to 35.6% in 2024. This is higher than India's 11.1%, but **it is still significantly behind the US** (96.5%) and China (73.1%). **Ensuring that the spectrum needs for future connectivity are met is another critical challenge,** while the incomplete assignment of the three 5G pioneer bands and the slow progress reported (on average in Europe only 75% of the relevant spectrum has been assigned by February 2025) exacerbate the problem.

In 2025, Europe is significantly falling behind in adopting 5G stand-alone (SA) networks, with only 2% of 5G users connected via SA infrastructure[12]**.** This sluggish uptake reflects ongoing challenges in infrastructure deployment and device readiness across the region. In stark contrast, the **US is far ahead** with **24% of its 5G users operating on SA networks** and **China has surged with 77.1%** — underscoring the country's aggressive roll-out of next-generation core technologies. These disparities reveal a growing global divide in 5G evolution, spotlighting China's technological momentum and exposing the structural and policy hurdles hampering Europe's shift from 5G non-stand-alone (NSA) to true SA capabilities.

[9] Statista, 2025 (Volume of data/information created, captured, copied, and consumed worldwide from 2010 to 2023, with forecasts from 2024 to 2028).
[10] The current KPI for the 5G target does not reflect the actual quality of service experienced by users. It monitors areas where a 5G signal is available, regardless of the network performance. The current stage of 5G deployment can be considered only as "basic 5G".
[11] All relevant statistics related to 5G can be found at the Commission's 5G Observatory website: https://digital-strategy.ec.europa.eu/en/policies/5g-observatory.
[12] Ookla. Omdia. A Global Evaluation of Europe's Digital Competitiveness in 5G Standalone, 2025.



In their **National Roadmaps**, Member States reported devoting a significant portion (approximately 28%) of their measures' total budget **to gigabit fixed connectivity**, amounting to EUR 80.6 billion (with EUR 56.6 billion coming from private sources). The 103 measures primarily focus on regulatory actions to facilitate network deployment, as well as financial support for non-viable and commercially unattractive areas and strategic parts of the networks. About one third of the measures are dedicated to each of the two areas. In their roadmap adjustments, Member States maintained a strong emphasis on regulatory actions to facilitate network deployment.

In terms of **5G investments**, Member States reported investing EUR 5.9 billion (with EUR 2.9 billion coming from non-public funds), which accounts for approximately 2% of the total budget of their measures. The 39 measures for 5G focus on **spectrum management**, as well as financial support for non-viable and commercially unattractive areas, and strategic parts of the network. There is equal emphasis on each of the two areas. In their roadmap adjustments, Member States placed a significant focus on increasing financial support for 5G networks.

To improve market incentives to build the digital networks of the future, the Commission is working on a future **Digital Networks Act** (DNA), to be proposed by the end of 2025, aiming to improve digital connectivity for all end-users. In parallel, the Commission is setting up 5G standalone **large-scale pilots** with EUR 205 million funding under the **Connecting Europe Facility**, a large-scale pilot for Telco-edge-cloud deployments under Horizon Europe (EUR 75 million funding), as well as taking a proactive role in the **global race for 6G** by developing a spectrum roadmap and shaping global standards.

Regarding **satellite connectivity (broadband internet, direct-to-device or D2D and Internet of Things or IoT satellite)**, the EU is facing a dual challenge of capacity and sovereignty. The EU remains heavily reliant on non-EU actors to access space, notably SpaceX launchers, and on **US satellite constellations such as Starlink,** while the satellite capacity of EU operators lags behind its competitors. Comparing the number of satellites paints a stark picture for the EU which has only 3 893 launched and planned satellites. China has launched 220 satellites and has an additional 27 198 planned, and the US has 7 633 launched and additional 33 397 planned - both countries have very ambitious expansion plans for the coming years[13]. Satellites are becoming an essential component of an efficient, secure and resilient connectivity network, increasingly providing low latency broadband connectivity. The convergence of non-terrestrial and terrestrial networks is accelerating, including in 5G and future 6G systems, increasing mobile coverage through satellite D2D connections—and improving network resilience and security with advanced encryption.

[13] Detecon International GmbH, Study on Mobile satellite services (MSS) in the 2 GHz band in the EU, 2025.

Already counting on GOVSATCOV, the EU will start improving its strategic presence in space with the development of IRIS². IRIS² is the new EU multi-orbit satellite constellation[14] of 292 satellites which will provide for secure connectivity and high-speed broadband to eliminate connectivity dead zones. In December 2024, the Commission and the SpaceRISE industry consortium, comprising the three major EU satellite operators, signed a 12-year concession contract for the design, development, and operation of IRIS². On the regulatory side, the Commission continues work with the Radio Spectrum Policy Group (RSPG) to develop a **common approach** to define common requirements for **satellite constellations** accessing the EU market and satellite D2D and to explore the potential of the EU harmonised 2 GHz Mobile Satellite System (MSS) frequency band, which will become available for reassignment in 2027, as a strategic tool to support its ambitions in the space market.

Submarine data cables are the backbone of global digital communication, carrying over 99% of international data traffic, which makes their security and resilience a top priority for the EU. In 2025, the EU has taken several steps to mitigate potential vulnerabilities that could be exploited by geopolitical adversaries (see section on cybersecurity below) and invested considerably in studies and works supporting submarine cables and backbone infrastructure. CEF-Digital already supports 51 Global Gateways projects (mostly on submarine cables) for a total investment of EUR 420 million. The demand for CEF funding is constantly increasing for submarine cables: the total requested funding is almost 6 times higher than the available budget in forth call.

Connectivity infrastructure - Recommended policies, measures and actions

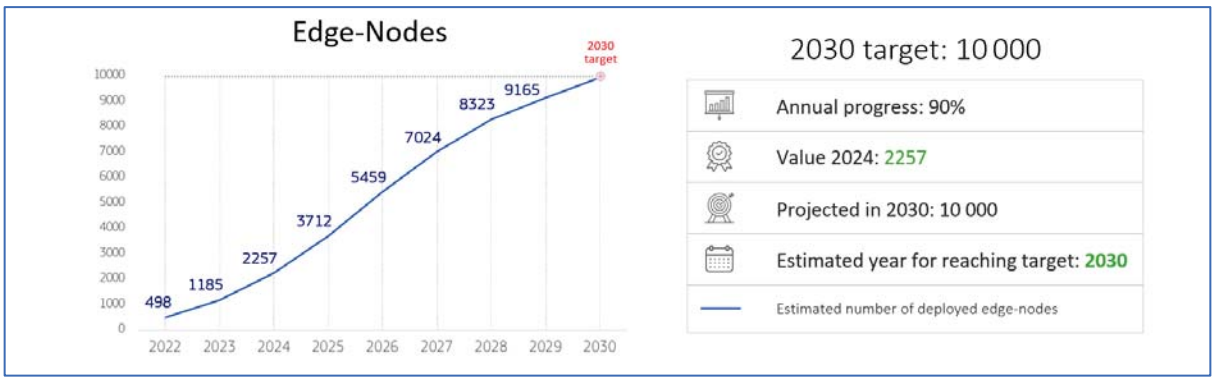
Member States should:

- *introduce targeted measures to accelerate fibre roll-out and take-up by end-users;*
- *use regulatory and financing measures to incentivise the densification of 5G networks, also based on EU-harmonised mm-wave spectrum, and accelerate the deployment of secure 5G stand-alone networks, including by fostering cross-border collaborations and promoting innovative use cases;*
- *support coordinated action for planning and developing a reliable, sovereign and resilient network of digital infrastructures and capacities, encompassing backbone terrestrial, submarine and satellite networks, across the EU and with international partner countries.*

Cloud and edge infrastructures

The role of **edge nodes is critical in the future AI ecosystem**. Edge computing enables more immediate AI processing of massive data volumes and intelligent interpretation of data in minimal processing times (milliseconds). It also provides a more secure processing environment and reduces data transmission costs and network congestion. The applications are numerous, including video observation, analysis and asset/equipment monitoring, tracking and performance optimisation[15].

[14] Meaning covering low Earth orbit (LEO), medium Earth orbit (MEO) and geostationary Earth orbit (GEO).
[15] Edge Observatory for the Digital Decade, Edge Deployment Data report 1, 2023.



In 2024, it is estimated that a total of **2 257 edge nodes** were deployed across the EU, which is a single-year increase of **1 072 new nodes** compared to 2023. 2025 represents a pivotal moment in the deployment trajectory; it is expected to see 1 455 new nodes deployed, the biggest single year increase, which is in line with the estimated trajectory to reach 10 000 by 2030. The density of edge nodes across the EU reveals varying levels of deployment across Member States. France, Germany, Italy, and Spain are at the forefront of edge node deployment. Today's edge node deployments mainly address the critical need for accessing real-time data, with 20% of organisations already using these solutions extensively and 42% planning to adopt them. As AI and machine learning applications evolve, businesses are likely to adopt edge nodes more with a promising future adoption rate of 54%[16]. This underlines the transformative potential of AI and machine learning in driving business innovation, informing decision-making, and monetising edge solutions.

Growing data centre capacity across Member States will also be critical in supporting the development of AI. The amount of computing power utilised to train leading AI systems has expanded by 350 million times over the past 13 years[17] and, since 2010, the training computing power used to create AI models has been **growing at a pace of 4.6 times per year**[18], underlying the dependence of AI on cloud computing infrastructure and software to train and use AI models at scale[19]. **The investment needs for developing cloud infrastructures are massive**. Europe today has **around 8-10 GW of installed data centre capacity, amounting to roughly a third of the installed capacity in the US** and half of the installed capacity of China[20]. Even though Europe's capacity is projected to increase significantly, potentially reaching 70% growth by 2030, the gap with the US is expected to widen further, as US data centre capacity is set to double in the same period[21]. Industry forecasts predict that demand for data centre services will outpace supply, widening the gap in Europe's cloud computing capacity relative to global competitors[22].

In this context, **the EU Cloud and AI Development Act** will be key to accelerate the deployment of data centres in Europe, by **cutting red tape**, accelerating permitting procedures, improving access to land, finance and energy, and creating the right conditions to incentivise large investments in energy-efficient cloud and edge capacity. The act will address these obstacles, with a **view to at least tripling the EU's data centre capacity within the next five to seven years and bringing it to a level that meets the needs of EU businesses and public administrations by 2035**. Finally, several Member States of the

[16] Edge observatory for Digital Decade, Edge Deployment Data Report – 3rd report, 2024.
[17] Lennart Heim, Markus Anderljung, Emma Bluemke, Robert Trager, Centre of the Governance of AI, "Computing Power and the Governance of AI", 2024.
[18] EPOCH AI, Notable AI models, 2025.
[19] OECD (2023) "A blueprint for building national compute capacity for AI", OECD Digital Economy Papers, No. 350, OECD Publishing, Paris.
[20] Hintemann, R.; Hinterholzer, S.; Progni, K. (2024a). Data centes in Germany - Current market developments 2024. Berlin: Bitkom e.V. Retrieved from Bitkom e.V. website: https://www.bitkom.org/Bitkom/Publikationen/Studie-Rechenzentren-in-Deutschland.
[21] Ibid.
[22] An upcoming study will consolidate these figures and provide DG CNECT with more granular data on capacity and needs, today and in 2030.

Joint European Forum for IPCEI (JEF-IPCEI) in November 2024 decided to enter into the **design phase of two new potential Important Projects of Common European Interest (IPCEI)**. These new initiatives, focused on innovative AI Services (IPCEI-AI) and on deploying computing infrastructure (IPCEI-ECI), amongst others to support the ambitions set out in the AI Continent Action Plan[23].

Moving forward it will be crucial for the EU to closely monitor the **deployment of data centre capacity across Member States** in cloud and edge infrastructures. Ensuring a balanced and strategic expansion of data centres is essential to supporting the growing demand for AI compute capacity. In practice, it will be fundamental to include the **systematic monitoring of investments in infrastructure and data centres.** This would help ensure that European businesses and the public sector have adequate access to the necessary compute capacity to benefit from edge, cloud computing and AI-driven solutions.

Cloud and edge infrastructure - Recommended policies, measures and actions

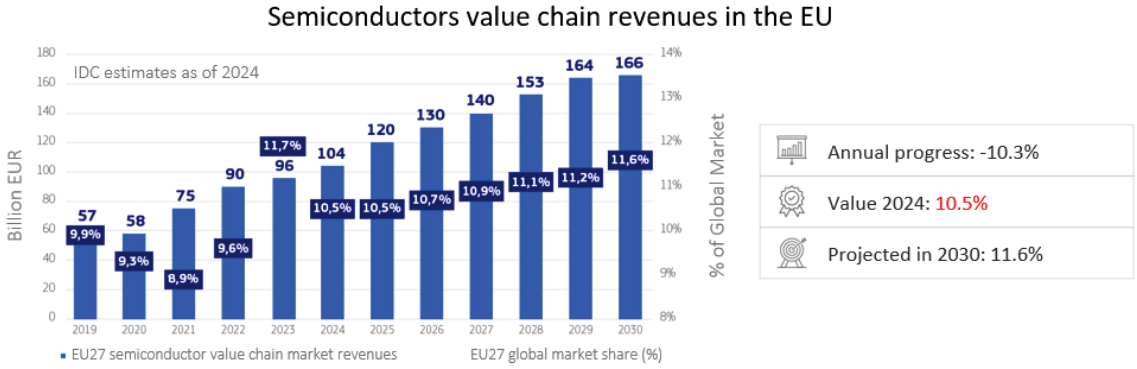
Member States should:

- *support the deployment of secure and sustainable cloud and edge nodes and focus national efforts on infrastructure-targeted investments and strategies to ensure that businesses have access to the sovereign compute infrastructure required for serving their cloud and AI needs.*
- *closely work with the Commission on the upcoming Cloud and AI Development Act, aiming to at least triple EU data centre capacity within the next five to seven years and bringing it to a level that matches the demands of EU businesses and administrations by 2035. This is an objective that could become a new Digital Decade target.*
- *engage fully with the Commission in the discussion on the outcome of the study supporting the Cloud and AI Development Act to establish methods for assessing and tracking the EU cloud compute infrastructure capacity.*

Semiconductors

In 2024 the **EU's share of global value chain revenues was 10.5%, still far from the 2030 target of 20%.** Huge investments were approved in the last semester of the previous US administration, and China is accelerating its investment in legacy chips manufacturing. The EU's share is projected to increase again moderately in the coming years driven by the steady growth of the EU's value chain revenues, in a context of sustained massive investments in other regions of the world, responding to strong growth of the global market revenues now projected to pass EUR 1.4 trillion in 2030. This implies that the EU's semiconductor revenues must grow more than four times their current value to achieve the Digital Decade target by 2030.

[23] AI Continent Action Plan, COM(2025) 165 final.



In their National Roadmaps, **Member States have committed to investing a substantial EUR 49.2 billion** in semiconductors, accounting for 17% of the roadmaps' total budget across all targets. Private sources are expected to contribute EUR 8.6 billion to this investment[24]. The 52 measures reported in the roadmaps mainly focus on supporting R&D and boosting production capacity and industrial deployment of semiconductors. Roughly one-third of the measures are dedicated to each of these areas, indicating a balanced approach to driving growth and innovation. These areas also remain a priority in the Member States' roadmap adjustments.

The **European Chips Act** has established a framework to attract investments from major semiconductor manufacturers into a first-of-a-kind for EU facilities. The first seven projects announced already exceeding EUR 30 billion in investments and there are other promising projects worth almost another EUR 30 billion in the pipeline. The approved IPCEI on Microelectronics and Communication Technologies (IPCEI ME-CT) brings together 14 Member States and 56 companies, channelling around EUR 20 billion from both private and public sources into 68 collaborative projects across multiple countries. Furthermore, a proposal for new IPCEIs on advanced semiconductor technologies is currently in the design phase. Moreover, the Chips Act is the basis for supporting five pilot lines with a total of EUR 3.7 billion funding. These projects will bridge the gap between laboratory innovation and industrial-scale manufacturing in key areas such as beyond 2nm leading-edge system-on-chip, fully depleted silicon-on-insulator applications, advanced packaging, wide band gap materials, and photonic integrated circuits.

For Europe to compete globally in the semiconductor sector, **it is essential to substantially increase investments and to continue its commitment to the leading value chain areas,** including semiconductor equipment, chips design, analogue components, sensors, photonics, while also securing a strong entry into emerging markets such as computing and AI-oriented silicon.

With this aim in mind, the Commission is starting the formal review of the Chips Act, which is planned by Q3 2026, with a clear support for a Chips Act 2.0 from industry, some Member States, and other stakeholders.

[24] Please note that measures included in the national roadmaps might draw on existing funding programmes and might include investments under the IPCEI mentioned in this paragraph.

Semiconductors - Recommended policies, measures and actions

Member States should:

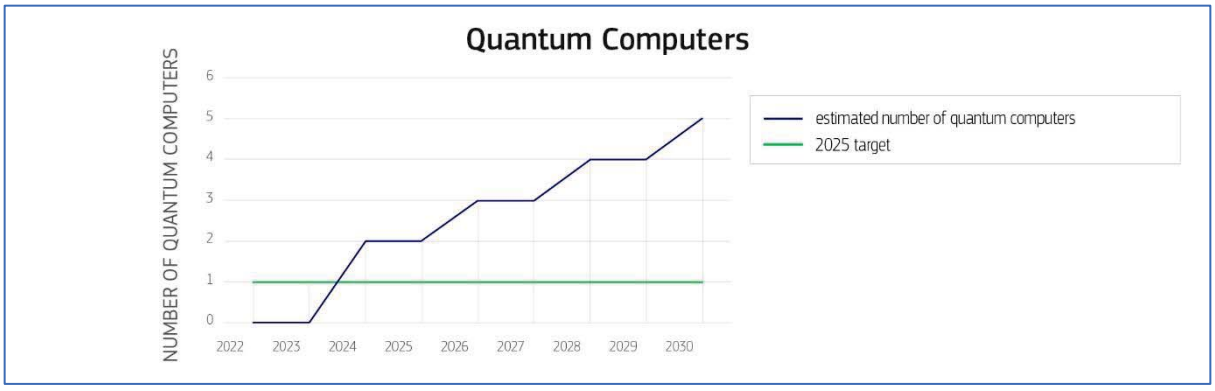
- *increase investments, stimulate secure and sustainable domestic chip design and manufacturing capabilities and continue their commitment in supporting both essential semiconductors and cutting-edge chips in leading value chain areas;*
- *enable a conducive investment framework including by developing the workforce with the semiconductor skills needed.*

Quantum and High Performance Computing (HPC)

The EU reached and exceeded the target in 2024 as the **first two quantum simulators were deployed in France and Germany**[25]. Moreover, it is expected that six additional quantum computers will be deployed until the end of 2025 as several procurement procedures are currently ongoing.

In their National Roadmaps, **Member States reported investing EUR 4.1 billion in quantum computing** (1% of the total budget of the National Roadmaps), of which EUR 3.8 billion come from private sources. The 63 measures reported mainly focus on supporting R&D and deploying quantum technologies, with roughly one third of the measures dedicated to each area. In their adjustments, Member States primarily focused on R&D for quantum technologies.

Quantum computing is a priority for the EU's leadership as a foundational technology, with frequent technological breakthroughs, increasing geopolitical focus and regions taking measures to secure their interests in this strategic field. Quantum technologies are poised to revolutionise multiple industries, driving innovation in healthcare, transportation, energy, defence, chemicals, and pharmaceuticals. Following the **Quantum Technology Flagship** in 2018, committing EUR 1 billion over a decade to reinforce Europe's leadership, total funding has grown to EUR 7 billion.



Despite being **a leading source of public funding for R&I in quantum**[26], **the EU still struggle to mobilise private finance to scale up**, attracting only 5% of global private funding (50% goes to US companies)[27]. This limited private funding hinders the scale-up capacity and contributes to brain drain and intellectual property migration. Moreover, it creates dependence on non-EU capital and

[25] Key Performance Indicators for Quantum Technologies in Europe, Strategic Advisory Board of the European Quantum Flagship, March 2025.
[26] The signature of the Quantum Declaration by 26 Member States confirming the strategic importance of quantum technologies and committing to collaborating on the development of a world-class quantum technology ecosystem across Europe.
[27] Draghi, M., The future of European competitiveness, 2024. According to another independent report by Olivier Ezratty, several US quantum firms attracted private VC funding in hundreds of millions of dollars whereas most EU start-ups operate with under EUR 20 million (Opinions Libres, Understanding quantum technologies 2024).

platforms, putting the EU's quantum sovereignty at risk, especially for hardware and full-stack quantum solutions.

The **European Investment Council has already invested over EUR 200 million in all the fields of quantum technologies** (sensing, communication and computing) and announced **a new STEP Scale-Up scheme**[28]**, making up to EUR 900 million of deep tech scale up funding available**.

The Commission is fostering the development of **Quantum Pilot Lines** to strengthen Europe's strategic autonomy in quantum technologies. In 2025, **six pilot lines for quantum chips were selected** under the Chips Joint Undertaking (JU), bridging laboratory prototypes and industrial manufacturing. QU-PILOT ensures technology maturation (TRL 4 – 7), quality control, and certification processes, paving the way for the future stability pilot lines under the Chips JU (TRL 8 – 9). It offers open access to support startups, SMEs, and academia, preventing a critical gap between R&D and industrial production. **The Quantum Strategy and Quantum Act** will set out the EU's plans to establish itself as the global leader in quantum technologies by 2030 and beyond.

The **High-Performance Computing JU** (EuroHPC) is contributing fully to the Digital Decade's quantum acceleration target by 2025 and has already selected **eight sites across the Union to host the first EU quantum computers** in Czechia, Germany, Spain, France, Italy, Poland, Luxembourg and the Netherlands.

Since its establishment in 2018, EuroHPC is leading the development of a world class supercomputing infrastructure. Over the past five years, EuroHPC has contributed to the acquisition of eight supercomputers, including computers that are among the most powerful in the world. These computers include LUMI (ranked #8 globally), Leonardo (#9), and MareNostrum 5 (#11), which collectively multiply Europe's computational capabilities. EuroHPC has also helped develop the first European system to reach the exascale frontier (JUPITER), which will become fully operational in Q2 2025. A second exascale supercomputer (Alice Recoque) is to be installed within the next year. Two further mid-range EuroHPC systems in Greece and Sweden are currently being procured. These efforts have contributed to developing a world-leading, secure, and interconnected supercomputing ecosystem, broadening HPC usage, and cultivating essential skills for European science and industry.

With the launch of the AI Factories initiative, nine new AI optimised supercomputers will be procured and deployed across the EU in 2025 and 2026, to match the EU's ambition of becoming a leading AI Continent. EuroHPC supercomputers have already enabled many scientific breakthroughs. For example, in 2024 the unprecedented and unique kilometre-scale Earth system models and global multi-decadal climate projections up to year 2050 were made possible through cooperation between EuroHPC and the EU's Destination Earth initiative[29]. This initiative has contributed to better predicting and mitigating the effects of climate change and extreme weather events in the EU.

Both HPC and quantum computing will play a key role in the development of AI Factories and Gigafactories as presented in the AI Continent Action Plan. The AI Factories will deploy and operate AI-dedicated supercomputers connected to large data centres. These Factories will support AI startups and research ecosystems by providing supercomputing services for the large-scale training and development of trustworthy and ethical AI models, particularly in health, climate change, robotics, and automated driving. Additionally, AI Factories will foster talent development through advanced education, training, and reskilling programmes for AI stakeholders.

[28] European Innovation Council, STEP scale up.
[29] Available at: https://destination-earth.eu/.

Quantum technologies - Recommended policies, measures and actions

Member States should:

- step up and coordinate investment in quantum technologies across Member States, and strive to increase private sector investment;

- strengthen efforts in the area of AI infrastructure, with robust support to the AI Factories and other EU initiatives in the field of AI, fostering a collaborative environment and maximizing the impact of these efforts.

b. Foster dissemination of digital technologies in the economy

A key factor undermining Europe's competitiveness is the **insufficient dissemination of digital technologies across its economy.** This limited uptake hampers productivity growth and limits businesses' ability to leverage technology for the creation of innovative services and business models[30].

Achieving a **basic level of digital intensity** among more than 90% of EU SMEs is a key target of the **EU's Digital Decade strategy**. As of 2024, 72.9% of SMEs had reached at least a basic level of digital intensity, up from 69.0% in 2022—a modest 2.8% annual growth. This is insufficient to reach the 2030 target before **2045**, with only 67.9% of SMEs expected to meet the target by **2030**.

Progress is uneven across **Member States** and **sectors**. While countries like **Finland** and **Denmark** have already met the target, others remain well below the EU average. Digital intensity also varies significantly between industries, with high-tech sectors like **ICT** outperforming traditional sectors such as **construction**, **accommodation**, and **food services**. SMEs face several barriers to digitalisation, including a limited awareness of digital technologies and cybersecurity, lack of funding for digitalisation, and digital skills shortages. To address these, the EU and Member States have introduced support measures such as **knowledge-building initiatives**, **financial incentives**, and **ecosystem partnerships**. In their **National Roadmaps**, 166 measures corresponding to a total of EUR 48.2 billion were reported as supporting the digitalisation of SMEs. The measures primarily focus on facilitating the uptake and deployment of digital technologies, as well as strengthening the broader ecosystem through activities such as information sharing, knowledge exchange and collaboration on digital technologies.

A cornerstone of this support is the **European Digital Innovation Hubs (EDIHs)** network, launched in 2023, now covering nearly 90% of the EU's regions. EDIHs provide training, networking, funding advice, and opportunities for SMEs to test digital solutions before investing[31]. Thousands of **digital maturity assessments** have helped SMEs identify areas for improvement, with 90% of participants showing increased digital maturity after engaging with EDIHs. The **Digital Maturity Assessment Tool (DMAT)** shows that SMEs average a score of 40/100, which indicates a moderate level of digitalisation, with relatively strong areas like **data management and cybersecurity**, while **AI & automation** remains weak. Progress in advanced digital areas often depends on solid foundations in strategy, employee engagement, and data handling. Sectors like **finance** and **ICT** lead in digital maturity, while **agriculture**

[30] Europe's choice, Political Guidelines for the next European Commission 2024–2029, 2024 (page 9).

[31] De Nigris, S., Kalpaka, A. and Nepelski, D., *Characteristics and regional coverage of the European Digital Innovation Hubs network, Publications Office of the European Union*, Luxembourg, 2023, doi:10.2760/590526, JRC134620.

and forestry lag behind. On average, firms working with EDIHs improve their DMAT scores by **seven points** in the second assessment, reflecting the effectiveness of targeted support in advancing SME digital transformation across the EU[32].

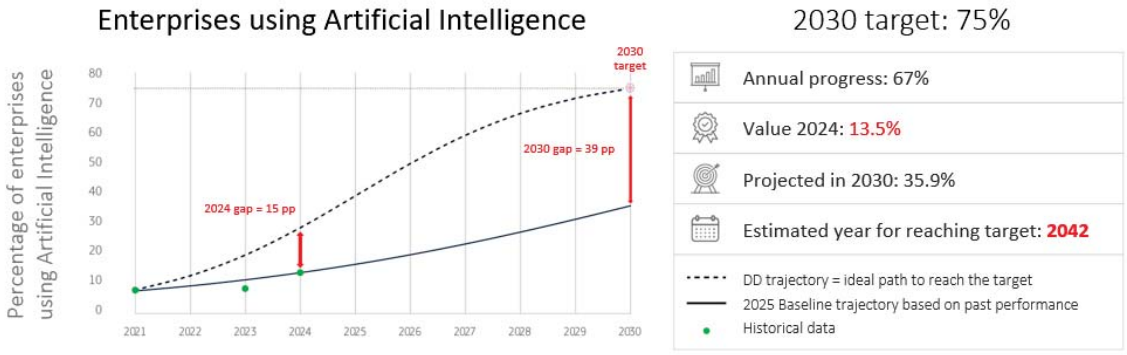
Digitalisation of SMEs - Recommended policies, measures and actions

Member States should strengthen their policies to accelerate SME digitalisation, with a particular focus on the integrating and adopting AI and tailored support within the framework of EDIHs and testing and experimentation facilities (TEFs).

i. Take up of AI

AI has become a critical factor for competitiveness across all sectors of the economy. In 2024 the share of EU enterprises using **AI rose significantly from 8.1% to 13.5%—a 67%** year-on-year increase. However, this remains well below the Digital Decade target of 75% by 2030, which **is not expected to be met until 2042**, with only 35.9% adoption projected by 2030.

Large enterprises continue to lead in AI adoption, with a usage rate of 41.2%, compared to 12.6% among SMEs—a gap of nearly 29 percentage points. However, an encouraging trend is that small companies are accelerating, showing a 71% growth rate, more than double that of larger firms.



AI uptake is advanced in a few sectors - information and communication, and professional, scientific, and technical service, whereas the construction and accommodation are well below the average. Adoption rates vary across the EU, ranging from 27.6% in Denmark to 3.1% in Romania. Nevertheless, growth is broadly distributed, with the fastest increases often seen in countries that previously had low uptake.

In their **National Roadmaps,** Member States reported investments of EUR 10.9 billion to support the uptake of AI, cloud or data analytics – representing approximately 4% of the total budget across roadmaps and covering 196 measures in total. Among these, roughly 34 measures specifically target AI, accounting for EUR 1.3 billion. The measures supporting the uptake of AI, cloud and data analytics are evenly distributed across measures to enhance the ecosystems and knowledge exchange, establish enabling framework conditions and develop capabilities across these technologies. However,

[32] European Commission: Joint Research Centre, Carpentier, E., D'Adda, D., Nepelski, D. and Stake, J., *European Digital Innovation Hubs Network's activities and customers*, Publications Office of the European Union, Luxembourg, 2025, https://data.europa.eu/doi/10.2760/7784020, JRC140547; and Joint Research Centre, Nepelski, D. and Stake, J., *The EDIH SME DMAT 2.0: Revision of the EDIH Digital Maturity Assessment Framework for SMEs*, Publications Office of the European Union, Luxembourg, 2024, JRC141446.

the AI-specific measures place a stronger emphasis on building AI capabilities. This focus is also reflected in Member States' roadmap adjustments.

Overall, while momentum is building, reaching the EU's AI targets will require more targeted actions and support, especially for SMEs and those sectors and regions lagging behind.

Following a slowdown in 2022 and 2023, AI investments have bounced back strongly. According to Dealroom, global venture capital investments in AI reached USD124.9 billion in 2024, marking a 58 percent increase on 2023[33], while private investments in AI in the EU grew by 22 percent in 2024 to USD 10.8 billion[34].

A **key measure is the GenAI4EU initiative**, which takes a sectoral approach and has so far **allocated close to EUR 700 million in planned Horizon Europe and Digital Europe programme** calls in 2025. GenAI4EU aims to stimulate the uptake of generative AI in a wide range of sectors fostering collaboration between AI startups and deployers of AI in industry and the public sector. GenAI4EU is dedicated to unlocking the revolutionary potential of generative AI through ambitious projects. In particular, the initiative aims to optimise production lines in manufacturing, improve robot autonomy and human-robot collaboration in complex tasks, as well as to increase the EU's cyber-defence and medical imaging capabilities.

At the AI Action Summit in Paris, the Commission announced **InvestAI**, an initiative to mobilise EUR 200 billion for investment in AI. This includes the launch of the InvestAI Facility, with a view to mobilise EUR 20 billion investment in AI infrastructure. The investment will support in particular up to **five AI Gigafactories** across the EU, building on the EUR 10 million invested in supercomputing infrastructures and AI Factories in 2021-2027.

The AI Office has been actively working on boosting AI adoption through various support instruments to boost technological integration across Member States. Recently, the EU has intensified its focus on AI adoption, designating it as a main priority to ensure competitive and innovative growth. The various initiatives mentioned in this chapter are part of the **AI Continent Action Plan** published on 9 April 2025. The plan outlines a set of actions on computing infrastructure, data, the development of AI algorithms and adoption, skills, and regulatory simplification to make the EU a global leader in AI.

Moreover, the Commission is adopting the **Apply AI strategy** to boost new industrial uses of AI and to improve the delivery of a variety of services. The strategy will assess the potential of AI technologies in strategic sectors, including advanced manufacturing; aerospace; security and defence; agri-food; energy and fusion research; environment and climate; mobility and automotive; pharmaceutical; biotechnology; advanced materials design; robotics; electronic communications; cultural and creative industries; and science. Furthermore, the public sector will be a driver of the strategy. To ensure consistency among the different support measures for AI, the Apply AI strategy, on which a wide array of stakeholders and the public are consulted, will strengthen the interplay and effectiveness of support instruments and target them towards the needs of AI adopters.

The Apply AI strategy will identify policy actions and concrete deliverables per sector, with key performance indicators to be achieved. The Commission will contribute to supporting developments through its funding programmes as well as through enablers. These enablers include the AI Factories and Gigafactories, Data Spaces, Testing and Experimentation Facilities, European Digital Innovation

[33] Dealroom, Artificial intelligence, 2024. Available at: https://app.dealroom.co/sector/technology/artificial%20intelligence/overview.
[34] Dealroom, Artificial intelligence, 2024. Available at: https://app.dealroom.co/sector/technology/artificial%20intelligence/overview?hqType=regions&hqValue=EU27.

Hubs, and AI Skills Academies. This, in turn, will support AI uptake by European enterprises and the public sector.

AI Factories are open and dynamic AI ecosystems created around the public network of Europe's world-leading EuroHPC supercomputers. They support the EU AI industrial and research ecosystems by bringing together computer power, data and talent to create cutting-edge, trustworthy AI models and applications. They foster collaboration across Europe, unlocking the potential of AI companies, in particular SMEs and start-ups, universities, and industry. AI Factories serve as one-stop shops driving advancements in AI applications across various sectors, such as health, manufacturing, climate and finance. In December 2024, seven consortia were selected to host the first AI Factories[35], and in March 2025, the EuroHPC announced the selection of another six new AI Factories[36]. These AI Factories are expected to more than triple the current EuroHPC AI computing capacity. Overall investments in supercomputing infrastructures and AI Factories in the EU will reach EUR 10 billion between 2021 and2027.

In parallel, **European Digital Innovation Hubs (EDIHs)** will function as AI Experience Centres providing stakeholders with the opportunity to test AI solutions before investing in them, but also offering funding advice, networking opportunities, and trainings. From December 2025, EDIHs will increasingly focus on AI uptake and ensure the adoption of AI solutions across sectors.

The **Network of European Digital Innovation Hubs** will work in close **synergy with the AI Factories ecosystem**. Among others, it will facilitate companies' access to the computing and data resources of the AI Factories, as well as to other AI initiatives, including regulatory sandboxes and testing and experimentation facilities. Increasing the level of AI skills in the Union is one of the priorities that the Apply AI strategy will pursue, as an AI-literate workforce is necessary to boost AI uptake. In particular, the **AI Skills Academy** will function as a one-stop shop providing education and training on skills for developing and deploying AI, and in particular generative AI. Looking ahead, interested Member States with the support of the Commission are designing a possible new **Important Project of Common European Interest** focused on AI, known as IPCEI-AI. The goal is to support R&D&I and first industrial deployment activities, aiming to develop innovative AI technologies and services, such as capabilities for training and deploying foundational models, such as AI models tailored to specific use cases.

Best practice highlights

The **Best Practice Accelerator's (BPA)**[37] **Technology Take-up Cluster**, launched in August 2024 under Belgium's leadership, supports Member States in scaling up the adoption of advanced digital technologies by promoting high-level, replicable national initiatives. As part of the Digital Decade governance framework, the cluster has so far organised two workshops—focusing on AI uptake and on data and interoperability—with the participation of all Member States and presentations from Belgium, Greece, and Finland. Eight best practices have been submitted by Belgium, Denmark, Finland, Germany, Hungary, and the Netherlands, covering themes such as AI adoption, SME digitalisation, personal data control, supply chain optimisation, IPv6 roll-out, and national tech strategies. Workshops were marked by high Member State engagement and interest in the replicability of the

[35] They were submitted by Finland (with Czechia, Denmark, Estonia, Norway and Poland), Italy (with Austria and Slovenia), Spain (with the participation of Portugal, Romania and Türkiye) as well as Luxembourg, Sweden, Germany, and Greece.
[36] Located in Austria, Bulgaria, France, Germany, Poland, and Slovenia. Bringing together 17 Member States and two EuroHPC Participating States.
[37] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are available to all Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

practices shared. Upcoming sessions will continue to explore enabling frameworks and support schemes to accelerate the widespread use of frontier technologies.

Take up of Cloud-AI-Big Data - Recommended policies, measures and actions

Member States should:

- *take targeted measures and earmark resources to support the adoption of advanced, trustworthy and sovereign AI-enabled solutions; step up investment, also by mobilising the private sector, in general purpose/generative AI.*
- *focus national efforts on incentivising infrastructure investments to ensure that businesses and the public sector have access to the compute infrastructure required for serving their cloud and AI needs, especially for fine-tuning and inference operations.*
- *foster secure and trusted data sharing, supporting the deployment of European Data Spaces, including via practical tools such as model contract clauses, taking full advantage of relevant existing EDICs and accelerating those being prepared.*

c. Security & harnessing digital for EU's resilience in a context of hybrid threats

i. Cybersecurity

The Cybersecurity landscape

As geopolitical and economic tensions grow, cyber threats escalate with espionage, sabotage, and disinformation campaigns becoming key tools for nations to manipulate events and secure a strategic advantage. Cyberespionage campaigns targeting EU Member States and EU institutions, bodies and agencies are continuous and remain a persistent and severe threat. In the context of the cybercrime ecosystem, ransomware remains one of the most impactful threats for EU Member States. There has been a shift from encryption to data exfiltration and with SMEs becoming a more attractive target for cybercriminals, and the double extortion tactic has become the norm for well-established ransomware groups[38]. In 2024, the healthcare sector was particularly affected, with ransomware accounting for 71% of cyber incidents impacting patient care[39]. Meanwhile, ransomware attacks rose by 11% compared to 2023, but enforcement actions against major groups like LockBit have led to a more fragmented threat environment, with 46 new ransomware groups identified in 2024[40].

Supply chain attacks have also surged. Cybercriminals exploit weaknesses in third-party vendors and service providers. This is particularly problematic where there is reliance on technology from high-risk suppliers subject to the jurisdiction of a third country that requires reporting information on software or hardware vulnerabilities to its authorities before they know to be exploited. States-sponsored actors may also preposition themselves in critical infrastructure with the intention of causing disruption later, for example during a conflict. Internet of Things malware attacks increased by 107% in the first half of 2024[41]. There have been concerning trends in public cybersecurity awareness[42] ,with declining confidence among the EU population in their ability to protect themselves from cybercrime and generally low awareness about reporting mechanisms. Overreliance on a single vendor for critical

[38] ENISA, 2024 Report on the State of Cybersecurity in the Union, 2024.

[39] Joint Research Centre, Cyber security in the health and medicine sector, 2024.

[40] Cyberint platform, Ransomware Annual Report 2024, 2025.

[41] SonicWal, SonicWall 2024 Mid-Year Cyber Threat Report, 2024.

[42] ENISA, 2024 Report on the State of Cybersecurity in the Union, 2024.

operations, especially non-European vendors, can result in major risks to all sectors of the economy, as evidenced by recent major incidents like the CrowdStrike outage of 2024.

With an estimated 299 000 cybersecurity professionals missing in its workforce, the EU faces a critical gap[43]. The Cybersecurity Skills Academy[44] contributes to addressing this challenge with concrete actions entrusted to the EU Agency for Cybersecurity (ENISA), such as developing the European Cybersecurity Skills Framework (ECSF)[45] or piloting a cybersecurity skills attestation scheme supporting recognition and portability of skills acquired by cybersecurity professionals.

Cybersecurity in enterprises

When it comes to cybersecurity in enterprises, 92.8% of surveyed enterprises[46] with more than 10 employees in the EU used at least one ICT security measure in 2024. Only 35.5% of the enterprises had documentation on measures, practices or procedures on ICT security, and only 34.1% of them had carried out an ICT risk assessment. Commonly used measures included strong password authentication (83.7% of enterprises) and data backups in a separate location (79.2% of enterprises). According to Eurostat, in 2024, 21.5% of enterprises experienced ICT-related security incidents leading to some adverse consequences.

The median information security spending rose to 9.0% of IT budgets (up 1.9 percentage points)[47], with higher perceived maturity in entities already covered by the Network and Information Security (NIS) Directive[48]. Among all sectors, the telecommunications sector ranks highest in maturity[49].

Despite their critical role in cybersecurity and digital resilience, the deployment of key Internet standards in the EU remains slow and fragmented. IPv6 adoption in the EU stands at **36.4% (user-side)** and **16.8% (server-side)**, with significant disparities across Member States: adoption in some exceeds 40% (e.g. Belgium, France, Germany), while it remains below 10% in others (e.g. Croatia, Cyprus, Malta)[50].

In their **National Roadmaps**, **Member States reported 38 measures contributing to increased cybersecurity**. Almost half of these measures are dedicated exclusively to cybersecurity, with a total budget of EUR 0.8 billion. The other measures have a broader scope, aiming to support several targets across all areas, with a total budget of EUR 6 billion. These initiatives often involve developing national cybersecurity strategies, establishing cybersecurity centres, boosting cybersecurity skills and strengthening cybersecurity capacities in businesses, public services and digital infrastructure. This focus is also reflected in the Member States' roadmap adjustments.

In the period 2024 - 2025, the EU significantly advanced its cybersecurity agenda. The **NIS2 Directive,** which had to be transposed into national law by October 2024, sets a high level of cybersecurity for entities operating in **18 critical sectors**. Moreover, in October 2024, the Commission adopted the first implementing act under the NIS2 Directive, specifying the cybersecurity risk management measures and the cases in which an incident should be considered significant for companies providing digital

[43] ISC2, 2024 Cybersecurity Workforce Survey Focus on the E.U, 2024.
[44] Please see the website: https://digital-skills-jobs.europa.eu/en/cybersecurity-skills-academy.
[45] European Cybersecurity Skills Framework (ECSF) | ENISA.
[46] Eurostat (isoc_cisce_ra) and (isoc_cisce_ic); Eurostat, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=ICT_security_in_enterprisesICT security in enterprises, 2024.
[47] Compared to 2022. ENISA, NIS Investments 2024, 2024.
[48] Directive (EU) 2016/1148 repealed by Directive (EU) 2022/2555 on measures for a high common level of cybersecurity across the Union (NIS 2 Directive).
[49] ENISA, 2024 State of Cybersecurity Report, 2024.
[50] EU Internet Standards Deployment Monitoring Website, available at: https://ec.europa.eu/internet-standards/downloads.html.

infrastructures and services. The **Cyber Resilience Act**[51], in force since December 2024, mandates cybersecurity requirements for digital products, with full implementation within three years. The **Cyber Solidarity Act**[52], effective since February 2025, established a European Cybersecurity Alert System, consisting of Cyber Hubs that would use advanced technologies and AI-driven threat detection. The act also laid the groundwork for the Cybersecurity Emergency Mechanism and the Incident Review Mechanism. The **Cybersecurity Act**[53]was effectively amended in February 2025 to enable the possible certification of managed security services. A **European action plan on the cybersecurity of hospitals and healthcare providers**[54] was adopted in January 2025, improving sectoral preparedness. Finally, in February 2025, the Commission proposed a revised **Cybersecurity Blueprint**, integrating civil-military coordination and crisis response mechanisms[55].

Work is also progressing on the European Quantum Communication Infrastructure (EuroQCI), which is part of the Union Secure Connectivity Programme (IRIS²). EuroQCI will provide, in first instance, a highly secure, quantum-protected service for the exchange of cryptographic keys, for symmetric encryption of communications between governmental entities and for protecting critical infrastructures. Throughout 2024, efforts focused on deploying national quantum communication networks, advancing key European technologies, and preparing for the deployment of quantum communication in space. Deployment of cross-border connections will start in 2026. The current EuroQCI efforts on point-to-point links and more complex networks are initiating the long-term endeavour of transitioning to future networks fully based on quantum technologies. However, the threat posed by quantum computing to cryptography must be addressed now, in a manner that is compatible with the way modern digital networks are designed and function. The transition to **Post-Quantum Cryptography (PQC)** remains essential, and such technology will likely play a highly relevant role also to support or hybridize with future quantum networks. To guide this transition, the Commission published a Recommendation in 2024 encouraging the Member States to develop a Roadmap to ensure a synchronized transition to PQC for public administrations and critical infrastructures across the EU. Work on developing this roadmap is ongoing, in the context of the PQC workstream in the NIS Cooperation Group, and it is also accompanied and supported by the sectorial developments, deployments and mapping of activities in several EU projects and other Member States' initiatives.

Cybersecurity - Recommended policies, measures and actions

Member States that have not already done so shall transpose the NIS2 Directive as a matter of urgency and should take actions, also going beyond what is necessary, to maximise the effects of the full implementation of the cybersecurity acquis, including the NIS2 Directive and the 5G cybersecurity Toolbox (encompassing where appropriate the imposition of restrictions or exclusions as regards high-risk suppliers).

Moreover, Member States should:

[51] Regulation (EU) 2024/2847 on horizontal cybersecurity requirements for products with digital elements and amending Regulations (EU) No 168/2013 and (EU) 2019/1020 and Directive (EU) 2020/1828 (Cyber Resilience Act).
[52] Regulation (EU) 2025/38 laying down measures to strengthen solidarity and capacities in the Union to detect, prepare for and respond to cyber threats and incidents and amending Regulation (EU) 2021/694 (Cyber Solidarity Act).
[53] For more information, please see the website: https://digital-strategy.ec.europa.eu/en/library/proposed-regulation-managed-security-services-amendment.
[54] European action plan on the cybersecurity of hospitals and healthcare providers, COM (2025) 10 final.
[55] For more information, please see the website: https://digital-strategy.ec.europa.eu/en/news/commission-launches-new-cybersecurity-blueprint-enhance-eu-cyber-crisis-coordination.

- *step up efforts to increase cybersecurity capabilities, including relevant to ensure the development of skills for the cybersecurity workforce by making use of available resources at EU level such as the European Cybersecurity Skills Framework;*
- *within the NIS Cooperation Group, develop a roadmap to ensure a synchronized transition to PQC throughout the whole EU for public administrations and critical infrastructure;*
- *progress in the transition of their crypto systems to post quantum cryptography by 2035, ensuring intermediate milestones are also met for high risk use cases and/or very complex systems to be migrated by 2030.*

ii. Submarine cables security

In February, the EU adopted the **Action Plan on Cable Security** to strengthen the resilience of its submarine cable infrastructure, including data cables, following a full resilience cycle—**prevention, detection, response, recovery, and deterrence**. The Commission, alongside the High Representative, will engage with Member States and partners, including NATO, to operationalise a number of concrete actions.

To prevent incidents that could compromise the EU's security and resilience, the Action Plan sets out dedicated actions to improve the redundancy and security of telecommunications cables. A key component of this effort is the allocation of nearly EUR 1 billion from the CEF Digital programme to strengthen backbone connectivity, with a focus on cross-border digital infrastructure and to connect EU territories with likeminded third countries. The Action Plan also promotes strengthening security requirements, in accordance to both the NIS2 and CER Directives. As set out in the prevention section of the Action Plan, an Expert Group comprising Member State representatives and ENISA has been established to deliver on Recommendation (EU) 2024/779 on Secure and Resilient Submarine Cable Infrastructures[56]. The Action Plan specifies that by Q4 2025, the Expert Group is expected to complete key tasks, including a comprehensive mapping of existing and planned infrastructures, a coordinated risk assessment (including the development of a stress testing methodology), the creation of a Cable Security Toolbox of mitigating measures, and a priority list of Cable Projects of European Interest (CPEIs) to be co-funded by CEF Digital. To increase the capacity to detect potential threats and incidents early on, the **Action Plan further proposes to establish an integrated surveillance mechanism.** This mechanism will be facilitated through the voluntary set up of regional cable hubs, located in each sea basin, which will serve as centres for monitoring and analysing the status of submarine cables, including potential suspicious activity occurring nearby. Additionally, the Action Plan provides for investments in new technologies, such as smart cables, undersea sensors and drones, to improve detection capacities.

The Action Plan sets out a more efficient response to incidents, building synergies between existing EU crisis management frameworks such as the EU Cyber Blueprint and the Critical Infrastructure Blueprint. To reduce the time to repair and mitigate the impact of incidents, it also calls for **increased repair capacities**. To that end, the Commission has proposed to support modular equipment that can be plugged to civilian vessels, and the gradual establishment of an EU Cable Repair Fleet.

To strengthen the security and resilience of submarine cables, a central role will be played by the CEF Digital programme, including for: i) providing direct support to the funding of strategic cables (over 420 million already committed in the first three calls); ii) enhance our ability to monitor and trigger

[56] Commission Recommendation (EU) 2024/779 of 26 February 2024 on Secure and Resilient Submarine Cable Infrastructures, *OJ L, 2024/779, 8.3.2024.*

early response actions in case of suspicious events (early warning systems); iii) support the deployment of functional modules for the repair and deployment of cables.

Finally, to **deter malicious actors from engaging in harmful activities,** the Action Plan calls for a significant strengthening of efforts to counter the shadow fleet of vessels. It also emphasises the importance of boosting cable diplomacy and promoting a common interpretation of international maritime law.

Submarine cable security: Recommended policies, measures and actions

Member States, together with the Commission, should:

- urgently operationalise the different actions outlined in the Action Plan. Building on the transposition of NIS 2 and CER, priority should be given to the aim of ensuring comprehensive cable security.

- fast-track key deliverables, including the Expert Group's tasks (mapping, risk assessments, Cable Security Toolbox, priority Cable Projects of European Interest), the development of a common strategy to reinforce cable repair capacities, and the establishment of Regional Cable Hubs. The goal of these hubs will be to establish an integrated surveillance mechanism for the EU to monitor and respond to cable security threats, in coordination with the cable repair capacities.

3. Protecting and empowering people, preserving EU democracies and values

a. Empower people through digital skills

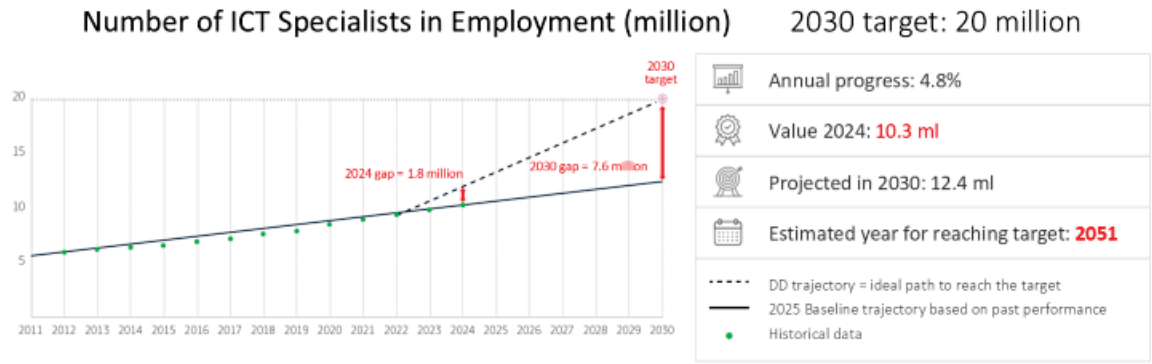
Empowering citizens and equipping workers with digital skills are at the core of Europe's digital transformation, in line with the Declaration on Digital Rights and Principles. Basic digital skills are essential for economic participation, social inclusion, and democratic resilience, while the availability of highly skilled professionals—particularly ICT specialists—is critical to Europe's competitiveness, technological sovereignty, and strategic autonomy.

Despite growing awareness of the need to boost digital skills across society**, the pace of progress in this area remains insufficient.** In 2023, only 55.6% of adults had at least basic digital skills[57]. On the basis of current trends, the EU is expected to reach a level of just under 60% by 2030 – falling significantly short of the 80% target set in the context of the Digital Decade policy programme[58]. This shortfall is particularly evident among certain demographic groups. For example: older adults, people with low levels of education, and people not in work or looking for work face disproportionately high risks of digital exclusion[59]. Although young people are often seen as digitally 'native', they are not universally digitally literate: 43% of eighth-grade students (aged 13 to 14) do not reach basic levels of digital skills, with persistent disparities based on socio-economic background and geographical location[60].

[57] Eurostat, European Union Survey on the Use of ICT in Households by Individuals. Available at: https://digital-decade-desi.digital-strategy.ec.europa.eu/datasets/desi/charts/desi-indicators
[58] At least basic digital skills in the EU. Historical data, Digital Decade trajectory and revised baseline trajectory towards 2030.
[59] European Commission, Joint Research Centre, Bertoni, E., Cosgrove, J., & Cachia, R. (2025). Digital Skills Gaps – A Closer Look at the Digital Skills Index (DSI 2.0), 2025. JRC140617.
[60] ICILS 2023 International Report: An International Perspective on Digital Literacy. Available here: https://www.iea.nl/studies/iea/icils/2023

At the same time, the **need for ICT specialists is rising sharply.** As the architects of Europe's digital future, these professionals play a central role in deploying advanced technologies, increasing productivity, and delivering secure and efficient digital services. Nevertheless, the EU remains only **halfway toward reaching its 2030 target of having 20 million ICT specialists in employment.** Structural shortages persist, hindering growth in high-demand digital areas such as AI, cybersecurity, and semiconductors. In 2024, women accounted for 19.5% of employed ICT specialists, a figure virtually unchanged from 19.4% in 2023.

To address these challenges, the Commission, in partnership with Member States, has put in place a comprehensive framework to strengthen digital skills across society. The **Skills package**[61], adopted in March 2025, puts a strong focus on digital skills as a key driver for competitiveness. It includes the **Union of Skills**, an **Action Plan on Basic Skills**[62], a **STEM Education Strategic Plan**[63], and the upcoming **2030 Roadmap on the future of digital education and skills**. To strengthen **leadership in key digital technologies**, the Commission is prioritising the development of advanced digital skills, ICT talent attraction and a resilient, future ready digital workforce. This also includes initiatives such as the recently adopted **AI Continent Action Plan** and the upcoming **Apply AI strategy**.



To respond to the need for a more coordinated approach to digital skills education and training in the EU, targeted at emerging skills needs of European companies, the European Commission is funding and promoting three new **Digital Skills Academies in Quantum, AI, and Virtual Worlds**. These academies will leverage strategic partnerships and act as powerful catalysts for promoting digital careers. The **Cybersecurity Skills Academy,** which already helps Member States to scale up training provision and improve coordination between industry and education providers, is being further expanded. Furthermore, through the **Chips Act** and the establishment of **Chips Competence Centres**, the Commission and Member States are investing in national talent pipelines for the semiconductor sector, supporting advanced technical training and collaboration with industry.

In their **National Roadmaps,** Member States reported investments of EUR 24.6 billion in basic digital skills (9% of the total budget). The 339 measures reported on the roadmaps primarily focus on improving digital skills in formal education and promoting digital inclusion, with roughly one third of the measures dedicated to each area. This emphasis on building digital skills is also evident in Member States' roadmap adjustments. For training of ICT specialists, Member States reported investing EUR 11.8 billion (4% of the total budget). The 213 measures on ICT Specialists mainly focus on increasing the number of people with advanced and highly specialised digital skills, with around one third of these measures targeting individuals in formal education and approximately one quarter of the measures focusing on those already in employment. This focus is also reflected in the Member States'

[61] European Commission, A Union of Skills to Equip People for a Competitive Europe, Press Release, Brussels, 5 March 2025.
[62] European Commission, Action Plan on Basic Skills, 2025.
[63] European Commission, STEM Education Action Plan, 2005.

roadmap adjustments, which include a sharp increase in measures aimed at boosting advanced digital skills among women.

National efforts have been strengthened through collaborative mechanisms. The 2024 edition of the **European Digital Skills Awards**[64] recognised outstanding projects promoting inclusion, digital literacy, and bridging digital divides. At the same time, the **Digital skills and Jobs Platform**[65] continues to grow as a central hub–for accessing learning opportunities, connecting over 15 000 stakeholders across Europe.

However, as laid out in the Draghi report and reiterated in the **Competitiveness Compass**, Europe is facing massive investment needs **for education and skills development in sectors critical to European competitiveness and preparedness.** Mobilising public and private investments, pursuing growth-enhancing reforms, and leveraging multi-country projects will be key to closing the talent gap in digital skills.

The European Commission is supporting the development of the Common European **Data Space for Skills** to improve our knowledge of what skills are likely to soon be in demand, helping policymakers and educators to anticipate future needs and direct investments more effectively. Furthermore, given the mounting **global competition for digital talent**, the EU is stepping up its support to Member States and employers to attract highly skilled top-tier researchers and professionals by establishing Multipurpose Legal Gateway Offices in selected partner countries. Where relevant, these could underpin Talent Partnerships as well as the future EU Talent Pool. In addition, the EU will also act to support portability of skills, addressing barriers to workers' mobility.

Best practice highlights

The **BPA Digital Skills Cluster**, led by Slovenia, involved all Member States in a structured peer exchange, with best practices submitted by Austria, Belgium, Croatia, Czechia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Romania, Slovenia, and Spain. While only some submitted practices, all Member States participated in the associated workshops that were held and expressed interest in adapting successful approaches. Of the 34 practices shared, over half focus on boosting basic digital skills for underserved groups, while 15 target the education of ICT specialists through measures such as curriculum reform, AI training, SME upskilling, and gender equality. Five workshops have been held so far, covering topics such as inclusion, education, AI-readiness, and the participation of elderly, rural populations, and women in advanced skills. Future sessions will continue to support inclusion while expanding into ICT specialisation areas such as cybersecurity, semiconductors, and mid-career reskilling.

Digital Skills - Recommended policies, measures and actions

Member States should:

- *Prioritise investment in digital education and skills in line with the Council Recommendation on improving the provision of digital skills and competences in education and training, including targeted policies for groups most in need;*
- *Promote AI literacy and basic cybersecurity practices.*

[64] European Commission, European Digital Skills Awards. Available at: https://digital-skills-jobs.europa.eu/en/european-digital-skills-awards-2025.
[65] European Commission, Digital Skills and Jobs Platform. Available at: https://digital-skills-jobs.europa.eu/en.

ICT specialists - Recommended policies, measures and actions

Member States should:

- *Promote ICT careers among young people, with notably a dedicated attention to girls;*
- *Enhance the academic offer for advanced digital skills and strengthen VET and lifelong learning in order to contribute to the EU's strategic digital objectives in key areas such as AI Factories, cybersecurity, data and semiconductors;*
- *Support the implementation of EU Digital Skills Academies;*
- *Leverage EU funding opportunities and governance structures such as European Digital Infrastructure Consortia (EDICs), the Digital Decade Best Practice Accelerator, and National Digital Skills and Jobs Coalitions;*
- *Increase efforts to expand labour migration pathways to attract highly skilled ICT specialists from non-EU countries and incentivise the return of European ICT talent to the EU, leveraging both national and European frameworks.*

b. Deploy digital solutions for people and societies

User-friendly and accessible digital public services to foster competitiveness and inclusion

In 2024, the EU made steady progress toward its Digital Decade targets for fully digital public services. The citizen score rose to 82.3/100 (+3.6%), and the business score to 86.2/100 (+0.9%). In their **National Roadmaps**, Member States reported investing EUR 13.8 billion, representing approximately 4.8% of the total budget, to drive the digitalisation of key public services. This investment included a comprehensive set of 287 measures, of which more than half aim to increase the uptake, interoperability and accessibility of digital public services and around one-quarter focus on strengthening their security and resilience of these services.

As Member States expand their offering of digital public services, **ensuring technological sovereignty and reducing reliance on foreign technologies** has become an important mean to safeguard privacy, increase resilience, and strengthen trust in EU-governed digital ecosystems. Despite the growing digitalisation of public services across the EU, a very significant share of government digital infrastructure still relies on **non-EU-based service providers** -particularly in areas such as cloud computing, data hosting, software platforms, videoconferencing and cybersecurity solutions. With 80% of the services bought by governments and the private sector originating mostly from the US[66], a substantial share of the **EUR 2 trillion that public authorities spend annually on the purchase of services, works and supplies**[67] **is not being spent on services originating in the EU**. This dependency might pose strategic risks, including reduced control over sensitive data, potential misalignment with EU values and regulatory frameworks, and vulnerability to the application of third country laws. Strategic public procurement, notably thanks to the revision of the Public Procurement Directives, as well as the support to GovTech will play a key role to foster EU preference through public investment and procure innovative solutions, which streamline administrative processes, foster transparency and improve data-driven decision-making.

[66] Draghi, M., The future of European competitiveness, 2024, Part A – A competitiveness strategy for Europe.
[67] European Commission, The Public Procurement Data Space (PPDS). Available at: https://single-market-economy.ec.europa.eu/single-market/public-procurement/digital-procurement/public-procurement-data-space-ppds_en

It is also of the utmost importance to ensure that there is adequate human support to help members of the public navigate digital services, with 9 out of 10 Europeans emphasising the significance of this support in the Digital Decade Eurobarometer survey[68].

In 2024, the use of **AI in public services** expanded further on EU Member States - from decision support and personalised services, to predictive tools in healthcare. A cornerstone of the efforts to reduce administrative burdens and support European Businesses interacting digitally will be the **European Business Wallet** which will streamline business-to-business and business-to-government interactions, enabling secure data exchange while creating new opportunities for trust service providers.

The **Single Digital Gateway** and the **Your Europe**[69] portal are key elements of the EU's digital infrastructure for cross-border public services. Your Europe is the main access point for national procedures and information about rules and rights and is currently the most visited EU website. The **Once-Only Technical System**[70] enables the secure cross-border exchange of evidence. Its common services are operational, and Member States are currently connecting competent authorities to it. A cornerstone of the efforts to reduce administrative burdens and support European Businesses interacting digitally will be the European Business Wallet which will streamline business-to-business and business-to-government interactions, enabling secure data exchange while creating new opportunities for trust service providers. Together with the upcoming **EU Digital Identity Wallet**[71]**, the Single Digital Gateway and the Once-Only Technical System** form an integrated infrastructure for accessing public services across the EU[72]. In addition, the **Public Procurement Data Space** simplifies processes and improves monitoring across the Single Market[73].

Other tools include the Business Registers Interconnection System (BRIS), a key transparency and secure data exchange tool, providing the public with company information and enabling the implementation of the 'once-only' principle with regard to company data and the European e-Justice Portal which are of key importance for the digitalisation of public services and of cross-border judicial proceedings.

The **Interoperable Europe Act**[74], effective from April 2024, marked a significant step towards strengthening interoperability in the public sector and the delivery of digital public services, providing a structural framework to drive seamless, cross-border digital public services within the EU. It introduces interoperability assessments to be carried out by publica administrations to ensure cross-border interoperability (mandatory since January 2025) and regulatory sandboxes. It also embeds

[68] Special Eurobarometer 566 on 'the Digital Decade' 2025, available at this link: https://digital-strategy.ec.europa.eu/en/news-redirect/883227.
[69] European Commission, The Single Digital Gateway and Your Europe. Available at: https://single-market-economy.ec.europa.eu/single-market/single-digital-gateway_en
[70] The Once-Only Technical System (OOTS) streamlines data retrieval for cross-border procedures, enhancing trust, efficiency, and data exchange among EU public administrations and citizens. It is an EC solution. Available at: https://interoperable-europe.ec.europa.eu/collection/digital-building-blocks/solution/once-only-technical-system-oots
[71] Regulation (EU) No 910/2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC. See also: European Commission, A Digital ID and Personal Digital Wallet for EU Citizens, Residents and Business. Available at: https://ec.europa.eu/digital-building-blocks/sites/display/EUDIGITALIDENTITYWALLET/EU+Digital+Identity+Wallet+Home.
[72] European Commission, The Public Procurement Data Space (PPDS). Available at: https://single-market-economy.ec.europa.eu/single-market/public-procurement/digital-procurement/public-procurement-data-space-ppds_en
[73] On these topics and the potential for simplification, please see also section 5.a.i of this document.
[74] Interoperable Europe Act, COM(2022) 720 final.

digital-ready policymaking - ensuring that future EU legislation supports digital transformation from the outset.

Digital public services - Recommended policies, measures and actions

Member States should focus investments and regulatory measures to develop and make available secure, sovereign and interoperable digital solutions for online public and government services, including possibly in the context of public procurements and including the completion of the connection of authorities to the Once-Only Technical System.

i. EU Digital Identity Wallets and European Business Wallets

The **European Digital Identity (EUDI) Framework** is a cornerstone of Europe's digital transformation and a key enabler of Digital Decade targets. Coverage continues to expand with **24 Member States** having now notified their electronic ID schemes, and **95% of EU citizens** now having access to eID. However, Hungary, Greece, and Ireland have yet to notify their schemes.

Central to this EUDI framework are the **EUDI Wallets**, designed to offer every EU citizen and business secure and seamless access to both public and private services across the EU by the end of 2026. These wallets will transform how people interact online - enabling cross-border authentication, legally valid e-signatures, and the digital storage, presentation and verification of key documents such as IDs, educational credentials, ePrescriptions, social security attestations, and driving licences. By replacing multiple logins with a single trusted solution, they increase convenience, privacy, and security for everyday transactions, travel, and access to services.

Moreover, significant legal milestones were reached. The **EUDI Regulation** entered into force in May 2024, followed by the adoption of nine **implementing acts** in November 2024 and April 2025, setting uniform technical standards and putting in place a robust certification framework. These ensure that all wallets are **interoperable, secure**, and **privacy-preserving** across the EU. Member States are now mandated to provide at least one wallet by the end of 2026.

Deployment is being tested through **Large Scale Pilot (LSP) projects**, covering real-world use cases from **education, social security and travel** to **payments and eGovernment services**. Since 2023, four LSPs have been running, involving over **350 entities** from nearly all Member States. In 2025, two new consortia - **WE BUILD** and **APTITUDE** - will further scale this work with over EUR 40 million in EU and Member State funding. These projects cover 17 use cases, including supply chains, business services, vehicle registration certificates, and digital travel credentials. These pilots are supported by the **Digital Europe Programme**.

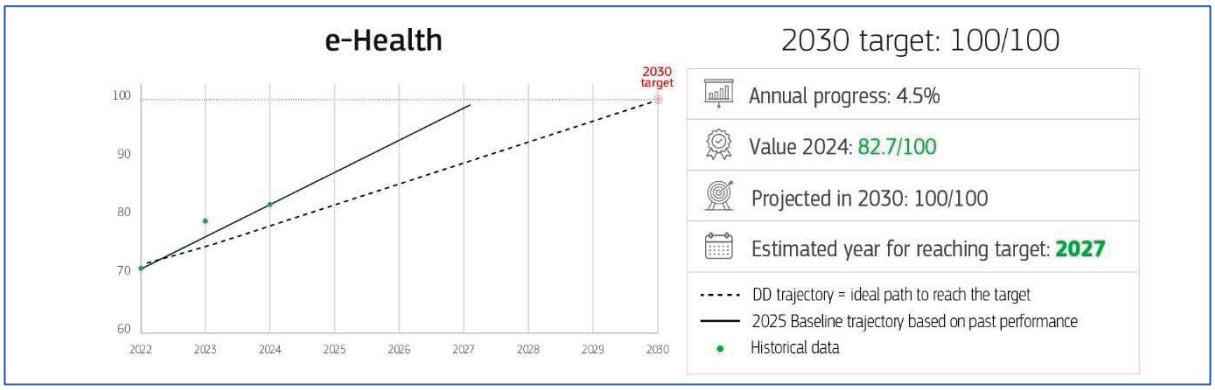
Looking ahead, the **European Business Wallet proposal will build on the EUDI Framework**, is planned in **Q4 2025**. This proposal will seek to facilitate business interactions with public authorities, reduce reporting burdens, and enable secure regulatory compliance across borders. This will in turn increase Europe's competitiveness.

EU Digital Identity Wallets - Recommended policies, measures and actions

Member States should continue their strong commitments to the development of use cases to link private and public service providers to the wallets and offer the user a large variety of use-cases upon first issuance of the wallets at national level in 2026.

ii. eHealth and technologies for healthcare.

In 2024, the EU continued to advance toward its Digital Decade goal of universal access to electronic health records (EHRs) by 2030. The composite score in the area rose to 82.7/100 (from 79.1/100 in 2024), with **all Member States offering some form of EHR access**. Estonia joined Belgium in reaching full coverage, while countries like Czechia, Ireland, Romania, and Slovakia made strong progress. Despite these gains, disparities persist: Austria, Cyprus, and the Netherlands recorded setbacks due to reduced functionalities or service availability. Ensuring the online availability of health records will now also be required under the **European Health Data Space**[75], which entered into force in **March 2025** as part of the EU's efforts to foster the digital transformation of healthcare. The European Health Data Space will increase citizens' control over their personal electronic health data and enable data reuse for research, innovation and policy purposes.



Innovation in medical technologies and life sciences is increasingly being powered by digital health data. Of the 13 first-selected **AI Factories**, 11 will put health and/or life sciences among their focus areas. The **European Cancer Imaging**, **1+ Million Genomes**, and **Virtual Human Twins initiatives** are making progress on setting up data infrastructures to foster personalised care and data-driven research, backed by targeted DIGITAL[76] funding and new procurement instruments. At the same time, the number of healthcare providers contributing data continues to grow, **though private sector participation still lags**. In their **National Roadmaps**, Member States reported investing EUR 7.8 billion to support e-Health services (all coming from public budgets), with approximately 106 measures, most of them focusing on accessibility and uptake. Continued investment, technical alignment, and cross-border cooperation will be essential to fully achieve the **European Health Data Space**. **Cybersecurity remains a key concern**. To strengthen resilience, incident response, and recovery capacities across the sector, the Commission in January 2025 launched a **European action plan on the cybersecurity of hospitals and healthcare providers** - a flagship initiative of the President von der Leyen's 'first 100 days'. Further recommendations to strengthen cybersecurity in the health sector, based on consultations with stakeholders and Member States, will follow in **Q4 2025**.

eHealth - Recommended policies, measures and actions

Member States should:

- *continue to implement the necessary measures to achieve full access for citizens to their electronic health records.*

[75] Regulation (EU) 2025/327 of the European Parliament and of the Council of 11 February 2025 on the European Health Data Space and amending Directive 2011/24/EU and Regulation (EU) 2024/2847.
[76] European Commission, Digital Europe Programme. Available at: https://digital-strategy.ec.europa.eu/en/activities/digital-programme

- *cooperate to fully deploy the innovation potential of health data by: (i) maximising the use of existing and future health data initiatives and infrastructure; (ii) investing in the research and deployment of advanced technologies such as high-performance computing and trustworthy AI applications in healthcare;(iii) strengthening cybersecurity measures, and enhancing cooperation through EDICs in this area.*
- *Implement the actions foreseen in the Action Plan on cybersecurity of hospitals and healthcare providers.*

iii. Smart cities and the New European Bauhaus: digital for quality of life

To bring **digital innovation closer to citizens and make cities more sustainable** and climate-neutral, the EU has mobilised a range of funding initiatives and multi-country projects, including the DIGITAL programme and newly established EDICs. The **LDT-CitiVERSE-EDIC**, launched in 2024, will help cities harness digital twins and shared infrastructure to address urban challenges—such as **climate neutrality, clean mobility, and smart energy systems**. CitiVERSE aims to bring together **100 cities in 2025** under a common EU digital infrastructure, connected to the first **SIMPL-based Data Space for Smart Communities**. Other projects are also underway to harness digital technologies in societal projects such as the **New European Bauhaus** (NEB)[77] for more sustainable, innovative and beautiful living environment (DigiNEB)[78]. The new **LDT-CitiVERSE-EDIC**[79] will receive within the EU procured LDT toolbox a complete set of digital tools and services to be used together with the EU building dataset for AI-based impact assessment of NEB strategies.

To address the challenge of climate neutrality with a holistic approach, there are also possible synergies with the actions taken under Horizon Europe[80], within the Mission on Climate-Neutral and Smart Cities.

Another initiative funded by the Digital Europe Programme, the **European Data Space for Smart Communities** (DS4SSCC-DEP) is a pivotal deployment project focusing on creating a large-scale data space controlled by public data holders, ensuring alignment with the **Smart Middleware Platform** and broader data space ecosystems. It also aims to offer middleware service solutions facilitating data sharing and management while refining the service it offers based on gained experience.

The Digital Europe Programme also co-finances the testing and experimentation facilities (TEF) for smart cities and communities: CitCom.ai. CitCom.ai provides facilities to test advanced AI and robotics solutions in real-world settings, targeting the sustainable development of cities and communities. CitCom.ai focuses on three overarching themes: (i) **Power** which targets changing energy systems and reductions in energy consumption; (ii) **Move** which targets more efficient and greener transportation linked to logistics and mobility; and (iii) **Connect** which serves citizens through local infrastructures and cross-sector services. CitCom.ai is organised around three super nodes – Nordic, Central and South – supported by satellites and sub-nodes located across 11 EU countries: Denmark, Sweden, Finland, the Netherlands, Belgium, Luxembourg, France, Germany, Spain, Poland and Italy.

The Commission currently manages or contributes to a broad set of initiatives with - and for - cities. The flagship R&I initiative in this field is the Horizon Europe Mission on Climate-Neutral and Smart

[77] European Commission, New European Bauhaus. Availabile at: https://new-european-bauhaus.europa.eu/index_en
[78] DigiNEB. Available at: https://digineb.eu/
[79] European Commission, Citiverse. Available at: https://digital-strategy.ec.europa.eu/en/factpages/citiverse
[80] Specifically, considering the call results of 'HORIZON-MISS-2025-04-CIT-02: Innovative, AI-based solutions for urban planning and management'.

Cities ('the Mission'), which aims to deliver 100 climate-neutral cities by 2030 and ensure that all EU cities follow suit and become climate neutral by 2050[81].

c. Protecting people, including minors, online

i. Preserving safety, security and wellbeing in digital environment

Online platforms have become integral to everyday life in the EU. Services like Google Search, YouTube, and Amazon are used by most Europeans[82] and 77% of internet users shop online[83]. Citizens are also increasingly aware of online risks: in 2023, nearly 70% took action to protect their personal data[84], and 72% reported awareness of the GDPR[85]. However, the sheer volume of user and platform activity - illustrated by over 10 billion content-moderation decisions in the last six months[86] - highlights the urgent need for **robust digital governance**.

The **Digital Services Act (DSA)**, **Digital Markets Act (DMA)** and, among others, the **Terrorist Content Online (TCO) Regulation** are instruments that aim to ensure a fair, safe, secure and trustworthy digital environment for citizens and businesses, accompanied by robust enforcement mechanisms.

The **Digital Services Act (DSA)** indeed represents a landmark EU response to this issue, setting clear obligations for digital service providers and assigning greater responsibilities to Very Large Online Platforms (VLOPs) and Very Large Online Search Engines (VLOSEs). In 2024, the list of services designated as VOLPs grew to 25, including Shein, Temu, and XNXX. To enforce the DSA, the European Commission has sent over 100 Requests for Information (RFIs) to platform providers, targeting disinformation, unsafe products, and opaque advertising practices. In addition, the Commission opened **14 formal proceedings**—for example against the providers of TikTok, Meta, Temu, X and AliExpress—notably focused on illegal content, the protection of minors, and algorithmic transparency. Markedly, one of the proceedings against the provider of TikTok has already been closed after TikTok agreed to binding commitments.

In February 2025 the Commission introduced the **e-Commerce Communication** which sets out a series of cross-cutting measures to ensure that goods sold online for example on digital marketplaces and particularly by non-EU sellers comply with EU rules[87]. By November 2025 the Commission **will evaluate how the DSA interacts with other EU legislation**, in particular legislation on personal data and consumer protection.

ii. Protecting children

As set out in the 2024-2029 Political Guidelines[88], the Commission considers the protection of children's and young people's mental health - particularly online - as one of the greatest challenges of

[81] European Court of Auditors, Special Report: Smart cities Tangible solutions, but fragmentation challenges their wider adoption, 2023.
[82] Digital Services Act (DSA): Amazon EU Store Transparency Report. Available at: https://trustworthyshopping.aboutamazon.com/dsa-digital-services-act-amazon-eu-store-transparency-report; Google Transparency Report: Signed-out recipients, versus 459 million signed-in recipients. Available at: https://transparencyreport.google.com/report-downloads?hl=en; Google Transparency Report: Signed-out recipients, versus 356 million signed-in recipients. Available at: https://transparencyreport.google.com/report-downloads?hl=en; Google, Information about Monthly Active Recipients under the Digital Services Act, 2025.
[83] Eurostat, [isoc_ec_ib20] Internet purchases by individuals (2020 onwards).
[84] At least one of the following: blocked or limited cookies, checked website security where personal data is provided, limited access to social media profile or shared content, read privacy policy statements, refused use of personal data for advertising, restricted or refused access to geographical location. These are the activities used by Eurostat for calculating individuals' safety skills. Indicator: Privacy and protection of personal data (2020 onwards), Eurostat: isoc_cisci_prv20
[85] European Commission, Justice, rights and values, October 2024, Eurobarometer survey
[86] See data of the DSA transparency database: https://transparency.dsa.ec.europa.eu/
[87] European Commission, E-commerce communication: A comprehensive EU toolbox for safe and sustainable e-commerce. Available at: https://digital-strategy.ec.europa.eu/en/library/e-commerce-communication-comprehensive-eu-toolbox-safe-and-sustainable-e-commerce
[88] European Commission, Europe's Choice, Political Guidelines for the next European Commission 2024–2029, 2024.

this decade. The Polish and Danish Presidencies of the EU Council have identified the impact of social media on young people's mental health and the protection of minors online as a priority. In 2024, public concern over the protection of children online continued to rise, with increasing calls across the EU and internationally to address the digital determinants of poor mental health among young people[89]. These calls have largely focused on the regulation of digital technologies and their negative impacts on mental well-being.

According to the 2025 Digital Decade Eurobarometer survey, **an overwhelming majority of respondents believe that urgent action by public authorities is needed** to protect children online, and in particular to: (i) limit the negative impact of social media on mental health (93% of respondents agreed); (ii) restrict access to age-inappropriate content through robust age assurance mechanisms (92% agreed); and (iii) tackle cyberbullying and online harassment (92% agreed)[90]. Increasing screen time has coincided with higher levels of problematic social media use and rising reports of cyberbullying. According to a study by the World Health Organization (WHO), **one in six school-aged children has experienced cyberbullying**[91]. Additionally, **34% of surveyed adolescents reported playing digital games daily**, with 22% playing for at least four hours on a gaming day[92]. Previous research[93] has shown that adolescents with problematic social media use report lower levels of mental and social well-being, as well as higher rates of substance use, compared to non-problematic users and non-users. If this trend continues, it could have far-reaching consequences for adolescent development and long-term health outcomes.

The risks children face online are increasingly severe. In 2024 the **EU co-funded Safer Internet Centres** (SICs) handled over 54 000 calls, 14% of which related to cyberbullying and 24% to sexual content, including grooming and sextortion[94]. In Poland, during the fourth quarter of 2024, every second underage internet user was exposed to erotic content, spending an average of 10 to 14 minutes per day on such material[95].

Excessive screen time, exposure to violent, pornographic or explicit content, and commercial manipulation - often in environments designed for adults - have become frequent experiences for minors, posing significant risks to their mental health. So far, **age-gating tools** that restrict access to content based on age **remain largely ineffective**. Research suggests that intensive use of online social networks is associated with loneliness and emotional distress among young people, a pattern not generally observed with instant messaging tools[96].

The EU has strengthened its legal framework and policy action to protect children online. At the core of the EU toolbox on protection and empowerment of minors online are: the **Digital Services Act**, the

[89] See e.g. Council Conclusions on the European and international policy agendas on children, youth and children's rights, 18 May 2024, https://data.consilium.europa.eu/doc/document/ST-9769-2024-INIT/en/pdf and the follow-up to the WHO-UNICEF-Lancet Commission, https://www.who.int/initiatives/a-future-for-the-worlds-children.
[90] Special Eurobarometer 566 on 'the Digital Decade' 2025: https://digital-strategy.ec.europa.eu/en/news-redirect/883227.
[91] Health Behaviour in School-aged Children (HBSC) international report from the 2021/2022 survey presented in 2024, updated every four years, in collaboration with the WHO Regional Office for Europe. A focus on adolescent peer violence and bullying in Europe, central Asia and Canada. Health Behaviour in School-aged Children international report from the 2021/2022 survey. Volume 2.
[92] Ibid, Volume 6. A focus on adolescent social media use and gaming in Europe, central Asia and Canada: Health Behaviour in School-aged Children international report from the 2021/2022 survey.
[93] Boniel – Nissim M et al., International perspectives on social media use among adolescents: Implications for mental and social well-being and substance use, 2022.
[94] Better Internet for Kids – Review of year 2024. Available at: https://better-internet-for-kids.europa.eu/en/about/insafe-inhope.
[95] Children's Internet. Report on monitoring the presence of children and young people on the Internet. 2025 (in Polish).
[96] Joint Research Centre, Cabeza Martínez, Begoña and d'Hombres, Beatrice and Kovacic, Matija, Social Media Use, Loneliness and Emotional Distress Among Young People in Europe (January 09, 2025). Ca' Foscari University of Venice, Department of Economics Research Paper Series No. 01/2025, Available at SSRN: https://ssrn.com/abstract=5089729. The paper uses survey sample from people aged 16-35.

Audiovisual Media Services Directive[97]; the General Data Protection Regulation (GDPR)[98]; the **Better Internet for Kids strategy (BIK+);** and the EU-co-funded network of **Safer Internet Centres in Member States** which reached over 35 million users in 2024. The **EU AI Act** is also relevant in this area, as it bans AI systems that exploit children's vulnerabilities and requires additional safeguards for high-risk applications affecting minors. The protection of minors is one of the enforcement priorities of the Commission under the DSA. In 2024 the Commission opened four formal **DSA enforcement** proceedings related to minors—one each against Meta's platforms, Facebook and Instagram, and two involving the provider of TikTok, one of which led to the suspension of addictive features in TikTok Lite and ultimately to the removal of that programme with a binding commitment not to re-launch it. In May 2025 the Commission opened formal proceedings against Pornhub, Stripchat, XNXX, and XVideos which also focus on the risks for the protection of minors, including those linked to the absence of effective age verification tools.

To continue protecting children into the future, the EU is preparing **guidelines under the DSA** to help online platforms ensure a high-level of privacy, safety and security for children using their services. These guidelines are expected in 2025 and will also help national authorities responsible for the enforcement to consistently apply rules for the providers of platforms below the threshold of 45 million monthly active recipients. In parallel, the Commission is developing a **short-term, privacy-preserving age-verification solution,** before EU Digital Wallets are offered to EU citizens and residents by the end of 2026. The Commission will also launch an **enquiry into the impact of social media on the mental health** of minors and is preparing an **action plan against cyberbullying**. Moreover, the upcoming evaluation of the Audiovisual Media Services Directive due by December 2026, accompanied where appropriate with proposals for its review, will assess the impact of this Directive and its added value when it comes to the provisions relating to the protection of minors against harmful content. Concerning the GDPR, the European Data Protection Board continues to work on guidelines about processing of children personal data expected to be finalised in 2026.

Protecting children - Recommended policies, measures and actions

Member States should:

- *implement the harmonised EU age-verification solution in the national EUDI Wallets, including systems for issuing the proof-of-age attestations, and accelerate the issuance of electronic means of identification to minors;*
- *take action to ensure the protection of minors and their well-being online, by cooperating on important issues such as age verification and cyberbullying, including through support for the future action plan against cyberbullying.*

d. Preserving information integrity

In 2024, disinformation, often driven by manipulative social media algorithms, continued to undermine trust in institutions and democratic processes. The EU faces rising threats from coordinated inauthentic behaviour (CIB) and foreign information manipulation and interference (FIMI), with fake accounts, bots, and troll farms distorting public discourse and simulating grassroots

[97] In particular the provisions on protecting minors against harmful content (Articles 6a and 28b) and the requirement to adopt appropriate measures to that end, including through age verification.
[98] GDPR states that processing of children personal data merit special protection. For example, the GDPR provides for explicit requirement to use child-friendly language and provides for rules on age of consent for information society services.

sentiment - frequently as part of state-sponsored influence operations. Nearly 50% of EU citizens report encountering false or doubtful content online, reaching over 70% in the Netherlands[99].

In response, the Commission has taken strong action, in particular by endorsing the integration of **the Code of Practice on Disinformation into the framework of the DSA, as a Code of Conduct** under Article 45 of the DSA, entering into application by July 2025. The Commission has launched four formal proceedings against the providers of major platforms Meta, TikTok and X, which focus on risk assessment and mitigation in the area of information manipulation.

The Commission also continues to support the **European Digital Media Observatory**, including its 14 fully operational hubs covering the entire EU. A **Creative Europe** call in October 2024 funded cross-border media literacy projects.

To address the challenges disinformation presents to elections, the Commission has used a wide toolbox, including the recommendation on protecting the integrity and resilience of the electoral process[100], the European Cooperation Network on Elections and the joint election resilience mechanism, made available to support Member States' authorities in building their capacity to detect and react appropriately to threats[101]. In the context of the DSA, targeted action has been taken through expert missions, stakeholder roundtables and stress tests, with the involvement of the Commission, Member States and Digital Services Coordinators (DSCs). In March/April 2024 the Commission published guidelines on recommended measures to the providers of VLOPs and VLOSEs to mitigate systemic risks online that may impact the integrity of elections[102]. A **DSA Toolkit**[103], published in February 2025, offers national regulators best practices in their work with the providers of VLOPs and VLOSEs to mitigate electoral risks, including in relation to hate speech and manipulation. In December 2024, the Commission opened formal proceedings against the providers of TikTok under the DSA for suspected failure to mitigate risks to election integrity in Romania.

Mechanisms under the **Code of Practice on Disinformation** such as the **Rapid Response System** (RRS), active during EU and national elections[104], enabled real-time fact-checking and content flagging in 2024 and continue to do so in 2025. The **European Digital Media Observatory** (EDMO) provided daily briefs and trend insights throughout the year.

In 2024, the EU has also introduced new EU common standards in the internal market. They will enable citizens to easily recognise **political advertising**, understand who is behind it and know whether they have been targeted[105]. Such rules address the growing complexity and cross-border nature of political advertising in the internal market, its growth in the online space, the use of advanced targeting techniques and the threat of information manipulation and interference.

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[99] Indicator Evaluating data, information and digital content (2021 onwards), Eurostat: isoc_sk_edic_i21, year 2023.

[100] Commission Recommendation (EU) 2023/2829 of 12 December 2023 on inclusive and resilient electoral processes. It includes different recommendations on protecting the integrity and resilience of the electoral process. For example, it encourages Member States to take measures to protect the information environment around elections and ensure that voters receive correct information. It recommends building resilience and developing public awareness, media literacy and critical thinking to address information manipulation, interference and disinformation related to elections. It also calls on Member States to develop training to relevant authorities and to facilitate cooperation among relevant stakeholders to tackle the information manipulation risks.

[101] In the context of this network, Member States discussed practical solutions to a range of threats including FIMI and disinformation. One of the operational tools is the joint election resilience mechanism, which supports exchanges among Member State experts, which several Member States used in the run-up to the elections.

[102] European Commission, Commission publishes guidelines under the DSA for the mitigation of systemic risks online for elections. Available at: https://digital-strategy.ec.europa.eu/en/news/commission-publishes-guidelines-under-dsa-mitigation-systemic-risks-online-elections

[103] European Commission, Commission presents new best-practice election toolkit on the Digital Services Act. Available at: https://digital-strategy.ec.europa.eu/en/news/commission-presents-new-best-practice-election-toolkit-digital-services-act

[104] See the Commission's Report on the 2024 elections to the European Parliament (publication pending at the time of writing).

[105] Regulation (EU) 2024/900 on the transparency and targeting of political advertising.

Fostering the EU's media ecosystem has been a priority. The role of free and independent media is crucial to address the current disruptions in the information space, fostering a pluralistic public debate. However, the news media sector in Europe is undergoing a profound transformation due to market disruptions, uneven access to content, emerging threats to media pluralism, and new funding challenges related to the evolving geopolitical landscape. The **2024 Media Pluralism Monitor**[106] reports a medium risk to fundamental protection of media (average score: 34% in the EU) and a high risk to market plurality (67% in the EU), driven by ownership concentration and lack of transparency in online content removal. To deal with challenges in the media market, the **European Media Freedom Act**[107] was adopted in 2024.

Looking ahead, the **European Democracy Shield** will, among other things, strengthen societal resilience and preparedness, and foster citizen participation and engagement. It will support free, pluralistic and independent media, and look at ways to reinforce our collective capacity to prevent, detect, analyse and respond to foreign information manipulation and interference (FIMI) and disinformation, including when they impact elections and voting behaviours, regulatory processes and public decision-making processes.

Preserving information integrity - Recommended policies, measures and actions

Member States should:

- *increase resilience against disinformation by investing in areas such as fact-checking, media literacy and technological detection tools;*
- *promote further research on information manipulation, looking into the structural, economic, psychological, and technological factors that contribute to its spread;*
- *develop and implement national strategies for countering foreign information manipulation and interference, including improved detection, response capacity, and secure information exchange channels;*
- *develop new strategies to ensure a pluralistic media sphere, including through financing provisions for news media, in ways that respect media independence.*

4. Harnessing digitalisation for the green transition

a. The digital-green nexus: unlocking sustainability, competitiveness and sovereignty

Digitalisation and environmental sustainability are no longer parallel priorities – they are **mutually reinforcing transformations**. If deployed effectively, digital solutions could cut **15 - 20% of global greenhouse gas emissions** by 2030, notably through improved efficiency in buildings, energy, transport, and manufacturing sectors[108].

This digital-green nexus also enhances Europe's industrial competitiveness. Greener digital infrastructure and smart technologies reduce operational costs and encourage adoption by consumers. The integration of AI and the internet of things into energy and resource management enables more efficient operations, particularly for SMEs and municipalities. This contributes to

[106] Centre for Media Pluralism and Media Freedom, Technical Report, EUI, RSC, Research Project Report, 2024. Available at: Monitoring media pluralism in the digital era: application of the media pluralism monitor in the European member states and in candidate countries in 2023.
[107] Regulation (EU) 2024/1083 establishing a common framework for media services in the internal market and amending Directive 2010/13/EU (European Media Freedom Act).
[108] Joint Research Centre European Commission, 5 digital solutions for a greener Europe, 2023.

decarbonisation while strengthening Europe's position in emerging green tech markets. Not only do digital tools optimise supply chains, but they also enable circular and profitable business models (such as Product as a Service).

Digitalisation for smart greening is critical to increase Europe's strategic autonomy and resilience. Digital tools such as smart metering allows better demand-side energy management and currently encompasses approximately 60% of European households on average. Nonetheless, substantial disparities persist between EU member states[109]. The launch of the code of conduct for energy-smart appliances will enable interoperability and boost the participation of smart appliances in demand response schemes. Climate observation satellites and predictive analytics contribute to **early warning systems and help manage climate-related risks** such as floods, wildfires, and droughts. As demand for low-carbon infrastructure and advanced computing grows, control over foundational technologies - including semiconductors, secure data infrastructure, and energy-efficient data centres - —has become a critical factor in reducing strategic dependencies.

AI is increasingly seen as a game changer for the green transition. When deployed responsibly, AI enables significant emissions reductions by improving energy efficiency, streamlining industrial processes, and supporting smarter resource management across sectors such as energy, transport, and agriculture. The potential of AI is amplified when combined with digital twins, sensor networks, and data-driven systems. The deployment of the energy data space will unlock consistent, high-quality and interoperable energy data for the training of AI models for energy and the inception of innovative energy services. The Smart Energy Expert Group was launched in October 2024 to support the establishment and governance of this initiative, through its 'Data for Energy' sub-group. AI-enabled decentralised energy systems, smart grid optimisation, and digital twins of the European electricity grid are helping improve energy efficiency and reduce reliance on imported fossil fuels. For example, AI-based grid management will be able to reduce electricity transmission losses while improving load balancing in real time[110]. Nevertheless, **AI's own environmental footprint–particularly that of Generative AI**–must be addressed, especially the energy-intensive and water-intensive nature of training AI models. With global electricity demand from generative AI projected to reach up to **134 TWh by 2027**, comparable to the annual consumption of Sweden[111], aligning AI development with climate goals is essential.

b. Rising pressures: electricity and water demand in the digital transition

Despite the potential advantages of digitalisation for the green transition, the environmental footprint of the digital economy is rising. In 2024 data centres in Europe consumed approximately **70 terawatt-hours (TWh)** of electricity. While this accounts for about **2% of total electricity consumption in Europe**, for some countries, such as Ireland, electricity consumption by data centres is significantly higher, reaching 20% of total consumption. By 2030, electricity consumption by data centres in Europe is expected to grow by **over 45 TWh**, reaching a total of **approximately 115 TWh**. This constitutes a **70% increase** over 2024 levels[112]. While data centres are important consumers of energy, they also offer an opportunity to contribute to system flexibility and demand response. Under the right conditions, they have the potential to provide grid services through the use of on-site battery storage, flexible cooling systems, load shifting, or by relocating computing workloads from one region to another as a form of sustained curtailment.

[109] European Union Agency for the Cooperation of Energy Regulators, Country Sheets : Monitoring data 2023, 2024.
[110] International Energy Agency (2023), Digital Demand-Driven Electricity Networks Initiative, 2024.
[111] McKinsey & Company, The Economic Potential of Generative AI: The Next Productivity Frontier, 2023.
[112] IEA, AI and Energy,2025.

It is forecast that mobile networks alone are expected to consume up to **170% more energy by 2026**, driven by the expansion of 5G networks[113]. Generative AI, AI training and inference, high-performance computing, and edge networks are further accentuating these trends.

In parallel, **water use for cooling digital infrastructure is becoming a growing concern**. The water needed to produce semiconductors is significant. In addition, depending on the cooling method and local climate, data centres can require substantial amounts of water, particularly when using evaporative cooling systems[114].

The rapid deployment of AI accelerators and dense compute clusters exacerbates this challenge. Studies show that by 2027, global AI demand could consume between 4.2 and 6.6 billion cubic metres of water a year[115]. Both the water and electricity consumption of data centres will be a key issue that the Commission will address through the forthcoming follow-up to the Energy Efficiency Directive and the Cloud & AI Development Act.

c. Recent EU actions supporting the green digital nexus

Since 2024, the European Commission has intensified its efforts to promote synergies between digital, energy, climate and circular economy actions. For example, the work on the **EU Code of Conduct for sustainable telecommunications networks** is advancing, with exchanges on a new draft occurring at a stakeholder workshop in May 2025.

In January 2025, the Commission adopted a new delegated regulation for establishing an EU-wide scheme to rate the **sustainability of EU data centres**, requiring operators of data centres above 500 kW to report key performance indicators to the European database by covering–among other things– energy use, water consumption, heat reuse and the type of refrigerant used. This lays the groundwork for more transparency on the sustainability performance of data centres that could be sought by future policy decisions.

In addition, the **Water Resilience** Strategy, launched in March 2025, provides guidance on water-efficient cooling technologies and supports municipalities hosting digital infrastructure through funding instruments under Horizon Europe and LIFE. The forthcoming **Digital Product Passport** framework will also apply to ICT equipment, detailing their environmentally relevant information. This will ensure lifecycle emissions and repairability are factored into procurement decisions.

The **European Green Digital Coalition** is a grouping of companies that seeks to harness the emission-reducing potential of digital solutions for all other sectors of the economy. With the support of the Commission, the European Green Digital Coalition released in 2024 a methodology to assess whether a deployed digital solution reduces more emissions than the solution's own carbon footprint. The Coalition will assess in 2025-2026 another 50 digital solutions in the sectors of energy, transport, construction, smart cities, manufacturing, agriculture and healthcare. It will also work with financial institutions to help sustainable finance to scale the deployment of such green digital solutions.

The twin green and digital transition measures at Member States level

In 2024, a wave of activity began operationalising the twin green and digital transition[116] through national strategies, regulations, and sectoral deployments. This marked a shift from high-level ambitions to systemic policy implementation that jointly advances digital transformation and

[113] GSMA, Energy Efficiency in Mobile Networks: A Roadmap to 2030, 2023.
[114] Circular water solutions key to sustainable data centres | World Economic Forum.
[115] Islam M.A. , Li P., Ren S., Yang J.,Making AI Less "Thirsty": Uncovering and Addressing the Secret Water Footprint of AI Models, 2023.
[116] European Commission, The twin green & digital transition, 2022.

environmental objectives. Measures such as **Italy's Transition 5.0 Plan**, **Luxembourg's National Energy Data Platform**, and **France's Frugal AI standard** illustrate how EU support has been translated into localised, impactful action. The revised Digital Decade **National Roadmaps** include 67 measures from 19 Member States contributing simultaneously to the Digital Decade's green and digital objectives. Of these 67 measures, 38 are specifically designed to simultaneously address those green and digital objectives, with a total investment of EUR 214.2 million.

Best practice highlights

France is leading the Green IT Cluster of the Best Practice Accelerator, and it has put forward three best practices on the twin transition field in 2024: (i) the **General Policy Framework for the Eco-design of Digital Services** , which targets ICT professionals and sets out 78 criteria and best practices applying eco-design principles in the development of services and the drafting of an Eco-design Declaration; (ii) the development and availability of **Product Category Rules** (PCR) for environmental evaluation and labelling to improve the environmental information provided to consumers, covering the entire product life cycle; and (iii) **the Alt IMPACT Communication Campaign** to raise public awareness about the environmental impact of digital technologies.

The Netherlands presented its **Sustainable Digitalisation Action Plan** published in July 2024. It outlines 44 concrete actions across three main pillars that work towards making the digital sector more sustainable, while simultaneously leveraging digitalisation for sustainability by improving the efficiency of production processes, optimising the use of existing resources, and enabling the circular use of raw materials and resources.

Finland presented a set of measures to increase the **knowledge base on the environmental handprint and footprint of the ICT Sector**. This set of best practice measures was in response to the lack of reliable and comparable data identified as one of the challenges during the drawing up of its national climate and environmental strategy for the ICT sector, which Finland published in 2021.

Luxembourg presented its **Product Circularity Data Sheet (PCDS)**, a tool designed to provide detailed information about the circular characteristics of products, such as their recyclability, their durability, and their use of recycled materials. The PCDS is aligned with the general and cross-cutting requirements of the Ecodesign for Sustainable Products Regulation.

Harnessing digitalisation for the green transition - Recommended policies, measures and actions

Member States should:

- *support the development of harmonised environmental impact metrics for digital solutions including AI-based solutions as well as metrics for digital infrastructures such as, edge computing, data centres, and telecommunications networks;*
- *reinforce their cooperation with the AI Office, the Green Digital Coalition, and the European Green Deal Data Space, as well as contributing to the upcoming EU Code of Conduct for sustainable telecommunications networks;*
- *incorporate digital sustainability KPIs into their national digital and green transition plans.*

5. Building coherence, efficiency and simplification

In 2024, the Commission made a strong commitment to an ambitious simplification agenda[117], presented in the Communication on a Simpler and faster Europe[118]. The Digital Decade is aligned with this simplification approach and includes a joint commitment to ensure that digital policies, measures, and programmes relevant for the EU's digital transformation are considered in **a coordinated and coherent way** so that they fully contribute to the Digital Decade objectives, while **avoiding regulatory overlaps and minimising administrative burdens.**

a. Need for simplification, efficiency and coherence

i. Better and lighter digital legislation

In 2024 and through 2025, the Commission prioritised the streamlining of EU legislation to enhance competitiveness, minimise the burden of compliance, reduce red tape and streamline regulation to ensure consistency. More than half of European SMEs flag such regulatory and administrative obstacles as their greatest challenge[119]. 86% of EU firms dedicate staff to compliance tasks, with the cost of compliance averaging 1.8% of turnover—rising to 2.5% for SMEs[120]. This is a similar order of magnitude to average energy costs, standing at 4% of annual turnover.

The **Commission has set an overarching target to reduce reporting burdens** by at least 25% for all companies —and by at least 35% for SMEs – before the end of its current mandate, without undermining the policy objectives of the reporting rules.

For the digital *acquis*, the Commission is planning **a wide 'stress test' of the regulatory framework.** Over the coming years, this stress test will include an assessment of regulatory coherence and whether the current rules are fit for purpose considering the rapid technological transformation and market evolution. The stress test will also explore whether further reductions can be made to the reporting and compliance burden, while pursuing the objectives of the regulations.

Firstly, in May 2025, the Commission came forward with the **Single Market Simplification** proposal. The Fourth Omnibus package simplifies the record-keeping obligation in the GDPR, taking into account the specific needs and challenges of small and medium-sized companies and organisations, while ensuring that the rights of individuals are protected.

Looking forward, in the fourth quarter of 2025, the Commission will put forward a **Digital Package**, including a Digital Omnibus proposal with a series of simplification measures for part of the digital *acquis*, stress-tested over the year.

In addition, the European Commission plans to propose the **Digital Networks Act**. This forthcoming legislation will transform Europe's digital infrastructure to support European businesses and citizens in an increasingly connected world. This effort is fully aligned with the broader priorities of the Competitiveness Compass, where digital infrastructure is fundamental to Europe's leadership in innovation, resilience, and long-term economic growth. At the core of this initiative is simplification. The Digital Networks Act will reduce regulatory burden, provide clarity, strengthen competition, all while safeguarding consumer benefits. The Digital Networks Act will ensure that digital infrastructure is built for the future.

[117] European Commission, Simplification and implementation. Available at: https://commission.europa.eu/law/law-making-process/better-regulation/simplification-and-implementation_en.
[118] European Commission, A simpler and faster Europe, 2024.
[119] Draghi, M., The future of European competitiveness, Part A – A competitiveness strategy for Europe, pg.14 2024.
[120] EIB Investment Report 2024–2025, European Investment Bank.

The **transformative potential of digital tools for administrative simplification** has been strongly endorsed by recent high-level reports on competitiveness. The Commission is leading efforts to build a dedicated infrastructure modelled on **Common European Data Spaces to automate regulatory compliance and data transmission.**

The **European Business Wallet** will be a cornerstone of doing business simply and digitally in the EU, providing a seamless environment for companies to interact with all public administrations is the upcoming European Business Wallet. Building on the EUDI Framework, the European Business Wallets will be horizontal enablers for Europe's competitiveness. The European Business Wallets are intended to streamline business-to-business and business-to-government interactions, enabling trusted digital identities, secure data exchanges and legally recognised digital notifications. It will reduce administrative burdens, lower compliance costs, and enhance cross-border transactions, benefiting SMEs and large enterprises. By streamlining processes, it will also improve business efficiency and foster competitiveness.

Alongside this, the **Single Digital Gateway** (SDG), and its cornerstone component -the **Only-Once Technical System** (OOTS) -could automate the exchange of verified data between public authorities, cutting administrative costs for SMEs by over 50%, according to a 2024 impact study[121]. By 2025, most Member States are expected to be technically ready to securely exchange official documents across borders, increasing the accessibility and interoperability of e-Government services for around 80 000 national authorities. Despite progress in this area, challenges remain - particularly in digitising industrial permitting procedures essential for sectors like renewable energy and semiconductors. Although EU legislation such as the SDG Regulation, the Net Zero Industry Act, and the Critical Raw Materials Act provide a strong legal foundation for the digital and green transitions, disparities persist as many Member States still lack the organisational and digital capabilities to fully implement and benefit from these reforms.

Further integration of these systems is planned. The **European Business Wallet, EU Digital Identity Wallet, SDG and OOTS will together form a cohesive, interoperable digital infrastructure**. This ecosystem will enable seamless interactions for businesses and citizens and reduce duplication in compliance processes. However, the slow progress made by national and local entities in implementing OOTS and the SDG remains a challenge, and this progress requires targeted alignment efforts and shared procedural standards.

EU company Law will reduce burden on companies leveraging digital solutions in synergy with the European Business Wallet, and through the Business Registers Interconnection System (BRIS) that enables the 'once only' principle with regard to company data. The '28th Regime' proposal will further support companies to set-up and grow in the EU, making it possible for innovative companies to benefit from a single, harmonised set of EU-wide rules wherever they invest and operate in the single market, as announced in the Competitiveness Compass. The digital euro initiative is also contributing to simplification. By ensuring interoperability **with the EU Digital Identity Wallet**, the Commission aims to provide users of the digital euro with a streamlined and secure means of verifying identity, confirming payments, and facilitating offline transactions. This will reduce transaction costs, especially for SMEs, and strengthen Europe's digital sovereignty.

Another major milestone was the adoption of the **VAT in the Digital Age** legislative package on 11 March 2025. This enables automated VAT reporting through e-invoicing, simplifying data extraction

[121] European Commission, EU SMEs and self-employed workers could save time and money when expanding abroad thanks to the once-only technical system, 2024.

and supporting sustainability reporting. Exploratory work is underway to align this functionality with the European Financial Reporting Advisory Group (EFRAG)'s sustainability standards, using e-invoices to meet environmental reporting obligations efficiently.

ii. Simplification through improved governance

Ensuring the effectiveness of this comprehensive simplification agenda requires improved governance. The **Digital Decade Board (DDB) has emerged as the primary forum for coordination** between the Commission and Member States on digital policy implementation. With a broad mandate, the DDB brings together national representatives to align digital measures, share best practices, and assess emerging challenges in the regulatory landscape.

The DDB has discussed several **avenues to reduce administrative burden**: (i) simplification through digital tools; (ii) the setting up of a Digital Single Rulebook;(iii) the setting up of a Single Digital Compliance Platform or (iv) codifying compliance requirements into a single interface. There are also some possible synergies regarding overlaps and fragmentation across the Commission's expert groups, which may exceed the administrative capacity of national authorities. As a first step, the Commission is conducting an **overview of all advisory bodies linked to digital legislation** to support internal coordination within Member States and improve strategic alignment. The potential streamlining of these structures will in particular be considered as part of the 2026 review of the Digital Decade Policy Programme (DDPP).

Coherence and simplification - Recommended policies, measures and actions

Member States should fully leverage the DDB's role and expertise to help streamline the implementation of digital acquis and support the development and deployment of solutions for simplification and reduction of administrative burden.

b. Funding the Digital Decade

The priority given to the digital transition by the Commission is reflected in the EU budget's commitment. Nearly all EU programmes contribute to digital goals, with key focus areas including the **digitisation of public services**, **digital skills**, **business digitalisation**, **advanced digital infrastructure** (such as 5G, AI, quantum, and cloud technologies), and **support for research and innovation**. Health and transport are two other major sectors targeted for digital transformation[122].

The Joint Research Centre (JRC)[123] study on five major programmes—**RRF, CEF Digital, Horizon Europe, DIGITAL, and Cohesion Policy**—estimates that between 2020 and 2027, a total of **EUR 207 billion** in public money will support digital objectives. Of this, **EUR 177.5 billion** directly contributes to achieving the EU's **Digital Decade targets**. The **RRF** alone accounts for over **EUR 149.8 billion** in public digital investments, with **EUR 135.7 billion** directly aligned with the targets, making it the single most significant contributor to digital investments in the EU[124]. It plays a leading role in promoting **basic digital skills**, the training of **ICT specialists**, **gigabit network coverage**, **digital public services**,

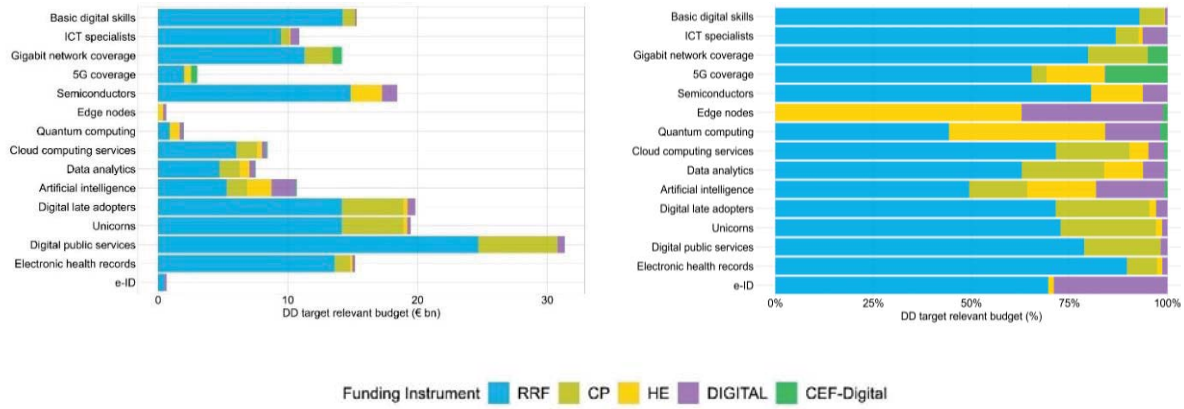
[122] The latest stocktaking exercise referred to EU spending from 2021 to 2023 shows that approximately EUR 205.5 billion—around 17.5% of the total EU budget—was dedicated to the digital transition. A significant portion of this funding was mobilized through the Recovery and Resilience Facility (RRF), which in the same period allocated 24% of its total budget to digital investments and reforms. Available at: https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/horizontal-priorities/digital-tracking_en

[123] Joint Research Centre, Nepelski, D. and Torrecillas, J. Mapping EU level funding instruments 2021-2027 to Digital Decade targets – 2025 update, Publications Office of the European Union, Luxembourg, 2025, JRC141966.

[124] Including measures in the Repower EU chapters contributing to the digital transition. Last update on 10 March 2025.

semiconductors, and **eHealth**, contributing over 70–90% of the relevant funding in each of these areas.

Figure 1: Relevant budget by funding instrument and Digital Decade target, in billion EUR (on the left) and as % (on the right)



Source: JRC Calculations

In addition to public funding, mobilising private investments plays a crucial role. The EU is increasingly using its budget to support private digital investment through tools such as **InvestEU**, **Joint Undertakings (JUs)**, and **Public-Private Partnerships (PPPs)**. As of March 2025, **InvestEU has mobilised EUR 15.88 billion** in digital-related investments. However, financial instruments are not yet fully taken advantaged of in all programmes[125] and often lack a strong policy steer or the scale needed to address systemic investment gaps. **Blending instruments and guarantees (e.g. InvestEU) show promising results in this area.** Depending on the level of technology readiness, **leveraging factors** from financial instruments (i.e. the amount of private money that is invested alongside every euro of public money) are currently **around 3 for early-stage deep-tech** companies (European Innovation Council Fund equity) and **around 5.62 from the InvestEU guarantee**[126]. **Overall, the EU faces a substantial and urgent need to increase investment in digital technologies, infrastructure, and innovation ecosystems.** Bridging the investment gap, estimated in the hundreds of billions annually, requires not only more funding, but smarter, better-targeted financial instruments, deeper capital markets, and stronger coordination across EU and national programmes. Strategic public support will remain essential in high-risk areas such as AI, cybersecurity, and deep tech, while effective leveraging of private investment will be key to achieving scale and impact. As Europe prepares for its next **Multiannual Financial Framework (MFF)** and advances its **Digital Decade objectives**, aligning funding with strategic priorities and maximising impact through higher coordination, across programmes and across the EU, will be critical to securing Europe's digital sovereignty and long-term competitiveness.

[125] As an example of needed flexibility, the EIC blended finance allows successful companies to decouple the timing of the grant and equity finance, without the need to go through a new application process when the time is ripe (e.g., when co-investors have been found). See also Mundell, The ecosystem: European Innovation Council uncouples grant and equity funding for startups, 2024. Available at: https://commission.europa.eu/strategy-and-policy/eu-budget/performance-and-reporting/horizontal-priorities/digital-tracking_en.
[126] From the Interim evaluation of the InvestEU Programme (1 October 2024).

Funding the Digital Decade - Recommended policies, measures and actions

Member States should:

- *prioritise strategic digital investment in their national budgets, aligned with Digital Decade objectives, EU Digital Principles, and sovereignty imperatives, including taking action to mobilise private investment;*
- *pursue reforms, including in public procurement, to facilitate the emergence and scaling of sovereign digital technologies and infrastructure;*
- *collaborate actively in the development of large-scale digital projects with transnational relevance, potentially supported by new common financing mechanisms or a dedicated Digital Sovereignty Fund.*

c. Cooperation with cities and regions

In the context of the Digital Decade, the European Commission is strengthening its cooperation with cities and regions, recognising that subnational governments play a pivotal role in implementing and disseminating digital policies that affect businesses, public services, and citizens on the ground.

With over **90 000 local governments** across the EU and EFTA, greater **coordination will be critical** for **digital transformation to scale**, to avoid duplication, improve interoperability, and share knowledge and digital infrastructure. Although innovation clusters and large cities are accelerating their digital transition, many smaller municipalities and rural areas are falling behind. To accelerate the dissemination of digital technologies across the EU and bridge the divide between innovation hot spots (typically in large cities) and the smaller cities that often lag behind, cities must be seen not just as implementers of policy made elsewhere, but as **strategic partners** building on their proximity to citizens and SMEs.

In this context, the **Digital Decade Policy Programme (DDPP) offers a valuable opportunity and framework for cities to align digitalisation** with wider priorities such as climate action, mobility, housing, and social inclusion. The DDPP also contributes as a strategic framework to the upcoming Commission **policy agenda for cities**, initiated at the start of the new mandate.

Aligning digitalisation with wider priorities will require accurate and timely data aligned with the Digital Decade targets and objectives. In 2024, the EU's **LORDIMAS monitoring** tool allowed self-assessments from **99 regional, metropolitan, and local administrations**, offering insights on EU digitalisation at subnational level. As of March 2025, **184 administrations had joined LORDIMAS**, with continued outreach to expand participation. This effort complements other initiatives, such as the **LDT-CitiVERSE** (see above), **Living-in.EU** and **Local Observatories** that are developed by cities to track digital progress and better target investment, especially in areas like **urban resilience, and bridging the digital divide.**

Cooperation with cities also includes the set-up of digital ecosystems that integrate skills development, connectivity infrastructure, and support for enterprises, especially SMEs. **European Digital Innovation Hubs (EDIHs)** and **AI Testing and Experimentation Facilities (TEFs)**, such as **CitCom.ai**, offer cities and local actors the tools to test and deploy emerging technologies in real-world conditions. CitCom.ai, launched in January 2025 with EUR 40 million in EU co-funding, is already trialling AI applications in smart mobility, energy, and urban planning across **11 EU countries**. The Commission also continues to support cities' connectivity through targeted investment in **high-speed**

broadband, **5G**, and **fibre infrastructure**. Over **7 200 municipalities** have benefited from **WiFi4EU**, an EU-funded programme to deliver free wifi to towns and villages across Europe, improving access to connectivity in remote areas.

Cities are also key actors in upholding the **European Declaration on Digital Rights and Principles**. Local initiatives such as the **Brussels Digital Rights Charter** and **Leipzig's Hardware for Future** project reflect the values of **equity, transparency, and citizen empowerment**. The **Cities Coalition for Digital Rights**, supported by the Commission, helps scale and replicate such efforts across Europe.

Best Practice: Portugal's Smart Territories National Strategy (ENTI)

*Portugal's **ENTI**, launched in August 2024, offers a compelling model for digital development. Funded with **EUR 60 million** from the Recovery and Resilience Facility, it integrates **digital twins, real-time data platforms, and urban dashboards** to improve regional development, public service delivery, and environmental monitoring. Rooted in EU digital rights and sustainability principles, it sets a benchmark for **data-driven, inclusive, and green territorial governance**.*

Cooperation with cities and regions - Recommended policies, measures and actions

Member States should:

- *encourage cities to participate in multi-country projects such as the LDT-CitiVERSE-EDIC and support cross-border reuse of digital public services;*
- *anchor local digital strategies in the European Declaration on Digital Rights and Principles (DRP);*
- *invite cities to adopt their own local Digital Rights and Principles Charters;*
- *invest in local digital capacity and data-driven governance: foster the development of local observatories (e.g. to monitor the digital divide) and encourage participation in tools to improve data availability and inform targeted policymaking.*

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ANNEX 2

ANNEX

to the

Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

{SWD(2025) 290 final} - {SWD(2025) 291 final} - {SWD(2025) 292 final} -
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European Commission

SHORT COUNTRY REPORTS 2025

Austria

Executive summary

Austria continues to demonstrate strong momentum in AI adoption and to make progress on connectivity deployment, although the country still lags behind in the roll-out of Very High-Capacity Networks (VHCN) and Fibre to the Premises (FTTP), while the start-up ecosystem remains constrained by declining venture capital and limited unicorn growth. In 2024, Austria maintained solid performance in digital public services and has strengthened its role in strategic technologies, such as semiconductors and quantum technologies.

Austria shows a high level of ambition in its contribution to the Digital Decade having set 12 national targets, 92% of which are aligned with the EU 2030 targets. The country is following its trajectories well with 75% of them being on track (on the basis of the 2024 trajectories defined for 8 KPIs out of 8 analysed). Austria addressed 59% of the 12 recommendations issued by the Commission in 2024, either by implementing significant policy changes (17%) or making some changes (42%) through new measures.

Despite high levels of digital skills, persistent gaps across age and education exist. Sustainability is reflected in selective initiatives, but a coherent green-digital strategy is still lacking in the national Digital Decade roadmap. Overall, the level of commitment to digital transformation has remained consistent over time, as demonstrated by the adjusted national strategic roadmap, which reinforces the ambition across most areas of the Digital Decade framework. AI remains a strategic focus, with Austria's National AI Strategy representing the cornerstone of the country's efforts, supported by the adjusted roadmap's new initiatives.

Digital Decade KPI (1)	Austria				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	AT	EU
Fixed Very High Capacity Network (VHCN) coverage	67.6%	72.2%	6.7%	73.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	41.0%	44.8%	9.4%	45.0%	69.2%	8.4%	72.0%	-
Overall 5G coverage	96.0%	99.5%	3.7%	99.5%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	18	33	83.3%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	72.2%	3.6%	-	72.9%	2.8%	90.0%	90%
Cloud	35.6%	-	-	-	-	-	-	75%
Artificial Intelligence	10.8%	20.3%	87.9%	20.0%	13.5%	67.2%	75.0%	75%
Data analytics	23.9%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	47.0%	-	-	-	-	-	-	75%
Unicorns	5	5	0.0%	4	286	4.4%	10	500
At least basic digital skills	64.7%	-	-	-	-	-	80.0%	80%
ICT specialists	5.3%	5.3%	0.0%	5.6%	5.0%	4.2%	10.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	80.7	80.8	0.1%	82.0	82.3	3.6%	100.0	100
Digital public services for businesses	82.9	87.7	5.8%	84.0	86.2	0.9%	100.0	100
Access to e-Health records	88.2	87.0	-1.4%	97.5	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the 2025 special Eurobarometer on the Digital Decade, 68% of Austrian citizens consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 87% consider it important to counter and mitigate the issue of fake news and disinformation online, and on competitiveness, 82% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Austria demonstrates strong 5G leadership, ongoing progress in AI adoption, and growing investment in strategic technologies such as semiconductors and quantum computing. With 99.55% 5G coverage and near-complete spectrum assignment, the country ranks among the EU's top performers in mobile connectivity. AI adoption by enterprises is accelerating and reached 20.3%, surpassing the EU average and supported by clear strategic direction and targeted funding. Austria's commitment to technological sovereignty is further reflected in its investments in strategic sectors: it continues to support quantum technologies through the Quantum Austria initiative and is advancing in semiconductors via targeted investments and participation in the Chips Joint Undertaking.

However, challenges remain in ensuring broader diffusion of advanced digital technologies. While Austria's digital intensity among SMEs is aligned with EU levels, the integration of data-driven solutions and next-generation technologies into business operations remains uneven. This is compounded by structural bottlenecks in the scale-up and start-up ecosystem, despite notable policy support. Venture capital investment has declined for the third consecutive year, as investor caution and delayed startup exits have slowed reinvestment cycles.

Protecting and empowering EU people and society

Austria has a strong performance in digital skills and continues to expand targeted measures to bridge structural gaps. However, persistent disparities, particularly across gender, education, and age affect digital inclusion. Flagship initiatives such as Digital Everywhere+ and the Future Skills programme demonstrate Austria's commitment to reaching disadvantaged groups and improving the digital capacity of its workforce. **Austria also took steps to expand its ICT workforce**, with new measures aimed at reskilling, increasing female participation, and strengthening STEM pathways.

Austria performs well in e-Health and digital public services, with new national targets, a dedicated strategy, and substantial funding.

Leveraging digital transformation for a smart greening

Austria recognises the importance of integrating environmental sustainability into its digital transition but lacks a coherent strategy explicitly twinning the green and digital dimensions. While AI for Green and SME-DIGITAL 4.0 initiatives support climate goals, no new measures have been adopted to monitor the environmental footprint of digital technologies or improve energy efficiency in infrastructures such as data centres.

National Digital Decade strategic roadmap

Austria submitted a fully updated roadmap in January 2025, including 26 new measures and revised trajectories for key KPIs such as 5G, AI, and digital public services. While it addresses most 2024

recommendations and sets clearer targets, the roadmap still lacks new dedicated support for SMEs and a strategic framework for the green-digital nexus. The overall ambition remains high, particularly in skills, AI, and connectivity, though progress will depend on sustained investment and cross-sector coordination. A total of 85 measures are now part of Austria's national strategic roadmap with a total budget of EUR 4.07 billion (equivalent to 0.84% of Austria's GDP in 2024).

Funding & projects for digital

Austria allocates 36% of its total recovery and resilience plan to digital (EUR 1.3 billion)[1]. In addition, under cohesion policy, EUR 76 million, representing 7% of the country's total cohesion policy funding, is dedicated to advancing Austria's digital transformation[2].

Austria is directly involved in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT). Austria is a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Austria has contributed to the Best Practice Accelerator[3] by sharing one best practice in the framework of the Digital Skills cluster (Digital Competence Initiative Austria).

Digital rights and principles

According to a support study, Austria has been one of the most active Member States in implementing the **European Declaration on Digital Rights and Principles**, with over 100 initiatives overall and 21 new initiatives launched in 2024. Austria is most active in the area of digital education, training and skills. Less activity has been identified with regards to Protection and empowerment of children and young people in the digital environment, and Sustainability. Measures in the area of Sustainability appear to have most impact on the ground, in contrast to those addressing safety, security and empowerment.

Recommendations:

- **FTTP roll-out:** Sustain and further accelerate the pace of fibre rollout (FTTP), particularly in rural areas, by maintaining strong investment and encouraging new deployment commitments**.**
- **Cloud and data analytics**: Introduce targeted support to accelerate the adoption of cloud and data analytics solutions, particularly among SMEs, to boost enterprise competitiveness.
- **ICT specialists:** Accelerate the overall growth of ICT specialists by strengthening reskilling and upskilling initiatives and promoting ICT training across enterprises, while continuing efforts to close gender gaps.
- **Key digital public services**: focus on accelerating growth in digital public services for citizens, particularly in cross-border services. Sustained efforts in digital public services for businesses are needed to maintain this positive momentum.
- **Unicorns:** scaling it further will be essential for Austria to fully realise its competitiveness and sovereignty goals within the Digital Decade.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

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ANNEX 3

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European Commission

SHORT COUNTRY REPORTS 2025

Belgium

Executive summary

Belgium benefits from a dynamic tech ecosystem and rapid technology adoption among enterprises. It holds a leading position in VHCN (gigabit) coverage, although there remains room to expand FTTP coverage and address persistent gaps in digital skills. The country has positioned itself as a leader in cybersecurity, strategic technology development and online service provision.

Belgium shows a high level of ambition in its contribution to the Digital Decade, having set 14 national targets, 93% of which are aligned with the EU 2030 targets. The country is following its trajectories, with 86% of them on track (on the basis of the 2024 trajectories defined for 7 KPIs out of 8 analysed). Belgium addressed 75% of the 8 recommendations issued by the Commission in 2024, either by implementing significant policy changes (50%) or making some changes (25%) through new measures.

Belgium stands out for its performance in gigabit coverage and rapid progress in 5G deployment. While fibre coverage still has room to grow, efforts to expand its deployment are accelerating. Business digitalisation is improving, with a focus on AI adoption and support to SME and start-up innovation. In cybersecurity, Belgium leads by engaging SMEs and committing to resilience-building initiatives. Digital skills development remains an area that needs to be prioritised, with programmes addressing ICT and STEM shortages and promoting gender inclusion. Belgium excels in online public services. Aligning with EU priorities, Belgium embeds sustainability in its strategies, and enhances the EU's sovereignty and competitiveness, such as in R&D for semiconductors.

Digital Decade KPI (1)	Belgium				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	BE	EU
Fixed Very High Capacity Network (VHCN) coverage	91.2%	93.8%	2.8%	82.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	25.0%	30.7%	22.8%	30.0%	69.2%	8.4%	82.0%	-
Overall 5G coverage	40.4%	96.9%	140.0%	99.5%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	15	30	100.0%	18	2257	90.5%	164	10000
SMEs with at least a basic level of digital intensity (2)	-	83.7%	4.1%	-80.3%	72.9%	2.8%	90.0%	90%
Cloud	47.7%	-	-	62%	-	-	75.0%	75%
Artificial Intelligence	13.8%	24.7%	78.9%	15.0%	13.5%	67.2%	75.0%	75%
Data analytics	44.5%	-	-	-44%	-	-	75.0%	75%
AI or Cloud or Data analytics	64.2%	-	-	-	-	-	-	75%
Unicorns	7	7	0.0%	-	286	4.4%	14	500
At least basic digital skills	59.4%	-	-	63%	-	-	80.0%	80%
ICT specialists	5.4%	5.7%	5.6%	7.1%	5.0%	4.2%	10.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	83.2	81.4	-1.1%	87.0	82.3	3.6%	100.0	100
Digital public services for businesses	91.6	95.4	4.1%	94.0	86.2	0.9%	100.0	100
Access to e-Health records	100	100	0.0%	100.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics.
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024).

Belgium

According to the 2025 special Eurobarometer on the Digital Decade, 72% of Belgian citizens consider that the digitalisation of daily public and private services is making their lives easier. Concerning the action of the public authorities, 87% consider it important to counter and mitigate the issue of fake news and disinformation online, and regarding competitiveness, 84% consider it important to ensure that European companies can grow and become 'European Champions' able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

In recent years, Belgium has made significant **progress with its connectivity infrastructure's coverage**. Belgium is now in the leading position on **VHCN (gigabit) coverage**. By now, Belgium has recovered the lag in 5G spectrum assignment and has scope to improve its **FTTP coverage,** which is below the EU average, but deployment is gaining pace on that front. Moreover, the country's **5G coverage** now surpasses the EU average as it has rapidly improved since 2023. This firmly puts Belgium on track to achieve its 2030 targets. While Belgium has made progress in increasing the share of high-speed broadband subscriptions and 5G SIM card usage, it still lags behind the EU average in 5G coverage for households in sparsely populated areas and in the 3.4-3.8 GHz band. The country's strong growth rates in these areas indicate a positive trajectory, but there is still room for improvement to catch up with the EU average.

Belgium and its regions prioritise advances in **AI take-up by companies and the digitalisation of online public services, which shows a strong dynamic in particular for businesses.** It is also home to strategic assets such as R&D in semiconductors, and actively promotes quantum computing and quantum ecosystem. The Centre for Cybersecurity Belgium (CCB) and its activities position Belgium as a leader in cybersecurity, but also strengthens its capacity for technological innovation and resilience by narrowing the cybersecurity skills gap. Regarding cybersecurity, Belgium continues to lead by example through a range of initiatives. Looking ahead, the continued implementation of the current National Cybersecurity Strategy, the development of its successor, and efforts to enhance SME participation in cybersecurity measures will be key to ensuring long-term resilience and success.

Protecting and empowering EU people and society

Belgium's digital transformation is under pressure due to **persistent gaps in digital skills, ICT talent shortages, and gender imbalance among ICT specialists.** The low performance in advanced digital skills hampers labour market outcomes and competitiveness. However, Belgium excels in delivering **digital public services**, especially for businesses (above the EU average), and in the uptake of **e-ID** by citizens. Belgium leads the EU in terms of **access to e-Health records** in 2023 with a maximum score of 100. **Authorities focus on closing skills gaps** through lifelong learning and targeted reskilling, with **special attention given to women** in digital roles. Efforts also target combating disinformation and promoting digital literacy to protect citizens online, fostering a safer and more inclusive digital environment.

Leveraging digital transformation for a smart greening

Regarding progress in its **twin transition**, Belgium is actively engaged in both greening its digital infrastructure and supporting digital solutions for carbon reduction in other sectors. While several initiatives show promise, a comprehensive strategy that links the digital and green transitions would likely accelerate these efforts.

Belgium

National Digital Decade strategic roadmap

Belgium submitted an addendum to its national Digital Decade roadmap on 11 December 2024, **addressing all the roadmap recommendations issued in 2024.** The country pledged to improve coordination across governance levels and to transition to an annual roadmap update cycle starting in 2025. The roadmap includes **13 updated and 5 new measures added to last year's 161 measures.** The new measures focus on people, digital skills, accessibility and inclusion. Most trajectories remain unchanged, with updates limited to missing KPIs for edge nodes and FTTP. The revised roadmap is composed of 166 measures with a budget of EUR 913.71 million (equivalent to 0.15% of GDP), up from EUR 892 million. It still covers all objectives of the Digital Decade such as a human-centred digital space, resilience and security, sovereignty, sustainability, and protection of society. Stakeholder engagement is planned for 2025, with Belgium committing to a more coordinated national strategy to close identified gaps and align with the EU's 2030 digital objectives. The country also decided to deliver a yearly roadmap, starting in 2025, instead of one every two years as the DDPP requires.

Funding & projects for digital

Belgium allocates 26% of its total recovery and resilience plan to digital (EUR 1.2 billion)[1]. In addition, under cohesion policy, EUR 329 million, representing 13% of the country's total cohesion policy funding, is dedicated to advancing Belgium's digital transformation[2].

Belgium hosts the EUROPEUM EDIC. It is also a member of the Local Digital Twins towards the CitiVERSE EDIC and participates as an observer in the Alliance for Language Technologies EDIC, for which the region of Flanders is a member. Belgian entities are indirect and/or associated partners in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT) and in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). Belgium is a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Within the Digital Decade's **Best Practice Accelerator**[3], Belgium leads the 'Technology Uptake' Cluster, organising workshops on AI adoption for SMEs and other key topics, with active participation across Europe and plans for ongoing collaboration and knowledge sharing.

Digital rights and principles

According to a support study, Belgium has been one of the most active Member States in implementing the **European Declaration on Digital Rights and Principles**, with over 100 initiatives overall and 12 new initiatives launched in 2024. Belgium is most active in the areas of digital education, training and skills and fair and just working conditions. Less activity has been identified with regards to sustainability. Measures in the area of freedom of choice appear to have most impact on the ground, in contrast to those addressing safety, security and empowerment and sustainability.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

Recommendations

- **Basic digital skills:** Address the gender gap in digital skills, provide support for the less educated, assist older adults in becoming digitally savvy, and improve online safety skills to ensure comprehensive digital inclusion.
- **ICT specialists:** Sustain efforts to boost the number of female ICT specialists and female ICT graduates.
- **Digitalisation of SMEs and advanced technologies take-up – Cloud:** Expand efforts to advance cloud infrastructure and promote cloud adoption among SMEs through broader national coordination across all regions and more concrete actions.
- **Artificial intelligence:** Continue to support innovation in AI to reinforce leadership in the sector and create future global leader companies.
- **Fixed and mobile connectivity:** To enhance digital infrastructure, (i) focus on accelerating FTTP deployment, particularly in sparsely populated areas; and (ii) direct efforts towards increasing the assignment of harmonized spectrum in the 5G pioneer bands.
- **Green and digital transition:** Continue to coordinate efforts and develop more structured monitoring mechanisms for emission reductions, linking environmental sustainability with digital innovation.
- **Cybersecurity:** Continue efforts in cybersecurity to address evolving threats, particularly maintaining vigilance for enterprises and administration.

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ANNEX 4

ANNEX

to the

Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Bulgaria

Executive summary

Bulgaria has a well-developed connectivity infrastructure and is strengthening its role in critical technologies, like semiconductors and quantum computing. However, its competitiveness potential is hampered by a fragmented ecosystem; persistent R&D gaps; weak innovation and tech uptake by SMEs and start-ups; and cybersecurity concerns. While the country is advancing in digital public services, challenges remain in digital skills, inclusion, and integrating sustainability into its digital infrastructure.

Bulgaria's contribution to the Digital Decade is moderately ambitious, with 12 national targets, half of which are aligned with the EU 2030 targets. The country is following its trajectories well with 75% of them being on track (based on the 2024 trajectories established for 8 KPIs out of 8 analysed). Bulgaria did not address the 13 recommendations issued by the Commission in 2024 through new measures.

Bulgaria excels in assigning 5G spectrum and is gradually bridging geographical divides in access to high-speed connectivity. The country positions itself as a growing player in critical technologies, with initiatives in semiconductors and quantum computing. While enterprise digitalisation is progressing, particularly in AI adoption, the overall adoption of advanced digital technologies remains below par. Recent actions, such as the launch of an AI Factory at Sofia Tech Park confirm Bulgaria's ambition to enhance its tech ecosystem. Despite its ongoing reliance on Chinese telecommunication components, Bulgaria is orienting its digital policies towards greater sovereignty by strengthening European partnerships in critical technologies.

Digital Decade KPI (1)	Bulgaria				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	BG	EU
Fixed Very High Capacity Network (VHCN) coverage	88.6%	90.4%	2.0%	93.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	88.6%	90.4%	2.0%	93.0%	69.2%	8.4%	100.0%	-
Overall 5G coverage	78.9%	81.3%	3.1%	91.0%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	5	10	100.0%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	49.9%	2.9%	-	72.9%	2.8%	60.0%	90%
Cloud	14.2%	-	-	-	-	-	15.0%	75%
Artificial Intelligence	3.6%	6.5%	78.7%	5.0%	13.5%	67.2%	11.0%	75%
Data analytics	21.9%	-	-	-	-	-	9.0%	75%
AI or Cloud or Data analytics	29.3%	-	-	-	-	-	-	75%
Unicorns	0	0		-	286	4.4%	-	500
At least basic digital skills	35.5%	-	-	-	-	-	52.0%	80%
ICT specialists	4.3%	4.6%	7.0%	4.2%	5.0%	4.2%	5.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	67.5	68.0	0.8%	83.0	82.3	3.6%	100.0	100
Digital public services for businesses	91.9	94.0	2.4%	92.0	86.2	0.9%	100.0	100
Access to e-Health records	77.2	87.5	13.3%	82.8	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics.
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024).

According to the 2025 special Eurobarometer on the Digital Decade, 76% of Bulgarian citizens consider that the digitalisation of daily public and private services is making their lives easier. Concerning the action of the public authorities, 86% consider it important to counter and mitigate the issue of fake news and disinformation online, and regarding competitiveness, 82% consider it important to ensure that European companies can grow and become 'European Champions' able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

Bulgaria boasts a robust connectivity infrastructure. It excels in assigning 5G spectrum and in rolling out gigabit networks to progressively bridge geographical divides. In 2024, Bulgaria's total VHCN and FTTP coverage outperformed the EU averages. Overall, 5G coverage lags behind EU coverage, and is growing at a slower pace. However, Bulgaria's coverage for households in sparsely populated areas shows improvement. Bulgaria is making strides in improving its broadband take-up indicators, with growth rates outpacing EU growth rates, but remaining below EU averages. The country is strengthening its position in **critical technologies**, notably through its integration in the European semiconductor ecosystem and initiatives in quantum computing. Despite these advancements, Bulgaria faces challenges in fully realising its **tech ecosystem**'s potential. This is true particularly for SMEs and start-ups, due to persistent R&D and innovation gaps compared with the rest of the EU. Recent government initiatives and the establishment of European Digital Innovation Hubs (EDIHs) are positive steps, but the broader ecosystem issues constrain the ICT sector's growth. EU funding has supported Bulgaria's **enterprise digitalisation**, including the growing adoption of AI, the forthcoming AI Factory at Sofia Tech Park, and the development of supercomputers and Centres of Excellence in ICT and Big Data under Cohesion Policy. However, the overall uptake of digital technologies in the country still lags behind the EU average. Moreover, Bulgaria's **cybersecurity preparedness remains a concern**, and a significant part of its telecommunications infrastructure continues to depend on Chinese components, raising strategic and security-related challenges.

Protecting and empowering EU people and society

Bulgaria's approach to digital inclusiveness shows promise, with targeted investments in education, digital infrastructure, and improvements in the digitalisation of public services for both businesses and citizens. However, its **journey towards a fully inclusive digital society is complex and might require sustained effort.** Despite ongoing and well-targeted measures, Bulgaria still faces a host of educational challenges, including digital skills proficiency, persistent digital divides, and a lack of scientific research capacity. In 2023, the **basic digital skills** of Bulgaria's population trailed behind the EU average. Adult learning participation is also alarmingly low and declining. **Bulgaria's ICT training provision and ICT specialist workforce** are below the EU average, although the country is showing positive growth in these areas. Bulgaria has a **strong legal framework for digital services**, a well-developed e-government system, and is digitalising more services. It is progressively **improving its administrative processes** to alleviate the burden for citizens and enterprises. **However, and despite substantial Cohesion policy support in the field, Bulgaria lags behind in overall digital public services for citizens, and only one third of Bulgarians use e-government services.** A low proportion of public services is fully online, and the lack of digital inclusion for minorities and people living in remote areas remains a major obstacle to the wider use of online services. **Bulgaria's performance on e-ID use is currently very poor** – the lowest in the EU – but there are positive signs of improvement thanks to

recent regulatory changes in 2023. The population's access to **e-Health** records is steadily improving, with some areas already surpassing EU averages. Digital democracy based on public participation, the protection of children online and the fight against disinformation is also expanding, with scope for further acceleration.

Leveraging digital transformation for a smart greening

Bulgaria's progress in its **twin transition** is hampered by the lack of a practical, integrated approach to making digital infrastructure greener or tracking emission reductions.

National Digital Decade strategic roadmap

Bulgaria did not submit a revised national roadmap. Instead, it presented minor updates to the roadmap initially submitted on 8 April 2024, primarily correcting clerical errors and updating dates, but **without introducing significant changes or new measures.** The roadmap aligns with the values and measures in the National Recovery and Resilience Plan and the European programmes. Bulgaria addressed most of the State of the Digital Decade 2024 recommendations through written responses and references to existing measures. A full stakeholder consultation was conducted. The roadmap continues to prioritise: the digitalisation of secure, interoperable, human-centred public services; basic digital skills; and the digitalisation of businesses (SMEs, smart farming). It contains **60 measures** and has a budget of EUR 2.19 billion (equivalent to 2.11% of GDP) that covers all the Digital Decade objectives, such as digital inclusion; cybersecure and resilient infrastructure; sovereignty; and governance of the digital transformation.

Funding & projects for digital

Bulgaria allocates 23% of its total recovery and resilience plan to digital (EUR 1.3 billion)[1]. In addition, under cohesion policy, EUR 1.3 billion, representing 12% of the country's total cohesion policy funding, is dedicated to advancing Bulgaria's digital transformation[2].

Bulgaria is a member of the 'Alliance for Language Technologies' EDIC. It is also a member of the European High-Performance Computing Joint Undertaking (JU) and of the Chips JU.

Bulgaria has not yet contributed to the Digital Decade's **Best Practice Accelerator**[2].

Digital rights and principles

According to a support study, Bulgaria has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 79 initiatives overall and 4 new initiatives launched in 2024. Bulgaria is most active in the area of putting people at the centre of the digital transformation. Less activity has been identified with regards to privacy and individual control over data. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing safety, security and empowerment.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

Recommendations

- **Digitalisation of SMEs and take-up of advanced technologies:** Improve the business climate and investment in R&D, notably strengthen Bulgaria's public science base and its linkages with the business ecosystem, while boosting private R&D efforts through well-calibrated public support tools.
- **Artificial Intelligence:** Continue the initiatives to promote AI development and adoption, with a focus on collaboration, ethical considerations, and policy alignment with the EU and across sectors.
- **Basic digital skills:** Leverage the strong performance of women in basic digital skills to reduce disparities linked to education, age, and geography, and to raise the overall level of digital competence. Prioritise targeted investments in teacher training, curriculum reform, and the development of digital and green skills.
- **ICT specialists:** Develop clear, targeted measures to help companies hire ICT experts in less populated areas. Set out a strategy addressing broader factors like infrastructure, economic conditions, and researcher mobility, and identify the most effective funding strategies. Expand ICT training and increase the number of female ICT specialists to help close the gap.
- **Cybersecurity:** Increase efforts in cybersecurity, particularly by supporting the development and deployment of cybersecurity capabilities, and by increasing awareness amongst private and public entities.
- **Key public services:** Continue the efforts to improve the digitalisation and user-friendliness of public procedures and to reduce the administrative burden, also by expanding the use of e-ID. Address the persisting societal and regional imbalances in the delivery of online services by, for example, cooperating with local stakeholders. Focus on accelerating the number of digital public services for citizens, particularly in cross-border services.
- **e-Health:** Ensure the timely and full availability of all types of medical images via the e-Health platform and app and provide clear information to the public. Expand online access to e-Health data to the entire population. Introduce technical functionalities that authorise persons to access this data on behalf of others. Strengthen communication to raise awareness of platform functionalities, especially among vulnerable groups.
- **Fixed and mobile connectivity:** Accelerate the expansion of both VHCN/FTTP and 5G coverage, with a focus on ensuring that deployment pace in sparsely populated areas is maintained. Continue investment to consolidate Bulgaria's strong position, especially in 5G deployment.
- **Green and digital transitions:** Set up clear mechanisms for measuring and promoting the environmental benefits of digital solutions across sectors. Work towards fully integrating green and digital priorities into the country's development strategy, through better alignment between political agendas, funding allocation, and private sector engagement.

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ANNEX 5

ANNEX

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Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Croatia

Executive summary

Croatia has made significant strides in strategic technological sectors but still faces challenges in the widespread adoption of advanced digital technologies. Progress in areas, such as quantum communication, semiconductors, and cybersecurity has strengthened its growing contribution to EU competitiveness and sovereignty.

Croatia shows a substantial level of ambition in its contribution to the Digital Decade, having set 13 national targets, 77% of which are well aligned with the EU's 2030 targets. The country is following its trajectories moderately well with 63% of them being on track (on the basis of the 2024 trajectories defined for all 8 KPIs analysed). Croatia addressed 50% of the 12 recommendations issued by the Commission in 2024 by making some changes through new measures.

In 2024, the government continued its strategic reforms, with digitalisation efforts increasingly linked to strengthening industrial competitiveness, fostering innovation, and boosting technological sovereignty. To make the most of the digital transition, Croatia must tackle persistent gaps in edge infrastructure, SME digitalisation, the uptake of advanced technologies, and support for high-growth enterprises.

Digital Decade KPI (1)	Croatia				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	HR	EU
Fixed Very High Capacity Network (VHCN) coverage	67.8%	78.9%	16.4%	68.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	62.1%	75.4%	21.4%	66.0%	69.2%	8.4%	100.0%	-
Overall 5G coverage	83.4%	94.2%	12.9%	85.7%	94.3%	5.9%	99.0%	100%
Edge Nodes (estimate)	3	6	100.0%	-	2 257	90.5%	-	10 000
SMEs with at least a basic level of digital intensity (2)	-	63.5%	4.8%	-	72.9%	2.8%	90.0%	90%
Cloud	40.7%	38.6%	-5.4%	-	-	-	75.0%	75%
Artificial Intelligence	7.9%	11.8%	49.0%	13.0%	13.5%	67.2%	20.0%	75%
Data analytics	51.7%	-	-	-	-	-	30.0%	75%
AI or Cloud or Data analytics	65.6%	-	-	-	-	-	-	75%
Unicorns	2	2	0.0%	2	286	4.4%	4	500
At least basic digital skills	59.0%	-	-	-	-	-	80.0%	80%
ICT specialists	4.3%	5.0%	16.3%	4.5%	5.0%	4.2%	7.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	67.2	75.2	11.9%	75.0	82.3	3.6%	100.0	100
Digital public services for businesses	66.2	65.3	-1.3%	75.0	86.2	0.9%	100.0	100
Access to e-Health records	85.6	86.6	1.2%	95.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics.
(2) DESI 2025 reports Version 4 of the Digital Intensity Index, which is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of annual progress. It is not comparable to the national trajectory, which is based on Version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI 2025 (year 2024).

According to the 2025 special Eurobarometer on the Digital Decade, 81% of Croatians consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 90% consider it important to counter and mitigate the issue of fake news and disinformation online. And on competitiveness, 91% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Croatia has made significant progress in FTTP and 5G deployment, surpassing the average EU growth rates. VHCN, although still below the EU average, progresses at a swift pace, driven by infrastructure programmes backed by the Recovery and Resilience Facility (RRF). However, Croatia faces challenges in deploying stand-alone 5G networks, with limited progress and no specific measures in place to speed up the roll-out. Rural mid-band 5G coverage also remains well below the EU average, and a comprehensive demand-side strategy to stimulate uptake is only expected after 2027.

The country also holds a strong position in the adoption of data analytics. Although the basic digital intensity of SMEs grew faster than in the rest of the EU, it remains well below the EU average. Croatia continues to face challenges in the uptake of AI and cloud services, where adoption is lower than EU average. The start-up and scale-up ecosystem also remains weak, with only two unicorns recorded and limited venture capital activity.

The launch of a national quantum communication project and the launch of a semiconductor competence centre are expected to strengthen Croatia's position in strategic technologies. The country has also started taking steps towards decentralising ICT infrastructure with the deployment of six edge nodes. However, the edge computing ecosystem remains underdeveloped and lacks a dedicated national strategy. The country's cybersecurity capacity has improved with the adoption of the Cybersecurity Act and the launch of the National Coordination Centre for Industry, Technology, and Research in Cybersecurity; however, key standards like Internet Protocol version 6 and Domain Name System Security Extensions remain far below the EU average, signalling persistent vulnerabilities in the national digital infrastructure.

Protecting and empowering EU people and society

Despite solid digital skills among young people, Croatia continues to face major challenges in digital inclusion, with persistent skill gaps affecting older adults, people with lower education levels, and the rural population. While the share of ICT specialists in employment has improved and matches the EU average, shortages remain, labour market mismatches persist, and brain drain continues to weaken the digital talent pipeline.

Public digital services for citizens have improved steadily and are broadly on track, but digital public services for businesses shows negative trends, including a decline in cross-border service availability. Preparations for the national Digital Identity Wallet are advancing, which will reinforce secure access frameworks. Access to health records is strong, but some key gaps remain: medical images are unavailable, some healthcare providers are not connected, and delegated access is not possible. Supporting a more inclusive and trusted digital transition, Croatia has intensified efforts to promote media literacy, cybersecurity awareness, and protection against online risks, particularly among young people.

Leveraging digital transformation for a smart greening

Green and digital priorities are receiving greater attention in Croatia, supported by major investments from the RRF. Croatia has made progress in digitalising its energy infrastructure and improving water management systems with digital monitoring solutions. However, the country still lacks a coherent national strategy linking digitalisation to climate objectives, and systematic monitoring of emission reductions through digital technologies has not yet been put in place. Consumer awareness of the environmental impact of ICT devices remains low, and voluntary sustainability efforts in the digital sector are still fragmented.

National Digital Decade strategic roadmap

Croatia submitted an adjustment to its national roadmap in January 2025, refining its set of measures and updating key connectivity targets. The adjustment was prepared with broad stakeholder consultation and addresses a substantial number of 2024 recommendations. The roadmap maintains a strong focus on strengthening digital infrastructure, SME digitalisation, digital skills development, and digital public services. However, gaps persist in the widespread adoption of advanced technologies, scaling up innovation-driven enterprises, and fully closing inclusion gaps in digital skills, particularly for older adults and rural areas. Overall, the Croatian roadmap includes 31 measures with a combined budget of 634.73 million, representing approximately 0.74% of the country's GDP.

Funding & projects for digital

Croatia allocates 20% of its total recovery and resilience plan to digital (EUR 1.4 billion)[1]. In addition, under cohesion policy, EUR 755 million, representing 9% of the country's total cohesion policy funding, is dedicated to advancing Croatia's digital transformation[2].

Croatia is a member of the three European Digital Infrastructure Consortia (EDICs): the Alliance for Language Technologies EDIC, the Local Digital Twins towards the CitiVERSE EDIC and the EUROPEUM EDIC. Croatian organisations are indirect partners in the Important Project of Common European Interest on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). Croatia is a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Croatia has contributed to the Best Practice Accelerator[3] by sharing one best practice under the Digital Skills cluster ('Women in Digital – Girls in ICT').

Digital rights and principles

According to a support study Croatia has been relatively active in implementing the European Declaration on Digital Rights and Principles, with 48 initiatives overall and 7 new initiatives launched in 2024. Croatia is most active in the area of solidarity and inclusion. Less activity has been identified

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

with regards to a fair digital environment. Measures in the area of sustainability appear to have most impact on the ground, in contrast to those addressing putting people at the centre of the digital transformation.

Recommendations

- **Public services:** Strengthen the interoperability and user-friendliness of public services to encourage people and businesses to use them more.
- **e-Health:** Introduce a comprehensive legal and technical framework for enabling authorised individuals' access to electronic health data on behalf of others; make medical imaging accessible to individuals via the national online health access service; and ensure that all healthcare providers, including geriatric nursing homes and mental health facilities, are connected and actively supplying data.
- **Basic digital skills:** Intensify targeted action to bridge the digital skills divide across age, education, and rural-urban populations.
- **ICT specialists**: Expand training, upskilling, and retention programmes for ICT specialists, strengthen alignment with labour market needs, and tackle brain drain to safeguard Croatia's digital talent pipeline.
- **SME digitalisation**: Develop targeted programmes and incentives to increase SMEs' adoption of cloud, AI, and data analytics solutions, narrowing the gap between digitally advanced enterprises and those lagging behind.
- **Edge nodes:** Increase efforts in the area of edge nodes in view of their importance for competitiveness, resilience, sovereignty and climate action.
- **5G**: Accelerate full gigabit and 5G coverage, especially by addressing operational bottlenecks (planning, permitting) and expanding mid-band 5G spectrum deployment.
- **Cybersecurity**: Develop targeted cybersecurity support programmes for SMEs, expand resilience testing, and strengthen national capacity to address cyber incidents in the public and private sectors.

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Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Cyprus

Executive summary

Cyprus has made remarkable progress in gigabit connectivity infrastructure but continues to face challenges in closing the digital skills gap between different population segments. Nonetheless, the country can count on a relatively good share of ICT specialists in employment.

Cyprus shows a substantial level of ambition in its contribution to the Digital Decade having set 14 national targets, 86% of which are aligned with the EU 2030 targets. The country is following its trajectories very well with 100% of them being on track (based on the 2024 trajectories defined for 8 KPIs out of 8 analysed). Cyprus addressed 63% of the 11 recommendations issued by the Commission in 2024, either by implementing significant policy changes (36%) or making some changes (27%) through new measures.

In 2024, the adoption of Artificial Intelligence (AI) by enterprises shows significant progress while remaining subpar. An AI taskforce has recently been tasked with formulating recommendations for a national strategy to harness the growth potential of AI. In addition, last year, Cyprus adopted a new national strategy for research and innovation (2024-2026), aimed at positioning the country as a regional hub for entrepreneurship and high-tech innovation. With regards to the digitalisation of public services for citizens, while progress was made last year, the pace of change is not yet sufficient to reach the EU average. Nonetheless, Cyprus remains on track according to its national trajectory. The digital transformation of the public sector continues to be a priority, with several measures added to the revised roadmap, including a measure to improve access to e-health records.

Digital Decade KPI (1)	Cyprus				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	CY	EU
Fixed Very High Capacity Network (VHCN) coverage	77.1%	89.1%	15.5%	72.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	77.1%	89.1%	15.5%	71.2%	69.2%	8.4%	100.0%	-
Overall 5G coverage	100.0%	100.0%	0.0%	100.0%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	5	9	80.0%	-	2257	90.5%	10	10000
SMEs with at least a basic level of digital intensity (2)	-	74.3%	3.0%	-	72.9%	2.8%	90.1%	90%
Cloud	45.5%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	4.7%	7.9%	69.2%	8.0%	13.5%	67.2%	75.0%	75%
Data analytics	33.5%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	58.0%	-	-	-	-	-	-	75%
Unicorns	3	3	0.0%	-	286	4.4%	5	500
At least basic digital skills	49.5%	-	-	-	-	-	80.0%	80%
ICT specialists	5.6%	5.0%	-10.7%	5.2%	5.0%	4.2%	10.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	74.0	77.6	5.0%	71.5	82.3	3.6%	100.0	100
Digital public services for businesses	86.1	86.0	-0.1%	89.8	86.2	0.9%	100.0	100
Access to e-Health records	68.1	75.4	10.7%	74.1	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, which is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the Special Eurobarometer 'Digital Decade 2025', 81% of Cypriot citizens consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 91% consider it important to counter and mitigate the issue of fake news and disinformation online, and on competitiveness, 87% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Cyprus demonstrates strong performance in all connectivity indicators, with outstanding results in gigabit coverage (VHCN and FTTP), as well as in overall 5G coverage. The share of small and medium-size enterprises (SMEs) having at least a basic level of digital intensity is progressing quite well, slightly faster than the EU average. Enterprises are also increasingly making use of AI technologies, but uptake remains relatively low compared to the EU. The AI taskforce, recently appointed to promote the wider adoption and use of Artificial Intelligence (AI) in Cyprus, will focus on reinforcing research and development, innovation, and practical applications for economic growth. The country can also rely on a very vibrant startup ecosystem, which is growing fast. Cybersecurity is another of Cyprus's priority areas, with a new measure added in the roadmap to reinforce the country's capacity to respond to growing threats and support SMEs and startups in managing cybersecurity risks. In parallel, Cyprus is working with other EU countries to set up a coalition that addresses the cybersecurity skills shortage in the EU.

Protecting and empowering EU people and society

Cyprus faces a challenge in terms of digital skills, with only 49.46% of the population having at least a basic level of digital skills, with significant gaps between education levels and age groups. The revised roadmap upgraded a measure aimed at developing of digital skills through customised training for specific groups. In 2024, the share of ICT specialists in employment decreased slightly to 5.0% compared to 5.6% in 2023, although it is still at the EU average. Meanwhile, the digitalisation of public services for citizens has made progress but remains below the EU average, and online public services for businesses are stagnating. Access to e-health records, while improving, remains below the EU average. Nonetheless, the revised roadmap demonstrates Cyprus's commitment to leveraging digital health technologies with three additional measures aimed at improving e-health records.

Leveraging digital transformation for a smart greening

Cyprus is developing a broad strategy for smart cities where digital technologies will play a major role in minimising environmental impact. The national digital strategy also acknowledges the importance of reducing the environmental footprint of the digital sector. Furthermore, the Cyprus' Smart Specialisation Strategy 2030 explicitly recognises the critical role of digital technologies in supporting the green transition, promoting the development of energy-efficient digital solutions and infrastructures. However, the adjustment of the roadmap does not fully reflect the adoption of an overall approach for twinning the digital and green transition.

National digital decade strategic roadmap

Cyprus submitted an updated national Digital Decade roadmap on 13 January 2025, with 11 additional measures, 6 revised measures and an adjusted trajectory for ICT specialists that aligns with the EU 2030 target. Two missing targets and trajectories have been added for unicorns and edge nodes,

completing the set of 14 national targets and trajectories. Except for unicorns, all targets are aligned with the EU's level goals for 2030. The adjustment also includes reporting on the consultation of stakeholders. Overall, it addresses a substantial number of roadmap recommendations issued in 2024. The revised roadmap is composed of 62 measures with a budget of EUR 988.4 million, comprising EUR 738.4 million from public funds (equivalent to 2.21% of GDP). Although it sets out measures for most of the targets, there is room to further consolidate action in some areas, such as basic digital skills and the digitalisation of public services for businesses.

As Cyprus's 2020-2025 Digital Strategy comes to an end in 2025, a new comprehensive strategy (2026-2030) will be developed in line with EU wide strategic goals. It will focus notably on accelerating the digital transformation across four key pillars — digital skills, digital infrastructure, digitalisation of businesses, and digital public services — while integrating horizontal priorities such as artificial intelligence, interoperability, and data governance. It is expected to support the Digital Decade's goals, reduce the administrative burden and boost competitiveness.

Funding & projects for digital

Cyprus allocates 25% of its total recovery and resilience plan to digital (EUR 274 million)[1]. In addition, under cohesion policy, EUR 113 million, representing 12% of the country's total cohesion policy funding, is dedicated to advancing Cyprus' digital transformation[2].Cyprus is a member of the EUROPEUM-EDIC on blockchain. It is also a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Cyprus is not yet active in contributing to the Digital Decade's Best Practice Accelerator[3], but participated in the workshops organised in the different clusters.

Digital rights and principles

According to a support study, Cyprus has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 42 initiatives overall and 3 new initiatives launched in 2024. Cyprus is mostly active in digital education, training and skills, while less activity has been identified with regards to the interactions with algorithms and artificial intelligence systems. Measures to put people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing freedom of choice.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

Recommendations

- **Basic digital skills**: Strengthen and expand targeted initiatives to enhance digital literacy among vulnerable groups. Provide accessible and tailored training programmes, and targeted awareness raising actions to bridge the digital gap.
- **Digital public services**: Accelerate the implementation of the digital transformation strategy for the public sector, prioritising seamless and inclusive access to digital services for all citizens.
- **Adoption of AI by businesses**: Sustain the efforts, with a special attention to SMEs' uptake of AI, in the design of the AI strategy.
- **Access to e-health records**: Ensure a comprehensive approach and swift implementation of on-going projects to allow access to e-health records
- **Smart greening***:* Enhance efforts to develop an integrated approach for the digital and green transition, specifically to improve the energy efficiency of digital infrastructure, and to accelerate the deployment of digital solutions to reduce the carbon footprint in other sectors.

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European Commission

SHORT COUNTRY REPORTS 2025

Czechia

Executive summary

Czechia benefits from a strong performance in digital skills and nationwide 5G coverage, but still lags in the rollout of very high-capacity networks (VHCNs) and the digital transformation of businesses. At the same time, its dynamic start-up ecosystem, deepening AI capabilities, and growing investments in strategic technologies like quantum and semiconductors underpin its ambition to strengthen digital sovereignty and resilience.

Czechia shows a low level of ambition in its contribution to the Digital Decade, having set 14 national targets, only 43% of which are fully aligned with the EU 2030 targets. Nonetheless, the country is following its trajectories well, with 75% of them currently on track (on the basis of the 2024 trajectories defined for all 8 KPIs analysed). Czechia addressed 82% of the 11 recommendations issued by the Commission in 2024, either by implementing significant policy changes (9%) or making some changes (73%) through new measures.

The 2024 adjustment to Czechia's national Digital Decade strategic roadmap reflects a more coherent and strategically aligned approach. It introduces new targets (e.g. for fibre to the premises (FTTP), edge nodes), strengthens SME support measures, and reaffirms the country's priorities for, semiconductors, and start-ups. Gaps remain - for instance, no explicit measures were introduced for edge node deployment or accelerating stand-alone 5G and eID uptake. Overall, the adjusted roadmap represents a meaningful improvement in terms of policy clarity, sectoral depth, and alignment with EU objectives. However, several measures could benefit from stronger financial commitment and more ambitious targets.

Digital Decade KPI (1)	Czechia				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	CZ	EU
Fixed Very High Capacity Network (VHCN) coverage	50.5%	53.9%	6.7%	63.7%	82.5%	4.9%	95.0%	100%
Fibre to the Premises (FTTP) coverage	36.0%	40.6%	12.6%	39.4%	69.2%	8.4%	60.0%	-
Overall 5G coverage	94.6%	99.1%	4.7%	87.3%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	10	21	110.0%	21	2 257	90.5%	144	10000
SMEs with at least a basic level of digital intensity (2)	-	70.8%	2.0%	-	72.9%	2.8%	80.0%	90%
Cloud	35.2%	-	-	-	-	-	60.0%	75%
Artificial Intelligence	5.9%	11.3%	90.8%	8.6%	13.5%	67.2%	21.0%	75%
Data analytics	19.5%	-	-	-	-	-	35.0%	75%
AI or Cloud or Data analytics	43.1%	-	-	-	-	-	60.0%	75%
Unicorns	4	4	0.0%	4	286	4.4%	6	500
At least basic digital skills	69.1%	-	-	-	-	-	80.0%	80%
ICT specialists	4.3%	4.5%	4.7%	5.1%	5.0%	4.2%	7.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	76.3	81.5	6.7%	80.2	82.3	3.6%	100.0	100
Digital public services for businesses	83.8	86.3	3.0%	87.3	86.2	0.9%	100.0	100
Access to e-Health records	51.1	77.4	51.6%	54.6	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special 2025 Eurobarometer on the Digital Decade, 73% of Czechs consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 78% consider it important to counter and mitigate the issue of fake news and disinformation online. And on competitiveness, 81% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign and resilient EU based on technological leadership

Czechia is steadily advancing in strategic digital sectors such as AI, semiconductors, and quantum technologies, backed by increased public investment and consistent national strategies. While 5G coverage is nearly universal, broadband infrastructure (FTTP, VHCN) still lags behind EU averages. Despite a vibrant start-up scene and strong R&D potential, SMEs face barriers to adopting digital technologies and securing financing. Addressing gaps in infrastructure, scale-up finance, and digital tech uptake will be key to boosting Czechia's competitiveness and digital sovereignty.

Protecting and empowering EU people and society

Digital inclusion is a strong point for Czechia, with widespread basic digital skills and minimal gender or rural-urban gaps. Reforms in digital education and support for ICT careers are progressing, with a growing focus on women and older learners. Public services are improving rapidly, particularly eHealth access and citizen-facing services. Digital civic participation and resilience against disinformation are still weak points and need stronger engagement policies.

Leveraging digital transformation for a smart greening

While Czechia has begun to acknowledge the importance of the twin green and digital transition, this area remains underdeveloped. A new energy efficiency law for data centres is a notable step, but the roadmap lacks fully-fledged digital sustainability measures. Scattered initiatives exist - in smart grids, soil monitoring, and recycling - but there is still no comprehensive national strategy for green digitalisation.

National Digital Decade strategic roadmap

Czechia submitted its adjusted national Digital Decade roadmap in January 2025, featuring strengthened targets and revised measures, particularly in the areas of enterprise digitalisation and emerging technologies. The update reflects an improved strategic alignment with EU priorities. It also addresses several recommendations issued in the 2024 State of the Digital Decade Report by introducing missing targets for FTTP and edge nodes, and clarifying uptake trajectories for AI, cloud, and data analytics. However, some targets remain relatively cautious compared to EU benchmarks - such as 60% FTTP coverage and 7% ICT specialists by 2030, but 5G targets are well-aligned. The roadmap retains national priorities around AI, quantum, and semiconductors. It consolidates the number of measures supporting the Digital Decade targets and objectives at 58 with a total budget of EUR 2.26 billion, equivalent to 0.71% of Czechia's GDP in 2024. While the roadmap demonstrates progress in depth, sectoral scope, and coherence, continued efforts are needed to improve rural connectivity, raise the level of ambition of workforce targets, and strengthen support to the digital and green transition.

Czechia

Funding & projects for digital

Czechia allocates 23% of its total recovery and resilience plan to digital (EUR 1.9 billion)[1]. In addition, under cohesion policy, EUR 1.9 billion, representing 9% of the country's total cohesion policy funding, is dedicated to advancing Czechia's digital transformation[2].Czechia is a member of the Alliance for Language Technologies European Digital Infrastructure Consortium (EDIC) and of the Local Digital Twins towards the CitiVERSE EDIC. The country is directly participating in the Important Project of Common European Interest on Microelectronics and Communication Technologies (IPCEI-ME/CT) and is a participating state in the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Czechia also contributes to the Digital Decade's Best Practices Accelerator[3] through its flagship initiative, Czech Digital Week 2023, presented as part of the Digital Skills Cluster.

Digital rights and principles

According to a support study, Czechia has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 76 initiatives overall and 9 new initiatives launched in 2024. Czechia is most active in the area of digital education, training and skills. Less activity has been identified with regards to fair and just working conditions and a fair digital environment. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing participation in the digital public space.

Recommendations

- **VHCN and FTTP:** Accelerate the rollout of fibre (FTTP) and Very High-Capacity Networks (VHCN), particularly in rural areas, and streamline permitting procedures and raising awareness about gigabit connectivity benefits among businesses and households.
- **Edge computing:** Introduce concrete measures to support the deployment of edge nodes and operationalise the national 2030 target. Ensure dedicated funding and public-private coordination mechanisms are in place.
- **SMEs and advanced technologies:** Continue and expand targeted support for the digital transformation of SMEs, with particular focus on reducing the adoption gap for AI, cloud, and data analytics between SMEs and large enterprises. Increase the visibility of support tools and foster regional innovation ecosystems to diffuse digital solutions.
- **ICT specialists:** Strengthen the attractiveness and labour market relevance of ICT careers, with a special focus on boosting the number of female ICT professionals. Further align digital education and reskilling programmes with business needs, especially in cybersecurity, AI, and advanced digital technologies.
- **Cybersecurity:** Strengthen cybersecurity preparedness, particularly in critical infrastructure sectors. Finalise the new National Cybersecurity Strategy and clarify funding mechanisms to support implementation across public and private sectors.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **Digital and green transition:** Develop a comprehensive strategy to align digitalisation with environmental goals.

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European Commission

SHORT COUNTRY REPORTS 2025

Denmark

Executive summary

Denmark benefits from a robust digital infrastructure, which provides the conditions for developing its high-quality public services and innovation. However, the country struggles with a shortage of skilled workers and widening gaps between small and large enterprises' adoption of key digital technologies. Denmark is emerging as a leader in digital inclusivity, trust and security.

The country shows a high level of ambition in its contribution to the Digital Decade, with 10 national targets, 90% of which are aligned with the EU 2030 targets. **It is following its trajectories moderately well**, with 67% of them being on track (based on 2024 trajectories established for 3 KPIs out of 8 analysed). **Overall, Denmark addressed 70% of the 10 recommendations issued by the Commission in 2024**, either by implementing significant policy changes (10%) or making some changes (60%) through new measures.

In 2024, Denmark maintained strong broadband and 5G coverage, advanced in quantum technology and saw growth in its semiconductor sector. However, challenges remain, including a digitalisation gap between small and large companies, especially in Artifical Intelligence (AI) adoption, and an ICT talent shortage. Digital public services improved further, with initiatives like the Social Media, Tech and Democracy Centre enhancing online safety, especially for children. The creation of a Ministry of Digitalisation marked a key step in unifying efforts across telecom, AI and emerging technologies, positioning Denmark to lead in the digital transformation.

Digital Decade KPI (1)	Denmark				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	DK	EU
Fixed Very High-Capacity Network (VHCN) coverage	97.2%	96.8%	-0.4%	-	82.5%	4.9%	-	100%
Fibre-to-the-Premises (FTTP) coverage	84.0%	87.2%	3.7%	-	69.2%	8.4%	-	-
Overall 5G coverage	100.0%	100.0%	0.0%	100.0%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	24	46	91.7%	-	2 257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	90.5%	0.9%	-	72.9%	2.8%	95.0%	90%
Cloud	66.2%	-	-	-	-	-	77.2%	75%
Artificial Intelligence	15.2%	27.6%	81.8%	24.6%	13.5%	67.2%	76.6%	75%
Data analytics	49.5%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	77.4%	-	-	-	-	-	-	75%
Unicorns	9	9	0.0%	-	286	4.4%	-	500
At least basic digital skills	69.6%	-	-	-	-	-	80.0%	80%
ICT specialists	5.9%	5.8%	-1.7%	6.4%	5.0%	4.2%	7.7%	~10%
eID scheme notification		Yes						
Digital public services for citizens	84.2	79.5	-5.6%	-	82.3	3.6%	100.0	100
Digital public services for businesses	88.7	87.5	-1.3%	-	86.2	0.9%	100.0	100
Access to e-health records	97.9	97.9	0.0%	-	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on the Digital Decade 2025, 81% of Danish citizens consider that the digitalisation of daily public and private services is making their lives easier. Moreover, 94% consider it important that public authorities counter and mitigate the issue of fake news and disinformation online. Finally, regarding competitiveness, 88% deem it significant that European companies can grow and become 'European Champions' able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

Denmark's infrastructure indicators are all above the EU average, although the extension of coverage to smaller towns and remote areas could still be improved. The country also excels in research and innovation, with some noteworthy initiatives aimed at advancing its semiconductor and quantum technology ecosystems. However, despite a strong R&D community, technological innovations and ideas tend to be concentrated within a limited number of universities and innovation hubs. Similarly, R&D activities and investments are predominantly focused on large companies, which risks restricting the widespread adoption of key technologies across the broader business landscape. This divide is particularly evident in the digitalisation gap between large companies and Small and Medium-sized Enterprises (SMEs), with many SMEs facing challenges in adopting cutting-edge digital technologies. The revised roadmap attempts to address this challenge with a new strategic initiative on AI. With regard to cybersecurity, the Danish government is applying new security measures to protect online public services. It also continues to raise awareness of online dangers and to provide tools to help businesses improve their cybersecurity practices.

Protecting and empowering EU people and society

There are generally high levels of digital skills across different categories of Denmark's population, enabling individuals to use and take advantage of the country's highly digitalised public services. The revised roadmap also includes measures to further improve the understanding of digital solutions and technology in primary and secondary education. With regard to digital public services, the government's 'digital-by-default' approach has been instrumental in delivering user-centric and efficient public services both to citizens and businesses. The focus now is on further strengthening inclusivity and public trust, ensuring that no one is left behind in the digital transformation.

Another key priority for Denmark is to protect and enhance online wellbeing, particularly for vulnerable groups like children. Despite being on a strong digital footing, Danish companies – especially smaller enterprises – continue to face significant challenges in finding and retaining qualified ICT specialists, while also struggling to keep pace with upskilling and reskilling practices. Moreover, there is still a gender disparity in employed ICT specialists. The revised roadmap focuses on improving ICT-related courses in higher education, improving teachers' competencies in the field, continuing training activities for people in IT jobs and retaining international students in the ICT labour market. Nonetheless, at present, the country is lagging behind its national trajectory point for 2024.

Leveraging digital transformation for a smart greening

Danish public and private sector organisations are increasingly leveraging digital solutions to monitor energy consumption, which drives greater efficiency and sustainability. The revised roadmap sets out several measures that demonstrate this. Awareness of the importance of sustainable digital technologies is also growing, but it remains a developing area that requires further attention.

National digital decade strategic roadmap

Denmark submitted a revised national Digital Decade roadmap on 7 January 2025, containing 12 additional measures and four revised targets and trajectories. The revised roadmap addresses a substantial number of roadmap recommendations issued in 2024. The country has not presented any formal targets for FTTP coverage, edge nodes and unicorns, while the Very High-Capacity Networks (VHCN) trajectory and target ends at 2025 (98% coverage). Apart from ICT specialists, which remains slightly below the EU target (at 7.7% as the proportion of the total employed population working as ICT specialists instead of 10%), all the other national targets are aligned with the EU targets. Some targets (i.e. 95% of SMEs having a basic level of digitalisation, 77.2% of SMEs adopting cloud services and 76.6% adopting AI) are more ambitious than the EU's.

The revised roadmap continues to focus on AI and the digitalisation of SMEs, while also boosting basic digital skills in education and supporting ICT specialists. These efforts are clearly aligned with the new Commission's priorities for AI and digital skills. The revised roadmap has **67 measures with a budget of EUR 1.07 billion, of which EUR 832 million come from public budgets (equivalent to 0.21% of GDP).** The roadmap covers a diverse range of Digital Decade objectives, with strengthened digital and green commitments, as well as a renewed focus on promoting a human-centred digital space and protecting society online.

Funding & projects for digital

Denmark allocates 27% of its total Recovery and Resilience Plan to digital (EUR 382 million)[1]. In addition, under cohesion policy, EUR 63 million, representing 14% of the country's total cohesion policy funding, is dedicated to advancing Denmark's digital transformation[2].

Denmark is a member of the 'Alliance for Language Technologies' European Digital Infrastructure Consortium. It is also a participating state of the European High-Performance Computing Joint Undertaking (JU) and of the Chips JU.

The country contributed to the Digital Decade Best Practice Accelerator[3] by sharing one best practice in the 'Business Uptake' cluster (i.e. the 'SME:Digital' initiative).

Digital rights and principles

According to a support study, Denmark has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 52 initiatives overall and two new initiatives launched in 2024. The country is mostly active in ensuring people remain at the centre of the digital transformation, while less activity was identified with regards to digital solidarity and inclusion. Nonetheless, measures in the latter area appear to have most impact on the ground, in contrast to efforts addressing freedom of choice.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

Recommendations

- **SMEs' take-up of advanced digital technologies:** continue to raise SMEs' awareness of digital solutions to improve productivity and competitiveness. Help them to use and integrate key digital technologies into their business models.
- **ICT specialists and advanced skills:** monitor the new measures for improving advanced digital skills in higher education and for upskilling and reskilling ICT specialists already in the workforce. Find new ways of increasing young people's interest in ICT and STEM, including among women. Continue attracting foreign talent in ICT companies, while also retaining international students in ICT-related degree programmes.
- **Innovation ecosystems:** enhance collaboration between universities and businesses to improve the commercialisation of research. Consider targeted knowledge and financial support for SMEs, start-ups and scale-ups in key strategic sectors, so that more companies can contribute to the country's digital innovation.
- **Cybersecurity***:* support cybersecurity measures in view of evolving threats, building capacity in both enterprises and public administrations.
- **Green transition:** continue to use digital tools to monitor the green transition and focus more on actions to make digital solutions more energy efficient through public-private collaborations.

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Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Estonia

Executive summary

Estonia is positioning itself as a leader in the digitalisation of public services. However, the country lags EU average in connectivity and the digitalisation of SMEs, while has achieved full access to e-Health records before 2030.

In its national roadmap adjustment, Estonia shows a high level of ambition in its contribution to the Digital Decade having set 14 national targets, of which 93% are aligned with the EU 2030 targets. The country is following its trajectories very well with 100% of them being on track (considering 2024 trajectories defined for 8 KPIs out of 8 analysed). Estonia addressed 100 % of the 12 recommendations issued by the Commission in 2024, either by implementing significant policy changes (8%) or making some changes (92%) through new measures.

Estonia focuses on digital sovereignty, through its emphasis on government resilience. The country has put measures in place to ensure that it can continue to be digitally governed beyond its geographical borders in various disaster scenarios. Estonia's roadmap recognises that the country's current challenges require not only introducing new digital measures, but also making sure that well-established digital services function well and are secure. Although Estonia lags behind the EU in terms of overall very high capacity (VHCN) and 5G coverage, it excels in 5G coverage in sparsely populated areas. Cybersecurity continues to be important, as demonstrated by the country's new National Cybersecurity strategy 2024-2030. This strategy prioritises safeguarding digital infrastructure, protecting the country from cyber threats and increasing cybersecurity cooperation.

Digital Decade KPI (1)	Estonia				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	EE	EU
Fixed Very High Capacity Network (VHCN) coverage	76.9%	76.3%	-0.9%	77.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	76.9%	76.3%	-0.9%	77.0%	69.2%	8.4%	100.0%	-
Overall 5G coverage	87.5%	91.5%	4.6%	90.0%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	5	10	100.0%	0	2257	90.5%	5	10000
SMEs with at least a basic level of digital intensity (2)	-	71.2%	3.1%	-	72.9%	2.8%	90.0%	90%
Cloud	52.6%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	5.2%	13.9%	167.6%	14.0%	13.5%	67.2%	75.0%	75%
Data analytics	25.6%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	60.6%	-	-	-	-	-	-	75%
Unicorns	2	2	0.0%	-	286	4.4%	5	500
At least basic digital skills	62.6%	-	-	-	-	-	80.0%	80%
ICT specialists	6.7%	7.2%	7.5%	7.0%	5.0%	4.2%	10.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	95.8	96.1	0.3%	99.0	82.3	3.6%	100.0	100
Digital public services for businesses	98.8	97.5	-1.3%	100.0	86.2	0.9%	100.0	100
Access to e-Health records	97.5	100.0	2.6%	99.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 79% of Estonian citizens consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 88% consider it important to counter and mitigate the issue of fake news and disinformation online, and on competitiveness, 69% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Estonia is falling behind the EU average in infrastructure indicators (VHCN, 5G), but shows impressive 5G coverage in sparsely populated areas. It is one of the Member States that experienced the biggest expansion of coverage in the 3.4-3.8 GHz band in 2024. Estonia has relied on Recovery and Resilience Facility (RRF) measures to expand VHCN coverage (to be completed in 2025). The country is taking initiatives to increase rural coverage by completing the identification of their white areas (areas without connectivity), which will serve as the foundation for a public consultation (expected to be launched mid-2025). The adoption of advanced technologies by Estonian enterprises paints a mixed picture: the share of those taking up cloud or AI is higher than the EU average, but the share of those taking up data analytics is lower. Across the three technologies, large enterprises consistently reported higher levels of uptake compared to SMEs.

Protecting and empowering EU people and society

Estonia is prioritising the development of its citizens' digital skills through its Digital Agenda 2030. The country performs well in basic digital skills, with small gaps in gender and education levels, and notable digital skills among rural residents and younger generations. Estonia has developed an action plan to equip people with basic digital skills and has focused on educating civil servants and increasing digital skills training, particularly in rural areas. Estonia has identified that managers who lack an understanding of their responsibilities in cybersecurity and risk assessment, and who do not sufficiently align their digitalisation initiatives with the strategic aims of their respective areas, can hinder overall digital transformation. The country's share of ICT specialists in employment is one of the highest in the EU, and its share of female ICT specialists is the highest in the EU. Estonia is well on its way to achieving its digital transformation goal with initiatives such as research on future digital skills needs and collaboration with the University of Tartu to ensure future ICT specialists are enrolled in relevant training. However, the demand for ICT professionals continues to grow, and there is a lack of highly skilled and advanced digital specialists across sectors. Estonia's performance on digital public services and access to e-Health records continues to surpass the EU average, and has reached the Digital Decade 2030 target. Despite this, Estonia will face the challenge of ensuring its digitalised services are up to date with the latest technologies.

Leveraging digital transformation for a smart greening

According to Estonia's Digital Agenda 2030, the country aspires to become the world's greenest digital government; however, it currently lacks a systematic approach or strategy to achieve this goal. Estonia launched a Sustainability Reporting Tool and relies on private sector initiatives that aim to increase the lifespan of ICT devices and to reduce overall energy consumption.

National digital decade strategic roadmap

Estonia submitted a fully revised national Digital Decade roadmap on 27 March 2025. It reports on the consultation of stakeholders and addresses a limited number of the roadmap recommendations issued in 2024. In the updated roadmap, Estonia includes 13 new targets and one revised target, all in line with the EU's level of ambition. Although it provides some information on planned activities to achieve the country's targets, it lacks detailed information on the budget allocated to each area and the specific aims and scope of the different activities. The roadmap puts a strong emphasis on quantum computing, EU-level cooperation and digital skills and puts a new emphasis on high-performance computing, resilience and security. However, the green transition is reflected less in the roadmap.

Funding & projects for digital

Estonia allocates 24% of its total recovery and resilience plan to digital (EUR 208 million)[1]. In addition, under cohesion policy, EUR 373 million, representing 11% of the country's total cohesion policy funding, is dedicated to advancing Estonia's digital transformation[2].

Estonia is a member of the Local Digital Twins towards a CitiVERSE European Digital Infrastructure Consortium (EDIC). The country is a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Estonia has not yet presented any measure in the framework of Digital Decade's Best Practice Accelerator[3].

Digital rights and principles

According to a support study, Estonia has shown rather limited activity in implementing the **European Declaration on Digital Rights and Principles**, with 39 initiatives overall and 6 new initiatives launched in 2024. Estonia is most active in the area of protected, safe and secure digital environment. Less activity has been identified with regards to fair digital environment. Measures in the area of freedom of choice appear to have most impact on the ground, in contrast to those addressing Participation in the digital public space.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

Recommendations

- **Connectivity**: Continue and establish new measures that target enhancing VHCN, and 5G coverage.
- **Digital skills**: Introduce digital skills measures targeted to mid-level managers to be able to lead the digitalisation process for their employees and enterprises.
- **ICT specialists**: Continue to implement measures to educate ICT specialists to fill the current gap.
- **SMEs**: Sustain and complement activities to improve digitalisation and uptake of advanced technologies and give special attention to SMEs.
- **Digitalisation for public services**: Improve the useability of the digital public services to ensure that they are accessible to all as well as to ensure that its services are up to date.
- **Green**: Implement a coherent green digitalisation strategy to be able to keep up with the country's ambition of being the world's greenest digital government.
- **Cybersecurity:** Continue efforts in cybersecurity to address the evolving and increasing threats. Ensure continuation in the implementation of cybersecurity classes.

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European Commission

SHORT COUNTRY REPORTS 2025

Finland

Executive summary

Finland positions itself as a technological leader with digitally agile enterprises, skilled citizens and a strong semiconductor industry. While its gigabit infrastructure requires further development, digital public services are widely available to people and businesses.

Finland shows a high level of ambition in its contribution to the Digital Decade having set 12 national targets, 100% of which aligned with the EU 2030 targets. The country is following its trajectories well with 83% of them being on track (considering 2024 trajectories defined for 6 KPIs out of 8 analysed). Finland addressed 72% of the 11 recommendations issued by the Commission in 2024, either by implementing significant policy changes (27%) or making some changes (45%) through new measures.

In 2024, 5G almost covered the entire country. Finland strengthened European sovereignty with developments in semiconductors and cross-sectoral support for artificial intelligence (AI) and other disruptive technologies. Notably, it hosts one of the first European AI Factories. Finnish businesses rely on digital tools and close to three quarters of them use cloud solutions. Digitalisation enjoys strong public support, individuals have solid basic digital skills and relatively high privacy and content evaluation skills. There is a widespread use of digital government solutions. However, the need for ICT specialists persists. Finland is actively preparing for the implementation of the European Digital Identity Regulation and the European Health Data Space Regulation.

Digital Decade KPI (1)	Finland				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	FI	EU
Fixed Very High Capacity Network (VHCN) coverage	77.7%	81.7%	5.1%	66.6%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	61.1%	68.3%	11.6%	66.6%	69.2%	8.4%	100.0%	-
Overall 5G coverage	98.3%	99.5%	1.2%	99.6%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	24	47	95.8%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	92.5%	1.7%	-	72.9%	2.8%	95.0%	90%
Cloud	73.0%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	15.1%	24.4%	61.4%	26.0%	13.5%	67.2%	75.0%	75%
Data analytics	40.6%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	79.5%	-	-	-	-	-	-	75%
Unicorns	7	7	0.0%	-	286	4.4%	-	500
At least basic digital skills	82.0%	-	-	-	-	-	87.0%	80%
ICT specialists	7.6%	7.8%	2.6%	7.9%	5.0%	4.2%	10.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	90.6	96.3	6.3%	92.0	82.3	3.6%	100.0	100
Digital public services for businesses	100.0	98.8	-1.3%	-	86.2	0.9%	100.0	100
Access to e-Health records	82.6	84.7	2.5%	-	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 77% of Finnish citizens consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 92% consider it important to counter and mitigate the issue of fake news and disinformation online, and on competitiveness, 88% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Finland boasts excellent 5G infrastructure and is making good progress in improving fixed connectivity despite remaining below the EU average. The country is putting significant efforts into advancing digital technologies, particularly through its active participation in the 'Chips for Europe' initiative, supporting research, development and innovation (RDI) in quantum ecosystem and gathering scientists and enterprises in Finland's AI efforts. Although Finland has made good progress in adopting digital technologies and leveraging the data economy, achieving its ambitious AI and data analytics targets will depend on continuous efforts. The country has a start-up friendly ecosystem, but scaling up remains an issue and, in general, Finnish enterprises struggle to achieve high productivity and innovation. Nonetheless, they show good awareness of cybersecurity measures. In this area, in October 2024 Finland adopted a comprehensive cybersecurity strategy for 2024-2035.

Protecting and empowering EU people and society

Finland's digital skills performance indicates inclusive growth across various demographic groups, although some gaps remain among rural populations and older people. Most of the population also have the skills needed to critically evaluate digital content. The number of ICT specialists, including women, is increasing but they continue to be in high demand. As result, there is some action under way to support higher education in ICT. Finland's digital public services are achieving scores close to 100; however, access to digital health records is progressing slower than in the rest of the EU. In the second quarter of 2024, Finland successfully notified the 'Citizen Certificate' eID scheme. By actively participating in European large-scale pilots and other cross-country projects, the country is preparing for the implementation of the European Digital Identity Regulation and the European Health Data Space Regulation.

Leveraging digital transformation for a smart greening

Finland is a leader in monitoring and reducing the environmental impact of its ICT sector. It also links clean energy with advantages for enterprises and aligns technological advancements with sustainability goals. The EuroHPC LUMI supercomputer hosting Climate Change Adaptation Digital Twin is a notable example of this. The country plays a key role in green initiatives in the Digital Decade's Best Practice Accelerator.

National digital decade strategic roadmap

Finland submitted an addendum to the national Digital Decade roadmap on 29 November 2024. The addendum, like the original roadmap, is based on Finland's Digital Compass. The content of the roadmap and its update have been developed in cooperation with stakeholders. The new roadmap addresses a substantial number of roadmap recommendations issued in 2024, containing both additional and revised targets and trajectories. All targets align with the EU-level goals for 2030, and two are even higher, 87% for basic digital skills and 95% for the basic digital intensity of SMEs. The revised roadmap continues to prioritise semiconductors and quantum, RDI activities and the digital

empowerment of enterprises. It contains 14 measures with a budget of EUR 559 million, comprising EUR 556 million from public budget (equivalent to 0.2% of GDP). It covers many objectives of the Digital Decade, such as creating a human-centred digital space, boosting technological leadership, sovereignty, competitiveness, and supporting the green transition.

Funding & projects for digital

Finland allocates 29% of its total recovery and resilience plan to digital (EUR 526 million)[1]. In addition, under cohesion policy, EUR 385 million, representing 20% of the country's total cohesion policy funding, is dedicated to advancing Finland's digital transformation[2].

Finland is a member of the Alliance for Language Technologies EDIC. Finland is directly participating in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT). The country is also a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Finland is co-leading the Green IT cluster of the Best Practice Accelerator[3], promoting the exchange of information on public policies aimed at the environmental transition of digital technologies. The country has already contributed with two best practices in this area. Additionally, Finland has shared best practices on digital skills development and the adoption of digital technologies by enterprises.

Digital rights and principles

According to a support study, Finland has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 72 initiatives overall and 5 new initiatives launched in 2024. Finland is most active in the area of putting people at the centre of the digital transformation. Less activity has been identified with regards to interactions with algorithms and artificial intelligence systems. Measures in the area of solidarity and inclusion (appear to have most impact on the ground, in contrast to those addressing sustainability.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

Recommendations

- **Gigabit:** Intensify efforts to develop fixed gigabit connectivity, including by encouraging the take up of the existing broadband support measure and identifying the most suitable strategies to achieve full coverage.
- **ICT specialists:** Intensify efforts to attract ICT specialists, including those from abroad, by offering tailored training pathways, and addressing the gender gap in the field.
- **Advanced technologies:** Further promote cooperation between academia, businesses and other stakeholders, with a view to advancing innovation with the support of digital technologies.
- **AI:** Continue strengthening the AI ecosystem to boost Finland's leadership role in this area.
- **Cybersecurity**: Continue efforts in cybersecurity to address evolving threats, particularly for enterprises and public administration.
- **Unicorns**: Continue improving the business environment and access to finance for digital start-ups to scale-up and compete globally.
- **Semiconductors and digital innovation**: Continue investing in the development and manufacturing of critical technologies in the areas of digital and deep tech.

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European Commission

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France

Executive summary

France can rely on a very good digital infrastructure but lags behind in the digitalisation of businesses. The country positions itself as a tech leader in AI and green ICT.

France shows a high level of ambition in its contribution to the Digital Decade having set 9 national targets, 100% of which aligned with the EU 2030 targets. The country is following its trajectories moderately well with 50% of them being on track (considering 2024 trajectories defined for 6 KPIs out of 8 analysed). France addressed 77% of the 13 recommendations issued by the Commission in 2024, either by implementing significant policy changes (54%) or making some changes (23%) through new measures.

In 2024, fibre and 5G coverage in France is high despite a large territory. The digitalisation of SMEs and the adoption of advanced digital technologies by businesses remains below average. Recent activities, such as hosting the AI Action Summit in 2025, confirm that France wants to position itself as a leader in AI. The country is also developing initiatives and standards to measure and reduce the environmental footprint of the ICT sector. France's digital policies increasingly emphasise sovereignty by, for example, developing its national production of semiconductors and fostering the adoption of sovereign EU and French solutions by businesses and the public administration. France has set out a very broad portfolio of actions to raise awareness of cyberthreats in all sectors (enterprises, administration, general public) but has also provided support in implementing cybersecurity strategies, especially in the healthcare sector.

Digital Decade KPI (1)	France				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	FR	EU
Fixed Very High Capacity Network (VHCN) coverage	81.4%	87.5%	7.5%	90.7%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	81.4%	87.5%	7.5%	-	69.2%	8.4%	-	-
Overall 5G coverage	90.9%	94.3%	3.8%	96.6%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	272	532	95.6%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	68.5%	3.8%	-	72.9%	2.8%	90.0%	90%
Cloud	23.0%	-	-	-	-	-	-	75%
Artificial Intelligence	5.9%	9.9%	68.5%	-	13.5%	67.2%	-	75%
Data analytics	33.9%	-	-	-	-	-	-	75%
AI or Cloud or Data analytics	44.9%	-	-	-	-	-	65.0%	75%
Unicorns	43	48	11.6%	49	286	4.4%	100	500
At least basic digital skills	59.7%	-	-	-	-	-	80.0%	80%
ICT specialists	4.7%	4.8%	2.1%	5.5%	5.0%	4.2%	10.0%	~10%
e-ID scheme notification		Yes						
Digital public services for citizens	72.1	71.2	-1.2%	76.1	82.3	3.6%	100.0	100
Digital public services for businesses	79.3	76.9	-3.0%	82.3	86.2	0.9%	100.0	100
Access to e-Health records	79.3	84.2	6.2%	82.2	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 65% of French people consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 89% consider it important to counter and mitigate the issue of fake news and disinformation online. And on competitiveness, 82% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Digital infrastructure indicators (very high capacity networks (VHCNs), fibre to the premises (FTTP), 5G) are all above the EU average thanks to effective public policies (plan *'France très haut débit'*, multiple service providers sharing a fibre network). However, the digitalisation of enterprises, especially SMEs, is still lagging. Nonetheless, France has demonstrated leadership in AI and can count on a dynamic start-up ecosystem in this sector and in quantum computing. The country has adjusted its roadmap with additional measures to foster the adoption of generative AI and retrieval-augmented generation technologies by businesses. However, the take-up of advanced digital technologies by businesses is below average. France promotes cyber awareness on all fronts: businesses, population, and administration. The updated roadmap includes a programme for cyber protection of healthcare facilities. The roadmap also includes massive investments in semiconductors (research and production).

Protecting and empowering EU people and society

France's digital skills performance reflects inclusive growth across genders and a small urban-rural skills gap, but some disparities persist based on people's education levels. The general population's poor performance in mathematics may limit the pursuit of science, technology, engineering and mathematics (STEM) and ICT specialist training and careers as these skills shortages are persistent. Public service digitalisation is losing ground compared to the EU average. In this area, the authorities are focussing on reducing the administrative burden (dematerialisation – replacing physical documents, processes and transactions with digital equivalents, 'once only' principle). They are also promoting the adoption of sovereign solutions, including cloud, open software, and specialised skills within the administration. On a positive note, the digitalisation of healthcare has made impressive progress in the past two years.

Leveraging digital transformation for a smart greening

France is a global leader in monitoring and reducing the environmental impact of its ICT sector. It has developed tools to measure, forecast and monitor the ICT sector's footprint (such as designing carbon reduction trajectories) and plays a key role in green initiatives within the Digital Decade's Best Practice Accelerator.

National digital decade strategic roadmap

France submitted a fully revised national Digital Decade roadmap on 3 February 2025, containing six additional measures and revised trajectories. The updates are aligned with the Commission's new priorities on AI, cybersecurity and green ICT. It includes reporting on the consultation of stakeholders. It addresses a substantial number of roadmap recommendations issued in 2024. All targets align with the EU level goals for 2030 (except for the combined indicator on the adoption of AI, cloud, and data analytics technologies where the country aims at 65%, below the EU target of 75%). The revised

roadmap continues to prioritise semiconductors, connectivity, and e-Health. It contains of 33 measures with a budget of EUR 18.6 billion, including EUR 11.1 billion from the public budget (equivalent to 0.38% of GDP). It covers all the Digital Decade objectives, such as creating a human-centred digital space, boosting resilience and security, promoting sovereignty, supporting the green transition, and protecting society.

Funding & projects for digital

France allocates 22% of its total recovery and resilience plan to digital (EUR 8.1 billion)[1]. In addition, under cohesion policy, EUR 1.9 billion, representing 11% of the country's total cohesion policy funding, is dedicated to advancing France's digital transformation[2].

France is the host Member State of the Alliance for Language Technologies EDIC (ALT-EDIC). France is also a member of the Local Digital Twins towards CitiVERSE EDIC. The country is directly participating in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT) and in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). France is also a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

France has contributed to the Best Practice Accelerator[3] by leading the cluster on Green IT related to public policies on the environmental transition of digital technology. It shared three best practices within this cluster (the general reference framework for the eco-design of digital services, the Alt IMPACT Communication Campaign, and the development of product category rules for environmental evaluation and labelling) and one additional best practice in the Digital Skills cluster (digital advisors).

Digital rights and principles

According to a support study, France has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 53 initiatives overall but no new initiatives launched in 2024. France is most active in the area of participation in the digital public space. Less activity has been identified with regards to digital public services online. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing safety, security and empowerment.

Recommendations

- **SMEs**: Improve digitalisation of SMEs, including by directing existing support schemes to SMEs that lag in digitalisation, independently of their size.
- **ICT specialists and advanced skills**: Increase the job market relevance, improve the visibility, and clarify the offer of digital training and reskilling options.
- **Advanced technologies take-up**: Support the adoption of advanced digital technologies by businesses (with a particular attention to AI and cloud) via the creation of local ecosystems to

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

spread technologies and best practices across all economic sectors. Encourage the adoption of sovereign European solutions.

- **Artificial intelligence**: Continue supporting innovation in AI to strengthen France's leadership in the sector and create future global leader companies.
- **Cybersecurity**: Continue efforts in cybersecurity to address evolving threats, particularly for enterprises and administration.
- **Digital public services**: Speed up the digitalisation of public services for both citizen and businesses, in particular by expanding cross-border capabilities.

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ANNEX 12

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Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Germany

Executive summary

Germany continues to excel in domains related to developing advanced technologies, such as semiconductors and edge nodes. However, the country is lagging behind in providing digital public services, has low digital skills, and incomplete high-capacity network coverage. This highlights the need for more focused measures, which would also further boost businesses' uptake of digital technologies.

Germany shows a substantial level of ambition in its contribution to the Digital Decade, with nine national targets, 89% of which are aligned with the EU 2030 targets. The country is following its trajectories well with 75% of them being on track (considering 2024 trajectories defined for 4 KPIs out of 8 analysed). Germany addressed 33% of the 12 recommendations issued by the Commission in 2024 by making some changes through new measures.

Germany's new Federal Government assumed office in early May 2025. The government's coalition agreement outlines ambitious goals for digital policy and digitalisation, and the focus on digital policy is reflected by the newly established Federal Ministry for Digitalisation and Government Modernisation. This coalition agreement may result in an accelerated digitalisation of Germany, thereby contributing to the objectives of the Digital Decade.

Digital Decade KPI (1)	Germany				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	DE	EU
Fixed Very High-Capacity Network (VHCN) coverage	74.7%	77.4%	3.5%	-	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	29.8%	36.8%	23.4%	-	69.2%	8.4%	100.0%	-
Overall 5G coverage	98.1%	99.1%	0.9%	-	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	358	652	82.1%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	79.9%	1.6%	-	72.9%	2.8%	91.0%	90%
Cloud	38.5%	-	-	-	-	-	-	75%
Artificial Intelligence	11.6%	19.8%	71.0%	-	13.5%	67.2%	-	75%
Data analytics	37.1%	-	-	-	-	-	-	75%
AI or Cloud or Data analytics	58.0%	-	-	-	-	-	-	75%
Unicorns	67	69	3.0%	-	286	4.4%	-	500
At least basic digital skills	52.2%	-	-	-	-	-	80.0%	80%
ICT specialists	4.9%	5.3%	8.2%	4.9%	5.0%	4.2%	5.3%	~10%
eID scheme notification		Yes						
Digital public services for citizens	75.8	78.9	4.1%	75.8	82.3	3.6%	100.0	100
Digital public services for businesses	78.6	77.5	-1.4%	78.6	86.2	0.9%	100.0	100
Access to e-Health records	87.0	87.0	0.0%	100.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 74% of German citizens consider that the digitalisation of daily public and private services is making their lives easier. Concerning the action of the public authorities, 88% consider it important to counter and mitigate the issue of fake news and disinformation online, and regarding competitiveness, 82% consider it important to ensure that European companies can grow and become 'European Champions' able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

Germany is making significant strides in expanding its connectivity infrastructure, with 5G coverage nearly meeting the Digital Decade target, and an ambitious national goal for 100% fibre-to-the-premises (FTTP) by 2030. The country is a leader in the number of edge nodes and is taking proactive steps in quantum computing and semiconductor technologies. While several measures, particularly for FTTP, are expected to yield results soon, Germany still faces challenges. It lags behind the Digital Decade's gigabit connectivity objectives and struggles with access to Very High-Capacity Networks (VHCN) in rural areas, where coverage is below the EU average. Additionally, FTTP availability is limited to only a fraction of households, representing half of the EU average coverage. Although Germany has nearly achieved full 5G coverage, actual usage based on 5G SIM cards remains poor. Despite the relatively high number of unicorns, there is still room to improve the availability of funding for start-ups and to reduce their administrative burdens.

Protecting and empowering EU people and society

Germany faces significant challenges in developing digital skills, having achieved only modest improvements in this area. The German government is making strides in several areas, yet it still behind in some key aspects. This not only hinders the uptake of digital services, but also effectively limits the workforce's ability to use data to improve business services. This issue is particularly relevant because, according to the German Country Report of 2024, SMEs' uptake of AI was hindered by the limited skills in this area. Even so, the German authorities have chosen not to introduce substantial new measures in the national roadmap, preferring instead to allow existing initiatives to take their course.

Germany tends to view these challenges through a wider lens, taking a holistic approach rather than addressing each metric individually. This method is reflected in various aspects, such as Germany's plans to increase the number of ICT specialists. Nonetheless, considerable room for improvement remains, especially in the use of electronic identification and the further digitalisation of public services. These gaps must be addressed to take full advantage of the opportunities presented by the expanding digital landscape and to ensure that Germany remains competitive and innovative on the global stage.

Leveraging digital transformation for a smart greening

Germany prioritises the dual green and digital transition and continues to implement key measures at both federal and state levels. The German population outperforms the EU average in recycling electronics, such as computers, phones, and tablets, although the overall recycling rates for IT equipment remain relatively low.

National digital decade strategic roadmap

On 21 December 2024, Germany submitted a revised national Digital Decade roadmap, addressing recommendations from the 2024 Country Report. The revised roadmap included stakeholder consultation. It is composed of 50 measures with a budget of EUR 102.1 billion, comprising EUR 46.8 billion from public budgets (equivalent to 1.09 % of GDP). New targets were added for ICT specialists and digitalisation of public services for citizens and businesses.

The revision brings impulses on quantum, AI and connectivity, as well as targeting several objectives in broader measures. However, the adjusted roadmap could do more to address the challenges in the area of digitalisation of public services for citizens and businesses.

Funding & projects for digital

Germany allocates 48% of its total recovery and resilience plan to digital (EUR 13.3 billion)[1]. In addition, under cohesion policy, EUR 2.2 billion, representing 11% of the country's total cohesion policy funding, is dedicated to advancing Germany's digital transformation[2]. Germany participating directly in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT) and in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). It is also a participating member of the European High Performance Computing Joint Undertaking (EuroHPC JU) and of the Chips JU[3].

Germany has contributed to the Best Practice Accelerator[4] by sharing several best practices in the 'Digital Skills' cluster as well as in the 'Business Uptake' cluster. In this context, the AI Opportunity Market (MaKi) and the Federal IPv6 Programme are noteworthy.

Digital rights and principles

According to a support study, Germany has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 74 initiatives overall and 3 new initiatives launched in 2024. Germany is most active in the area of digital education, training and skills. Less activity has been identified with regards to putting people at the centre of the digital transformation. Measures in the area of freedom of choice appear to have most impact on the ground, in contrast to those addressing safety, security and empowerment.

Recommendations

- **Digital public services:** Accelerate the digitalisation of key public services by making additional public services available online, improving interoperability, as well as front-end and back-end digitalisation.
- **eID**: Launch targeted measures to ensure eID uptake and use.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] Corrigendum to Digital Decade Country Report Germany 2024: Germany is not a member of the Local Digital Twins towards the CitiVERSE EDIC.
[4] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via published in the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **ICT specialists:** Launch targeted measures to increase the attractiveness of STEM disciplines at school to boost the number of young people, including girls and women, interested in taking up ICT-related studies or careers.
- **Basic digital skills:** Improve the effectiveness of existing measures and evaluate whether increased efforts and/or additional measures are necessary in particular in the area of formal education.
- **Connectivity infrastructure**: Accelerate infrastructure roll-out of very high-capacity digital networks, especially fibre optics.
- **Unicorns/start-ups:** Implement measures to improve access to funding and reduce administrative burdens.
- **Cybersecurity:** Increase efforts in cybersecurity, particularly by increasing awareness amongst private and public entities.

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State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Greece

Executive summary

Greece continues its steady progress in rolling out fibre for gigabit connectivity. However, it struggles to fill the gap of ICT specialists and to address a severe digital gap in basic digital skills between different age groups and between rural and urban areas. Despite this, the country's displays an encouraging growth rate in the digitalisation of small and medium-size enterprises.

Greece shows a moderate level of ambition in its contribution to the Digital Decade having set 14 national targets, 57% of which aligned with the EU 2030 targets. The country is following its trajectories well with 88% of them being on track (based on the 2024 trajectories defined for 8 KPIs out of 8 analysed). Greece addressed 77% of the 13 recommendations issued by the Commission in 2024, either by implementing significant policy changes (31%) or making some changes (46%) through new measures.

In 2024, Greece's 5G coverage was among the highest in the EU and was very close to the Digital Decade 2030 target. Despite rapid progress, the adoption of artificial intelligence (AI) by businesses remains below par. The selection of Greece to host one of the seven first AI Factories in the EU confirms the country's commitment to help build the EU's technological leadership. The AI Factory will also contribute to developing and strengthening the start-up ecosystem in Greece. Regarding the transition of public services, although the latest data indicates limited annual progress in services for citizens, the integration of AI into the single digital portal of the public administration will improve the quality, speed and accessibility of public services. Greece has also developed a strategy and new measures for protecting minors online such as the parental control initiative.

Digital Decade KPI (1)	Greece				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	EL	EU
Fixed Very High Capacity Network (VHCN) coverage	38.4%	46.1%	19.9%	42.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	38.4%	46.1%	19.9%	42.0%	69.2%	8.4%	100.0%	-
Overall 5G coverage	98.1%	99.8%	1.8%	88.0%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	7	13	85.7%	0	2257	90.5%	95	10000
SMEs with at least a basic level of digital intensity (2)	-	53.4%	13.9%	-	72.9%	2.8%	79.7%	90%
Cloud	18.1%	-	-	-	-	-	56.0%	75%
Artificial Intelligence	4.0%	9.8%	146.5%	6.3%	13.5%	67.2%	32.0%	75%
Data analytics	25.0%	-	-	-	-	-	40.0%	75%
AI or Cloud or Data analytics	33.5%	-	-	-	-	-	-	75%
Unicorns	3	3	0.0%	4	286	4.4%	20	500
At least basic digital skills	52.4%	-	-	-	-	-	70.2%	80%
ICT specialists	2.4%	2.5%	4.2%	3.0%	5.0%	4.2%	4.5%	~10%
eID scheme notification		No						
Digital public services for citizens	75.9	76.7	1.1%	71.8	82.3	3.6%	98.2	100
Digital public services for businesses	86.2	78.6	-8.8%	81.3	86.2	0.9%	100.0	100
Access to e-Health records	73.8	73.8	0.0%	66.6	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index (DII), which is comparable to the DII value from DESI 2023 (referring to 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (referring to 2024)

According to the special Eurobarometer on 'the Digital Decade 2025': (i) 78% of the Greek population consider that the digitalisation of daily public and private services is making their lives easier; (ii) 92% consider it important that the public authorities counter and mitigate the issue of fake news and disinformation online; and (iii) 83% consider that ensuring European companies' ability to grow and become 'European Champions' that can compete globally is important for competitiveness.

A competitive, sovereign, and resilient EU based on technological leadership

Greece is making progress in deploying gigabit connectivity infrastructure, with a 46.1% VHCN coverage in 2024. While this is below the EU average, the outlook for the 2030 targets is positive, as various operators have recently announced significant investments in the deployment of fibre optic networks across the country by 2027. Greece's high annual growth rate of 13.9% for the digital transition of small and medium-size enterprises (SMEs) resulted in 53.4% of SMEs having at least a basic level of digital intensity in 2024. However, this is still below the EU average. The adoption of AI by enterprises in general is also demonstrating an exceptional progress with more than doubling its share (from 4.0% in 2023 to 9.8% in 2024). The adjustment of the roadmap includes the 'Plan for the transition of Greece to the AI ERA', published in November 2024. This plan includes a chapter on how AI can boost innovation and enhance the business ecosystem. With regards to cybersecurity, Greece has restructured its National Cybersecurity Authority to an independent public law entity aiming at enhancing the Authority's operational autonomy and capacity, enabling it to more effectively coordinate and oversee the implementation of the NIS2 Directive which has been transposed in November 2024 and will continue to develop its national cybersecurity strategy and related policies in alignment with the EU and the national strategic priorities.

Protecting and empowering EU people and society

Increasing the number of ICT specialists in employment remains one of the biggest challenges faced by Greece in its digital transition. Additional measures to familiarise young people with digital technologies very early during their schooling have been included in the adjustment of the national roadmap to attract young people to ICT studies and careers by making them familiar with digital very early during their schooling. The initiative to reverse the serious brain drain during the economic crisis and to encourage highly skilled Greeks living abroad to return to the Greek labour market will also help to increase the number of ICT specialists in employment. The country also faces a challenge in fostering digital skills for all, with significant gaps between age groups and between rural-urban segments of the population. The annual rate of progress in the digital transformation of public services and businesses is slowing down, although the country continues to actively implement its broad strategy for the digital transformation of public services. The introduction of the services related to the Single Digital Gateway regulation (SDGR) present additional challenge for these indicators to reach the target. In 2024, Greece launched a large-scale project to set up a new eID infrastructure and also integrate it with Gov.gr Wallet and the new ID cards. However, it has not yet notified an e-ID scheme to the Commission under the eIDAS Regulation. In line with the Commission priority of protecting minors online, Greece has launched the 'Kids Wallet' application as part of an overall strategy on this area.

Leveraging digital transformation for a smart greening

Greece is addressing the environmental impact of the digital transition and digital infrastructure, by stimulating private investments in green data centres and by addressing the need to optimise the distribution of renewable energy for the growing number of digital data centres across the country. Additionally, the public sector is implementing initiatives, such as an action plan for green and innovative public procurement.

National digital decade strategic roadmap

Greece submitted adjustments to its national Digital Decade roadmap on 17 January 2025, with specific follow-up actions addressing a substantial number of recommendations issued in 2024. It includes 16 additional measures, and an in-depth analysis of the situation. In particular, Greece explained why it has not, at this stage, revised the national targets that were not aligned with the EU 2030 targets. This concerns the targets related to the digital transformation of SMEs and to the adoption of technologies (AI, cloud, data analytics), as well as the two targets related to digital skills. The updates are aligned with the new Commission's priorities, such as: (i) advancing AI technology and innovation; (ii) deploying submarine cables to increase the resilience of backbone networks; (iii) joining forces to develop capacities in edge technology, such as quantum computing; and (vi) protecting minors online. The adjustment includes reporting on the consultation of stakeholders. The roadmap and the adjustments to it continue to build on Greece's national digital transformation strategy (for 2020-2025). It contains priorities in the four pillars of the Digital Decade, while adding new measures in strategic digital technologies, such as AI and quantum computing. The updated roadmap contains 125 measures and has a budget of EUR 6.1 bn (equivalent to 2.57% of GDP). It also gives a rough estimate of EUR 7 bn in private investments over the coming years in data centres and gigabit connectivity. The revised roadmap covers the broad objectives of the Digital Decade, such as cybersecurity and resilience, building a safe and human centric digital environment, and promoting the responsible use of AI. In 2024, the Ministry of Digital Governance launched the revision of the national digital transformation strategy (for 2020-2025) by consulting the Executive Network of Digital Transformation (ENDT), a large network of public services in order to produce a national policy for aligning the future national digital transformation strategy (for 2026-2030) with the Digital Decade targets.

Funding & projects for digital

Greece allocates 21% of its total recovery and resilience plan to digital (EUR 7.4 billion)[1]. In addition, under cohesion policy, EUR 2.7 billion, representing 13% of the country's total cohesion policy funding, is dedicated to advancing Greece's digital transformation[2].

Greece is a member of the 'Alliance for Language Technologies' European Digital Infrastructure Consortium (EDIC) and of the EUROPEUM EDIC for blockchain. The country is directly participating in the important project of common European interest on Microelectronics and Communication

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

Technologies (IPCEI-ME/CT). Greece is also a participating state in the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Greece has contributed to the Best Practice Accelerator[3] by sharing one best practice in the 'Digital Skills' cluster: 'Training Civil Servants in Cloud Computing Technologies' and one best practice in the 'Uptake of Digital Technologies' cluster: 'the Greek Data Strategy and Interoperability'.

Digital rights and principles

According to a support study, Greece has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 43 initiatives overall but no new initiatives launched in 2024. Greece is most active in digital education, training and skills while less activity has been identified with regards to Sustainability. Measures regarding sustainability appear to have most impact on the ground, in contrast to those addressing the participation in the digital public space.

Recommendations

- **ICT specialists:** continue to explore options focusing on raising the number of ICT specialists in employment.
- **Basic digital skills:** address the large digital gap in basic digital skills, between age groups and between rural and urban areas.
- **Digital public services:** address all the dimensions of online public services for citizens and businesses, including the cross-border dimension.
- **Uptake of digital technologies by businesses:** further develop the ecosystem and raise awareness of existing opportunities and resources for businesses to benefit from advanced digital technologies - such as AI - and from access to innovative process (e.g. through the European Digital Innovation Hubs (EDIHs).
- **e-ID:** notify an e-ID scheme to the Commission.
- **Smart greening**: make efforts to leverage digital technologies for smart greening in additional sectors of the economy (e.g. transport, buildings and agriculture).

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

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European Commission

SHORT COUNTRY REPORTS 2025

Hungary

Executive summary

Hungary boasts a very good digital infrastructure, but it still lags behind in the digitalisation of businesses despite recent progress, while access to e-Health records is above the EU average. Hungary shows a moderate level of ambition in its contribution to the Digital Decade having set 14 national targets, 43% of which are fully aligned with the EU 2030 targets. The country is following its trajectories well with 75% of them being on track (on the basis of the 2024 trajectories defined for all 8 KPIs analysed). Hungary addressed 13% of the 16 recommendations issued by the Commission in 2024 by making some changes through new measures.

In 2024, Hungary continued to make progress increasing broadband connectivity, expanding basic 5G coverage, and driving digitalisation in SMEs, in particular the adoption of cloud. However, significant challenges persist in the area of digital skills, especially in the adoption of advanced technologies such as AI by Hungarian enterprises. Hungary's digital policies are focused on improving digitalising key public services and boosting digital skills.

Digital Decade KPI (1)	Hungary				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	HU	EU
Fixed Very High Capacity Network (VHCN) coverage	84.1%	86.0%	2.2%	86.0%	82.5%	4.9%	97.0%	100%
Fibre to the Premises (FTTP) coverage	76.2%	79.9%	4.9%	80.0%	69.2%	8.4%	95.0%	-
Overall 5G coverage	83.7%	85.6%	2.3%	70.0%	94.3%	5.9%	99.0%	100%
Edge Nodes (estimate)	8	16	100.0%	16	2257	90.5%	82	10000
SMEs with at least a basic level of digital intensity (2)	-	57.4%	5.4%	-	72.9%	2.8%	89.0%	90%
Cloud	37.1%	39.8%	7.2%	-	-	-	75.0%	75%
Artificial Intelligence	3.7%	7.4%	101.4%	7.5%	13.5%	67.2%	24.0%	75%
Data analytics	53.2%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	65.6%	-	-	-	-	-	-	75%
Unicorns	0	0		-	286	4.4%	2	500
At least basic digital skills	58.9%	-	-	-	-	-	70.0%	80%
ICT specialists	4.2%	4.5%	7.1%	4.9%	5.0%	4.2%	8.3%	~10%
eID scheme notification		No						
Digital public services for citizens	73.4	77.7	5.9%	76.8	82.3	3.6%	96.3	100
Digital public services for businesses	74.9	80.0	6.9%	80.6	86.2	0.9%	97.2	100
Access to e-Health records	86.0	86.0	0.0%	94.3	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the 2025 special Eurobarometer on the Digital Decade, 81% of Hungarians consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 91% consider it important to counter and mitigate the issue of fake news and disinformation online. And on competitiveness, 90% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Hungary is equipped with solid digital infrastructures and continued to progress on deployment. It should, however, focus more on the deployment of AI technologies. On infrastructures, Hungary is above the EU average for very high capacity networks (VHCN) and is also very close to the EU's average for 5G coverage. Despite the continued increase in the take-up of advanced technologies, most businesses, in particular SMEs, are not yet reaping all the benefits, due to a lack of digital skills. This in turn has a negative impact on the competitiveness of the economy. A new measure has been added to the updated national roadmap, focusing on the digitalisation of SMEs. Although Hungarian employees are less aware of their ICT security-related obligations compared to the EU average, enterprises in the country tend to experience less incidents related to cyberattacks. However, the recent hacking of Hungary's defence procurement agency (VBÜ) by foreign hackers, shows that Hungary could be victim to similar attacks in the future.

Protecting and empowering EU people and society

Hungary is focusing on further increasing at least basic digital skills among 16-74 year-olds, aiming to reach 70% by the end of the decade, driven by demographic impacts, public policy measures and projects. Although the new target is lower than the overall EU target, it is 10 percentage points higher than the commitment in the previous version of the Hungarian roadmap and is considered to be feasible within the scope of the existing measures. In terms of ICT specialists, Hungary is making progress, getting closer to the EU average. Hungary also plans to focus on improving gender convergence and the proportion of ICT graduates, in which Hungary is currently ahead of the EU average. Hungary has not yet notified an e-ID scheme to the Commission under the eIDAS regulation. The country plans to do so in the second half of 2025. This could also help to improve the currently stagnating indicator for eHealth and the slowly growing indicators for digital public services for citizens and for businesses.

Leveraging digital transformation for a smart greening

Although, none of the measures planned in Hungary's national roadmap are specifically aimed at the green transition, they can contribute indirectly to the uptake of greener technologies due to the nature of digitalisation. Hungary also contributed with a best practice within the Green IT cluster of the Digital Decade's Best Practice Accelerator: all-year waste heat reuse solution of the country's Hungary's largest supercomputer, Komondor.

National digital decade strategic roadmap

Hungary submitted a fully revised national Digital Decade roadmap on 16 May 2025, containing two additional measures and revised trajectories. It includes reporting on the consultation of stakeholders. It addresses a substantial number of roadmap recommendations issued in 2024. The updated roadmap has raised the national targets for fixed VHCN and at least basic digital skills and has provided a target value for fibre-to-the-promises (FTTP) coverage; however, these national targets are still below the EU-level targets set for 2030. Additionally, Hungary has increased the 2030 targets for Cloud and Data analytics to align them with the EU goals for 2030. The target set for the adoption of AI technologies continues to be significantly below the EU level target (75%), as Hungary aims at a 24% adoption rate by 2030. The revised roadmap continues to prioritise digital skills and digital infrastructure. It contains

of 44 measures with a budget of EUR 2.489 billion, comprising EUR 1.822 billion from public budgets (equivalent to 0.88% of GDP), with the EU being the major contributor towards the public budget. It still covers all objectives of the Digital Decade such as those relating to the competitiveness, sovereignty, leadership, and resilience, including cybersecurity.

Funding & projects for digital

Hungary allocates 29% of its total recovery and resilience plan to digital (EUR 1.7 billion)[1]. In addition, under cohesion policy, EUR 2.6 billion, representing 12% of the country's total cohesion policy funding, is dedicated to advancing Hungary's digital transformation[2]. Hungary is a member of the Alliance for Language Technologies European Digital Infrastructure Consortium (EDIC). Hungary is directly participating in the Important Project of Common European Interest on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). Hungarian bodies are indirect and associated partners in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT). Hungary is a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Hungary has contributed to the Best Practice Accelerator[3], submitting three best practices, one in each of the Digital Skills, the Business Uptake and the Green IT clusters.

Digital Rights and Principles

According to a support study, Hungary has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 71 initiatives overall and 2 new initiatives launched in 2024. Hungary is most active in the area of digital education, training and skills. Less activity has been identified with regards to interactions with algorithms and artificial intelligence systems. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing sustainability.

Recommendations

- **Digitalisation of SMEs**: Continue efforts through new support programmes and incentives to accelerate the digital transformation of SMEs, no matter what their size, and increase resources for existing schemes.
- **ICT specialists and advanced skills**: Closely monitor implementation of existing measures to boost the number of ICT specialists in the shorter term and continue measures to increase the percentage of women in ICT careers; increase efforts to reduce the cybersecurity skills gap.
- **e-ID:** Notify an e-ID scheme under the eIDAS Regulation to the Commission.
- **Advanced technologies take-up:** Support the adoption of advanced digital technologies (with a particular attention to AI and cloud) by enterprises via the creation of local ecosystems that enables technologies and best practices to be spread across the whole business sector.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **Basic digital skills**: Accelerate the country's efforts to bridge the digital divide by developing and investing in inclusion policies that focus on vulnerable groups, such as those with lower levels of formal education and those living in rural areas.
- **Cybersecurity**: Continue efforts to address evolving threats, particularly for enterprises and administration.
- **Digital public services**: Speed up the digitalisation of public services for citizens and businesses.
- **e-Health**: Make the data type of medical images available to citizens through the country's online access service, expand the availability of health data by onboarding public and private geriatric nursing homes, strengthen the authentication method for logging in to the online access service by using a notified or pre-notified eID scheme and ensure that all access modes comply with web accessibility guidelines.
- **Smart greening:** Support digital players to accelerate the transition of their network infrastructure to greener, less energy intensive solutions.

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ANNEX 15

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Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Ireland

Executive summary

Ireland shows good progress in digital infrastructure and should further improve access to e-health records building on visible progress made in 2024. The country positions itself as a cybersecurity leader, particularly through strong implementation of the 5G Cybersecurity Toolbox and public cloud control investments.

Ireland shows a high level of ambition in its contribution to the Digital Decade, having set 11 national targets, 91% of which are very well aligned with the EU's 2030 targets. The country is following its trajectories moderately well, with 50% of them being on track (on the basis of the 2024 trajectories defined for 6 KPIs out of 8 analysed). Ireland addressed 64% of the 11 recommendations issued by the Commission in 2024, either by implementing significant policy changes (9%) or making some changes (55%) through new measures.

Fibre and very high-capacity network (VHCN) coverage continued to register strong growth in 2024, including in rural areas, and 5G coverage reached 89.9%, approaching 90%. The digitalisation of SMEs remains just above the EU average, while adoption of advanced technologies, such as AI, is broadly in line with the EU average. Ireland piloted the European Digital Identity Wallet and advanced the preparations for its eIDAS notification. The country also expanded initiatives to reduce the environmental footprint of public sector digital infrastructure, including by creating a new public service data centre and promoting green public procurement. Cyber resilience efforts were extended to SMEs and key sectors, with targeted actions in the health system.

Digital Decade KPI (1)	Ireland				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	IE	EU
Fixed Very High Capacity Network (VHCN) coverage	78.5%	87.2%	11.0%	93.5%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	61.6%	73.5%	19.3%	-	69.2%	8.4%	-	-
Overall 5G coverage	85.3%	89.9%	5.4%	87.1%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	20	39	95.0%	18	2 257	90.5%	-	10 000
SMEs with at least a basic level of digital intensity (2)	-	73.4%	-0.5%	-	72.9%	2.8%	90.0%	90%
Cloud	53.1%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	8.0%	14.9%	86.0%	18.0%	13.5%	67.2%	75.0%	75%
Data analytics	37.1%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	64.1%	-	-	-	-	-	-	75%
Unicorns	12	13	8.3%	-	286	4.4%	-	500
At least basic digital skills	72.9%	-	-	-	-	-	80.0%	80%
ICT specialists	6.2%	6.3%	1.6%	7.5%	5.0%	4.2%	9.6%	~10%
eID scheme notification		No						
Digital public services for citizens	81.2	87.1	7.2%	82.0	82.3	3.6%	100.0	100
Digital public services for businesses	100.0	100.0	0.0%	100.0	86.2	0.9%	100.0	100
Access to e-Health records	11.4	24.5	115.8%	-	82.7	4.5%	80.0	100

(1) See the methodological note for the description of the indicators and other metrics.
(2) DESI 2025 reports Version 4 of the Digital Intensity Index, which is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of annual progress. It is not comparable to the national trajectory, which is based on Version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI 2025 (year 2024).

According to the 2025 special Eurobarometer on the Digital Decade, 77% of Irish people consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 92% consider it important to counter and mitigate the issue of fake news and disinformation online. And on competitiveness, 93% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Ireland's strong digital economy, driven by a dynamic ICT sector and a vibrant start-up ecosystem, benefits from high foreign direct investment and proactive innovation policies. Fixed infrastructure indicators (VHCN, fibre to the premises (FTTP)) are above the EU average, and Ireland is consolidating its role as a strategic digital gateway. 5G deployment continues steadily, although deployments in the 3.6 GHz band remain limited and there is a lack of demand for spectrum in the 26 GHz band. Ireland maintains a high level of SME digitalisation, but growth has been stagnating since 2022. Nevertheless, the uptake of advanced technologies, such as cloud, AI, and data analytics, remains strong. National strategies on semiconductors, edge computing, and quantum technologies advance the country's technological leadership. Moreover, cybersecurity resilience is being strengthened through targeted initiatives across enterprises and critical infrastructure.

Protecting and empowering EU people and society

Ireland continues to perform strongly on digital skills and gender inclusion, with one of the narrowest rural-urban divides in the EU. However, significant disparities persist across education levels. Growth in the number of ICT workers remains modest, and a decline in employer-led training may undermine long-term readiness. Digital public services are a national strength, particularly for businesses, but further back-end integration is needed to improve efficiency and accessibility. Ireland advanced its eID roll-out and digital health strategy in 2024; however, access to electronic health records remains limited, and onboarding healthcare providers is at an early stage. Progress on online safety, media regulation, and electoral integrity accelerated, strengthening Ireland's commitment to a human-centric and trusted digital environment. Complementary tools provided by the national regulator, including broadband availability checkers, telecom comparison platforms, and anti-scam measures, further support digital empowerment and consumer protection.

Leveraging digital transformation for a smart greening

Ireland is strengthening the link between digital innovation and sustainability, with public strategies promoting energy-efficient infrastructure, green procurement, and support to SMEs' sustainable adoption of digital technologies. Projects, like Build Digital, and the Digital Transition Fund are advancing the decarbonisation of key sectors, and new policies encourage environmental criteria in ICT and construction. However, the absence of a unified system to monitor emissions reductions with digital solutions is still an issue. Green skills development has also been prioritised to ensure workers are ready for the twin transitions.

National Digital Decade strategic roadmap

Ireland submitted its adjusted Digital Decade strategic roadmap in November 2024. It expands the total number of measures to 81, including 22 new initiatives, with a total budget of EUR 9.2 billion, of which EUR 4.8 billion is from the public budget (equivalent to 0.90% of GDP). Maintaining its original structure and funding priorities, the roadmap confirms Ireland's strong focus on SME digitalisation, public service digitalisation, digital skills, and cybersecurity. Although no new national targets were

introduced, Ireland reiterated its commitment to gigabit coverage by 2028 and sustained investment in digital inclusion and connectivity. Based on the national strategy, Harnessing Digital, the roadmap continues to prioritise digital infrastructure, digital skills, cybersecurity, and support for innovation and scale-ups. All targets align with the EU's 2030 goals, except the one access to e-Health records (80% compared to the EU objective of 100%). Ireland has made some efforts to follow up the 2024 roadmap recommendations through new policy measures and updates.

Funding & projects for digital

Ireland allocates 34% of its total recovery and resilience plan to digital (EUR 312 million)[1]. In addition, under cohesion policy, EUR 54 million, representing 5% of the country's total cohesion policy funding, is dedicated to advancing Ireland's digital transformation[2].

Ireland is a member of the Alliance for Language Technologies European Digital Infrastructure Consortium (EDIC) and of the Local Digital Twins towards the CitiVERSE EDIC. Ireland is directly participating in the Important Project of Common European Interest on Microelectronics and Communication Technologies (IPCEI-ME/CT). It is also a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Ireland has contributed to the Digital Decade's Best Practice Accelerator[3] by sharing four practices, including three in the Digital Skills cluster (SuCcES, INGENIC, and TU Dublin's mentoring model for women in ICT) and one on the green transition (Build Digital). These initiatives reflect Ireland's strategic focus on skills, innovation, and sustainable infrastructure.

Digital rights and principles

According to a monitoring study, Ireland has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 89 initiatives overall and 4 new initiatives launched in 2024. Ireland is most active in the area of digital education, training and skills. Less activity has been identified with regards to a fair digital environment and sustainability. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing freedom of choice.

Recommendations

- **e-Health**: Accelerate the onboarding of healthcare providers and enable full access to electronic health records for everyone, including legal guardians and authorised persons, building on the implementation of the national Digital Health Strategy.
- **Artificial intelligence**: Continue to support applied AI innovation and skills development to strengthen Ireland's leadership in responsible, human-centric AI and accelerate its adoption by SMEs.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **Cybersecurity**: Strengthen efforts to address evolving threats, particularly for SMEs and public services.
- **ICT specialists and advanced skills**: make digital training and reskilling opportunities more accessible and more relevant to job market needs. Address the stagnation in gender participation in the digital sector through dedicated national measures.
- **Take-up of advanced technologies**: Support the adoption of advanced digital technologies (particularly AI and cloud) by businesses through the creation of regional ecosystems and industrial use-case pilots. Encourage the use of sovereign European solutions.
- **SMEs**: Improve the digitalisation of SMEs, including by prioritising support to those with lower levels of digital maturity, regardless of their size. Ensure the continuity of existing schemes beyond their current RRF funding.
- **5G**: Encourage the assignment of 5G mid-band spectrum and promote the deployment of stand-alone 5G networks and industrial use cases, including in rural and underserved areas.
- **eID:** Notify an eID scheme under the eIDAS Regulation to the Commission.

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ANNEX 16

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State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Italy

Executive summary

Italy has made remarkable progress in enhancing digital infrastructure and digital public services, but continues to face challenges in AI adoption and startup growth, while maintaining a leading role in strategic technologies like quantum and semiconductors. Italy shows a substantial level of ambition in its contribution to the Digital Decade, having set 14 national targets, 79% of which aligned with the EU 2030 targets. The country is following its trajectories very well with 100% of them being on track (considering the 2024 trajectories defined for 7 key performance indicators (KPIs) out of 8 analysed). Italy addressed 69% of the 13 recommendations issued by the Commission in 2024 by making some changes through new measures.

In 2024, Italy made advances in developing its digital infrastructure, particularly through increased fibre-to-the-premises (FTTP) coverage, and progressively achieved significant results in the digitalisation of public services and in the area of eHealth. However, the country continues to lag behind in the adoption of advanced digital technologies such as artificial intelligence and its ecosystem for innovative start-ups and scale-ups remains relatively underdeveloped. On the other hand, Italy holds a leading position in strategic technologies, having launched a Quantum strategy and actively working on a semiconductors strategy, highlighting a commitment to gain technological leadership.

Digital Decade KPI (1)	Italy				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	IT	EU
Fixed Very High Capacity Network (VHCN) coverage	59.6%	70.7%	18.6%	66.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	59.6%	70.7%	18.6%	66.0%	69.2%	8.4%	100.0%	-
Overall 5G coverage	99.5%	99.5%	0.0%	99.6%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	74	152	105.4%	158	2257	90.5%	946	10000
SMEs with at least a basic level of digital intensity (2)	-	70.2%	0.2%	-	72.9%	2.8%	90.0%	90%
Cloud	55.1%	-	-	-	-	-	74.0%	75%
Artificial Intelligence	5.1%	8.2%	62.4%	8.0%	13.5%	67.2%	60.0%	75%
Data analytics	26.6%	-	-	-	-	-	60.0%	75%
AI or Cloud or Data analytics	63.1%	-	-	-	-	-	-	75%
Unicorns	8	9	12.5%	2	286	4.4%	16	500
At least basic digital skills	45.8%	-	-	-	-	-	80.1%	80%
ICT specialists	4.1%	4.0%	-2.4%	-	5.0%	4.2%	8.4%	~10%
eID scheme notification		Yes						
Digital public services for citizens	68.3	83.6	22.4%	69.0	82.3	3.6%	100.0	100
Digital public services for businesses	76.3	80.9	6.1%	78.0	86.2	0.9%	100.0	100
Access to e-Health records	82.7	84.1	1.7%	74.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics.
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024).

According to the special Eurobarometer on 'the Digital Decade' 2025, 73% of Italian citizens consider that the digitalisation of daily public and private services is making their lives easier. 90% consider it important to counter and mitigate the issue of fake news and disinformation online, and regarding

competitiveness, 90% consider it important to ensure that European companies can grow and become 'European Champions' able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

Italy has made notable progress in fiber-to-the-premises (FTTP), increasing coverage by 11 percentage points between 2023 and 2024 and reaching the EU average. The country also holds a strong position in the digitalization of small and medium enterprises (SMEs), with most achieving at least a basic level of digital intensity. However, despite increased adoption of artificial intelligence and being on track with the national trajectory set, Italy still falls behind in this area. The start-up ecosystem remains underdeveloped, with only nine unicorns — an increase of just one compared to last year — which does not reflect the size of the Italian economy. The recent announcement of a quantum strategy is expected to significantly drive further progress in this sector. Alongside this, ongoing efforts to develop a semiconductors strategy reflect Italy's dedication to further strengthening its position in these areas. Several initiatives are also in progress to enhance the country's cybersecurity capabilities, including the strengthening of monitoring, analysis and response capabilities, and skills development.

Protecting and empowering EU people and society

Italy is confronted with issues concerning digital skills, with gaps affecting in particular people with lower education levels but extending also to young people – a primary target of the national Recovery and Resilience Plan (RRP) measures in this area. Italy is also faced with a low share of ICT specialists in total employment, which stood at 4% in 2024, below the EU's 5%. The digitalisation of public services has advanced significantly, with the progressive implementation of key measures and efforts to increase interoperability and usability (e.g. better user experience, adoption of PagoPA and the IO app, deployment of the National Digital Data Platform - PDND). In the framework of the EU Digital Identity Wallet, the country has also initiated the development of its IT-Wallet, with the first pilots made available to the public through the app IO, where users could access and use some initial documents (e.g. driving licence). Furthermore, Italy is working to boost citizens' basic digital skills through initiatives such as the network of digital facilitation services and digital civic service (both supported by the RRP), combat disinformation, enhance media literacy, and ensure online safety, particularly for minors.

Leveraging digital transformation for a smart greening

Green and digital priorities have received increased attention, in part due to the RRP and its RePowerEU chapter. In 2024, impulse was given to the implementation of 'Transition 5.0', aiming to accelerate the industry transition to an energy-efficient, sustainable, and renewable-based production model. However, the available data shows a modest take-up of the measure.

National digital decade strategic roadmap

Italy submitted an adjustment, containing five additional measures and revised trajectories. Stakeholders were consulted. It addresses a substantial number of the roadmap recommendations issued in 2024. All targets align with the EU level goals for 2030, except for the adoption of AI and data analytics, where the country aims for 60% adoption (instead of 75%) by 2030. The roadmap is very comprehensive, and the focus is on improving digital skills, ICT specialists and digital public services. Some areas, such as unicorns and uptake of AI, lack targeted measures. Overall, the Italian roadmap

is composed of 67 measures with a budget of EUR 62.3 billion, equivalent to 2.84% of gross domestic product (GDP).

Funding & projects for digital

Italy allocates 26% of its total recovery and resilience plan to digital (EUR 46.8 billion)[1]. In addition, under cohesion policy, EUR 4.9 billion, representing 11% of the country's total cohesion policy funding, is dedicated to advancing Italy's digital transformation[2]. Italy is a member of the three established European Digital Infrastructure Consortia (EDICs): the Alliance for Language Technologies EDIC, the Local Digital Twins towards the CitiVERSE EDIC and of the EUROPEUM EDIC. Italy is directly participating in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT) and in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). Italy is also a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Italy has contributed to the Best Practice Accelerator[3] by sharing three best practices in the frame of the Digital Skills cluster (network of digital facilitation services, the digital civic service and fund for *Repubblica Digitale*).

Digital Rights and Principles

According to a support study, Italy has been one of the most active Member States in implementing the **European Declaration on Digital Rights and Principles**, with over 100 initiatives overall and 12 new initiatives launched in 2024. Italy is most active in the area of digital education, training and skills. Less activity has been identified with regards to protection and empowerment of children and young people in the digital environment. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing safety, security and empowerment.

Recommendations

- **Artificial Intelligence***:* Step up efforts to acquire a leadership position in the area of AI, also leveraging the existing centres of expertise and capabilities, including in the area of supercomputing.
- **Innovation ecosystems:** Boost innovation in the area of digital technologies by enhancing the national ecosystem, from research/university to technology transfer centres, start-ups and scale-ups, and considering targeted incentives for key strategic sectors.
- **SMEs and Advanced technologies take-up**: Support the efforts to build a strong network of technology transfer services, maintaining a nationwide presence, increasing the emphasis on key technologies like AI.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **Basic digital skills**: Strengthen training opportunities and support services for all population groups, reinforce education on digital skills in schools and incentivise reskilling and upskilling for workers.
- **ICT Specialists**: Expand ICT higher education and align it with labour market needs, promote women's participation in ICT education and careers, and introduce measures to attract and retain ICT professionals.
- **Cybersecurity***:* Improve cybersecurity priorities in view of evolving threats, building capacity in both enterprises and public administrations.
- **Connectivity:** Continue the efforts to deploy connectivity infrastructure, particularly FTTP, across the whole country and including in sparsely populated areas, and consider using take up as a driver for deployment.
- **Digital Public Services**: Maintain momentum in deploying digital public services, focusing on simplification and take-up by users.

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Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Latvia

Executive summary

Latvia can rely on good digitalisation of public services for businesses, and citizens, but lags behind on 5G, fibre-to-the-premises, and very high-capacity networks, while having a high access to health records.

In its national roadmap and roadmap adjustment, Latvia shows a substantial level of ambition in its contribution to the Digital Decade having set 14 national targets, 86% of which are aligned with the EU 2030 targets. The country is following its trajectories moderately well with 50% of them on track (on the basis of the 2024 trajectories defined for 8 KPIs out of 8 analysed). Latvia addressed 84% of the 13 recommendations issued by the Commission in 2024, either by implementing significant policy changes (15%) or making some changes (69%) through new measures.

In 2024, gigabit connectivity and 5G remain below the EU average. Digitalisation of SMEs and the adoption of advanced digital technologies by businesses are a priority of the Latvian recovery and resilience plan. Latvia's overarching Cybersecurity Strategy 2023-2026 continues to guide its overall approach to cybersecurity.

Digital Decade KPI (1)	Latvia				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	LV	EU
Fixed Very High Capacity Network (VHCN) coverage	68.0%	68.1%	0.2%	74.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	61.9%	61.1%	-1.2%	74.0%	69.2%	8.4%	100.0%	-
Overall 5G coverage	53.1%	71.1%	33.9%	55.5%	94.3%	5.9%	70.0%	100%
Edge Nodes (estimate)	5	10	100.0%	0	2257	90.5%	51	10000
SMEs with at least a basic level of digital intensity (2)	-	59.2%	6.4%	-	72.9%	2.8%	90.0%	90%
Cloud	29.0%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	4.5%	8.8%	94.9%	13.0%	13.5%	67.2%	75.0%	75%
Data analytics	36.9%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	48.2%	-	-	-	-	-	-	75%
Unicorns	0	0		-	286	4.4%	2	500
At least basic digital skills	45.3%	-	-	-	-	-	70.0%	80%
ICT specialists	4.4%	4.9%	11.4%	5.4%	5.0%	4.2%	10.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	88.2	93.5	6.0%	88.0	82.3	3.6%	100.0	100
Digital public services for businesses	87.2	96.3	10.4%	87.0	86.2	0.9%	100.0	100
Access to e-Health records	84.8	85.9	1.2%	80.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 75% of Latvian citizens consider that the digitalisation of daily public and private services is making their lives easier. Concerning the action of the public authorities, 86% consider it important to counter and mitigate the issue of fake

news and disinformation online, and regarding competitiveness, 78% consider it important to ensure that European companies can grow and become 'European Champions' able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

Latvia's digital infrastructure coverage remains below the EU average, mainly in VHCN, FTTP and 5G, even in the context of a strong year-on-year growth in overall 5G coverage. In broadband uptake, 1 Gbps subscriptions are growing faster than the EU, despite slower growth in 100 Mbps subscriptions and 5G SIM penetration. The country is advancing on deployment of edge nodes and quantum technologies, but lags on cloud, and AI. There has been a surge in cyber-attacks, totalling 418 325 registered complaints in 2024. Despite this, Latvia demonstrates overall preparedness as none of the attacks have had a lasting impact.

Protecting and empowering EU people and society

Latvia's digital skills lagged behind the EU, with only 45.34% of its population having basic digital skills compared to the EU's 55.56%. Despite a noticeable gender gap favouring women and strong collaborative skills, Latvia faces challenges, especially among rural areas and older adults, and remains below the EU in educational attainment-related digital skills. To address these gaps, initiatives like the STARS learning account have been launched. In the ICT sector, Latvia has seen a positive increase in the employment of ICT specialists, especially among women. Despite this, the country's ICT training for businesses lags behind the EU average. Latvia excels in digital public services for both citizens and businesses, surpassing EU growth rates, especially in cross-border services. Latvia's performs strongly on digital public services and access to e-health records compared with the EU average. While strengths are evident, Latvia could benefit from further efforts to close gaps in digital skills, aiming for broader proficiency across different demographic groups.

Leveraging digital transformation for a smart greening

Latvia prioritises the promotion of energy and material efficiency in digital infrastructure, aiming to minimise its environmental impact by creating data centres that will run on 100% renewable energy. In addition, it is focusing on introducing smart digital solutions that in turn will reduce the country's carbon footprint.

National digital decade strategic roadmap

Latvia submitted an adjusted Digital Decade roadmap on 11 February 2025. The adjusted roadmap contains new 43 measures, 2 new targets and 4 revised trajectories. It includes reporting on the consultation of stakeholders but lacks information on how their comments were considered. The updates are clearly aligned with the new Commission's priorities on gigabit connectivity and 5G. The adjusted roadmap addresses a substantial number of roadmap recommendations issued in 2024. All targets are aligned with the EU-level goals for 2030, except for the target for at least basic digital skills, where Latvia is aiming for 70% instead of 80% by 2030. The adjusted roadmap continues to prioritise AI, the digitalisation of public services, and tech uptake. It contains 90 measures, with a budget of EUR 2 287.5 million, including EUR 2 004.8 million from the public budget (equivalent to 4.99% of the country's GDP). It still covers all Digital Decade objectives, such as a human-centred digital space, boosting resilience and security, promoting sovereignty and greening digital technology.

Funding & projects for digital

Latvia allocates 23% of its total recovery and resilience plan to digital (EUR 416 million)[1]. In addition, under cohesion policy, EUR 441million, representing 10% of the country's total cohesion policy funding, is dedicated to advancing Latvia's digital transformation[2].

Latvia is a member of the Alliance for Language Technologies EDIC and of the Local Digital Twins towards the CitiVERSE EDIC. Latvian organisations are indirect and/or associated partners in the Important Project of Common European Interest (IPCEI) on Microelectronics and Communication Technologies (IPCEI-ME/CT) and in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). Latvia is also a participating state in the EuroHPC Joint Undertaking (JU) and in the Chips JU.

Latvia has not yet presented any measure in the framework of Digital Decade's Best Practice Accelerator[3].

Digital Rights and Principles

According to a support study, Latvia has shown rather limited activity in the **European Declaration on Digital Rights and Principles**, with 34 initiatives overall and 2 new initiatives launched in 2024. Latvia is most active in the area of interactions with algorithms and artificial intelligence systems. Less activity has been identified with regards to putting people at the centre of the digital transformation, connectivity and sustainability. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing freedom of choice.

Recommendations

- **Digital skills:** Strengthen and continue to implement measures to increase digital skills across all ages with a special emphasis on people living in rural areas and those with lower educational background.
- **Connectivity:** Sustain the ongoing effort and establish new measures to support VHCN, FTTP, and 5G coverage.
- **SMEs**: Sustain and complement activities to improve the digitalisation and uptake of advanced technologies, emphasising the take-up of advanced technologies and give special attention to SMEs.
- **Cybersecurity**: Continue efforts in cybersecurity to address the evolving and increasing threats. Ensure introduction and continuation of implementation of cybersecurity education, especially at undergraduate level.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **E-health:** Ensure that all data types are made available in a timely manner. Offer a mobile application for citizens to access their electronic health records. Connect more private rehabilitation centres to the online access service.

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European Commission

SHORT COUNTRY REPORTS 2025

Lithuania

Executive summary

Lithuania benefits from excellent 5G coverage and a dynamic start-up ecosystem but continues to face challenges in expanding fixed Very High-Capacity Networks (VHCN) coverage, particularly in rural areas. The country is positioning itself as a niche player in semiconductor and quantum-related technologies, leveraging its strong laser industry.

Lithuania shows a high level of ambition in its contribution to the Digital Decade having set 12 national targets, 92% of which are aligned with the EU 2030 targets. The country is following its trajectories moderately well with 71% of them being on track (on the basis of the 2024 trajectories defined for 7 KPIs out of 8 analysed). Lithuania addressed 25% of the 8 recommendations issued by the Commission in 2024 by making some changes through new measures.

Lithuania demonstrates strong performance in mobile connectivity, with near universal 5G coverage and continued infrastructure investment. However, fixed broadband deployment remains uneven, particularly in rural areas. SME adoption of advanced digital technologies such as cloud, AI, and data analytics continues to lag despite targeted support schemes. The start-up ecosystem is growing, though scale-up activity and access to private capital remain modest. In 2024, Lithuania maintained high digital public service availability, supported by centralised platforms and a mature eHealth system. Digital skills development is supported through national programmes focused on vulnerable and underrepresented groups. On sustainability, the country is piloting digital tools for climate action through startup funding and cleantech initiatives, though a comprehensive green-digital strategy has yet to emerge. In Lithuania cybersecurity is a strategic priority, reinforced by the national programme and the implementation of 5G Toolbox.

Digital Decade KPI (1)	Lithuania				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	LT	EU
Fixed Very High Capacity Network (VHCN) coverage	78.1%	78.3%	0.3%	84.0%	82.5%	4.9%	98.0%	100%
Fibre to the Premises (FTTP) coverage	78.1%	78.3%	0.3%	-	69.2%	8.4%	-	-
Overall 5G coverage	98.9%	99.7%	0.9%	92.0%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	5	10	100.0%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	66.3%	2.0%	-	72.9%	2.8%	90.0%	90%
Cloud	33.6%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	4.9%	8.8%	80.2%	12.0%	13.5%	67.2%	75.0%	75%
Data analytics	40.5%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	53.5%	-	-	-	-	-	-	75%
Unicorns	3	3	0.0%	3	286	4.4%	6	500
At least basic digital skills	52.9%	-	-	-	-	-	80.0%	80%
ICT specialists	4.9%	5.3%	8.2%	5.3%	5.0%	4.2%	6.9%	~10%
eID scheme notification		Yes						
Digital public services for citizens	86.7	87.9	1.3%	86.0	82.3	3.6%	100.0	100
Digital public services for businesses	95.9	92.5	-3.6%	95.0	86.2	0.9%	100.0	100
Access to e-Health records	95.4	95.4	0.0%	100.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the 2025 special Eurobarometer on 'the Digital Decade', 77% of Lithuanian citizens consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 90% consider it important to counter and mitigate the issue of fake news and disinformation online. And on competitiveness, 79% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

In 2024, Lithuania reinforced its position as a regional frontrunner in mobile connectivity, reaching near-universal 5G coverage across households. However, fixed Very High-Capacity Network (VHCN) deployment, particularly fibre in rural areas, continues to require targeted public investment. Two major state-funded projects, supported by the RRF and ERDF, are underway to expand VHCN infrastructure, with over 2 000 km of fibre and 60 new towers planned. To accelerate enterprise digitalisation, Lithuania scaled up support through Measure VST-1. ('To encourage the digitalisation of businesses') notably relying on digital vouchers for SMEs, accelerators, and the national network of EDIHs. However, adoption of AI, cloud, and data analytics remains uneven, with surveys highlighting procedural complexity and lack of digital awareness. The country deepened its role in emerging technologies through the GreenTech Hub and laser-based contributions to semiconductors and quantum, as well as its commitment to the ALT-EDIC. Cybersecurity was significantly strengthened with the full transposition of NIS2, a national programme focused on 5G network trustworthiness, and growing investment in public sector cyber resilience.

Protecting and empowering EU people and society

Lithuania continues to perform strongly in digital public services, with high levels of availability for both citizens and businesses. Access to eHealth records remains among the highest in the EU, and ongoing reforms to the Electronic Health Services system aim to expand coverage and improve data interoperability. While ICT specialist employment rose in 2024, demographic pressures and reliance on foreign talent remain key structural challenges. Measures supporting talent development include vocational retraining, the Talent-Reach initiative, and Diaspora Youth Traineeships. On digital inclusion, Lithuania has significantly invested in programmes targeting older adults and vulnerable groups, including the national "No One Left Behind" campaign and education efforts led by NGOs and Universities of the Third Age. These are complemented by training initiatives under the roadmap, such as EdTech for teachers and skills development schemes for low-skilled adults, yet further acceleration is needed to reach the digital skills target by 2030.

Leveraging digital transformation for a smart greening

Lithuania is at an early stage in aligning its digital and environmental transitions. While it lacks a fully integrated green-digital strategy, targeted efforts are emerging, particularly through support for startups developing climate-relevant digital solutions. Measure VST-3 'To encourage businesses to move towards a climate-neutral economy' has enabled 170 startups to work on tools like AI-based smart housing systems and automated workflow platforms.

The GreenTech Hub is actively strengthening the cleantech ecosystem by guiding companies working on technologies such as smart grids, e-mobility, and IoT toward EDIH services. Further coordination is expected under the upcoming National Digital Agenda.

National Digital Decade strategic roadmap

Lithuania submitted its initial national Digital Decade roadmap on 13 March 2024. At the time, digital policy lacked centralised coordination, with each ministry responsible for its own domain. In response to challenges identified while preparing the roadmap and the 2024 country report, the government adopted a resolution in July 2024 to establish a National Digital Agenda for 2026 –2040. This new cross-cutting strategy aims to centralise governance, align funding, and address gaps in areas such as semiconductors and edge nodes. An in-depth analysis is being carried out in Q1-Q3 2025 to guide the Agenda's development. National authorities intend to adjust the roadmap at a later stage.

A total of 26 measures are part of Lithuanian's national strategic roadmap with a budget of EUR 1.5 billion (1.9 % of Lithuanian's GDP in 2024).

Funding & projects for digital

Lithuania allocates 23% of its total recovery and resilience plan to digital (EUR 724 million)[1]. In addition, under cohesion policy, EUR 280 million, representing 4% of the country's total Cohesion policy funding, is dedicated to advancing Lithuania's digital transformation[2]. Lithuania is a member of the Alliance for Language Technologies EDIC. Lithuania is also a participating state in the EuroHPC Joint Undertaking (JU) and in the Chips JU.

The country has engaged with the Best Practice Accelerator[3] by its presence in the workshops.

Digital Rights and Principles

According to a support study, Lithuania has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 45 initiatives overall but no new initiatives launched in 2024. Lithuania is most active in the area of protection and empowerment of children and young people in the digital environment. Less activity has been identified with regards to a fair digital environment and a protected, safe and secure digital environment. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing safety, security and empowerment.

Recommendations

- **SMEs:** Simplify access to SME digitalisation funding by reducing bureaucratic complexity, improving guidance, and targeting support to low-digital-intensity sectors.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies

Lithuania

- **AI:** Step up targeted support for the adoption of artificial intelligence, especially among SMEs, by raising awareness of business-relevant use cases, improving access to advisory services, and simplifying funding procedures.
- **ICT Specialists:** Scale efforts in relation to retraining programmes, and female participation in ICT.
- **Cybersecurity**: Continue work on cybersecurity to address evolving threats, particularly regarding citizens awareness.
- **VHCN:** Expand public support for VHCN deployment, notably in rural areas.
- **Green**: Adopt an integrated green-digital strategy with measurable targets, establish mechanisms to monitor environmental impacts, and scale up digital solutions that support climate goals.

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European Commission

SHORT COUNTRY REPORTS 2025

Luxembourg

Executive summary

Luxembourg continues to position itself as a strategic digital hub, backed by strong infrastructure but facing persistent challenges in SME digital uptake. The country asserts its role as a European frontrunner in digitalisation, notably through targeted investments in frontier technologies such as AI, quantum computing, and sovereign cloud.

Luxembourg shows a high level of ambition in its contribution to the Digital Decade having set 12 national targets, 100% of which are aligned with the EU 2030 targets. The country is following its trajectories well with 75% of them being on track (on the basis of the 2024 trajectories defined for all 8 KPIs analysed). Luxembourg addressed 71% of the 7 recommendations issued by the Commission in 2024, either by implementing significant policy changes (57%) or making some changes (14%) through new measures.

With nearly universal 5G and very high-capacity network (VHCN) coverage, the country sustains a high-performing digital environment. However significant disparities remain in cloud and data analytics adoption, particularly among SMEs. While Luxembourg's startup ecosystem is expanding, it remains constrained by limited access to private venture capital and a modest pipeline of scale-ups progressing toward unicorn status. In 2024, Luxembourg maintained strong performance in digital public services and digital skills, yet persistent gaps remain across age groups, gender, and levels of education. On sustainability, Luxembourg has launched targeted measures, but an integrated green-digital strategy is not yet fully articulated in the revised roadmap. Sovereignty and cybersecurity have emerged as central pillars of Luxembourg's digital strategy, with an increasing focus on sovereign cloud infrastructure, open-source security tools, and cross-border data resilience.

Digital Decade KPI (1)	Luxembourg				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	LU	EU
Fixed Very High Capacity Network (VHCN) coverage	94.7%	95.2%	0.5%	97.5%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	78.9%	81.8%	3.7%	89.0%	69.2%	8.4%	100.0%	-
Overall 5G coverage	99.6%	99.6%	0.0%	97.4%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	10	20	100.0%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	70.3%	3.0%	-	72.9%	2.8%	90.0%	90%
Cloud	32.6%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	14.5%	23.7%	64.2%	40.6%	13.5%	67.2%	75.0%	75%
Data analytics	32.4%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	52.0%	-	-	-	-	-	-	75%
Unicorns	2	2	0.0%	-	286	4.4%	-	500
At least basic digital skills	60.1%	-	-	-	-	-	80.0%	80%
ICT specialists	8.0%	8.0%	0.0%	8.3%	5.0%	4.2%	10.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	94.8	97.7	3.0%	96.7	82.3	3.6%	100.0	100
Digital public services for businesses	96.7	100.0	3.4%	97.9	86.2	0.9%	100.0	100
Access to e-Health records	76.1	76.1	0.0%	75.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the 2025 special Eurobarometer on 'the Digital Decade' 2025, 80% of Luxembourgish citizens consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 88% consider it important to counter and mitigate the issue of fake news and disinformation online. And on competitiveness, 86% consider it important to ensure that European companies can grow and become 'European Champions' able of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Luxembourg's infrastructure performance remains well above the EU average, with near-universal coverage of VHCN, and 5G thanks to early and well-coordinated public strategies. However, the digitalisation of enterprises –particularly SMEs –lags behind, hindered by high integration costs and limited technical capacity. Despite this, Luxembourg shows leadership in AI and quantum computing, notably through the deployment of MeluXina-AI and its selection for the EU's AI Factories initiative. The adjusted roadmap includes measures to foster SME adoption of advanced technologies, including generative AI. While the startup ecosystem continues to grow, scale-up financing can rely on a number of public funding schemes but often struggle to access later-stage funding due to the small size of the market and a limited private risk capital culture. Sovereignty and cybersecurity remain central to Luxembourg's digital strategy, with ongoing efforts to reinforce sovereign cloud capabilities, promote open-source cybersecurity tools through the establishment of an Open Source Program Office (OSPO), and develop a national cybersecurity tools with dedicated sectoral safeguards, including for healthcare.

Protecting and empowering EU people and society

Luxembourg maintains high digital skills levels and has the second highest shares of ICT specialist employment in the EU. However, among people with at least a basic level of digital skills disparities persists between demographic groups, particularly by age and education. The country is a front-runner in digital public services, supported by mature platforms like MyGuichet.lu and centralised government IT architecture. Ongoing efforts focus on reducing administrative complexity and promoting sovereign digital solutions within the public sector, including GovCloud and open-source adoption. Although Luxembourg intends to step up its efforts to improve health data interoperability and availability, it continues to score below the EU average in access to eHealth records.

Leveraging digital transformation for a smart greening

Luxembourg is taking initial steps toward aligning digital and environmental transitions. While not yet underpinned by a fully integrated green-digital strategy, the country promotes a renewables-based and intelligent energy system, supports GovCloud sustainability, and is exploring the role of digital solutions in reducing emissions in mobility and industry. Participation in EU-level initiatives such as the Green Digital Coalition and IPCEI projects positions Luxembourg to further develop tools and metrics to measure and reduce the ICT sector's carbon footprint.

National Digital Decade strategic roadmap

Luxembourg submitted a fully revised national Digital Decade roadmap on 2 December 2024, containing more than 30 new or edited measures and revised trajectories. The roadmap notably strengthens the focus on SMEs and AI, with new support tools set to be launched in 2025. It addresses a substantial number of roadmap recommendations issued in 2024. A total of 98 measures are now

part of Luxembourg's national strategic roadmap with a budget of EUR 515 million, comprising EUR 488 million from public sector budgets, equivalent to 0.57% of Luxembourg's GDP in 2024.

Funding & projects for digital

Luxembourg allocates 38% of its total recovery and resilience plan to digital (EUR 24 million)[1]. In addition, under cohesion policy, EUR 6 million, representing 15% of the country's total Cohesion policy funding, is dedicated to advancing Luxembourg's digital transformation[2]. Luxembourg is a member of the three established EDICs; the Alliance for Language Technologies EDIC, the Local Digital Twins towards the CitiVERSE EDIC and of the EUROPEUM EDIC. Luxembourgish entities are indirect partners in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). Luxembourg is also a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

The country has contributed to the Best Practice Accelerator[3] by sharing three best practices. Two of them are part of the Digital Skills cluster: the Girls in ICT Day national awareness action and Girls Deploy your Digital Talent. One has been shared in the Green IT Cluster: the Creation and promotion of Product Circularity Data Sheet (PCDS).

Digital Rights and Principles

According to a support study, Luxembourg has been one of the most active Member States in implementing the **European Declaration on Digital Rights and Principles**, with over 100 initiatives overall and 20 new initiatives launched in 2024. Luxembourg is most active in the area of digital education, training and skills. Less activity has been identified with regards to a fair digital environment. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing sustainability.

Recommendations

- **Digital Skills:** Scale up targeted programs to reach older citizens, women, and populations with lower education background.
- **SMEs:** Further support the uptake of advanced digital technologies (cloud, AI, data) by SMEs, who currently lag significantly behind larger enterprises.
- **Cybersecurity**: Continue efforts in cybersecurity to address evolving threats, particularly regarding employees' awareness.
- **Green**: Adopt an integrated green-digital strategy with measurable targets, leveraging EU tools to scale up low-carbon digital solutions, especially for SMEs, and implement a national framework to monitor ICT-enabled emission reductions across key sectors like energy, transport, and industry.
- **FTTP:** Explore targeted measures to increase take-up and extend coverage of FTTP in remaining underserved areas, ensuring that high-speed connectivity is accessible to all households.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **Unicorns:** Strengthen the growth pipeline for scale-ups by facilitating greater access to private venture capital.

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State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Malta

Executive summary

Malta performs very well on the uptake of AI and digitalisation of businesses, while there is room to further expand the pool of ICT specialists. The country is a top performer in the digitalisation of public services. Malta shows a moderate level of ambition in its contribution to the Digital Decade having set 12 national targets, 58% of which aligned with the EU 2030 targets. The country is following its trajectories moderately well with 50% of them being on track (considering 2024 trajectories defined for 4 KPIs out of 8 analysed). Malta addressed 38% of the 8 recommendations issued by the Commission in 2024 by making some changes through new measures.

Significant progress has been achieved over the last year, particularly in the share of enterprises adopting AI, which reached 17.3%, and in expanding connectivity infrastructure—most notably through the ongoing roll-out of fibre-to-the-premises (FTTP) networks. Malta has reached the Digital Decade targets for Very High Capacity Networks (VHCN) in 2019 and basic 5G coverage in 2022. FTTP deployment is still underway but is progressing rapidly towards full national coverage. Challenges remain in improving basic digital skills across the population and addressing the shortage of ICT specialists.

Malta has increasingly oriented its digital policies toward enhancing digital sovereignty, to better control and safeguard its digital infrastructure, data, and technologies, through a multi-dimensional approach. Malta is advancing digital sovereignty by strengthening national cybersecurity through initiatives like CYBER+ALT, expanding threat detection, and building secure infrastructure, while promoting local innovation via dedicated start-up funding and digital policy frameworks.

Digital Decade KPI (1)	Malta				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	MT	EU
Fixed Very High Capacity Network (VHCN) coverage	100.0%	100.0%	0.0%	-	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	69.6%	86.2%	23.9%	-	69.2%	8.4%	100.0%	-
Overall 5G coverage	100.0%	100.0%	0.0%	100.0%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	17	32	88.2%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	81.3%	2.2%	-	72.9%	2.8%	85.0%	90%
Cloud	58.2%	-	-	-	-	-	80.0%	75%
Artificial Intelligence	13.2%	17.3%	31.4%	18.8%	13.5%	67.2%	27.2%	75%
Data analytics	35.6%	-	-	-	-	-	51.1%	75%
AI or Cloud or Data analytics	68.3%	-	-	-	-	-	-	75%
Unicorns	4	4	0.0%	-	286	4.4%	-	500
At least basic digital skills	63.0%	-	-	-	-	-	75.0%	80%
ICT specialists	4.7%	5.2%	10.6%	5.5%	5.0%	4.2%	8.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	100.0	99.7	-0.3%	100.0	82.3	3.6%	100.0	100
Digital public services for businesses	100.0	100.0	0.0%	-	86.2	0.9%	100.0	100
Access to e-Health records	88.0	93.7	6.5%	-	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 80% of Maltese citizens consider that the digitalisation of daily public and private services is making their lives easier. Concerning the action of the public authorities, 90% consider it important to counter and mitigate the issue of fake news and disinformation online, and regarding competitiveness, 87% consider it important to ensure that European companies can grow and become "European Champions" able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

Malta has a strong position when it comes to digital infrastructure, outperforming the EU average and reaching full VHCN and basic 5G coverage. The roll-out of fibre networks is continuing and progressing at a fast pace. Regarding 5G in the 3.4–3.8 GHz band, Malta still lags behind the EU but it is expanding rapidly.

Most of Maltese enterprises show at least a basic level of digital intensity and uptake of AI is above the EU average, although challenges persist particularly among smaller enterprises. Malta is nurturing a dynamic and expanding start-up ecosystem through concrete support measures such as the *Start-Up Finance scheme*, the *Start-Up Residence Programme*, and the creation of a €10 million *Venture Capital Fund*. The country is also investing in digital skills and innovation infrastructure, including a national roadmap that promotes emerging technologies and supports scale-ups. Malta is actively strengthening its cybersecurity capabilities and digital resilience, with the goal of reducing dependency on external technologies and enhancing control over its digital ecosystem, although challenges remain in adopting key internet standards like IPv6 and DNSSEC.

Protecting and empowering EU people and society

Most of the people in Malta have at least basic digital skills and the country made some progress on the share of ICT specialists in employment, but there is room to improve gender balance. In 2024, the share of ICT specialists in employment grew to 5.2%. While interest in STEM and ICT careers is growing, skill shortages remain a concern. The majority of the Maltese population (63%) has at least basic digital skills, and the country prioritises inclusivity in the implementation of the National eSkills Strategy 2022-2025.

Digital public services are well-developed and widely accessible, reflecting Malta's focus on user-centric, simplified administration. National strategies promote sovereign digital solutions, aiming to ensure a secure and inclusive digital transformation for all citizens.

Leveraging digital transformation for a smart greening

Malta is committed to achieving carbon neutrality by 2050, with a focus on sustainability, resilience, and innovation across all sectors. Digital technologies are recognised as a key enabler in this transition, helping businesses adopt sustainable practices and boosting overall competitiveness. The government is fostering collaborations with the private sector to drive forward sustainability goals and integrate digital solutions in the green transition.

National Digital Decade strategic roadmap

Malta did not submit an updated national Digital Decade roadmap in 2025; therefore, the measures and targets for 2030 remain unchanged from those outlined in the initial 2023 roadmap. In 2024, Malta continued the implementation of existing measures but did not take any new measure. In total three

targets (i.e., VHCN, 5G and Digital Public Service for Citizen) have already been reached. All the other targets align with the EU level goals for 2030, except for three national targets (basic digital skills, number of ICT specialist and SMEs with at least a basic level of digital intensity) that fall slightly below the EU targets. Trajectories for edge nodes, e-Health and unicorns are missing. Although the roadmap covers nearly all objectives of the Digital Decade, some aspects may require more effort. Furthermore, the roadmap is composed of 66 measures with a total budget of EUR 285 million (equivalent to 1.27% of GDP) covering most of the targets. It still covers all objectives of the Digital Decade such as a human-centred digital space, resilience and security, sovereignty, green, and protection of the society. These achievements are the result of targeted public policies under the *Malta Diġitali 2022–2027* strategy, with a strong focus on enhancing public digital services and connectivity.

Funding & projects for digital

Malta allocates 26% of its total recovery and resilience plan to digital (EUR 68 million)[1]. In addition, under cohesion policy, EUR 129 million, representing 17% of the country's total cohesion policy funding, is dedicated to advancing Malta's digital transformation[2]. Malta is directly participating in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT). Malta is a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Malta has not yet presented any project in the framework of Digital Decade's Best Practice Accelerator[3].

Digital Rights and Principles

According to a support study, Malta has been one of the most active Member States in implementing the **European Declaration on Digital Rights and Principles**, with over 100 initiatives overall and 35 new initiatives launched in 2024. Malta is most active in the area of solidarity and inclusion and digital education, training and skills. Less activity has been identified with regards to connectivity and Sustainability. Measures in the area of solidarity and inclusion appear to have most impact on the ground, in contrast to those addressing freedom of choice.

Recommendations

- **ICT specialists:** Promote ICT and STEM career opportunities and related education programmes, especially among women.
- **Basic digital skills:** Prioritise reskilling and upskilling initiatives, leveraging public-private partnerships and EU funding, and promote digital literacy particularly among those with lower educational backgrounds.
- **Cybersecurity**: Implement targeted initiatives to strengthen internet security and enhance DNSSEC adoption, and support the development and deployment of cybersecurity capabilities.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **AI:** Continue the efforts to strengthen the uptake of AI, especially among SMEs, and in connection with the deployment of other technologies, such as cloud and edge nodes.
- **Connectivity infrastructure**: Continue efforts to deploy fibre networks and 5G pioneer bands and promote uptake.
- **Digitalisation of SMEs:** Enhance efforts to close the digitalisation gap between SMEs and large enterprises, in order to maximise the economic potential of SMEs.

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European Commission

SHORT COUNTRY REPORTS 2025

The Netherlands

Executive summary

The Netherlands has long been a leader in digital innovation owing to support from a strong research base. However, it faces challenges from ICT labour shortages and declining public investments in innovation and digital education. The country is very committed to safeguarding users online and focuses on countering disinformation and protecting children.

The Netherlands shows a high level of ambition in its contribution to the Digital Decade, with 10 national targets, 90% of which are aligned with the EU 2030 targets. **The country is following its trajectories well**, with 83% of them being on track (based on the 2024 trajectories established for 6 KPIs out of 8 analysed). **The Netherlands addressed 40% of the 10 recommendations issued by the Commission in 2024**, either by implementing significant policy changes (20%) or making some changes (20%) through new measures.

The Dutch semiconductor industry remains a cornerstone of its digital landscape, with growing momentum in quantum technologies. However, the discontinuation of key funding sources like the National Growth Fund have created financial uncertainty. ICT talent shortages also persist, worsened by recent budget cuts in higher education. In 2024, the Netherlands expanded its 2022 strategy against online disinformation and improved legislation to protect children online. **The upcoming Netherlands Digitalisation Strategy** will take a more centralised approach, focusing on enhanced digital government services at local, regional and national level, Artificial Intelligence (AI) adoption, civil servant digital skills and digital sovereignty and security.

Digital Decade KPI (1)	The Netherlands				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	NL	EU
Fixed Very High Capacity Network (VHCN) coverage	98.3%	98.4%	0.1%	97.8%	82.5%	4.9%	100.0%	100%
Fibre-to –the-Premises (FTTP) coverage	77.7%	85.3%	9.9%	-	69.2%	8.4%	-	-
Overall 5G coverage	100.0%	100.0%	0.0%	100.0%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	27	59	118.5%	-	2 257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	80.8%	0.5%	-	72.9%	2.8%	95.0%	90%
Cloud	60.4%	68.5%	13.5%	-	-	-	85.3%	75%
Artificial Intelligence	14.1%	23.1%	63.5%	23.0%	13.5%	67.2%	85.1%	75%
Data analytics	50.8%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	74.6%	-	-	-	-	-	-	75%
Unicorns	30	32	6.7%	-	286	4.4%	-	500
At least basic digital skills	82.7%	-	-	-	-	-	100.0%	80%
ICT specialists	6.9%	7.0%	1.4%	7.7%	5.0%	4.2%	9.2%	~10%
eID scheme notification		Yes						
Digital public services for citizens	85.9	88.5	3.1%	85.9	82.3	3.6%	100.0	100
Digital public services for businesses	86.7	88.8	2.4%	86.7	86.2	0.9%	100.0	100
Access to e-health records	72.5	65.2	-10.1%	-	82.7	4.5%	-	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade 2025', 84% of the Dutch public consider that the digitalisation of daily public and private services is making their lives easier. Moreover, 90% consider it important that public authorities counter and mitigate the issue of fake news and disinformation online. Regarding competitiveness, 83% deem it significant that European companies can grow and become 'European Champions' able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

The Netherlands' connectivity infrastructure is in good shape, with widespread broadband coverage and excellent 5G services. The National Technology Strategy serves as the guiding policy for the country's digital innovation efforts, outlining key priorities such as semiconductors, AI, quantum technology and cybersecurity. In its approach to semiconductors and quantum technologies, the country aims to strike a balance between promoting technological leadership and protecting its critical supply chains. On the digitalisation of businesses, while most Dutch businesses have achieved a basic level of digitalisation, smaller enterprises often struggle to keep pace with the adoption of key digital technologies, particularly AI. This challenge may be exacerbated by the fragmented nature of AI innovation in the country, which is largely driven by regional partnerships. As a result, funding opportunities and the overall national strategy can appear disjointed and unevenly accessible to these smaller businesses. Finally, to address digital threats and promote digital initiatives, the Dutch Cybersecurity Strategy remains the primary initiative in the Netherlands. Encouragingly, progress was made in 2024 towards centralising government efforts and strengthening public-private collaboration in this area.

Protecting and empowering EU people and society

The Netherlands has a strong digital skills profile with very good scores across regions and genders, although some differences remain across age groups and education levels. Recent budget cuts in higher education, combined with existing ICT labour shortages, could in the future challenge the digital labour market. The roadmap has therefore been adjusted to support ICT teaching and regional plans to increase the ICT workforce. The gender imbalance in ICT specialists in employment and the decline in women employed in this field are also significant. The country has good digital public services and is working on digital accessibility to ensure everyone can participate in the digital transition. It is also continuing its commitment to countering disinformation and safeguarding children's rights online.

Leveraging digital transformation for a smart greening

The Netherlands is stepping up its commitment to sustainable digitalisation with the launch of the Sustainable Digitalisation Action Plan. This plan, which features in the 'Green & Digital' cluster of the Digital Decade's Best Practice Accelerator, outlines measures to leverage digital tools to reduce energy consumption, monitor and mitigate the environmental impact of the digital sector and strengthen public-private collaboration in information sharing.

National digital decade strategic roadmap

The Netherlands submitted a fully revised national Digital Decade roadmap on 31 January 2025. It contains around 15 new measures and four revised targets. In the revised roadmap, the Netherlands addressed a substantial number of roadmap recommendations issued in 2024. The country raised the ambition of its national targets for VHCN, the digitalisation of SMEs and the uptake of data analytics,

aligning them with the EU targets for 2030. The Dutch national target for ICT specialists remains slightly below that of the EU (at 9.2% of the total employed population working as ICT specialists instead of 10%). There is no target for access to e-health records, as it would be difficult to draw up, given the decentralised healthcare system. The revised roadmap continues to prioritise digital public services and shows an increased focus on ICT specialists. It contains **59 measures and has a budget of EUR 5.25 billion, of which EUR 5.22 billion comes from public budgets (equivalent to 0.46% of GDP).** It still covers a diverse range of Digital Decade objectives, with strengthened commitments to the digital and green transition, promoting a human-centred digital space and protecting society online. The roadmap also includes more details on the consultation with stakeholders with respect to the original roadmap.

Funding & projects for digital

The Netherlands allocates 26% of its total Recovery and Resilience Plan to digital (EUR 1.2 billion)[1]. In addition, under cohesion policy, EUR 170 million, representing 11% of the country's total cohesion policy funding, is dedicated to advancing the country's digital transformation[2].

The Netherlands is a member of the 'Alliance for Language Technologies' European Digital Infrastructure Consortium (EDIC) and of the 'Local Digital Twins towards the CitiVERSE' EDIC. The country participates directly in the important project of common European interest (IPCEI) on Microelectronics and Communication Technologies and in the IPCEI on Next Generation Cloud Infrastructure and Services. It is also a participating state of the European High-Performance Computing Joint Undertaking (JU) and of the Chips JU.

The Netherlands has contributed to the Digital Decade Best Practice Accelerator[3] by sharing two best practices in the 'Business Uptake' cluster (with the National technology Strategy) and the 'Green and Digital' cluster (with the Sustainable Digitalisation Action Plan).

Digital rights and principles

According to a support study, the Netherlands has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 60 initiatives overall and three new initiatives launched in 2024. The Netherlands is mostly active in ensuring people remain at the centre of the digital transformation, while less activity was identified with regards to ensuring a fair digital environment. Measures related to digital solidarity and inclusion appear to have most impact on the ground, in contrast to those addressing digital safety, security and empowerment.

Recommendations

- **Quantum/semiconductors:** find alternative sources of funding (both public and private) to capitalise on the Netherlands' competitive advantage in the areas of semiconductors and quantum technologies, while maintaining a good business environment for long-term digital innovation.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **ICT specialists:** attract a more diverse pool of ICT talent by taking advantage of untapped potential workers (i.e. people with a migrant background and those working in part-time employment). Follow up on recent plans to reduce labour market shortages, paying particular attention to attracting more ICT talent, improving labour market matching and providing suitable funding for higher education. Respond to worries regarding recent budget cuts in higher education.
- **Artificial Intelligence:** strategically allocate a combination of public and private resources to support SMEs' take-up of key digital technologies, in particular AI. Improve collaboration between scattered regional initiatives and set out a clear vision and strategic plan for AI to fully harness its potential.
- **Basic digital skills:** complement the ongoing efforts at local and regional level to ensure digital inclusion and good levels of digital skills by setting up national curriculum plans and funding. This could include integrating technology literacy or similar courses in the national curriculum.
- **Green transition:** continue efforts to contribute to the green transition, also by translating the Sustainable Action Plan into an actionable programme and creating more synergies among measures and policies within and beyond the government.

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European Commission

SHORT COUNTRY REPORTS 2025

Poland

Executive summary

Poland has well-developed fixed connectivity infrastructure but continues to be affected by a low level of digital skills among its population and limited adoption of advanced technologies by companies. The country sees cybersecurity, advancing breakthrough technologies such as quantum computing and artificial intelligence and development of capacity in semiconductors manufacturing as important areas for development.

Poland shows a moderate level of ambition in its contribution to the Digital Decade having set 14 national targets, 71% of which are aligned with the EU 2030 targets. The country is following its trajectories moderately well with 63% of them being on track (considering 2024 trajectories defined for 8 KPIs out of 8 analysed). Poland addressed 55% of the 11 recommendations issued by the Commission in 2024 by making some changes through new measures.

Digital Decade KPI (1)	Poland				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	PL	EU
Fixed Very High Capacity Network (VHCN) coverage	81.1%	83.8%	3.4%	84.1%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	75.4%	77.8%	3.1%	84.1%	69.2%	8.4%	100.0%	-
Overall 5G coverage	71.9%	89.3%	24.1%	98.3%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	42	82	95.2%	11	2257	90.5%	370	10000
SMEs with at least a basic level of digital intensity (2)	-	69.0%	6.4%	-	72.9%	2.8%	90.0%	90%
Cloud	46.5%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	3.7%	5.9%	60.8%	4.3%	13.5%	67.2%	10.0%	75%
Data analytics	19.3%	-	-	-	-	-	35.0%	75%
AI or Cloud or Data analytics	51.8%	-	-	-	-	-	-	75%
Unicorns	10	11	10.0%	13	286	4.4%	20	500
At least basic digital skills	44.3%	-	-	-	-	-	80.0%	80%
ICT specialists	4.3%	4.5%	4.7%	4.3%	5.0%	4.2%	6.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	63.7	70.7	10.9%	81.5	82.3	3.6%	100.0	100
Digital public services for businesses	72.9	85.0	16.6%	87.4	86.2	0.9%	100.0	100
Access to e-Health records	90.0	91.8	2.0%	88.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports Version 4 of the Digital Intensity Index, which is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory, which is based on Version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 78% of Polish citizens consider that the digitalisation of daily public and private services is making their lives easier. Concerning the action of the public authorities, 84% consider it important to counter and mitigate the issue of fake news and disinformation online. And regarding competitiveness, 84% consider it important to ensure that European companies can grow and become 'European Champions' able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

The country's fixed connectivity infrastructure is well-developed, but 5G deployment has been delayed due to the late allocation of pioneer bands: 3.4-3.8 GHz was allocated in December 2023 and the auction for 700 MHz was completed in March 2025. Poland has come significantly closer to the EU average in terms of the digital intensity of enterprises, but it still scores below the EU average in this respect as well as in the uptake of more advanced technologies by companies. However, it is making progress in areas like quantum computing - first quantum computer should be installed in 2025 – and AI, where the Polish large language model (PLLuM) became available in February 2025 and the country is a part of consortium to host one of the AI Factories. Finally, cybersecurity is one of the key priorities for the Polish administration, which deploys measures to enhance this at different levels of government and to improve the relevant skills of citizens. However, the NIS2 Directive has yet to be transposed into the Polish legal system.

Protecting and empowering EU people and society

Regarding at least basic digital skills, the distance to the national 2030 target remains significant and the low level of digital skills among older and less educated people persist. The lack of ICT specialists is one of the barriers to the digitalisation of enterprises in general, as well as to the uptake of more advanced technologies, and for ensuring protection against cyberattacks. Poland's goal of ensuring that ICT specialists represent 6% of the workforce by 2030, is lower than the EU target. On the other hand, Poland has made progress in digitalising public services, and has seen growth in the use of eID and in access to medical records online. However, the country still needs to address issues such as disinformation, improve coordination between state actors in this area, and enhance people's critical skills to deal with online threats.

Leveraging digital transformation for a smart greening

Polish authorities recognise the link between the digital and green transformations, with the draft State Digitalisation Strategy aiming to promote an environmentally friendly ICT sector and digital ecology. However, the country's digital sector energy consumption is expected to grow rapidly, driven by data centre needs. Measures to ensure the availability and reuse of data on energy sector activities are yet in planning stage. Moreover, recycling of ICT equipment is low despite Poles prioritising energy efficiency when buying ICT devices. The country has, however, implemented measures to promote the use of digital technologies to better protect the environment, including some Smart Cities solutions. The draft State Digitalisation Strategy includes actions aimed at raising citizens' awareness of the environmental impact of ICT and promoting basic knowledge of digital sustainability.

National Digital Decade strategic roadmap

Poland formally adopted its national Digital Decade roadmap on 22 October 2024. As a result, the previous country report, which was published in July 2024, relied on the draft roadmap, which was shared with the Commission on 30 January 2024. The differences between the draft and the formally endorsed document were not substantial. The Polish roadmap is composed of 55 measures with a budget of EUR 12.4 billion, equivalent to 1.47% of GDP. Polish authorities expressed their intention to adjust the national roadmap in line with Article 8 (3) of the decision establishing the Digital Decade Policy Programme, but at the time of writing, neither the formally endorsed document, nor the draft version, has been shared with the Commission.

Poland

In 2024, Poland was working on a comprehensive State Digitalisation Strategy to outline priorities for the digital transformation of Poland until 2035 and provide a basis for public spendings in this area. The implementation of the strategy, whose adoption is expected by mid-2025, will be aligned with various existing and upcoming documents, both at national and EU level, to ensure a comprehensive and coordinated approach to digital development.

Funding & projects for digital

Poland allocates 21% of its total recovery and resilience plan to digital (EUR 7.5 billion)[1]. In addition, under cohesion policy, EUR 5.7 billion, representing 8% of the country's total cohesion policy funding, is dedicated to advancing Poland's digital transformation[2]. Poland is a member of the Alliance for Language Technologies EDIC and of the EUROPEUM EDIC. Poland is directly participating in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT) and in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). Poland is also a participating state in the EuroHPC Joint Undertaking (JU) and in the Chips JU.

Poland has not yet presented any projects in the framework of Digital Decade's Best Practice Accelerator[3].

Digital Rights and Principles

According to a support study, Poland has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 62 initiatives overall and 6 new initiatives launched in 2024. Poland is most active in the area of digital education, training and skills. Less activity has been identified with regards to a fair digital environment and sustainability. Measures in the area of freedom of choice appear to have most impact on the ground, in contrast to those addressing participation in the digital public space.

Recommendations

- **Basic digital skills**: Increase the attractiveness of STEM disciplines at school to raise interest in taking up ICT-related studies and careers, including by girls and women. Strengthen the measures focused on social groups with lower digital skills, such as older adults, inhabitants of rural areas, and people with disabilities.
- **ICT specialists:** Take measures to increase the number of ICT specialists (e.g. improved training and reskilling options; incentive schemes to attract new / retain current ICT specialists, including specialists from other countries) and continue promoting ICT studies and careers to women and girls.
- **SMEs**: Enhance digitalisation of SMEs, including by directing existing support to those who lag in digitalisation and improving their awareness of the benefits offered by digitalisation and of the available support options.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **Cybersecurity**: Continue efforts in cybersecurity to address evolving threats, particularly for enterprises and administration.
- **Artificial Intelligence**: Create an AI friendly ecosystem by stimulating public and private investments in research and innovation, raising awareness among entrepreneurs, increasing access to specialised knowledge and computing power, and implementing consistent legal frameworks and standards.
- **5G**: Encourage operators to speed up the deployment of 5G stand-alone core networks.
- **Cloud**: Encourage the adoption of cloud technologies by businesses, focusing on sovereign European solutions.
- **Unicorns**: Continue to improve the business environment and access to finance for digital start-ups, provide more tailored support to address the challenges for scaling business.
- **Semiconductors and digital innovation**: Invest in the development and manufacturing of critical technologies in the areas of digital and deep tech.
- **Green**: Develop a system for monitoring and quantifying the emission reductions of the digital solutions deployed.

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State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Portugal

Executive summary

Portugal records stable growth in digital public services and performs particularly well on access to e-health records. It faces challenges with artificial intelligence (AI) adoption by enterprises and their capacity to innovate as well as basic digital skills but can rely on solid connectivity networks.

Portugal shows a high level of ambition in its contribution to the Digital Decade having set 12 national targets, 92% of which aligned with the EU 2030 targets. The country is following its trajectories very well with 100% of them being on track (considering 2024 trajectories defined for 7 KPIs out of 8 analysed). Portugal addressed 77% of the 13 recommendations issued by the Commission in 2024 by making some changes through new measures.

In 2024 Portugal noted progress in all measured indicators, with its digital networks almost covering the full territory. The National Digital Strategy adopted in December 2024 announced ambitious plans regarding AI, data sharing, sovereign cloud and simplification through digital tools. However, while at least basic digital intensity of SMEs is slightly above the EU average, AI adoption by enterprises remains weak, and the scale-up support for start-ups is limited. On the other hand, the growing availability and use of digital public services for citizens and businesses, as well as the significant improvement in access to e-health records create a blueprint to build on. While basic digital skills remain unevenly distributed across society, more people acquired advanced digital skills, including in areas such as cybersecurity. Portugal is also involved in EU-wide cooperation in semiconductors and quantum technologies.

Digital Decade KPI (1)	Portugal				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	PT	EU
Fixed Very High Capacity Network (VHCN) coverage	94.2%	94.6%	0.4%	94.2%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	92.3%	93.2%	0.9%	92.3%	69.2%	8.4%	100.0%	-
Overall 5G coverage	98.1%	98.7%	0.6%	98.1%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	14	27	92.9%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	74.3%	2.7%	-	72.9%	2.8%	90.0%	90%
Cloud	32.3%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	7.9%	8.6%	9.8%	-	13.5%	67.2%	75.0%	75%
Data analytics	38.6%	-	-	-	-	-	-	75%
AI or Cloud or Data analytics	54.4%	-	-	-	-	-	-	75%
Unicorns	1	1	0.0%	-	286	4.4%	2	500
At least basic digital skills	56.0%	-	-	-	-	-	80.0%	80%
ICT specialists	4.6%	5.2%	13.0%	4.5%	5.0%	4.2%	7.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	81.5	84.5	3.6%	81.5	82.3	3.6%	100.0	100
Digital public services for businesses	81.9	84.3	2.9%	81.9	86.2	0.9%	100.0	100
Access to e-Health records	86.0	88.1	2.4%	86.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 71% of Portuguese citizens consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 89% consider it important to counter and mitigate the issue of fake news and disinformation online, and on competitiveness, 89% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Portugal enjoys robust connectivity infrastructure, with stable progress across the indicators and almost full 5G coverage. However, broadband and mobile take up are mostly lower than the EU average and so is 5G pioneer bands spectrum assignment. To engage more under the 'Chips for Europe' initiative, Portugal has set up a national chips competence centre. The country provides some contribution to European quantum initiatives. SMEs record at least basic digital intensity slightly above the EU average, but the take-up of AI by enterprises remains modest. Ambitious plans regarding sovereign digital solutions, such as AI development and cloud, and boosting the innovation ecosystem are partly supported by funding under the recovery and resilience plan. The country plans to increase the number of start-ups from just over 4 700 in 2024 to 6 000 by 2030 with anticipated spillover on the number of unicorns, as Portugal currently hosts only one such company. For Portuguese start-ups, access to funding at further growth stages remains an issue. The cybersecurity awareness of people and companies is growing, in part thanks to strong efforts by and the collaborative spirit of the authorities. However, NIS2 Directive still awaits transposition and implementation into national law.

Protecting and empowering EU people and society

Basic digital skills remain in the EU average, with significant gaps for people with lower levels of education and older people. However, in 2024 Portugal noted promising progress in the share of ICT specialists, including female ones. Some programmes are starting to promote gender convergence in this area but advanced digital skills are not prominent in Portugal's roadmap. Robust digital skills are, however, promoted in public administration, notably due to investments from Portugal's recovery and resilience plan. The country shows good progress on digital government, with visibly more people using such solutions and digital public services for citizens remain at high level. With a single Gov.pt app, digital identity might gain momentum. In addition, access to e-health records progressed rapidly over the last years, making Portugal one of the frontrunners. This might also be linked to the RRF investment in digital health transition. However, some challenges persist as digital services for businesses are below the EU average, in particular in cross-border context. Media literacy and child protection receive growing attention.

Leveraging digital transformation for a smart greening

Green and digital priorities are slowly gaining attention. With RRF support, Portugal is implementing a Digital and Smart Nation agenda, which envisages the creation of Urban Management Platforms and digital twins. These will leverage vast data on territories, as well as connectivity solutions, to respond to territorial challenges, including environmental and climate ones.

National digital decade strategic roadmap

Portugal submitted a fully revised national Digital Decade roadmap in December 2024, (with targeted adjustments until March 2025) containing more than 150 measures, including many new ones, revised targets and, for the first time, more than half of the required trajectories. It is largely based on the

National Digital Strategy and its action plan, on which stakeholders were consulted. The updates are aligned with the new Commission's priorities on AI, sovereignty and digital skills. The revised roadmap includes reporting on the consultation of stakeholders and addresses a substantial number of roadmap recommendations issued in 2024. Most targets align with the EU level goals for 2030, except for 7% target for ICT specialists (instead of 10%) by 2030. The revised roadmap continues to prioritise digital skills, digital public administration and the digitalisation of businesses. It is composed of 157 measures with a budget of EUR 2.15 billion, equivalent to 0.75% of GDP. The roadmap responds to majority of objectives, such as human-centred digital transformation, simplification, sovereignty and resilience. However, areas such as sustainability and inclusion lack specific focus, while competitiveness is not comprehensively covered.

Funding & projects for digital

Portugal allocates 21% of its total recovery and resilience plan to digital (EUR 4.5 billion)[1]. In addition, under cohesion policy, EUR 2.4 billion, representing 11% of the country's total cohesion policy funding, is dedicated to advancing Portugal's digital transformation[2].Portugal is a member of the Local Digital Twins towards the CitiVERSE EDIC and of the EUROPEUM EDIC. Portuguese entities are indirect and/or associated partners in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT). Portugal is also a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Portugal has contributed to the Best Practice Accelerator[3] by sharing one best practice in the frame of the Green IT cluster (National Strategy for Smart Territories).

Digital rights and principles

According to a support study, Portugal has been one of the most active Member States in implementing the **European Declaration on Digital Rights and Principles**, with over 100 initiatives overall and 14 new initiatives launched in 2024. Portugal is most active in the Declaration area of digital education, training and skills. Less activity has been identified with regards to privacy and individual control over data. Measures in the area of freedom of choice appear to have most impact on the ground, in contrast to those addressing participation in the digital public space.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

Recommendations

- **Artificial Intelligence:** Support AI take-up and thus enable innovation by enterprises, including by timely implementation of ongoing and planned measures.
- **Basic digital skills**: Evaluate the take-up of the current measures and identify ways to address the remaining needs, notably to tackle the digital divide in the society.
- **Basic digital intensity of SMEs and advanced technologies**: Support the adoption of advanced digital technologies by businesses by fostering enhanced collaboration between public and private sector and academia and by identifying support measures for the medium-term.
- **Cloud:** Encourage cloud take-up, in particular implement the plans for sovereign cloud infrastructure.
- **ICT specialists:** Identify ways to attract ICT specialists, promote ICT studies, digital upskilling and reskilling options, and continue reinforcing gender balance in the field.
- **Green:** Consider introducing a coherent approach to twinning the digital and green transitions.
- **Scale-ups and unicorns:** Continue improving the business environment and access to finance for digital start-ups to grow into scale-ups, including by targeting business R&D with public support.
- **Semiconductors:** Continue efforts in semiconductors and strive towards leadership at EU level.
- **5G:** Consider assigning remaining 5G pioneer bands and promoting 5G take-up.

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European Commission

SHORT COUNTRY REPORTS 2025

Romania

Executive summary

Romania can rely on a well-developed fixed connectivity infrastructure and is strengthening its role in critical technologies like semiconductors, but persistent R&D gaps, weak SME and start-up innovation and slow emerging tech uptake limit its competitiveness. While the country is advancing in digital public services, challenges remain in digital skills, inclusion, and integrating sustainability into its digital infrastructure. Romania shows a low level of ambition in its contribution to the Digital Decade having set 11 national targets, 36% of which are aligned with the EU 2030 targets. The country is fully following its trajectories (on the basis of the 2024 trajectories defined for 1 KPI out of 8 analysed). Romania addressed 40% of the 15 recommendations issued by the Commission in 2024 by making some changes through new measures.

Romania remains an EU leader when it comes to fixed connectivity, but more efforts are needed on 5G. Despite recent efforts, Romanians have very low levels of digital skills. Efforts have been made to strengthen Romania's position regarding semiconductor manufacturing. The country is also taking major steps to improve the digitalisation of public services, including a new Governmental cloud and the notification of an eID scheme. Romania struggles with integrating digital technology into business activities. AI and data analytics are not used to their full potential. Lack of access to capital both for start-ups and scale-ups remains an important issue hampering digital innovation.

Digital Decade KPI (1)	Romania				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	RO	EU
Fixed Very High Capacity Network (VHCN) coverage	95.0%	95.9%	0.9%	-	82.5%	4.9%	99.0%	100%
Fibre to the Premises (FTTP) coverage	95.0%	95.7%	0.8%	-	69.2%	8.4%	99.0%	-
Overall 5G coverage	32.8%	46.8%	42.7%	33.0%	94.3%	5.9%	62.0%	100%
Edge Nodes (estimate)	5	11	120.0%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	69.1%	14.7%	-	72.9%	2.8%	75.0%	90%
Cloud	15.5%	-	-	-	-	-	40.0%	75%
Artificial Intelligence	1.5%	3.1%	103.3%	-	13.5%	67.2%	10.0%	75%
Data analytics	21.9%	-	-	-	-	-	15.0%	75%
AI or Cloud or Data analytics	28.7%	-	-	-	-	-	-	75%
Unicorns	0	0		-	286	4.4%	-	500
At least basic digital skills	27.7%	-	-	-	-	-	50.0%	80%
ICT specialists	2.6%	2.8%	7.7%	-	5.0%	4.2%	4.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	52.2	62.7	20.2%	-	82.3	3.6%	100.0	100
Digital public services for businesses	50.0	55.1	10.2%	-	86.2	0.9%	100.0	100
Access to e-Health records	58.6	75.1	28.2%	-	82.7	4.5%	-	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, which is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory, which is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024).

According to the 2025 special Eurobarometer on 'the Digital Decade', 62% of Romanians consider that the digitalisation of daily public and private services is making their lives easier. 77% consider the action of the public authorities important to counter and mitigate the issue of fake news and disinformation online. 77% consider competitiveness important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Romania remains an EU leader in connectivity, including in sparsely populated areas, has the highest take-up of high-speed Internet in the EU for >100 Mbps and ranks 3rd in the EU for >1 Gbps connections. However, despite strong year-on-year growth, Romania continues to underperform on 5G, both in terms of coverage and spectrum assignment. Significant growth potential exists here and a lot more could be done to promote the benefits of 5G connectivity, particularly how it could support the country's manufacturing and B2B sectors.

Romania is slowly strengthening its position in critical technologies. Recently, it has adopted its national quantum technology strategy and announced an initiative that will lead to an investment of EUR 420 million (NRRP) for auto industry semiconductor R&D and manufacturing. The approach, which involves European companies, universities and SMEs, has the potential to build a strong semiconductor ecosystem in the medium and long term.

Romania does not have unicorn companies in ICT and digital. Its start-up ecosystem would benefit from better conditions for access to capital, in particular risk, in order to develop further. Regarding cybersecurity, Romanians take fewer steps than the EU average to protect their data online. Romania has transposed the NIS2 Directive in its national legislation via an Emergency Ordinance.

Protecting and empowering EU people and society

Romania is investing significantly in digitalising its public services and raising the overall level of digital skills. This is a long-term process that needs strong political will, a clear agenda and renewed commitment in terms of efforts and resources in order to achieve success.

Romania continues to rank last in basic digital skills, but it is taking significant steps to address this, with a higher budget for education and schemes in place to train teachers and optimise the education process. It is important that the concept of acquiring the necessary digital skills is integrated throughout the curricula and represents a key KPIs for investments throughout the entire learning cycle.

Regarding ICT specialists, Romania has a high number of graduates but is not able to retain this talent in the country. The number of ICT specialists appears to be stagnating, which could put the country's 2030 target at risk.

Romania demonstrates a consistent pattern of robust growth for the digitalisation of public services, but the absolute scores for Romania remain below the EU average. Major projects are currently being announced or implemented and should transform how public services are delivered but will require the appropriate degree of development and maintenance over time. The public entities running these projects should be given the necessary resources (finance, project management, ICT specialists) to continue them after the original contract is finalised. Streamlining of the multiple existing projects that have been promoted as 'single point of contact' could also be envisaged.

For eHealth, Romania has gradually improved its performance, but not all data types are available and less than 50% of the healthcare providers are connected and supplying data. A new strategy for the digitalisation of the health system is being prepared. A new health insurance platform, which should replace the current one, is expected for 2026.

Leveraging digital transformation for a smart greening

Regarding progress in its twin transition, Romania is slowly advancing on an integrated approach to making digital infrastructure greener and tracking emission reductions.

National Digital Decade strategic roadmap

Romania has not submitted an update to its national Digital Decade roadmap. Taking into account Romania's starting point, the roadmap puts forward ambitious objectives, particularly for the use of digital services and the number of ICT specialists.

Overall, the roadmap is a key document in ensuring ownership and oversight of the necessary steps to meet the national targets. It was formally adopted by the Romanian Government in October 2024.

The roadmap consists of 98 measures with a budget of EUR 3.6 billion (equivalent to 1.01% of GDP) of which a substantial share stems from the National Recovery and Reform Plan. The main focus is on the digitalisation of public services and increasing digital skills. A lower priority seems to be given to the digitalisation of businesses and advanced technologies (semiconductors, quantum, edge nodes). Similarly to 2023, Romania has not indicated targets for eHealth, quantum, edge nodes and semiconductors. None of the existing targets were revised.

Funding & projects for digital

Romania allocates 22% of its total recovery and resilience plan to digital (EUR 5.8 billion)[1]. In addition, under cohesion policy, EUR 2.7 billion, representing 9% of the country's total cohesion policy funding, is dedicated to advancing Romania's digital transformation[2]. Romania is a member of the EUROPEUM EDIC. Romania is directly participating in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT). Romania is also a participating state in the EuroHPC Joint Undertaking (JU) and in the Chips JU.

Romania has contributed to the Best Practice Accelerator[3] by sharing one best practice in the frame of the Digital Skills cluster (Skills in Advanced Technologies for SMEs).

Digital Rights and Principles

According to a support study, Romania has been relatively active in implementing the **European Declaration on Digital Rights and Principles**, with 62 initiatives overall and 2 new initiatives launched

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

in 2024. Romania is most active in the area of putting people at the centre of the digital transformation. Less activity has been identified with regards to a fair digital environment and sustainability. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing freedom of choice.

Recommendations

- **Digital public services**: Continue to dedicate the necessary resources (finance, project management, ICT specialists) for the digitalisation of public services, including after the initial set-up (maintenance and support). Streamlining of the multiple existing projects that have been promoted as 'single point of contact' could also be envisaged.
- **Basic digital skills**: Continue to integrate basic digital skills as a core component of the education process, both for teachers and students. Make upskilling, particularly of employees in the private sector and older population, a priority.
- **eHealth**: Continue to expand the data sources available online. Adopt and implement the new strategy on the digitalisation of health system, taking into account user needs and ease of use.
- **ICT specialists and advanced skills**: boost SME digital skills by simplifying support measures and engaging stakeholders to identify market needs. Identify ways to attract and retain ICT talent.
- **Unicorns**: Building on existing programmes, Romania should identify ways to support company scale-up and diversify funding opportunities for innovative companies.
- **Advance technologies take-up** Continue efforts, including via EDIHs, to increase the uptake of cloud and AI services by companies of all sizes. Continue to increase the number of edge nodes deployed and ensure links with work done on semiconductors, quantum and the internet of things.
- **5G**: increase overall 5G coverage, including in the 3.4–3.8 GHz band, and spectrum assignment.
- **Twin digital-green transition**: Develop a comprehensive strategy to align digitalisation with environmental goals.

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European Commission

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Slovakia

Executive summary

Slovakia made some improvement in digital infrastructure deployment and take-up of broadband connectivity and 5G network services, but it still lags behind in overall rollout of digital infrastructure and in business digitalisation. Good progress was achieved in the share of ICT specialists and a promising trend emerges among the youth, with digital skills levels in line with the EU average.

Slovakia shows a substantial level of ambition in its contribution to the Digital Decade, having set 12 national targets, 83% of which aligned with the EU 2030 targets. The country is following its trajectories well with 86% of them being on track (considering 2024 trajectories defined for 7 KPIs out of 8 analysed). Slovakia addressed 27% of the 15 recommendations issued by the Commission in 2024 by making some changes through new measures.

Slovakia falls short of EU standards in most of the Digital Decade key performance indicators. Efforts are underway to bridge these gaps, but their results will require time and additional resources to fully materialise. The country is taking steps to create an environment that supports the digitalisation of SMEs and the development of digital skills, with new measures introduced in 2024. At the same time, public sector investments aim to further enhance connectivity infrastructure, with a particular focus on FTTP, and comprehensive initiatives are supporting the development of a high-performance computing ecosystem. While digital public services are below EU average levels, a comprehensive investment plan was adopted to strengthen their digitalisation. Increasing attention is being dedicated to ensuring cybersecurity.

Digital Decade KPI (1)	Slovakia				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	SK	EU
Fixed Very High Capacity Network (VHCN) coverage	69.1%	73.0%	5.6%	49.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	64.2%	67.8%	5.6%	-	69.2%	8.4%	-	-
Overall 5G coverage	79.0%	87.9%	11.3%	80.0%	94.3%	5.9%	98.5%	100%
Edge Nodes (estimate)	5	10	100.0%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	62.9%	2.2%	-	72.9%	2.8%	90.0%	90%
Cloud	30.2%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	7.0%	10.8%	53.1%	9.0%	13.5%	67.2%	75.0%	75%
Data analytics	30.2%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	45.8%	-	-	-	-	-	-	75%
Unicorns	0	0		0	286	4.4%	3	500
At least basic digital skills	51.3%	-	-	-	-	-	70.0%	80%
ICT specialists	4.2%	4.6%	9.5%	4.0%	5.0%	4.2%	6.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	72.1	72.6	0.7%	70.0	82.3	3.6%	100.0	100
Digital public services for businesses	79.2	73.4	-7.3%	84.0	86.2	0.9%	100.0	100
Access to e-Health records	66.3	72.0	8.6%	50.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 82% of Slovak citizens consider that the digitalisation of daily public and private services is making their lives easier. Concerning the action of the public authorities, 93% consider it important to counter and mitigate the issue of fake news and disinformation online, and regarding competitiveness, 88% consider it important to ensure that European companies can grow and become 'European Champions' able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

Despite some progress in deploying fixed and mobile networks, with Slovakia's VHCN and 5G deployment rate outpacing the EU average, the country still lags behind EU average levels in overall broadband coverage and uptake. This is particularly notable in rural areas, where access to these networks remains limited. Support instruments are being prepared to fund connectivity infrastructure – notably for gigabit infrastructure deployment in underserved areas and in schools, as well as social vouchers to promote digital inclusion for pupils – but an investment gap remains. Recent and ongoing changes in the regulatory landscape are also expected to impact the deployment of digital infrastructure (use of aerial infrastructure for fibre deployment, new construction law, Gigabit Infrastructure Act). Slovakia's 5G spectrum allocation currently spans the 700 MHz and 3.6 GHz frequency bands, and all telecom operators have increased their coverage over the past year, with 5G stand-alone networks expected to become available soon.

Slovak businesses show a low level of adoption of advanced technologies, with many SMEs having low digital intensity. Efforts to promote the digitalisation of businesses are ongoing, including support for SMEs through initiatives such as European Digital Innovation Hubs, the Digitrans project, digital and innovation vouchers. However, room for improvement exists in the pace of implementation, ensuring streamlined administrative procedures and expanding the pool of beneficiaries, especially among SMEs. Targeted efforts to promote AI adoption are underway, although challenges associated with informational and managerial barriers exist. Slovakia's ecosystem of innovative start-ups is small. The government has introduced a number of measures to support the growth of scale-ups and start-ups, including the establishment of a European Institute of Innovation & Technology Digital Regional Office, but limited funding remains a barrier.

Cybersecurity is a political priority, backed by various measures, such as training, monitoring and vulnerability assessment. The country is working to improve its cybersecurity with a new strategy being adopted for the 2026-2030 period.

Protecting and empowering EU people and society

While Slovakia's overall digital skills levels are lower than the EU average, a positive trend emerges among younger generations, who have digital skills comparable to their EU counterparts. To promote digital competencies, Slovakia is implementing a comprehensive and inclusive national digital skills strategy. New measures have been introduced to ensure the appropriate pre-conditions for students and teachers to develop their digital skills, with the provision of digital equipment to students from disadvantaged backgrounds and the integration of AI into teaching. Progress, however, will take time to materialise and will require structural barriers to be addressed, including the shortage of mathematics and informatics teachers, social and financial vulnerabilities and a fragmented management of digital skills policies. A promising uptrend was observed in the share of ICT specialists

within the workforce. At the same time, action is being taken to increase the number of ICT specialists and provide appropriate education and training offers, with a specific focus on women's participation in ICT, though it remains at a relatively low scale.

Improvements are needed in the digitalisation of public services, especially in terms of availability for cross-border users. Relevant measures are being implemented, including the recently adopted roadmap for digitalising administrative procedures for 16 priority life situations. These initiatives are expected to improve the availability of digital services for citizens and businesses and reduce administrative burden. At the same time, the share of e-Government users and the uptake of eID continue to be low compared to the availability of these services, and weaknesses associated with the transparency of service processes and design remain.

Slovakia has made good progress in increasing access to electronic health records and is on track to achieve 100% accessibility by 2030. However, the country still faces challenges in fully utilising its e-Health system, due to issues such as low use of e-ID and technical difficulties faced by healthcare professionals, as well as gaps in the availability of medical images to citizens and access opportunities for legal guardians, authorised individuals, and disadvantaged groups.

Leveraging digital transformation for a smart greening

Digitalisation is being explored as a means to support Slovakia's green transition, but current efforts remain limited. The `Digital Skills for the Green Future of Slovakia' project is a flagship initiative, aiming to address the skills needs associated with the green and digital transitions, raising awareness among key stakeholders and developing reference frameworks that identify necessary green and digital skills across professions.

National Digital Decade strategic roadmap

Slovakia submitted an addendum to its national Digital Decade roadmap on 27 November 2024, containing 11 additional measures and 2 revised trajectories. While not all the new measures directly address the SDD24 recommendations, they are relevant to the reality and needs of Slovakia's digital landscape, focusing in particular on the digitalisation of businesses and development of digital skills. However, no additional public funding could be allocated to their implementation, which might negatively affect their implementation and sustainability.

The adjusted roadmap addresses a limited number of roadmap recommendations issued in 2024. All targets align with the EU level goals for 2030, except for the development of digital skills, where the country has a 70% target (instead of 80% for the EU) and ICT specialists, where the country has a goal of 6% of the workforce (instead of 10%). The revised roadmap continues to prioritise the digitalisation of businesses and development of digital skills. It is composed of 127 measures with a budget of EUR 2.26 billion, equivalent to 1.74% of GDP. It still covers all objectives of the Digital Decade, such as a human-centred digital space and bridging the digital divide, but certain aspects would require more attention, such as promoting leadership and sovereignty, and contributing to the green transformation.

Slovakia

Funding & projects for digital

Slovakia allocates 21% of its total recovery and resilience plan to digital (EUR 1.2 billion)[1]. In addition, under cohesion policy, EUR 886 million, representing 7% of the country's total cohesion policy funding, is dedicated to advancing Slovakia's digital transformation[2].

Slovakia is a member of the Local Digital Twins towards the CitiVERSE EDIC. Slovakia is directly participating in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT). Slovakia is also a participating state in the EuroHPC Joint Undertaking (JU) and in the Chips JU.

Slovakia has not yet presented any project in the framework of Digital Decade's Best Practice Accelerator[3].

Digital Rights and Principles

According to a support study, Slovakia has shown rather limited activity in implementing the **European Declaration on Digital Rights and Principles**, with 27 initiatives overall but no new initiatives launched in 2024. Slovakia is most active in the area of putting people at the centre of the digital transformation. Less activity has been identified with regards to a protected, safe and secure digital environment. Measures in the area of solidarity and inclusion and freedom of choice appear to have most impact on the ground, in contrast to those addressing safety, security and empowerment and sustainability.

Recommendations

- **VHCN/FTTP**: Facilitate infrastructure deployment by lifting administrative barriers and supporting collaboration between stakeholders, especially for the deployment of fibre optic networks.
- **SMEs**: Continue building on existing measures targeted at SMEs (e.g. EDIHs, Digitrans), expanding their scope and pool of beneficiaries, while ensuring continued support in the medium-long term.
- **AI, Cloud and Data analytics**: Accelerate the implementation of planned measures, prioritising solutions that limit administrative burden and ensure transparency. In particular, continue supporting the uptake of AI across businesses and in the public administration, addressing existing informational and managerial barriers.
- **Basic digital skills**: Continue implementing existing measures to enhance the level of digital skills across all population groups, while ensuring that all educators possess adequate training, especially IT and mathematics teachers.
- **Cybersecurity**: Continue ongoing efforts to strengthen cybersecurity, while also allowing the appropriate authorities to enforce prompt and necessary actions to mitigate identified threats or weaknesses.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

- **Digital public services**: Increase the transparency and availability of digital public services, particularly for cross-border users, including by enhancing the user-friendliness, functionalities and uptake of the e-ID mobile app and *Slovensko v Mobile app*.
- **Unicorns**: Expand existing measures aimed at supporting the growth of scale-ups and start-ups that drive innovation and invest in emerging technologies.
- **ICT specialists**: Ensure ICT studies are sufficiently offered and promoted, in line with labour market needs, as well as provide opportunities for workers to access lifelong learning and reskilling/upskilling programmes in this area.
- **Green ICT**: Develop a coherent approach to twinning the digital and green transitions.

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ANNEX 26

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Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Slovenia

Executive summary

Slovenia can rely on a well-developed digital infrastructure but lags behind in digital skills. The country is very active in several cutting-edge technology projects, particularly in quantum, semiconductors, cloud and Artificial Intelligence (AI). Slovenia shows a high level of ambition in its contribution to the Digital Decade having set 13 national targets, 100% of which are aligned with the EU 2030 targets.[1] The country is following its trajectories moderately well with 63% of them being on track (considering 2024 trajectories defined for 8 KPIs out of 8 analysed). Slovenia addressed 82% of the 11 recommendations issued by the Commission in 2024 by making some changes through new measures.

In 2024, 5G coverage increased considerably, including in rural areas. However, the country lags behind in basic digital skills and ICT specialists, which may also be one of the factors limiting the uptake of advanced technologies in SMEs. An exception is AI adoption by enterprises, which has recently shown considerable progress. Often in collaboration with other EU Member States, the country takes an active role in several pioneering technology projects, including those focused on quantum computing, semiconductors, cloud computing and AI.

Digital Decade KPI (1)	Slovenia				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (4)	DESI 2025	Annual progress	SI	EU
Fixed Very High Capacity Network (VHCN) coverage	78.5%	79.6%	1.5%	80.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	78.5%	79.6%	1.5%	82.0%	69.2%	8.4%	100.0%	-
Overall 5G coverage	82.1%	96.7%	17.8%	74.0%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate) (2)	8	16	100.0%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (3)	-	67.6%	0.4%	-	72.9%	2.8%	90.0%	90%
Cloud	36.0%	-	-	-	-	-	75.0%	75%
Artificial Intelligence	11.4%	20.9%	83.7%	33.0%	13.5%	67.2%	75.0%	75%
Data analytics	19.1%	-	-	-	-	-	75.0%	75%
AI or Cloud or Data analytics	44.7%	-	-	-	-	-	-	75%
Unicorns	0	0		-	286	4.4%	7	500
At least basic digital skills	46.7%	-	-	-	-	-	80.0%	80%
ICT specialists	3.8%	4.3%	13.2%	6.0%	5.0%	4.2%	10.0%	~10%
eID scheme notification		Yes						
Digital public services for citizens	77.0	78.6	2.0%	76.0	82.3	3.6%	100.0	100
Digital public services for businesses	84.0	85.0	1.2%	90.0	86.2	0.9%	100.0	100
Access to e-Health records	87.6	87.5	-0.1%	83.0	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) Slovenia aims to contribute to this target through the deployment of edge nodes by 200 companies.
(3) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(4) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

[1] While the KPI on edge nodes measures the number of edge nodes deployed, Slovenia intends to contribute to the target of 10 000 edge nodes with 200 companies deploying edge nodes.

According to the special Eurobarometer on 'the Digital Decade' 2025, 78% of Slovenian citizens consider that the digitalisation of daily public and private services is making their lives easier. Concerning the action of the public authorities, 90% consider it important to counter and mitigate the issue of fake news and disinformation online, and regarding competitiveness, 82% consider it important to ensure that European companies can grow and become "European Champions" able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

The fibre to the premises coverage is relatively high in Slovenia and very high capacity network coverage is gradually increasing, although some rural gaps remain. The country is taking action to reduce these gaps. 5G coverage increased significantly, including in rural areas, and fibre-to-the-premises coverage remains strong. The country is actively advancing strategic technologies such as quantum computing, semiconductors, cloud computing and AI. To strengthen its ecosystem and capacities, it is establishing Competence Centres for semiconductors and AI, and will host an AI Factory featuring a supercomputer. With the exception of the businesses' uptake of AI, where Slovenia has made significant progress recently, the uptake of more accessible digital technologies that could enhance competitiveness on a larger scale for SMEs is relatively low. This limitation may partly stem from a shortage of sufficiently skilled employees. For the start-up sector, initial steps are being taken to enhance framework conditions, such as through legislative changes. However, several initiatives are still under development, and venture capital expenditure and funding via capital markets remain relatively low. Slovenia is developing cyber awareness and capabilities across multiple areas, including securing infrastructure and providing trainings in the public sector, safeguarding healthcare systems and launching pilot training programmes within the education system.

Protecting and empowering EU people and society

Slovenia lags behind in digital skills. Its population has a relatively low level of basic digital skills. Despite ongoing efforts to improve basic digital skills across various demographic groups, it remains to be seen whether these initiatives will effectively bridge the significant gaps. The current education reform presents an opportunity to integrate digital skills into the curriculum, which will be crucial in addressing this issue. Although Slovenia has made good progress in increasing its proportion of ICT specialists within the workforce, it still lags behind the EU average. The relatively low share of ICT specialists may be one of the factors limiting businesses' adoption of advanced digital technologies. While training programmes for acquiring advanced digital skills in specific technologies are available, they appear to be insufficient to meet the demand for ICT specialists. Additionally, despite Slovenia's efforts in anticipating future job market trends and the demand for ICT specialists, addressing these dynamic needs remains challenging. In this regard, integrating digital skills into the ongoing higher education reform will be crucial. The availability of digital public services in Slovenia is a bit less widespread than in the EU, especially when it comes to cross-border services. However, their uptake is higher than the EU average. Slovenia plans to enhance the digital transformation of public authorities, in particular on data access and on municipality level. Furthermore, the country is preparing the Digital Healthcare Act, a major project that aims to drive digital transformation in the healthcare sector.

Leveraging digital transformation for a smart greening

Slovenia is taking steps to support the green transition through digital technologies, building on its existing measures and introducing new ones as part of its adjusted roadmap. Initiatives range from modernising green public procurement and creating digital twins to establishing circular and digital business models. However, current efforts still appear to be fragmented and there does not yet seem to be a systematic approach to fully leverage their potential together.

National Digital Decade strategic roadmap

Following a public consultation, Slovenia submitted a fully revised national Digital Decade roadmap on 31 January 2025[2]. This document will also serve as the Action Plan for the Digital Slovenia 2030 strategy, which was adopted in 2023. The roadmap contains some new or changed measures compared to the initial roadmap submission in 2023 and maintains its ambitious national target values. However, several measures have been removed from the adjusted roadmap, especially those linked to Digital Decade objectives and all measures linked to start-ups. The revised roadmap addresses a limited number of the roadmap recommendations issued in 2024. All national target values were kept in line with the EU's 2030 ambition level and the additional target on e-ID uptake, the quantitative estimates on how Slovenia will contribute to the semiconductor and the edge nodes targets were maintained. The update is composed of 81 measures with a budget of EUR 685 million, which represents 1.02% of Slovenia's GDP. While it brings some new impulses in line with the new Commission's priorities in areas like green ICT, AI and semiconductors, the update does not sufficiently address the country's challenges and is not fully aligned with its very ambitious national targets, especially in the areas of basic and advanced digital skills and digitalisation of businesses.

Funding & projects for digital

Slovenia allocates 20% of its total recovery and resilience plan to digital (EUR 513 million)[3]. In addition, under cohesion policy, EUR 287 million, representing 9% of the country's total cohesion policy funding, is dedicated to advancing Slovenia's digital transformation[4].

Slovenia is a member of the three established EDICs; the Alliance for Language Technologies EDIC, the Local Digital Twins towards the CitiVERSE EDIC and of the EUROPEUM EDIC on blockchain. Slovenian entities are indirect and/or associated partners in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT) and in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS).[5] Slovenia is also a participating state in the EuroHPC Joint Undertaking (JU) and in the Chips JU.

[2] Government approval pending due to some changes linked to the Digital Slovenia 2030 Action Plan. For the purpose of the Digital Decade Policy Programme, the content of the roadmap submitted on 31 January 2025 can be considered final. Corrigendum to Digital Decade Country Report Slovenia 2024: The initial national roadmap was adopted by the Slovenian Government in December 2023, before its publication and submission to the European Commission.

[3] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[4] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.

[5] Corrigendum to Digital Decade Country Report Slovenia 2024: Slovenian entities are indirect partners in the Important Project of Common European Interest on Next Generation Cloud Infrastructure and Services (IPCEI-CIS).

Slovenia leads the Digital Skills cluster of the Best Practice Accelerator[6]. In this context, it led the organisation of five workshops and shared four Slovenian best practices on digi info points, an adult digital literacy program, mobile heroes (for older people) and digital training for children and young people).

Digital Rights and Principles

According to a support study, Slovenia has shown rather limited activity in implementing the **European Declaration on Digital Rights and Principles**, with 38 initiatives overall and 3 new initiatives launched in 2024. Slovenia is most active in the area of Solidarity and inclusion. Less activity has been identified with regards to privacy and individual control over data. Measures in the area of putting people at the centre of the digital transformation appear to have most impact on the ground, in contrast to those addressing participation in the digital public space.

Recommendations

- **ICT specialists:** Improve the early identification of labour market needs and address them accordingly through training offers and with the help of the higher education reform.
- **Basic digital skills:** Increase and intensify education and training offers and integrate digital skills into the education curricula from an early age.
- **SME take up:** Provide continuous support to SMEs and create enabling framework conditions for their uptake of digital technologies.
- **Advanced technologies:** Quickly implement measures to increase the uptake of advanced technologies by businesses, with a focus on SMEs.
- **Cybersecurity:** Sustain and enhance activities to increase cybersecurity in the sectors of public services and education and introduce these with activities to support businesses.
- **Unicorns/startups**: Quickly implement measures to improve framework conditions and access to funding for start-ups.
- **Green:** Enhance digital technologies to support the green transition, in particular by addressing the interaction between green and digital initiatives in a more systematic manner.

[6] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

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ANNEX 27

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Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

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European Commission

SHORT COUNTRY REPORTS 2025

Spain

Executive summary

Spain benefits from a robust digital infrastructure, which allows it to develop its digital transformation. The country is making moderate progress in the adoption of key digital technologies by enterprises. Regarding AI, the Spanish government shows ambition with the last developments, but still continues to face challenges in AI adoption by SMEs. Although Spain lags behind in digital public services for business, the country has improved its performance in digital public services for citizens and in access to e-Health records. Spain is leading in initiatives to strengthen the cybersecurity of its public services and enterprises.

Spain's contribution to the Digital Decade is very ambitious, with 13 national targets, 92% of which are aligned with the EU 2030 targets. The country is following its trajectories well with 75% of them being on track (based on the 2024 trajectories established for 8 KPIs out of 8 analysed). Spain addressed 100% of the 7 recommendations issued by the Commission in 2024 by making some changes through new measures.

Digital Decade KPI (1)	Spain				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	ES	EU
Fixed Very High Capacity Network (VHCN) coverage	96.3%	95.0%	-1.4%	97.0%	82.5%	4.9%	100.0%	100%
Fibre to the Premises (FTTP) coverage	95.2%	94.9%	-0.4%	96.0%	69.2%	8.4%	100.0%	-
Overall 5G coverage	92.3%	95.7%	3.7%	98.9%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	167	301	80.2%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	74.2%	4.8%	-	72.9%	2.8%	90.0%	90%
Cloud	27.3%	33.1%	21.5%	-	-	-	75.0%	75%
Artificial Intelligence	9.2%	11.3%	23.2%	10.6%	13.5%	67.2%	75.0%	75%
Data analytics	38.0%	40.9%	7.7%	-	-	-	75.0%	75%
AI or Cloud or Data analytics	49.9%	55.7%	11.6%	-	-	-	-	75%
Unicorns	13	13	0.0%	16	286	4.4%	24	500
At least basic digital skills	66.2%	-	-	-	-	-	85.0%	80%
ICT specialists	4.4%	4.7%	6.8%	5.0%	5.0%	4.2%	8.6%	~10%
eID scheme notification		Yes						
Digital public services for citizens	84.2	88.8	5.4%	88.7	82.3	3.6%	100.0	100
Digital public services for businesses	91.0	85.1	-6.5%	95.0	86.2	0.9%	100.0	100
Access to e-Health records	84.6	88.3	4.4%	87.3	82.7	4.5%	100.0	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the special Eurobarometer on 'the Digital Decade' 2025, 72% of Spanish citizens consider that the digitalisation of daily public and private services is making their lives easier. Concerning the action of the public authorities, 92% consider it important to counter and mitigate the issue of fake news and disinformation online. Regarding competitiveness, 85% consider it important

to ensure that European companies can grow and become “European Champions” able to compete globally.

A competitive, sovereign, and resilient EU based on technological leadership

Spain's digital infrastructure is generally more advanced than the EU average, with higher coverage rates in most categories. Spain's 5G spectrum assignment in pioneer bands is particularly strong too (98.33%). The country prioritises semiconductor production through PERTE Chip (The Strategic Project for Microelectronics and Semiconductors), which aims to strengthen design and production capabilities in the microelectronics and semiconductor industries. It is backed by a budget of EUR 12.25 billion until 2027 and the country has created the SETT (Spanish Society for Technological Transformation) to accelerate the allocation of funds. Spain is actively participating in the IPCEI-ME and Chips JU initiatives and is leading the Integrated Photonics Pilot Line. Notably, the Spanish government approved the updated 2024 National Artificial Intelligence Strategy and published an open-source GenAI models trained with a high percentage of data in Spanish and co-official languages as part of its effort to strengthen digital sovereignty. Moreover, Spain is actively participating in the IPCEI-CIS to accelerate the edge nodes deployment. Spain also launched a regulatory sandbox for high-risk AI systems, a pioneering step in implementing the European AI Act and supporting companies in meeting upcoming obligations.

The country’s commitment to quantum technologies is reflected in the launch of the Quantum Technologies Strategy in April 2025 and in the deployment of initiatives, projects such as Quantum Spain, the Rydberg Atoms Computer and the EuroHPC Quantum Annealer. Concerning the digitalisation of business, the country shows strength in the basic digital intensity of SMEs (74.2%), and in the adoption of Cloud and data analytics by enterprises, although faces challenges in AI adoption by SMEs. Nonetheless, Spain is making efforts to improve its performance in these areas. The country is focusing on bolstering the innovative scale-up ecosystem with strategic investments to nurture and support innovative enterprises.

Protecting and empowering EU people and society

Spain continues to take positive steps toward empowering people and promoting opportunities for all individuals in the digital economy. The country is aiming to bridge gaps concerning the accessibility of digital technologies through all the activities related to its National Digital Skills Plan, which includes initiatives like a EUR 200 million program to train over 80 000 professionals in digital skills and AI. Spain is also making strides in the development of specialists in ICT, with initiatives like the ICT Talent Attraction and Retention Programme providing scholarships and contracts. Regarding Digital Public Services, Spain makes a significant contribution to the EU’s Digital Decade targets, with its performance in public services for citizens (88.8), however the country lags behind concerning the public services for business (85.1). The Spanish government has taken significant policy actions against online misinformation and in favour of the minors’ protection in the digital environment. It also pays particular attention to the promotion of digital rights and principles, with the recent launch of the Digital Rights observatory.

Leveraging digital transformation for a smart greening

Spain continues its efforts to support the synergies between the digital and green transitions. The country is implementing innovative programmes to reduce the environmental impact of energy-

intensive digital technologies. The National Green Algorithms Plan has four axes and aims to make AI more sustainable and to find AI solutions for the green transition.

National Digital Decade strategic roadmap

Spain did not submit a revised adjustment to its national Digital Decade roadmap. The Spanish authorities indicated that they plan at a later stage to formally revise the national roadmap, submitted in January 2024, in accordance with article 8 (3) of the Decision establishing the Digital Decade Policy Programme. The initial roadmap contains 67 measures with a budget of EUR 33.8 billion, of which EUR 26.7 billion come from public budgets (equivalent to 1.68 % of GDP). However, Spain has worked on addressing the recommendations made in 2024, by changing existing measures and implementing new ones that will be included in a future revised roadmap. The Spanish authorities published the initial national roadmap in March 2025.

Funding & projects for digital

Spain allocates 26% of its total recovery and resilience plan to digital (EUR 40.4 billion)[1]. In addition, under cohesion policy, EUR 5.0 billion, representing 14% of the country's total cohesion policy funding, is dedicated to advancing Spain's digital transformation[2].

Spain is a member of the three established EDICs; the Alliance for Language Technologies EDIC, the Local Digital Twins towards the CitiVERSE EDIC and of the EUROPEUM EDIC. Spain is directly participating in the IPCEI on Microelectronics and Communication Technologies (IPCEI-ME/CT) and in the IPCEI on Next Generation Cloud Infrastructure and Services (IPCEI-CIS). Spain is also a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Spain has contributed to the **Best Practice Accelerator**[3] by sharing one best practice in the frame of the Digital Skills cluster (The Generation D Pact launched in November 2022).

Digital rights and principles

According to a support study, Spain has been one of the most active Member States in implementing the **European Declaration on Digital Rights and Principles**, with over 100 initiatives overall and 30 new initiatives launched in 2024. Spain is most active in the area of digital education, training and skills. Less activity has been identified with regards to sustainability. Measures in the area of solidarity and inclusion appear to have most impact on the ground, in contrast to those addressing participation in the digital public space.

[1] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.
[2] This amount includes all investment specifically aimed at or substantially contributing to digital transformation in the 2021-2027 Cohesion policy programming period. The source funds are the European Regional Development Fund, the Cohesion Fund, the European Social Fund Plus, and the Just Transition Fund.
[3] The Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular workshops, currently focused on three thematic clusters: Digital Skills, Green IT, and the Uptake of Digital Technologies.

Recommendations

- **AI, cloud and data analytics**: continue the efforts to support the digitalisation of enterprises, in particular, to foster the adoption of AI, and paying attention to SMEs.
- **ICT specialists**: continue the efforts to increase the number of ICT specialists and their percentage over the total employment in the country.
- **Green**: Develop a system for monitoring and quantifying the emission reductions of the deployed digital solutions.
- **Unicorns**: Continue efforts to improve the business environment and access to finance for digital start-ups.
- **Semiconductors and digital innovation**: Accelerate the efforts to allocate public funds in strategic projects.
- **Cybersecurity**: Continue efforts in cybersecurity to address evolving threats, particularly for enterprises and administration.

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ANNEX 28

ANNEX

to the

Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee and the Committee of the Regions

State of the Digital Decade 2025: Keep building the EU's sovereignty and digital future

{SWD(2025) 290 final} - {SWD(2025) 291 final} - {SWD(2025) 292 final} -
{SWD(2025) 293 final} - {SWD(2025) 294 final} - {SWD(2025) 295 final}

European Commission

SHORT COUNTRY REPORTS 2025

Sweden

Executive summary

Sweden continues to seek to be a leading country in digitalisation. Although it has good digital infrastructure, it lags behind on e-Health. Its population scores high in both basic and advanced IT skills. The country is taking several steps to further digitalise its public services and to promote the use of AI.

Sweden shows a moderate level of ambition in its contribution to the Digital Decade having set 13 national targets, 54% of which are aligned with the EU 2030 targets. The country is following its trajectories well with 83% of them being on track (on the basis of the 2024 trajectories defined for 6 KPIs out of 8 analysed). The country is currently revising its national digitalisation strategies and is expected to submit its revised roadmap only later in 2025. Sweden addressed 55% of the 9 recommendations issued by the Commission in 2024, either by implementing significant policy changes (11%) or making some changes (44%) through new measures.

Its fibre and 5G coverage keep increasing; however, connecting the remaining buildings will become increasingly costly. A substantial part of Sweden's Resilience and Recovery Plan was reserved for supporting the expansion of broadband connectivity in rural areas.

Digital Decade KPI (1)	Sweden				EU		Digital Decade target by 2030	
	DESI 2024 (year 2023)	DESI 2025 (year 2024)	Annual progress	National trajectory 2024 (3)	DESI 2025	Annual progress	SE	EU
Fixed Very High Capacity Network (VHCN) coverage	88.5%	89.7%	1.4%	-	82.5%	4.9%	98.5%	100%
Fibre to the Premises (FTTP) coverage	83.9%	85.6%	2.0%	-	69.2%	8.4%	98.5%	-
Overall 5G coverage	90.3%	98.6%	9.2%	99.0%	94.3%	5.9%	100.0%	100%
Edge Nodes (estimate)	32	63	96.9%	-	2257	90.5%	-	10000
SMEs with at least a basic level of digital intensity (2)	-	86.6%	-0.2%	-	72.9%	2.8%	95.0%	90%
Cloud	66.0%	-	-	-	-	-	94.0%	75%
Artificial Intelligence	10.4%	25.1%	141.9%	15.4%	13.5%	67.2%	39.5%	75%
Data analytics	35.0%	-	-	-	-	-	56.5%	75%
AI or Cloud or Data analytics	73.1%	-	-	-	-	-	-	75%
Unicorns	39	39	0.0%	44	286	4.4%	64	500
At least basic digital skills	66.4%	-	-	-	-	-	89.7%	80%
ICT specialists	8.7%	8.6%	-1.1%	9.7%	5.0%	4.2%	12.9%	~10%
eID scheme notification		Yes						
Digital public services for citizens	93.3	85.9	-7.9%	87.0	82.3	3.6%	90.0	100
Digital public services for businesses	96.0	90.4	-5.8%	88.7	86.2	0.9%	90.5	100
Access to e-Health records	77.9	77.9	0.0%	75.5	82.7	4.5%	78.5	100

(1) See the methodological note for the description of the indicators and other metrics
(2) DESI 2025 reports the version 4 of the Digital Intensity Index, that is comparable with the DII value from DESI 2023 (referring to year 2022) for the calculation of the annual progress. It is not comparable to the national trajectory that is based on version 3 of the index.
(3) National trajectory value if present in the national roadmap and if the indicator was measured in DESI2025 (year 2024)

According to the 2025 special Eurobarometer on the 'Digital Decade', 85% of Swedes consider that the digitalisation of daily public and private services is making their lives easier. On the action of the public authorities, 97% consider it important to counter and mitigate the dissemination of fake news

and disinformation online. And on competitiveness, 82% consider it important to ensure that European companies can grow and become 'European Champions' capable of competing globally.

A competitive, sovereign, and resilient EU based on technological leadership

Infrastructure indicators (VHCN, FTTP, 5G) are all above the EU average. 5G coverage, in particular, has increased over recent years, following allocation of the remaining spectrum in the 900 MHz, 2.1 GHz and 2.6 GHz band. However, Sweden indicated in its Roadmap that it will not fully reach the target of 100 % VHCN coverage due to the high cost of connecting the last buildings. Sweden is well advanced in switching off its copper network, which is expected to be completed in 2026. The country excels in promoting an environment conducive for start-ups and has a large number of unicorns given the size of its economy. Since last year, Sweden has made good progress in the use of AI by enterprises. In 2023 Sweden asked an AI Commission to analyse and present proposals for making the best use of AI. Sweden is currently assessing the report, which was presented in November 2024. Cybersecurity is a priority for Sweden as demonstrated by the creation of its National Cybersecurity Centre and the presentation of a new cyber security strategy in March 2025.

Protecting and empowering EU people and society

Sweden has for several years been a front runner in basic and advanced digital skills. It has the largest share of graduates with a degree in ICT in the EU. In February 2025 Sweden presented a strategy to increase the number of graduates in science and technology. The strategy sets several long-term targets on the share of science students in secondary school and the number of science, technology, engineering and mathematics (STEM) students.

Sweden's ICT landscape is characterised by a high proportion of enterprises providing ICT training and a large share of ICT specialists in total employment. However, the country faces challenges in maintaining growth rates in these areas, particularly in the context of enterprises providing ICT training and the overall number of ICT specialists. The notable exception is the growth rate of female ICT specialists, which is significantly higher than the EU average, indicating a positive trend towards gender diversity in the ICT sector.

Sweden, however, remains below the EU average in online access to electronic health records and is at risk of not meeting the EU target of 100% by 2030.

Leveraging digital transformation for a smart greening

Sweden's Recovery and Resilience Plan (RRP) is focused on the green transition, with specific reforms and investments primarily targeting carbon-intensive sectors. To do this, the **RRP** supports local and regional investments to reduce climate emissions and in the transition of industry, energy efficiency in multi-dwelling housing, rail transport and biodiversity.

National digital decade strategic roadmap

Sweden did not submit an adjustment to its national Digital Decade roadmap. An adjusted roadmap is expected later in 2025. The initial roadmap is composed of 40 measures with a budget of EUR 3.5 billion, EUR 2.8 billion of which comes from public funding (equivalent to 0.5% of GDP).

Sweden

Funding & projects for digital

Sweden allocates 21% of its total recovery and resilience plan to digital (EUR 674 million)[1]. In addition, under cohesion policy, EUR 230 million, representing 13% of the country's total cohesion policy funding, is dedicated to advancing Sweden's digital transformation[2].

Sweden is a participating state of the EuroHPC Joint Undertaking (JU) and of the Chips JU.

Sweden is not yet active in the Digital Decade's Best Practice Accelerator[3].

Digital Rights and Principles

According to a support study, Sweden has been relative active in implementing the **European Declaration on Digital Rights and Principles**, with 54 initiatives overall and 15 new initiatives launched in 2024. Sweden is most active in the area of digital education, training and skills and interactions with algorithms and artificial intelligence systems. Less activity has been identified with regards to fair and just working conditions. Measures in the area of solidarity and inclusion appear to have most impact on the ground, in contrast to those addressing freedom of choice.

Recommendations

- **5G:** Encourage operators to speed up the deployment of 5G stand-alone core networks.
- **Fixed broadband**: Ensure completion of the fibre network.
- **eHealth:** Continue efforts to increase the availability of electronic health records.
- **Artificial Intelligence:** Continue to encourage the use of AI by enterprises.
- **ICT specialists and advanced skills:** Continue the work to increase the number of STEM graduates.
- **Green:** Monitor and quantify the emission reductions of the digital solutions deployed.

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