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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

DIGITAL DECADE 2025
COUNTRY REPORTS

Portugal

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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 Citi VERSE 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.

A competitive, sovereign and resilient EU based on technological leadership

Portugal's policymakers are paying increasing attention to digital technologies as an enabler for competitiveness. The recent National Digital Strategy stresses the need for innovative companies driven by digital technologies, in particular trustworthy artificial intelligence (AI). In addition, Portugal's national recovery and resilience plan (RRP) gives significant attention to the digitalisation of businesses, the digitalisation of science, and boosting innovation potential.

However, there remain some challenges. Portuguese enterprises have only average levels of digital intensity and uptake of advanced digital technologies, with modest growth in AI in 2024. In 2023, spending on national research and development (R&D) was 1.7% of GDP, up from 1.3% in 2017[4] but far below Portugal's 2030 goal of 3%[5]. Such level R&D spending results in limited innovation and productivity potential.

The characteristics of Portuguese enterprises may account for some of their challenges in adopting digital technologies. SMEs account for approximately 97.8% of the country's enterprises with more than 10 employees, while large enterprises make up only 2.2% of such enterprises. Portugal's ICT sector accounted for 4.47% of gross value added in 2021 (no newer data)[6], lower than the EU average of 5.46%. R&D in the ICT sector accounted for 24.21% of total R&D expenditure by Portuguese businesses in 2023, slightly more than in 2022. Also in 2023, 25.7% of total R&D personnel in Portugal worked in the ICT sector, similar to 2022 (25.74%) but down from 27.27% in 2021.

Despite these tendencies, other factors contribute to Portugal's growing digital leadership. The country's digital infrastructures are a solid asset for citizens and businesses, and citizens and businesses could be incentivised to rely on these to build innovative business applications. In addition, Portugal is engaged in some actions and pilot lines under the European Chips Act and European quantum initiatives. Cybersecurity culture is also growing among enterprises, the general public, and the public administration. Finally, the number of Portuguese start-ups has risen, however, the country still has one unicorn, with two potential ones on the horizon[7].

Building technological leadership: digital infrastructure and technologies

Portugal excels in VHCN, FTTP, and overall 5G coverage, both measured nationally and when looking at households in sparsely populated areas. 5G coverage in the 3.4–3.8 GHz band is higher than the EU average, but the assignment of pioneer bands spectrum is below that average. On take-up, the country leads in fixed broadband subscriptions at speeds of 100 Mbps or more, but remains behind the EU average in 1 Gbps subscriptions and 5G SIM card adoption.

[4] 2025 European Semester Portugal country report, Innovation, business environment and productivity.
[5] 2024 European Semester Portugal country report, 'Further priorities ahead', p. 15.
[6] Most of the indicators mentioned in the country report are explained in the DESI 2025 Methodological Note accompanying the State of the Digital Decade report 2025.
[7] On the date of data extraction in March 2025, see the DESI Methodological Note for details.

Portugal

Connectivity infrastructure

In 2024 Portugal's VHCN coverage for all households was at 94.59% and increased by 0.4% compared with 2023, significantly higher than the EU average of 82.49% (2030 national target 100%). The country is on track according to its national trajectory. For households in sparsely populated areas, Portugal's VHCN coverage of 73.2% was also higher than the EU average of 61.89%, although Portugal's rate of year-on-year growth for VHCN coverage in sparsely populated areas from 2023 to 2024 of 2.5% was slower than the EU average growth rate of 11.3%.

FTTP coverage stood at 93.18% in 2024 (2030 national target: 100%), after a progression of 0.9%. This was much higher than the EU average of 69.24%. The country is on track according to its national trajectory. For households in sparsely populated areas, Portugal's FTTP coverage was also higher than the EU average, at 70.13% in 2024, compared with the EU's 58.78%. However, here too Portugal's growth rate in FTTP coverage for households in sparsely populated areas was only 2.1% between 2023 and 2024, much lower than the EU's 11.9%.

At 98.72% in 2024 (2030 national target 100%), after a progression of 0.6%, Portugal's 5G coverage was higher than the EU average of 94.35%. The country is on track according to its national trajectory. For households in sparsely populated areas, 5G coverage was also higher than the EU average, at 92.26% in 2024, compared with the EU's 79.57%. Portugal's growth rate for 5G coverage in sparsely populated areas between 2023 and 2024 of 5.5% was lower than the EU's 11.9%. 5G coverage in the 3.4–3.8 GHz band for all Portuguese households was higher than the EU average, at 71.38% in 2024, compared with the EU's 67.72% but grew more slowly between 2023 and 2024 at only 9.5% (compared with the EU growth rate of 32.6%). For households in sparsely populated areas, Portugal's 5G coverage in the 3.4–3.8 GHz band was lower than the EU average, at 21.45% in 2024, compared with the EU's 26.19%, showing similar growth rate (PT: 61.6%, EU: 65.1%). In 2025, the country's assignment of 5G pioneer bands spectrum was at 61.11% (unchanged from 2024), lower than the EU average of 74.63%.

Indicators of broadband and mobile take-up show a mixed performance compared with the EU average. In 2024, 91.62% of fixed broadband subscriptions in Portugal were at speeds of 100 Mbps or more, ahead of the EU's 71.88%. Nevertheless, the growth rate for this indicator between 2023 and 2024 in Portugal was 2.1%, which is lower than the EU's 9.1%. For fixed broadband subscriptions at speeds of 1 Gbps or more, Portugal's take-up in 2024 was at 15.15%, below the EU's 22.25%. Portugal's growth rate of 67.0% in this area outperformed the EU's 20.5%. On the share of 5G SIM cards, these constituted 27.49% of all SIM cards in Portugal in 2024, lower than the EU's 35.56%. Portugal's growth rate of 54.7% on this indicator was also lower than the EU's 63.9%.

VHCN and FTTP

In its adjusted roadmap, Portugal proposed new targets to reach 100% coverage for VHCN and FTTP by 2030, in line with the recommendation set out in the 2024 State of the Digital Decade report. Given the good rate of progress and the measures put in place by Portugal, this target seems achievable.

Portugal's revised roadmap includes some measures on fixed connectivity. As reported last year, to achieve gigabit connectivity for all, in late 2023 the Portuguese government launched a public tender for the installation, management and operation of VHCN providing download speeds of at least 1 Gbps and upload speeds of at least 150 Mbps in white areas. More than 400 000 residences and business establishments should be covered by this investment which seeks to achieve full coverage of these

areas by 2026/2027. Work on the project began in 2025, and the total investment of EUR 425 million is co-financed by public funds.

Portugal's copper switch-off process is underway. It started in 2019 and will end in 2030. According to the most recent data provided by ANACOM, Portugal's regulatory authority for electronic communications, active copper lines account for 2% of total broadband lines in Portugal.

With its Atlantic coastline and two outermost regions (Azores and Madeira), submarine cables are important digital infrastructures to ensure the security and sovereignty of Portugal and the EU. These autonomous regions are served by a domestic system of submarine cables known as CAM Ring, which are becoming obsolete and need to be replaced. To address this structural need, the Atlantic CAM (Global Project) is being planned, comprising a ring system of submarine cables with six fibre-optic pairs, including innovative integrated SMART component for seismic detection, environmental monitoring, underwater nautical activity detection and data transmission for scientific purposes. Its deployment, supported in 2024 with EUR 14.3 million from the Connecting Europe Facility (CEF), will contribute these goals while simultaneously: providing high-speed data-transfer capabilities and secure and reliable communication channels and reducing the dependence of the outermost regions on non-European countries for critical digital infrastructure.

5G

In its adjusted roadmap, Portugal proposed a new target to achieve 100% 5G coverage by 2030, in line with the recommendation set out in the 2024 State of the Digital Decade report. Given the good rate of progress and the measures put in place by Portugal, this target seems achievable.

Recent market dynamics have worked to the benefit of end users. In November 2024, a new operator entered the mobile market, pressuring the three major incumbent operators to provide a similar service by offering subscriptions with larger data volumes and lower prices, adjusting their bundled offers, and shortening their minimum contract periods.

The country is working on unleashing the full potential of 5G, including in rural areas and for specific sectors. In February 2025, ANACOM, , published a public consultation report on future procedures for allocating spectrum band. The report concluded that it may be justified to soon make available the spectrum that remained unallocated in the 5G auction (2x5 MHz), and possibly make it available before other frequency bands. The country is also involved in projects using connectivity for social empowerment. For example, '5G for rural smart communities of tomorrow' (5G.RURAL) is an ongoing CEF-supported project (with EUR 4 million) to deploy smart 5G-based community services in six municipalities of the Alentejo region, with a focus on healthcare, education, energy efficiency, agriculture, art, culture and tourism. Healthcare connectivity is also being supported through '5G in Healthcare – Northern Region (PT) (5G Healthcare (PT))', a CEF project to unleash 5G in this sector through actions such as connected emergency vehicles, remote training, and support for diagnosis and the internet of things (IoT) for a health-monitoring environment.

2024 recommendation on connectivity infrastructure: Ensure sufficient access of new players to spectrum for innovative business-to-business (B2B) and business-to-consumer (B2C) applications and encourage operators to speed up the deployment of 5G stand-alone core networks.

Portugal made some efforts to address the recommendation through new policy actions in 2024. ANACOM is in discussions with operators to identify specific 5G use cases, and the public consultation report referred to above also helped businesses to better understand possible use cases for certain

5G spectra. In 2024, one of Portugal's telecoms operators launched 5G standalone as part of its offer, while another installed a 5G standalone private mobile network to bring digitalisation to the cement sector.

Semiconductors

Semiconductors are becoming a priority for Portugal. The 2023 National Strategy for Semiconductors aims to empower Portugal in this sector through involving all interested parties, such as researchers and industry, and identify complementarities and synergies at national level. The country is involved under the European Chips Act. For example, Portuguese stakeholders participate in two of the EU's Chips Joint Undertaking pilot lines (APECS and PIXEurope). In addition, Portugal's national Foundation for Science and Technology (FCT) continues to co-fund the research and innovation (R&I) projects of the Electronic Components and Systems (ECS) component of the Chips Joint Undertaking and will also co-fund the Portuguese Competence Centre in Semiconductors of the Initiative component of the Chips Joint Undertaking.

To build sovereignty, Portugal is setting up a national competence centre in semiconductors under the Chips for Europe Initiative. Following a 2024 call, POEMS, a Portuguese consortium was awarded the contract to coordinate the centre. The consortium is led by the Braga-based International Iberian Nanotechnology Laboratory and is composed of 17 national entities such as universities, research centres and companies. Already operational, the competence centre provides access to technical expertise and experimentation in the area of semiconductors, helping companies to improve design capabilities and develop their skills. It offers or will offer services to semiconductor stakeholders, including start-ups and SMEs, and form part of the European network of competence centres in semiconductors.

2024 recommendation on semiconductors: Continue efforts in the area of semiconductors including by proposing concrete actions and exploring synergies between the national strategy and the EU-level cooperation.

Portugal made some efforts to address the recommendation through new policy actions in 2024. Notably, the country has established the national chips competence centre and participates in calls issued by the Chips Joint Undertaking (see above).

Edge nodes

According to the EU's Edge Node Observatory, Portugal is estimated to have deployed 27 edge nodes by 2024, 92.9% more than in 2023. This is almost twice the amount that Portugal is estimated to have deployed in 2023 (Portugal had originally been estimated to have deployed 14 edge nodes in 2023, although this number was revised since the 2024 State of the Digital Decade report). The country did not propose a 2030 target in this regard, nor did it suggest a strategy for the deployment of edge nodes.

Quantum technologies

Portuguese stakeholders are engaged in projects related to quantum technologies, including at European level. EuroHPC supercomputer Deucalion, based in Guimarães, became fully operational in May 2024 and received approximately 100 projects by and the end of 2024. In addition, the first users are now testing the quantum computing simulator software installed at Deucalion. With the Portuguese quantum communications project/PTQCI, led by the National Security Office (GNS) the

country is active in the European Quantum Communication Infrastructure (EuroQCI) initiative, which aims to implement secure communications networks for EU public administrations.

Portugal's roadmap adjustment refers to the country's participation in EuroQCS-Spain, a new quantum system to complement the existing quantum computer installed in the Barcelona Supercomputing Centre. In addition, Portugal's national Foundation for Science and Technology (FCT) will help Portuguese researchers apply for resources in the EuroHPC Quantum Computers network. FCT also participates in QuantERA, a project dedicated to R&I in quantum technologies.

Supporting EU-wide digital ecosystems and scaling up innovative enterprises

Businesses in Portugal are making greater use of digital technology, but the acceleration of this process could bring further benefits to the country's economy. The basic digital intensity of SMEs in Portugal has grown steadily in recent years. The adoption of cloud computing, data analytics, and AI technologies in Portugal has been mixed compared with EU averages. For example, the adoption of data analytics in Portugal has exceeded the EU average but AI adoption – trailed behind the EU average and annual growth. There is also a clear disparity in technology adoption between Portuguese SMEs and the country's large enterprises, with large enterprises exhibiting significantly higher adoption rates across all three technologies. With SMEs representing the vast majority of enterprises in Portugal, their comparatively lower uptake rates for digital tools point to a need for targeted initiatives to accelerate digital transformation. The number of start-ups is growing, but innovation funding remains an issue. On a positive note, the 2025 Eurobarometer[8] showed that 87% of Portuguese people think that public authorities should prioritise shaping the development of AI and other digital technologies to ensure that they respect our rights and values. It represents an increase of 8 percentage points compared to last year, reflecting the growing interest of the citizens at this aspect.

SMEs with at least basic digital intensity

In 2024, 3 out of 4 (74.26%) SMEs in Portugal had at least a basic level of digital intensity (2030 national target 90%), thus outpacing the EU average of 72.91%. This followed an annual growth rate of 2.7% between 2022 and 2024. More specifically, 36.98% of SMEs in Portugal in 2024 had high or very high digital intensity, above the EU average of 32.66%. Overall, this reveals good digital engagement and steady growth in digital intensity among Portuguese SMEs.

Portugal still aims for 90% of its SMEs to reach at-least-basic digital intensity by 2030, in line with the EU target for 2030. The country continues to implement investments under its RRP, in particular under component 16 on the digitalisation of enterprises. Examples of these investments include Digital Commerce Neighbourhoods, Digital Innovation Hubs and digital test beds (mostly in specific business sectors). A noteworthy measure, also highlighted in the roadmap, is 'More Digital Leader', supported with EUR 9 million in EU funding. This project aims to give digital training to managers and senior staff in SMEs, in particular women, and bundle this training with an implementation plan for the digital transformation of companies.

Portugal's revised roadmap gathers existing and upcoming initiatives to encourage enterprises to make greater use of digital technology as part of broader efforts to increase competitiveness while simplifying and reducing administrative burden for companies. For example, Espaço Empresa is a support service for companies that also involves assistance in digital public services. Portugal plans for it to become a single point of access to information, including on EU funds, that can also promote

[8] Special Eurobarometer 566 on 'the Digital Decade' 2025: https://digital-strategy.ec.europa.eu/en/news-redirect/883227

simplified online communication between public administrations and businesses. Another measure referred to the in revised roadmap is the Entrepreneur App, a mobile application for entrepreneurs to help them find resources and participate in a community that promotes growth and the sharing of knowledge, contacts and feedback.

In addition, Portugal has 17 digital innovation hubs in place across the country, 16 of which are connected within the European Digital Innovation Hubs network. These hubs provide testing, training, funding and incubation support across sectors and technologies, e.g. in mobility, health, AI and cybersecurity.

2024 recommendation on the digitalisation of SMEs: Intensify the existing measures in view of the ambitious target on the basic digital intensity of enterprises and the need to ensure continuity of support until 2030.

Portugal continued to implement existing measures in this area in 2024, but did not take any new measures to address the recommendation. The adjusted roadmap provided a more comprehensive picture of existing support. It also suggested some wider measures to facilitate access to information on digitalisation and enable unbureaucratic, digital interaction between the State and companies (see above). However, the potential effect of these measures on the digitalisation of SMEs remains to be fully evaluated over time and the existing measures were not intensified.

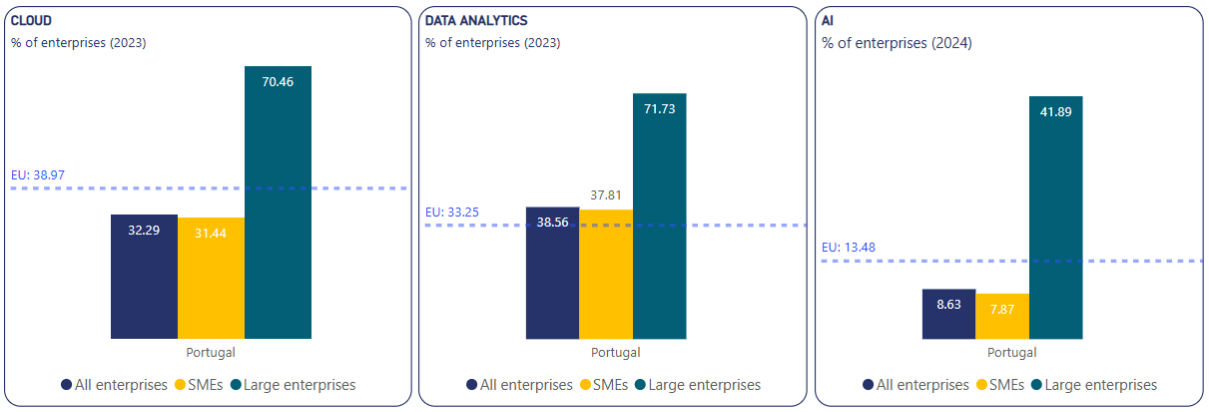
Take-up of cloud/AI/data analytics

According to 2024 data, 8.63% of enterprises in Portugal adopted AI (2030 national target 75%), remaining behind the EU average (13.48%). Portugal saw only modest increase since last year (9.8%), especially in the light of the average EU-level growth rate of 67.2%. The country did not provide a national trajectory point for 2024. While SMEs' uptake of AI in 2024 was 7.87%, large enterprises reported a significantly higher rate of 41.89%. This corresponds to a gap of 34.02 percentage points (pp.) between SMEs and large enterprises, which is higher than the EU gap of 28.53 pp.

Adoption by enterprises of cloud, data analytics, and the three technologies together were not measured in 2024.

In 2023, the uptake of cloud in Portugal reached 32.29% of all businesses (2030 national target 75%), below the EU-level uptake of 38.97%. More specifically, SMEs exhibited an adoption rate of 31.44%, while large enterprises had a higher uptake of 70.46%. This created a gap of 39.02 pp. in uptake between SMEs and large enterprises in Portugal, which exceeded the EU-level gap of 31.68 pp.

Data analytics was performed by 38.56% of enterprises in 2023, surpassing the EU average of 33.25%. Among these, 37.81% SMEs used data analytics, compared with a much higher share of large enterprises (71.73%). This corresponds to a gap of 33.92 pp. in engagement between SMEs and large enterprises, which is lower than the EU gap of 39.72 percentage points.



When taking the three technologies together in 2023, 54.4% of enterprises in Portugal engaged with either AI, cloud, or data analytics, which was roughly in line with the EU average of 54.7%. The uptake among SMEs was slightly lower at 53.68%, while large enterprises had a higher rate of 86.53%. This indicates a difference of 32.85 pp. in uptake between SMEs and large enterprises in Portugal, which is in line with the EU-level gap.

- **Cloud**

Following the 2024 recommendation, Portugal has set a target of 75% enterprises adopting cloud solutions by 2030, in line with the EU target. This goal remains ambitious given Portugal's current pace of development in this area.

The revised roadmap included some new measures to support the achievement of this ambitious target. In 2025, the government will prepare a development plan on sovereign cloud infrastructure to provide national cloud services to public administration and businesses. Another important measure planned by Portugal is its 'Collaborative Hub for Digital' platform to facilitate interaction between public clients and innovation suppliers of digital solutions. This RRF-funded platform will build on both Portugal's existing Innovation Portal, where 1 200+ entities from the national innovation ecosystem are already listed; and the Portuguese platform for the public procurement of innovation. Starting from March 2025, the Collaborative Hub for Digital will create the infrastructure to enable comprehensive matchmaking of digital innovation procurement needs in the public sector with technology offerings from the private sector. The Collaborative Hub for Digital should also foster collaborations and synergies with Portugal's collaborative laboratories (CoLABs; see below), technology and innovation centres (CTIs), technological free zones (ZLTs), test beds, sandboxes, and common data spaces.

- **Data Analytics**

Portugal has not set a 2030 target for the usage of data analytics. No measures in Portugal's roadmap directly targeted the promotion of data analytics solutions among enterprises. However, because data analytics provide the tools and methodologies necessary to harness the power of data, it will be indispensable for the development, implementation, and refinement of AI systems, actions which are at the heart of Portugal's new digital agenda.

- **Artificial Intelligence**

Following the 2024 recommendation, Portugal has set a target of 75% of its enterprises using AI by 2030. Looking at the current rate of progress, this target seems very ambitious.

However, both the roadmap adjustment and the National Digital Strategy give attention to the development and implementation of AI. One new flagship initiative set out in the roadmap

adjustment is the development of a **Portuguese large language model called Amalia**, which will: (i) help preserve national sovereignty; (ii) distinguish the different variants of the Portuguese language; and (iii) recognise aspects of the culture and history of Portugal. Amalia will also make it possible to control the data used for training the AI, and ensure conditions for the storage and use of sensitive data. Another AI project in which Portugal is involved, are AI Factories. In this context, Portuguese stakeholders, including businesses, will be able to access computing capacity on the Mare Nostrum 5 supercomputer in Barcelona. Both actions (the development of Amalia and Portugal's participation in the AI Factory) will be supported through the RRF under the 'More Digital Science' component thanks to the revision of the plan adopted in May 2025.

Some of the initiatives taken in recent years bring opportunities to build up the AI ecosystem in Portugal. Portugal's Centre for Responsible AI is a consortium of start-ups, R&D centres and industry leaders that seeks to create synergies, benefit from the sharing knowledge on AI and develop products that respond to real market needs. In addition, the RRP investment 'Interface mission' (RE-C05-i02) aims to increase cooperation between academia and companies, in particular through support for the revitalisation of infrastructures that promote the transfer of knowledge and technology. As part of this RRP investment, funding is being directed to three Collaborative Laboratories focused on data and AI (Data CoLAB, DTx, Vortex) and 17 collaborative laboratories using AI in sectoral applications; and (iii) to 16 Interface Centres using AI in sectoral applications.

2024 recommendation on AI/cloud/data analytics: (i) Envisage specific measures for the take up of cloud, AI and data analytics, such as reinforced collaboration between public and private sector and with academia to better match the potential of these technologies with the business needs.

Portugal made some efforts to address the recommendation through new policy actions in 2024. In addition to implementing its RRP, Portugal has put AI innovation and data infrastructures on its agenda by making use of existing funding possibilities. However, the effects of these actions remain to be seen. Cooperation between businesses and academia remains underexploited[9], although there are some opportunities in this area, for example the AI Factory and the future collaborative hubs.

Unicorns, scale-ups and start-ups

At the start of 2025, Portugal hosted one unicorn company which is the same number as in previous year. Two companies were identified as potential unicorns. The country has maintained its target to double this number by 2030. As the National Digital Strategy includes a target to have at least 6 000 start-ups by that year, this might also support the emergence of potential unicorns. The number of mapped start-ups in Portugal has increased strongly, rising from 3 700 in 2022 to over 4 700 in 2024.

The revised roadmap introduced a new measure, namely, in November 2024 the Deep2Start programme was announced. This programme aims to promote the development of 'deep tech' projects and start-ups with high potential for disruptive technological innovation in Portugal. The programme consists of two parts, one aimed at early-stage research and the other aimed at commercialising slightly more mature research. The first part is a deep-tech fund with EUR 50 million in public funding, with private investment expected to add another EUR 50 million to reach a total of 100 million through Banco Português de Fomento, the major promoter of financing programmes and co-investment initiatives. This first part seeks to fund early-stage research in technology. The second part is EUR 10.6 million of additional public funding, distributed in conjunction with the ANI, Portugal

[9] 2025 European Semester Portugal country report, Annex 'Innovation to business'.

Ventures and Startup Portugal. This second part seeks to attract private investment from 'ignition' funds which seek to: (i) transfer and increase the flow of technological and scientific knowledge from academia to the business ecosystem; and (ii) support start-ups in the early stages of financing. This second part will also distribute 'vouchers' to help deep-tech projects to apply for funding from the European Innovation Council Accelerator. Another measure identified in the revised roadmap is Lisbon City Council's flagship initiative Unicorn Factory Lisboa, which supports technology start-ups and scale-ups through incubation and acceleration programmes.

Funding for innovation remains an issue. A report looking at Portugal's start-up ecosystem from November 2024 showed that Portugal excels in implementing a favourable tax regime for stock options and has solid digital public services. However, it has struggled with updating its regulatory framework to foster innovation and ensure sufficient funding for start-ups. Nevertheless, most of the available funding for innovation in Portugal is directed to start-ups, with only a small portion allocated to later development stages (9.4% of funding for innovation in Portugal is directed to later-stage innovative start-ups, compared with an EU average of 48.7%). Significant financial instruments have been put in place, both within the RRP and elsewhere, to support equity investments in Portuguese venture firms. Nevertheless, most of these investments are anticipated to occur in 2025 and 2026[10].

2024 recommendation on unicorns: Continue reinforcing the country's start-up and scale-up ecosystem, in particular by ensuring availability and effectiveness of adopted measures.

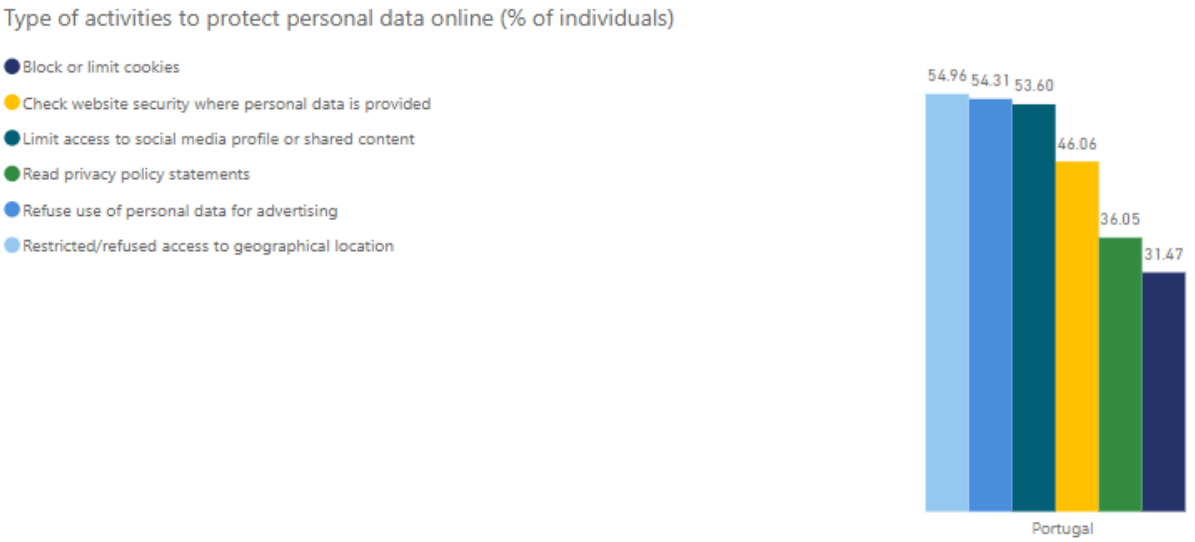
Portugal made efforts to address the recommendation through new policy actions in 2024. Work is ongoing to recognise start-ups (see above) and raise awareness of the benefits of investing in them, such as tax incentives introduced by the Start-ups Law. Beyond this, tech and start-ups, visas are in place, and Portugal continues to implement the RRP, in part by implementing start-up vouchers. The Deep2Start programme has set out a vision to strengthen Portugal's start-up sector, although its effects remain to be seen.

Strengthening Cybersecurity & Resilience

In Portugal, 73.07% of individuals reported engaging in at least one action to protect their data online, slightly above the EU average of 69.55%. More specifically, at national level, 56.11% of people took three or more actions to protect their data (see the six types of digital safety actions in the graph's legend), and therefore could be considered as having above-basic digital safety skills. Restricting or refusing access to the user's geographical location was the action most commonly taken (54.96%), while the least commonly taken action was changing browser settings to block or limit cookies (31.5%).

[10] 2025 European Semester Portugal country report, Innovation, business environment and productivity.

Portugal



Portuguese enterprises tend to experience fewer incidents related to cyberattacks, and Portuguese employees are more aware of their obligations related to ICT security than the EU average. The number of enteprises in Portugal that experienced ICT security incidents leading to the unavailability of ICT services due to attack from outside (e.g. Ransomware attacks, Denial of Service attacks) has increased slightly, rising from 2.46% in 2022 to 3.12% in 2024, slightly below the EU average of 3.43%. Portuguese enterprises are also much less prone to incidents related to hardware or software failures (10.31%) than their EU peers (17.97%). In terms of measures, the vast majority (95.62%) of enterprises in Portugal deployed some ICT security measures in 2024 (against the EU average of 92.76%). In addition, two thirds of Portuguese enterprises (65.63%) made their employees aware of their obligations related to ICT security, above the EU average for this measure (59.97%).

Portugal shows a mixed performance in the roll out of the secure Internet Protocol version 6 (IPv6) protocol for end users. On the deployment of secure internet standards, Portugal is performing above the EU average in IPv6 for end users (40% of users vs EU average of 36%), but is significantly below the EU average on the server side (2%, against 17% for the EU). IPv6 is an important protocol as it ensures the scalability, stability, and security of the Internet. The deployment of this new version is increasingly urgent, as traditional IPv4 addresses have been long depleted. Domain Name System Security Extensions (DNSSEC) is also an important standard to be rolled out as it introduces security features to DNS. In Portugal, the DNSSEC validation rate (i.e. verification of the authenticity of responses sent by name servers to clients, using a digital signature technology) is 11% (Q3 2024), below the EU average of 47% and significantly lower than two years ago (34.8% in Q3 2022).

Intense work is ongoing to transpose the NIS 2 Directive into the Portuguese legal system, after which the national cybersecurity strategy will be adopted. Following the adoption of the national cybersecurity strategy, Portugal is expected to announce a plan to increase the cybersecurity of its 5G networks.

Public and private stakeholders recognise the value of raising both general cybersecurity awareness and specialised cybersecurity skills. Portugal's National Cybersecurity Centre (CNCS; the national cybersecurity authority and national cybersecurity certification authority) is responsible for multiple initiatives in the field funded under the RRP. Many of these initiatives began full operations in 2024 and early 2025. For example, the C-Academy provides training in cybersecurity skills in public administration and private sector, while the Cybersecurity Competence Centres Network (C-Network)

gathers 'one stop shops' spread across regions, which are designed to provide local guidance and services to the public administration, SMEs and other entities. The Cybersecurity Digital Innovation Hub (C-Hub) fosters R&D and introduces cybersecurity innovation in the country. Large Portuguese tech companies continue cooperating under the Cybersecurity Alliance, and the general public can stay informed about cybersecurity thanks to the Cybersecurity Observatory. Portugal is now planning to launch a 'Safer Digital' campaign to raise awareness about cybersecurity among young people.

Protecting and empowering EU people and society

Empowering people and bringing the digital transformation closer to their needs

The share of the Portuguese population with at least basic digital skills is roughly the same as the EU average, although digital skills are less common among people with lower levels of education, older people, people living in rural areas, and women. However, the annual growth rate in the number of enterprises providing ICT training; and the increase in the share of ICT specialists, including women indicate a positive trend. In addition, some programmes are starting to promote gender convergence in the area of ICT skills. Robust digital skills are also being promoted through investments in Portugal's RRP, including in public administration.

Equipping people with digital skills

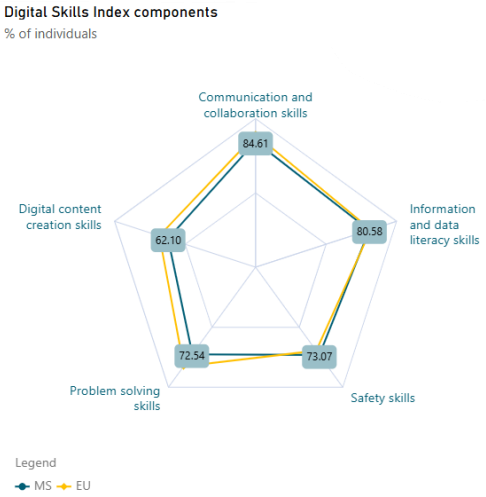
Basic Digital Skills

In 2023, 55.97% (2030 national target 80%) of Portugal's population had at- least basic digital skills, close to the EU average (55.56%). Although these data were not updated in 2024, examining specific demographics provides a clearer picture of the digital skills landscape. The points below give some insight into these specific demographics.

- **Gender Gap:** Portugal's gender gap in digital skills was similar to the EU average in 2023, with 57.21% of men and 54.84% of women proficient in digital skills, resulting in a gap of 2.37 pp. (this gap is 2.23 pp. for the EU on average).
- **Education Level:** Educational attainment is significantly correlated with digital proficiency. Of those with higher education in Portugal, 88.72% had at least basic digital skills, well above the EU average (79.83%). However, there was a steep drop for those with lower education, only 23.16% of whom had at least basic digital skills, leading to a gap of 32.81 pp. from the national average. This was considerably larger than the EU average disparity between the digital skills of those with higher education and the digital skills of those with lower levels of education (21.95 pp.).
- **Living Areas:** In rural Portugal, 43.70% of people have at least basic level of digital skills, which is below the EU average for rural areas (47.50%). The gap between rural areas and the national average is 12.27 pp., indicating that Portugal has a more pronounced digital divide compared to the EU (8.06 pp.).
- **Age Groups:** Young people aged16-24 years in Portugal are highly skilled digitally, with an 82.64% proficiency rate, significantly above the EU average (69.98%). In stark contrast, the 65-

to 74-year-old demographic has a low proficiency rate of 18.52%, well below the EU average for that age group (28.19%).

- **Digital Skills Index components:** Portugal's performance in the Digital Skills Index is mixed, with safety skills being the only category where, with a score of 73.07, it is above the EU average (69.72%). The country's weakest area is digital-content-creation skills, with a score of 62.10%, below the EU average (68.28%).



Portugal shows strengths in digital safety skills and among younger individuals, but faces significant challenges, particularly in supporting older adults and those with less formal education. Addressing these gaps, especially in rural areas and in digital-content creation, could improve overall digital proficiency and further bridge the digital divide in Portugal.

The revised roadmap sets out multiple existing and planned measures to increase the digital skills of the population. Among the new measures, the Digital Skills Curriculum is a plan to develop both micro credentials in digital skills and ways to certify these micro credentials. The aim of this measure is to respond to labour market needs by giving the population reliable digital training and a tool to prove they have reached a certain level of proficiency. Another planned measure is the Digital Skills Index for use in primary and secondary education. Implementation of a pilot version of this index in 10 representative public schools will start in September 2025, with the index being applied to the last academic year of each cycle. Expansion of the project to 200 schools is planned to start in September 2026. This pilot will identify five critical areas of intervention to mitigate gaps in students' digital skills. In addition, an important part of the country's approach to digital skills is the continuous training of public administration on digital skills. This training is receiving support from the RRF.

Portugal's adjusted roadmap retained its earlier target of 80% of its population having at least basic digital skills by 2030. This target remains ambitious but seems achievable with concerted effort across the society.

2024 recommendation on basic digital skills: Intensify efforts including by evaluating the take-up of the current measures and the remaining needs.

Portugal made efforts to address the recommendation through new policy actions in 2024. New actions targeting children and the population in general are planned, with results to be evaluated at a later stage. In addition, many measures reported last year appear to remain in place. However, it is difficult to assess the take-up of these measures. Moreover, there remains a need to improve digital skills – especially given age-related, educational and territorial disparities.

ICT specialists

Portugal shows promising trends in its share of ICT specialists. ICT specialists as a percentage of total employment in Portugal increased to 5.2% in 2024 (2030 national target 7%), exceeding the EU's 5.0%. The country is now on track according to its national trajectory. As the value in 2023 was 4.6% (number revised from last year), the yearly growth rate of 13.0% for Portugal in this category was substantially higher than the EU's growth rate of 4.2%.

Portugal also shows a positive trend in its share of female ICT specialists. This figure increased from 20.2% of ICT specialists in 2023 to 22.7% in 2024, remaining above the EU's 19.5% in 2024. Portugal's growth rate of 12.4% in this area is far higher than the EU's 0.5%. In 2022, 23.66% of enterprises with 10 or more employees in Portugal provided ICT training, slightly surpassing the EU average of 22.37%. By 2024, this figure rose to 27.79%, while the EU average decreased slightly to 22.29%. Portugal's annual growth rate of 8.4% in this area significantly outpaces the EU's -0.2%.

On demand in the labour market, Eurostat experimental statistics based on web scraping show that 'software and applications developers and analysts' are the most sought after IT profile in Portugal, representing 51.5% of online job advertisements for ICT specialists (against 58.0% at EU level). In addition, 29.5% of online job advertisements for ICT specialists in the country are for 'information and communications technology operations and user support technicians', making this role in more demand in Portugal than in the EU on average (10.4%).

The 2030 target set by Portugal for ICT specialists as a share of total employment is 7%, which is lower than the 10% target value for the EU. However, given the good rate of progress this national target seems achievable, and the authorities expressed initial openness to an upward revision of the target in the future.

The revised roadmap included some existing measures to address the 2024 recommendation. One example of this is the + Digital Trainer programme (*Formador + Digital*), which started in late 2023 and plans to train 4 000 professional digital trainers by the end of Q3 2025. Part of the RRF investment on the digital empowerment of enterprises, Employment + Digital (*Emprego + Digital*), this RRF initiative aims to attract technology-sector professionals and specialists to help them improve their pedagogical skills, enabling them to obtain certification to work as trainers in their areas of expertise. It also focuses on reorienting professionals who already hold certification in teaching skills and wish to develop specialised skills in specific digital technologies.

Tackling gender balance in the field of ICT specialists and in science, technology engineering and mathematics (STEM) has become more visible in the Portuguese political agenda. The recently launched 'Girls in STEM' National Programme encompasses, first, an 'Ambassadors Network', through which women working in STEM fields meet female high school and university students to mentor and inspire them by sharing academic and professional experiences. The second, future strand of this programme will be governmental support for projects by all stakeholders (e.g. academia, private sector, NGOs) which will promote the interest, attraction and retention of girls and women in STEM fields throughout education and on the labour market.

Other initiatives are still underway. One example is the requalification programme UpSkill, which involves intense theoretical courses and hands-on training in companies and aims to train 7 500 people by 2030. Importantly, increasing the number of students graduating from tertiary education courses in STEAM fields is also one of the targets under the RRF (RE-C06-i04), with 10 000 additional graduates in the school year 2023/2024, compared to the school year 2019/2020.

2024 recommendation on ICT specialists: Adopt additional measures for ICT specialists, including cybersecurity talent and promoting ICT studies and gender balance in the field.

Portugal made some efforts to address the recommendation through new policy actions in 2024. Specific action was taken to promote gender balance in ICT and STEM, for example through Girls in STEM. In addition, earlier launched initiatives, such as the + Digital Trainer programme were added to the revised roadmap (see above).

Key digital public services and solutions – trusted, user-friendly, and accessible to all

On digital public services for citizens, Portugal scored 84.48 (2030 national target: 100), after a progression of 3.6%, putting the country above the EU average for 2024 of 82.32. The country is now on track according to its national trajectory, and its year-on-year growth rate of 3.6% between 2023 and 2024 mirrored the EU's growth rate. For cross-border digital public services for citizens, the country scored 71.67, exceeding the EU's 71.28. Portugal's growth rate of 9.0% the EU's 4.3%. The share of Portuguese people using government internet websites or apps has increased significantly, rising from 80.61% in 2023 to 85.25% in 2024, well above the 2024 EU average of 74.71% in 2024.

On digital public services for businesses, Portugal's score was 84.31 in 2024 (2030 national target 100), after a progression of 2.9%, but this means Portugal was still below the EU's score of 86.23 for that year. The country is on track according to its national trajectory. On cross-border digital public services for businesses, Portugal lagged behind the EU's score of 73.76 with a score of 68.61. Nevertheless, Portugal's year-on-year growth rate between 2023 and 2024 of 7.4% was significantly higher than the EU's of 0.9%.

Access to e-Health records in Portugal is continuously improving, and with a score of 88.07 in 2024 (2030 national target: 100), exceeding the EU average of 82.7. The country is on track according to its national trajectory. However, Portugal's growth rate of 2.4% between 2023 and 2024 on this measure was slightly lower than the EU's 4.5%.

eID

In its adjusted roadmap, Portugal made reference to GOV.PT app, a new measure to build a single public-services app. In December 2024, GOV.PT app replaced the two public-services apps that had been in use. Further plans for this app include implementation of push notifications to proactively inform citizens about the services available and design changes to gradually integrate more proactive services.

National stakeholders remain active in piloting the usage of EUDI Wallets through four large-scale pilots before EUDIW becomes fully operational by the end of 2026. One of the most recent pilots is the Advanced Project for Trusted Identity Technologies and Unified Digital Ecosystem (APTITUDE). The participants in the APTITUDE consortium, of which Portugal is one, focus on advancing the use of wallets for travel and payment purposes across four use cases: payments, mobile vehicle-registration certificates, digital travel credentials, and tickets and travel check-in. Another new project is also being implemented in Portugal by the consortium Wallet Ecosystem for Business & Payment Use cases, Identification, Legal person representation and Data sharing (WE BUILD), jointly led by Sweden and the Netherlands. WE BUILD aims to pilot the usage of EUDI Wallets across 13 use cases in the areas of business, supply chain, and payments, and will become operational in autumn 2025.

Digitalisation of public services for citizens and businesses

Following the 2024 recommendations, Portugal has set national targets for digital public services for citizens and businesses by 2030. These targets are to reach scores of 100 by 2030, and are accompanied by trajectories to reach these values. Given Portugal's overall progress rate so far, and if roadmap measures are implemented, this target seems achievable.

The adjusted roadmap includes new measures to support the digitalisation of public services and the digital transformation of the national administration. For example, Portugal plans to make available authentication processes in autenticação.gov.pt (a citizen card and digital mobile key) the

exclusive means of authentication for all digital public services. Additionally, a guide with recommendations for drafting digital-ready legislation will be prepared in 2025. The 2025-2026 action plan for the National Digital Strategy contains plans to create a national digital agency to harmonise the implementation of public policies related to digital public services and make it more efficient.

GOV.PT, the Portuguese single digital gateway (formerly known as ePortugal) has been undergoing changes since the 2024 State of the Digital Decade report. The new version of the generative AI virtual assistant, launched in December 2024, uses the most advanced generative AI technology, based on OpenAI's ChatGPT model, and has a knowledge base specifically developed to offer information on more than 2 300 public services. The interface for GOV.PT, available in text and voice, facilitates direct and personalised interaction and offers support in 12 languages. An AI virtual assistant is also integrated into more than 5 000 GOV.PT pages, with plans to expand its capabilities. The project foresees new transactional functionalities from 2025, including the monitoring of processes and services such as scheduling appointments. The development of the national large-language model Amalia can support this process.

2024 recommendation on digital public services/e-ID: Continue developing user-friendly e-Government solutions and intensify efforts to promote their take-up, with particular attention to the e-ID.

Portugal made efforts to address the recommendation through new policy actions in 2024. The country is expanding its network of RRF-funded 'citizen spots' (dedicated desks, for example in hospitals and parish councils, city councils and other public facilities) which advertise e-ID and increasingly provide training on digital public services, within the scope of the National Digital Strategy. A single app (see above) will contribute to this goal. Currently, a public procurement procedure is being carried out to promote the dissemination and activation of e-ID at several summer events, thereby achieving a higher rate of usage among younger people.

e-Health

Following the 2024 recommendation, Portugal has set a target for access to e-health records with a score of 100 by 2030. Given the continuous progress in recent years, this target seems achievable. The country did not add any new measures on e-health in its adjusted roadmap, but it continues implementing the large RRF investment on the digital health transition, which is also included in its roadmap, and might explain Portugal's remarkable progress in this area in recent years.

The country continues to collaborate on e-health solutions in a cross-border context. In 2024, it expanded participation in the MyHealth@EU initiative by sharing health data with Latvia, Lithuania, and Ireland, raising the number of countries with which health data can be exchanged to 13, one of the highest in Europe. This expansion strengthens the initiative's goal of improving healthcare collaboration and access across Europe.

2024 recommendation on e-health: Make the data types of medical images and hospital discharge reports available to citizens through the online access service and, building on existing legal provisions, implement technical functionality for legal guardians and authorised persons to access electronic health data on behalf of others.

Portugal made significant efforts to address the recommendation through new policy actions in 2024. The country has worked to provide citizens with access to hospital discharge reports, which are now available through the National Health System portal (SNS24) for several public hospitals. As part

of the actions under its RRP, Portugal has drawn up plans to implement the remaining recommendations. These include plans to: (i) make medical images available in various formats through the 'Exames Sem Papel' (paperless medical exams) initiative; and (ii) develop technical solutions that will enable legal representatives and guardians to access health data, in line with existing legal provisions. In this regard, Portugal is developing a dedicated platform to provide citizens with access to medical images. The final draft of the platform's legal framework has been completed, and technical developments are currently being decided on and implemented.

Building a safe and human centric digital environment and preserving our democracy

Online participation in political and civic life is slowly growing. In 2024, 22.12% of people in Portugal used the internet to participate in consultations, for voting or sharing opinions online. This share is slightly above the EU average and trending upward (20.58% in 2022), in line with the trend observed at EU level (17.59% in 2022 and 20.45% in 2024).

Portugal's revised roadmap includes a measure to increase digital civic participation. As planned by the National Digital Strategy, the Participa.gov.pt platform, which is used for participatory processes, will gain new functionalities and capabilities to make it simpler to use and more interactive. In addition, awareness-raising actions are planned to promote this democratic activity online.

Less than 1 in 4 of those who encounter doubtful information online check its accuracy. In 2023, 51.73% of individuals in Portugal reported having encountered untrue or doubtful information or content on internet news sites or social media, slightly above the EU average of 49.25%. Of those exposed, according to the survey, 23.45% checked the truthfulness of the information or content, reflecting a modest effort to verify the reliability of the information. Young people (those aged 16-24) reported more exposure to this doubtful information (64.5% said they had been exposed) than adults (those aged 25-64) (55.58% of whom said they had been exposed), with verification rates being substantially higher for young people (37.71% checked the information they encountered) than was among adults (only 24.68%). Men (53.75%) reported slightly more exposure than women (49.87%), and also showed a slightly higher verification rate (24.94% for men and 22.09% for women).

A high share of Portugal's population, especially young people, encounters hostile and degrading messages online. In 2023, 35.48% of individuals encountered online messages considered hostile or degrading towards groups of people, such as those based on LGBTIQ identities or religion. This was slightly above the EU average of 33.5%. Young people (aged 16-24) reported significantly higher exposure (52.69% said they had been exposed) than adults (aged 25-64) (37.5% of whom said they had been exposed), indicating a marked age-related gap. Women (36.16%) and men (34.74%) experienced very similar rates, with no significant gender differences.

Digital and media literacy is receiving growing attention from the authorities. Following the publication of the 2023 Guidelines for a National Plan on Media Literacy the government presented in October 2024 a comprehensive Media Action Plan that sets out 30 measures to combat disinformation (e.g. through a strengthened role for publicly funded media) and promote media literacy, responsible media consumption and informed citizenship. The measures, which are in the early stages of implementation, include discounts and free access to news-media digital subscriptions in specific age groups, as well as pilot projects on media literacy in schools. A wider strategy the National Plan on Media Literacy for 2025-2029 is under preparation.

Portugal is also giving increasing attention to the protection of minors. The revised roadmap proposes a future 'Safer Digital' campaign. This campaign will involve pinpointing key areas for intervention to: (i) increase awareness among young people about the safe use of digital technologies, including online services and social networks; and (ii) adapt the message by using communication channels most favoured by youth.

In addition, according to the Digital Decade Eurobarometer 2025, Portuguese people consider it urgent that public authorities act to protect children online regarding the negative impact of social media on children's mental health (95% of Portuguese respondents), cyberbullying and online harassment (94%) and to put in place age assurance mechanisms to restrict age-inappropriate content (96%).

Leveraging digital transformation for a smart greening

Sustainability is becoming more important for Portuguese authorities. Examples can be found in Portugal's drive to build territorial cohesion and smart cities through digital tools and the digitalisation of administrative procedures. However, a comprehensive approach to addressing both the digital and green transitions is missing. According to the Digital Decade Eurobarometer 2025, 75% of Portuguese people consider digital technologies important to help fight climate change (increase by 18 pp. since last year), while 83% of Portuguese respondents think that ensuring that digital technologies serve the green transition should be an important action for public authorities.

Portugal's population recycles only a small part of its ICT equipment, but makes sustainable choices when buying this equipment. In 2024, the country's inhabitants recycled their laptop and desktop devices less (9.26% for laptops and tablets, 10.49% for desktops) than the EU average (11.31% and 14.66%, respectively). This lower rate of recycling in Portugal was also the case for mobile phones (9.74% against 10.93% for the EU). However, in another 2024 survey, 38.27% of people in Portugal said that they considered energy efficiency as an important factor when purchasing ICT devices, the highest number in the EU (EU average: 19.35%) and 24.6% said they considered the eco-design of the device to be important, which is also well above the EU average (12.04%). However, those two eco-friendly criteria were less important for Portuguese consumers than the price, performance, and design of the ICT device.

Significant actions to unleash the potential of digital technologies for a greener future are covered by Portugal's National Strategy for Smart Territories (ENTI) launched in late 2023. The strategy focuses on transforming data into actionable insights to enable efficient, sustainable, and transparent management of territories. The goal is for this strategy to improve decision-making and services for citizens and businesses. It is supported by RRF investment on intelligent territories (TD-C19-i08) and covered under the 'Digital and Smart Nation' initiative of the National Digital Strategy. Specific measures under those initiatives seek to interconnect territories and share data and good practices on the country's future Smart Territories Portal, National Data Management System for Smart Territories, Public Policies Dashboard and the Local Government Observatory. The strategy will rely on high-speed connectivity and interoperable digital services. Other actions under the strategy, the Urban Management Platforms can serve sustainability through: (i) integrated data management; (ii) digitalised procedures; and (iii) the promotion of smart energy grids, efficient mobility solutions, and environmental monitoring through the internet of things and AI, taking into account local challenges. Five 'Digital Twins' (computer-based virtual representations of real-world systems such as water or transport systems) will be created to tackle the issues most prioritised by Portugal, such as climate resilience, water, mobility and civil protection.

The revised roadmap also includes measures linking digital tools with environmental objectives. However, they do not explore the full potential of digital technologies in this regard. One example of these tools is iFAMA, a centralised online portal for reporting environmental violations. This tool makes it possible to promptly submit evidence and ensure transparency in tracking complaints. It also empowers citizens to report environmental violations and promotes administrative efficiency.

Portugal

2024 recommendation on green ICT: (i) Develop a coherent approach to twinning the digital and green transitions. First, promote improvements in energy and material efficiency of digital infrastructures, in particular data centres. Second, support the development and deployment of digital solutions that reduce the carbon footprint in other sectors, such as energy, transport, buildings, and agriculture, including the uptake of such solutions by SMEs. (ii) Monitor and quantify the emission reductions of the deployed digital solutions in line with the relevant EU guidance and with the support of the methodology developed by the European Green Digital Coalition, in view of future policy development, as well as of attracting relevant financing.

In 2024, Portugal continued to implement existing measures, but did not take any new measures. The relationship between sustainability and digital solutions is receiving some attention but has not been approached in a comprehensive way. Some work is ongoing as indicated in the roadmap, for example through the publicly supported industry initiative Agenda for Ecoceramics and Crystal of Portugal, which aims to improve the competitiveness of this sector through more sustainable and digitally enabled production and value chains. However, a comprehensive approach is missing.

Annex I – National roadmap analysis

Portugal's national Digital Decade strategic roadmap

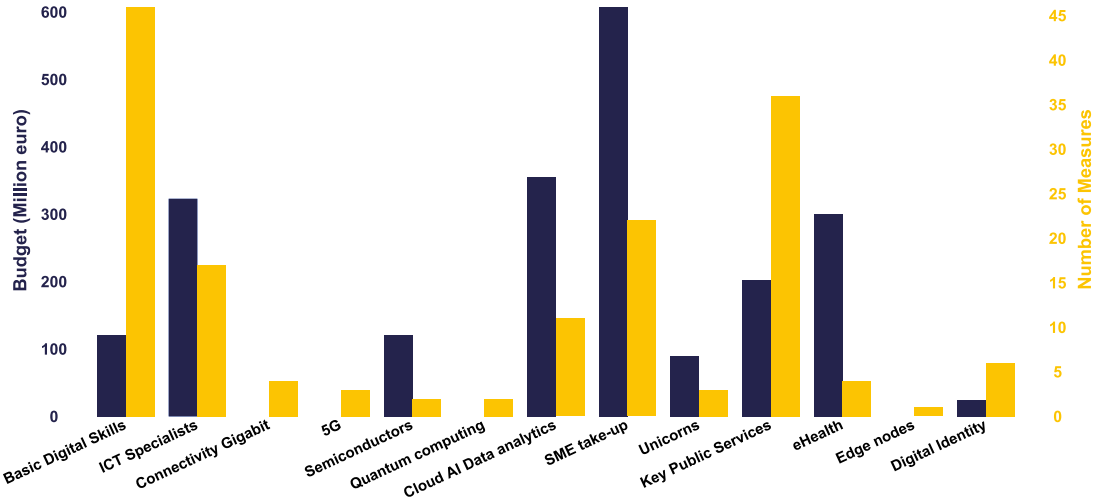
Portugal submitted a fully revised national Digital Decade roadmap in December 2024 (with targeted adjustments until March 2025), containing 157 measures, 12 targets (up from 5 reported last year) and 8 trajectories (compared to none in the previous roadmap). The roadmap is largely based on Portugal's National Digital Strategy also from December 2024 and its action plan, which were both put out for consultation with stakeholders as reported in the roadmap. The updates are aligned with the new Commission's priorities on AI, sovereignty, simplification and digital skills, as well as addresses a substantial number of roadmap recommendations issued in 2024, as listed below.

- *Propose targets and trajectories concerning VHCN, FTTP, 5G coverage, edge nodes, cloud, AI and data analytics separately, accessibility of key public services for citizens and businesses, access to e-health records and set trajectories for basic digital skills, ICT specialists, digital intensity of SMEs, unicorns using correct baseline values.* Portugal largely addressed this recommendation. Targets for edge nodes and data analytics are missing, as are target trajectories related to the digitalisation of businesses.
- *Align the level of ambition of the target for ICT specialists with the EU target*: The 7% target was not raised, and no explanation was provided.
- *Consider establishing national ambitions for technological leadership, competitiveness, and resilience to support EU-wide targets regarding semiconductors and quantum:* No new ambitions were introduced, but reporting was expanded.
- *Supplement the roadmap with measures related to connectivity:* information was added related to 5G and VHCN tenders, as well as submarine cable investments.
- *Review the measures contributing to targets on skills and digitalisation of enterprises, consider setting up additional measures for ICT specialists and basic digital intensity of enterprises:* National measures were listed and described more extensively, but both the attribution of these measures to concrete targets – and the novelty of these measures – is unclear.
- *Review the budget description of all presented measures, highlighting both national and EU sources:* A more comprehensive overview was added.
- *Provide more information on the implementation of digital rights and principles (and Digital Decade general objectives), including what national measures contribute to it:* Portugal provided a comprehensive mapping in this regard.
- *Incorporate, where appropriate, measures reported through other channels in the roadmap:* Portugal addressed this recommendation, except for some areas (e.g. cybersecurity).
- *Consult key stakeholders, as outlined in the DDPP, before proposing the adjustment to the national roadmap:* Stakeholder consultations were conducted in the context of National Digital Strategy.

Overall, Portugal presented a non-exhaustive selected set of the main policies and measures contributing to the achievement of most of the Digital Decade targets. The measures presented also cover several types of objectives: technological leadership, sovereignty, competitiveness and human-centred digital transformation. The roadmap responds to most of the 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

articulated. The revised roadmap continues to prioritise digital skills (but not across all demographics), digital public administration and the digitalisation of businesses, in particular through information sharing and improving the skills of employees. In total, the measures presented amount to EUR 2.15 billion, or 0.75% of GDP, with a significant share of the funding for this coming from the Recovery and Resilience Facility.

Measures and budget in national roadmap[11]



[11] 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 of the extent to which Member States followed the guidance was carried out.

Annex II – Factsheet on multi-country projects (MCPs) and funding

Multi-country projects and best practices

Portugal is a member of the Local Digital Twins towards the CitiVERSE EDIC and of the EUROPEUM EDIC. It is also an observer to the Alliance for Language Technologies EDIC, and is leading efforts to set up an EDIC in the area of startups. 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[12] by sharing one best practice in the frame of the Green IT cluster (National Strategy for Smart Territories).

EU funding for digital policies in Portugal

Portugal allocates 21% of its total recovery and resilience plan to digital (EUR 4.5 billion)[13]. 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[14]. According to JRC estimates, EUR 6.09 billion directly contribute to achieving Digital Decade targets (of which EUR 4.42 billion comes from the RRF and EUR 1.67 billion from cohesion policy funding)[15].

The biggest digital measures of the plan are investments in the 'Digital transition of education' (EUR 614 million) and 'Modernisation of supply and vocational education and training institutions – Equipment for digital skills' (EUR 521 million), followed by the 'Digital Transition of Enterprises' (EUR 399 million), 'Digital Health Transition' (EUR 300 million) and several measures related to digitalisation of the national administration.

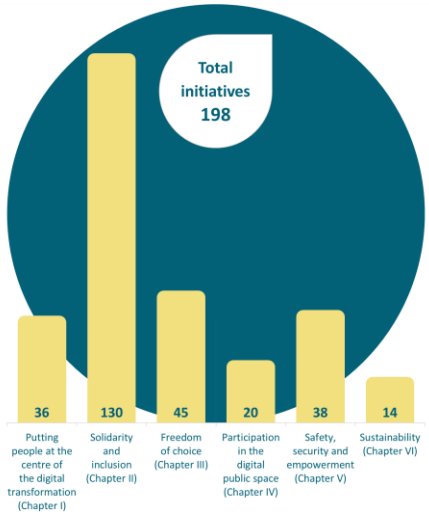
[12] Best Practice Accelerator (BPA) is a platform that enables Member States to share successful measures and challenges encountered in their efforts to meet their Digital Decade targets and objectives. Best practices are made available to Member States via the BPA Repository and showcased in regular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

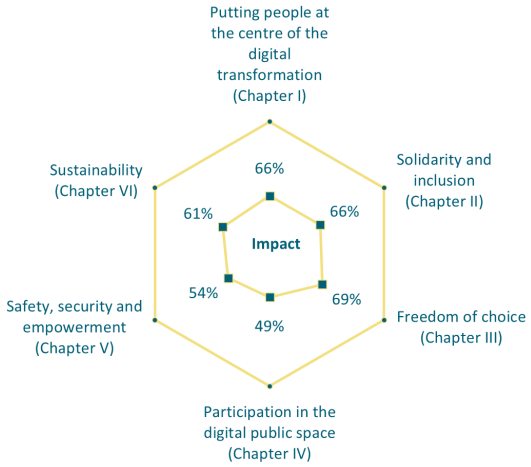
[13] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[14] 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.

[15] 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. Last data update: 10 March 2025.

Annex III – Digital rights and principles[16]





Activity on digital rights and principles *(figure 1)*

Portugal has been one of the most active Member States in implementing digital rights and principles, with over 100 initiatives overall and 14 new initiatives launched in 2024, showing notable progress towards its commitments. **Portugal is most active in the area of Digital education, training and skills** (II). There is room for improvement, especially with regards to Privacy and individual control over data (V) where less activity has been identified.

Impact of digital rights initiatives *(figure 2)*

Quantitative impact indicators developed by the support study illustrate the level of implementation of digital rights initiatives on the ground. Based on available data, they estimate the impact of measures implemented by key stakeholders in Portugal (mainly national government) and how these are perceived by citizens.

The indicators suggest that **Portugal is most successful in implementing commitments related to Freedom of choice** (III). Portugal could review and strengthen efforts in areas where the impact of digital rights initiatives appears to be limited despite relative activity, notably on Participation in the digital public space (IV).

According to the Special Eurobarometer 'Digital Decade 2025', **45% of citizens in Portugal think that the EU protects their digital rights well** (a 2% increase since 2024). This is slightly above the EU average of 44%. Citizens are particularly confident about getting more freedom of expression and information online (56%, below the EU average of 60%). They are most worried that their right to a safe digital environment and content for children and young people is not well protected (49%, above the EU average of 48%).

[16] Based on a study to support the Monitoring of the Implementation of the Declaration on Digital Rights and Principles, available here. For a more detailed country factsheet accompanying the study, click here.