Council of the European Union

Brussels, 20 June 2025
(OR. en)

10407/25
ADD 52

TELECOM 196
DIGIT 122
CYBER 173
COMPET 574
RECH 286
PI 125
MI 411
EDUC 273
JAI 869
ENFOPOL 216
COSI 121

COVER NOTE

From:	Secretary-General of the European Commission, signed by Ms Martine DEPREZ, Director
date of receipt:	16 June 2025
To:	Ms Thérèse BLANCHET, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2025) 294 annex
Subject:	PART 20/27 COMMISSION STAFF WORKING DOCUMENT Digital Decade 2025 country reports Accompanying the document 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

Delegations will find attached document SWD(2025) 294 annex.

Encl.: SWD(2025) 294 annex

EUROPEAN
COMMISSION

Brussels, 16.6.2025
SWD(2025) 294 final

PART 20/27

COMMISSION STAFF WORKING DOCUMENT

Digital Decade 2025 country reports

Accompanying the document

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

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

European Commission

DIGITAL DECADE 2025
COUNTRY REPORTS

The Netherlands

The Netherlands

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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.
- **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).

[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.

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.

A competitive, sovereign and resilient EU based on technological leadership

The Netherlands has long been a pioneer in research, development and innovation (R&D&I), playing a leading role in the global semiconductor industry and making significant strides in quantum technologies. The country still appears to be an innovation leader in the European Innovation Scoreboard 2024. However, recent cuts to the public budget and the suspension of the fourth and fifth rounds of the National Growth Fund have led to a **notable decline in the country's innovation trajectory.** Investments in public R&D have decreased from 0.75% of GDP in 2021 to 0.64% of GDP in 2023 (falling below the EU average of 0.72%).

One of the key factors underpinning the Netherlands' highly digitalised economy and society is **its excellent connectivity infrastructure, which provides a strong foundation for digital growth and innovation.** Leveraging this excellent connectivity base, **Dutch companies continue to have a strong position in both digital engagement and the adoption of key digital technologies**. Nevertheless, **a significant gap persists between small and medium-sized enterprises (SMEs) and larger companies in the adoption of key digital technologies** like cloud computing, data analytics and Artificial Intelligence (AI). This gap is particularly concerning, given that SMEs accounted for approximately 96.1% of domestic enterprises in 2022. The Dutch ICT sector represented 5.31% of the gross value added in 2022[4] (improving from 4.88% in 2013), but is still slightly below the EU average of 5.46%. The financing system, although well-developed, is less accessible to smaller companies, which also poses challenges to the country's overall competitiveness.

The Netherlands is currently preparing its new Dutch Digitalisation Strategy to unify the government's approach to digitalisation and boost the government's digital services, digital infrastructure, autonomy and resilience at different levels (national, regional and local). The strategy will focus, among other things, on the effective use of AI and data in the public sector. At the same time, it will also promote digital sovereignty by reducing dependency on external cloud providers and foster a more robust and secure digital ecosystem within the government. In parallel, when it comes to innovation subsidies and strategic efforts, the National Technology Strategy remains the overarching Dutch policy for prioritising critical technologies like semiconductor, AI, quantum and cybersecurity technologies. The strategy features in the 'Business Uptake' cluster of the Digital Decade's Best Practice Accelerator.

Building technological leadership: digital infrastructure and technologies

The Netherlands' **connectivity infrastructure is in good shape**, with several key performance indicators (KPIs) outpacing the corresponding EU averages. This aligns well with a notable majority (92%) of Dutch citizens considering the development of efficient and secure digital infrastructures to be a crucial priority for public authorities (according to the Special Eurobarometer[5] on the Digital Decade 2025). Some challenges remain in the **coverage of rural and remote areas** and in ensuring the **affordability of fixed high-speed internet services**.

[4] 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.
[5] Special Eurobarometer 566 on 'the Digital Decade' 2025: https://digital-strategy.ec.europa.eu/en/news-redirect/883227

The Netherlands

Connectivity infrastructure

The Netherlands has achieved 98.41% of Fixed Very High-Capacity Network (VHCN) coverage, which is well above the EU average and close to its 2030 national target of 99.90%. For households in rural areas, VHCN coverage was 88.38% in 2024, above the EU average of 61.89%. Overall, **the country is on track according to its national trajectory.**

The Netherlands performed well in Fibre-to-the-Premises (FTTP) coverage, achieving 85.35% coverage in 2024, with a growth rate of 9.9%. For households in sparsely populated areas, the Netherlands' FTTP coverage was 78.79% in 2024, which was significantly higher than the EU average of 58.78%. However, very little progress has been made since 2023, when FTTP in rural areas was 78.42%. **The country did not provide a national trajectory point for 2024 or a 2030 national target.**

Finally, the country already achieved full 5G coverage in 2022 and is therefore on track according to its national trajectory. As a result of the allocation of the 3.5 GHz band, 5G coverage in the 3.4 – 3.8 GHz band significantly increased in 2024, reaching 99.37% of households. Regarding 5G spectrum, the Netherlands assigned 66.67% of 5G pioneer bands in 2025, which is double the figure for 2024 (33.33%), but still lower than the EU average of 74.63%.

VHCN and FTTP

As the Netherlands has made good progress with both VHCN and FTTP, it is currently focusing on covering the remaining addresses and investigating pricing dynamics to benefit consumers.

The most recent data from the Broadband coverage in Europe 2024 study shows that, in that year, 98.41% of Dutch households had VHCN coverage and 85.35% had fibre. According to the telecom monitor published by the Authority for Consumers and Markets (ACM), in Q3 2024, the roll-out of fibre optic reached nearly 7.94 million households (up from 7.69 million households in the previous quarter). 3.03 million of those households had a fibre optic plan (up from 2.99 million in Q2). Meanwhile, the country is gradually switching off copper, with the number of houses using coax or copper cable services decreasing further last year. Moreover, mobile-data consumption surpassed its all-time peak of 600 million GB.

In the revised 2024 roadmap, the Netherlands provides a new target value for VHCN (99.9%) by 2030, which is aligned with the EU target (100%). This projected value, which the **country is overall on track to meet**, is based on the main market players' expected roll-out plans. In a letter to Parliament sent by the Minister of Economic Affairs in September 2024, the government also highlighted its intention to have households' fixed internet connection upgraded from 100 Mbps to 1 Gbps before 2030.

Despite progress, the current situation still presents some challenges that require attention. VHCN coverage in rural areas was lower (88.38%) than overall coverage (98.41%) in 2024. At the time the letter was written, approximately 27 500 households in rural or underserved areas lacked access to fixed fast internet, with many of them relying on connections slower than 30 Mbps. Although telecom operators are expected to address the needs of 15 500 of these households by 2028, around 12 000 households are at risk of remaining without fixed high-speed internet by the end of the decade. This represents an improvement on the 2022 projection of 19 000 households being without fixed high-speed internet by 2030. To bridge this connectivity gap, the government points to wireless alternatives, such as fixed wireless solutions and satellite internet. Additionally, State aid may be necessary beside these market efforts, with local government in provinces like Friesland and Groningen exploring funding options to expand high-speed internet coverage in their rural territories. To further support

these initiatives, the government will continue to provide provinces with access to expertise and knowledge, sharing the latest fixed broadband coverage data and facilitating efforts to roll-out fibre in the remaining underserved areas.

With regard to take-up, 85.38% of fixed broadband subscriptions in the Netherlands had speeds of 100 Mbps or higher in 2024, up from 72.03% in 2023. Fixed broadband subscriptions with speeds of 1 Gbps or higher remain less attractive, accounting for only 10.53% of fixed broadband subscriptions. This is below the EU average of 22.25%, but up from 4.13% in 2023.

Recent market research and surveys have shed light on trends in the Dutch telecom market and consumer behaviour, revealing that **broadband subscription prices in the Netherlands remain relatively high.** Despite the availability of more affordable and higher-quality fibre/cable-based plans, many consumers are hesitant to switch from low speed, (mostly) copper legacy subscriptions. In 2024, the ACM conducted a comprehensive scan of the Dutch telecom market and a consumer survey to better understand consumer behaviour in the sector. The survey's findings are telling: 53% of consumers consider the price of their fixed internet subscription to be high, and a significant majority (63%) pay more than EUR 50 per month for their broadband subscription. Furthermore, when choosing a fixed internet subscription, 61% of consumers prioritise fixed monthly costs, compared with 52% who prioritise quality and reliability of their internet connection. However, the survey also reveals a paradox: households with slower broadband plans (under 100 Mbps) pay an average of EUR 44 per month, which is higher than plans offering faster speeds (EUR 38 for 100-250 Mbps and EUR 41 for 250-750 Mbps). Moreover, many consumers in the budget segment have 'dormant' contracts, and therefore miss out on discounts available to those with active contracts. This suggests that, although higher-quality and more affordable plans exist, consumers often fail to take advantage of them. In response, the ACM has announced plans to further investigate this issue and is encouraging telecom operators to better inform customers about their cheapest options, emphasising that access to the internet must remain affordable for all.

Beyond VHCN and FTTP coverage, global digital connectivity through submarine cables is also a key Dutch priority, with the country providing a crucial port and infrastructure network for international undersea cables. The Netherlands participates in several ongoing projects that are receiving EU funding from the Connecting Europe Facility Digital programme. In April 2024, the new CELIA Caribbean European Territories Cable project kicked off as a collaboration between French and Dutch operators to build a submarine cable with the goal of improving connectivity with the two Caribbean islands of Martinique (France) and Aruba (the Netherlands). The end of December saw the start of the BCA submarine cable project, which will study and design the future installation of a submarine cable connecting certain Overseas Countries and Territories (the islands of Bonaire, Curacao and Aruba) with the EU. Finally, in February 2025, the Dutch Subsea Cable Coalition signed a memorandum of Understanding to develop the Pan-Arctic Cable System. This will significantly improve the country's internet resilience, increase its bandwidth capacity and diversify its routing options.

5G

With 5G coverage at 100%, the Netherlands has already achieved the 2030 EU target. A noteworthy development in the 5G space in 2024 was the launch by one of the main Dutch telecom operators' of Klik&Klaar: a home internet service operating on 3.5 GHz frequencies. The service offers affordable, high-speed internet with download speeds up to 300 Mbps and upload speeds up to 30 Mbps across the country. Being independent of the traditional fixed-line infrastructure, it is designed for easy self-installation, with users simply needing to plug in the provided modem to go online. By December 2024,

there was already a lot of interest in the solution from Dutch consumers. Also interesting to note is that 127.46%[6] of the population had a 5G SIM card in 2024, which is well above the EU average of 35.56%.

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.
In 2024, the Netherlands continued to implement existing measures, but did not take any new measures. After the 3.5 GHz band auction was completed in July 2024, the three main Dutch telecom operators secured their spectrum allocation, providing a solid foundation for the development of advanced 5G services. In addition, the Netherlands is investigating potential future demand for other frequency bands (the 26 GHz band and the 3.8 – 4.2 GHz band for local or regional private 5G networks). Opening up access to this additional spectrum would facilitate innovation in both B2B and B2C applications. For businesses, this spectrum could help with everything from smart city solutions to digital applications. For consumers, it could lead to new services, such as enhanced mobile broadband and new types of connected devices, all operating on private networks.

Semiconductors

The semiconductor industry remains a cornerstone of the digital landscape in the Netherlands. Over the past year, there has been a growing focus on drawing up a strategic framework for the sector that balances promoting technological leadership and protecting critical value chains. This has been accompanied by sustained investments from both public and private sources. On a strategic level, the country successfully set up the Semiconductor Board NL in January 2025, consisting of different companies in the Dutch semiconductor ecosystem and relevant ministries. The Semiconductor Board NL is tasked with developing and overseeing the implementation of a sector-wide semiconductor strategy designed to reinforce and maintain the technological leadership of Dutch companies. The Board offers strategic guidance, sets priorities, identifies challenges and actively supports the executive of initiatives essential to securing an internationally leading, sustainable knowledge and an industrial position by 2035.

To further enhance cooperation in the field, the Netherlands also took the lead in setting up the Semiconductor Coalition with eight other EU Member States in March 2025. The goal is to build up a common European strategy to increase and strengthen the EU's position in the global semiconductor supply chain by increasing production capacity, investing in cutting-edge research and developing a skilled workforce. A declaration with concrete ideas on how to move forward is expected to come in the next months. These two key strategic milestones demonstrate the Netherlands' commitment to continued growth and global leadership in the semiconductor sector.

At the level of projects and funding, several impactful initiatives are in place. The launch of 'Project Beethoven' (worth EUR 2.5 billion) triggered a new phase of public and private investments to improve housing, transportation, education and electricity in the Eindhoven region, one of Europe's fastest-growing tech hubs. In December 2024, for example, a group of Dutch tech companies, including ASML and chipmaker NXP, pledged around EUR 200 million to improve infrastructure in the region. Additionally, the NXTGEN HIGHTECH programme, officially launched in 2023, is developing a new generation of semiconductor equipment. In 2025, six new projects started as part of the programme.

[6] The percentage of the population with 5G SIM cards can exceed 100% because people can have more than one SIM card.

These bring together researchers from various knowledge institutions and industry partners to improve the design and manufacturing of complex systems; develop new tools and methods for testing and analysing materials; and boost the speed and accuracy of detection and sensing technologies that have applications in fields like biomedicine and semiconductor production.

Moreover, the PhotonDelta growth fund programme, launched in 2023 with a total budget of EUR 471 million, aims at the development and industrial take-up of the photonic integrated circuits industry in the Netherlands. From this programme, EUR 54 million will be allocated to the national co-funding of the photonics pilot line PIXEurope, that was selected under the EU Chips Joint Undertaking. On 5 February 2025, the R&D programme PhotonDelta announced a call for proposals concerning photonic technology, with over EUR 7 million being available to support the country's photonics market and supply chains. At EU level, the country also continues to be active in the multi-country project on Microelectronics and Communication Technologies.

2024 recommendation on semiconductors and quantum computing: continue to secure public funding and stimulate private investments to capitalise its competitive advantage in the areas of semiconductors and quantum technologies, while maintaining a good business environment for long-term digital innovation.

In 2024, the Netherlands continued to implement existing measures but did not take any new measures. A report from TechLeap reveals that the country ranks second in Europe in terms of per capita investments in semiconductors. Moreover, from 2019 to 2024, over 80% of the total venture capital investment in next-generation technologies and computing infrastructure was focused on the semiconductor industry. However, the recent shifts in government priorities have resulted in budget cuts to R&D, despite the fact that it is crucial for both technological innovation and the development of skilled talent in the sector. Moreover, the discontinuation of the National Growth Fund, which was meant to secure a EUR 20 billion investment over several years in key sectors including semiconductors, created some budget gaps and uncertainty. While the government still maintains a focus on semiconductors, budget cuts present a hurdle to the country's continued leadership in this critical industry. To continue driving innovation in the semiconductor sector, the country is now looking to create public-private partnerships and find alternative funding models to fill the void left by these cuts.

Moving forward, just as for other critical technologies, an essential aspect of the semiconductor policy in the Netherlands will be about finding a balance – as a matter of both economic and national security – between promoting and protecting the country's semiconductor industry. The government's announcement at the start of 2025 that it will tighten its export checks on advanced semiconductor manufacturing equipment from April is consistent with this line of thinking.

Edge nodes

According to the Edge Node Observatory, the Netherlands is estimated to have deployed a total of 59 edge nodes by 2024, up from the 27 in 2023. No national target or trajectory was set for the deployment of edge nodes in the Dutch national roadmap, as the country favours a more quality-oriented target.

2024 recommendation on edge nodes: consider measures specific to edge nodes deployment, supplementary to the Important Project of Common European Interest on Next-Generation Cloud Infrastructure and Services (IPCEI-CIS) participation.

In 2024, the Netherlands continued to implement existing measures but did not introduce any new measures or plans for developing a specific strategy soon. Nonetheless, the country continues to be involved in the IPCEI-CIS, which focuses on the industrial deployment of advanced cloud and edge computing technologies. The country also highlights that it will continue to track the findings of the European Edge Observatory for the Digital Decade and will consider the need for new measures if deployment is lagging.

Quantum technologies

Interest in – and activities around – quantum technologies are gaining momentum in the Netherlands. The government is leading the way with the Quantum Delta NL programme, which is progressing well. The project's first two completed phases focused on consolidating quantum infrastructure and research (for instance by granting funds for the award of more than 50 PHD scholarships) and improving an R&D network infrastructure between the cities of Delft, Amsterdam and Eindhoven. The third and final phase will now focus on deployment and commercialisation, with some work on developing use cases for the government in sectors like defence and cybersecurity having already started. Some of the main recent milestones include:

- the securing of a EUR 273 million investment from the National Growth Fund in July 2024, as part of the third phase.
- the launch of the Quantum Delta NL Participations Fund in February 2025, with EUR 5 million secured already to support early-stage quantum startups at global level.
- the completion of about 80% of the upgrade of the cleanroom facility, following the allocation of EUR 150 million from the National Growth Fund to the NanoLab Cleanroom project in April 2024.

2024 recommendation on semiconductors and quantum technologies: continue to secure public funding and stimulate private investments to capitalise its competitive advantage in the areas of semiconductors and quantum technologies, while maintaining a good business environment for long-term digital innovation.

As in the case of semiconductors, the Netherlands continued to implement existing measures in the field of quantum technologies in 2024 but did not introduce any new measures. Quantum Delta NL, one of the main instruments for building the Dutch quantum ecosystem, has benefited greatly until now from the National Growth Fund. However, the fund's discontinuation will make it harder to secure both large-scale and long-term investments in the technology. Aside from supporting key projects, the fund played a crucial role in convincing private investors of the reliability and profitability of quantum investments. Moving forward, the government will focus on finding alternating funding resources to achieve a sustainable investment climate and maintain the technology's momentum. These include public-private partnerships, EU funding and private and venture capital investments.

As in the case of semiconductors, the Dutch government is trying to balance innovation and national security. In October 2024, new regulations were introduced that require companies to obtain an export permit to sell quantum computers outside the EU. The regulations will apply to eight types of quantum computers, to quantum measurement equipment and to chipmaking technologies.

In parallel, the Netherlands continues its fruitful collaboration with EU countries. In March 2024, it signed the European Declaration on Quantum Technologies (also known as the Quantum Pact) with 19 Member States. The country also continues its commitment to the trilateral collaboration with Germany and France. The three countries organised a joint European Quantum summer school for Master's students in July 2024 and made progress in setting up a European Quantum Campus, which will be a network of locations with R&D facilities tailored to the needs of quantum start-ups.

Supporting EU-wide digital ecosystems and scaling up innovative enterprises

In broad terms, Dutch enterprises are highly digitalised compared with those in other EU Member States. However, **SMEs are lagging behind larger companies when it comes to adopting key digital technologies like cloud computing, AI and data analytics.** The slowdown in start-up creation and the consistently low rate of companies scaling up are also limiting the competitiveness of Dutch tech companies, highlighting the need for more early-stage funding and reducing the regulatory burden.

SMEs with at least basic digital intensity

Dutch SMEs maintain a strong position in both basic and advanced digital engagement. In 2024, 4 out of 5 (80.83%) Dutch SMEs had achieved at least a basic level of digital intensity (the 2030 national target is 95%), maintaining a similarly high level as in 2022 (80.06%). 2022 is the last year that can be compared using a similar methodology to measure the digital intensity of enterprises. The Netherlands consistently exceeds the EU average of 72.91%, particularly in terms of high or very high digital intensity. In 2024, 44.22% of Dutch SMEs reached this level, far surpassing the EU average of 32.66%.

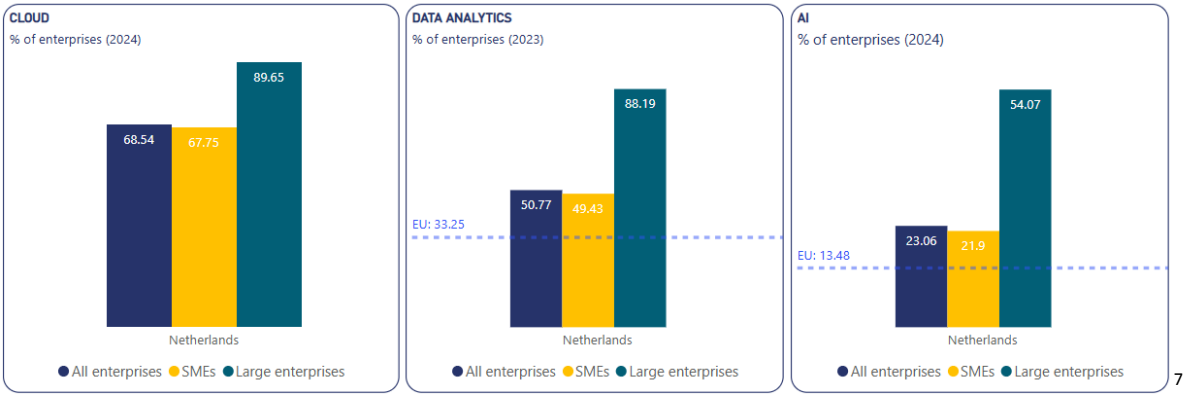
In 2024, the Dutch government presented a national target for SMEs' basic digital intensity of 95%, which is above the 90% EU target. However, **the current trajectory suggests that Dutch SMEs may fall short of this goal**, with only 88.19% projected to reach a basic level of digitalisation by 2030. The government acknowledges that this target may be difficult to meet, as SMEs face barriers such as limited financial resources, resistance to change and a lack of skilled staff. These challenges were highlighted in recent evaluations of the national pilot projects 'My Digital Case' and the 'Digital Workplaces', which are designed to help SMEs improve their digital skills, strengthen their online presence and better understand ICT investments. From 2020 to 2023, the 'Digital Workplaces' programme supported around 10 500 SMEs, with 7 500 taking further steps to digitalise their operations. Similarly, the 'My Digital Case' pilot projects supported approximately 11 500 SMEs in 2022 and 2023.

At local level, approximately 400 regional hubs and initiatives are now dedicated to supporting SMEs across different sectors in their digital transformation journeys. A key initiative among these is the 'Smart Makers Academy', which was launched in 2020 to assist SMEs in the manufacturing sector. The academy operates through various regional hubs, offering practical, short-term training programs to optimise production processes and foster product development through digital technologies. In 2024, the academy received an additional subsidy of EUR 254 228 from the Dutch Government to expand its reach. Due to strong demand from SMEs, particularly in the area of generative AI, the initiative will continue through at least until the end of 2025 and will extend its programmes to the healthcare and green sectors.

In parallel, the five Dutch European Digital Innovation Hubs (EDIHs), which were launched in 2023 with funding from the Digital Europe Programme, continue to act as crucial regional touchpoints, helping SMEs understand and leverage digital solutions to enhance their businesses. In 2024, these hubs made significant progress in advancing digital transformation across sectors. The focus has

shifted from raising awareness to providing active support for companies' digital implementation, with the EDIHs playing a key role in contributing to the Commission's Digital Maturity Assessment Tool. Looking ahead, the goal is to better align the EDIHs' services with national priorities, while strengthening coordination with existing national and regional initiatives.

Take up of cloud/AI/data analytics



[7]

The Netherlands demonstrates **a robust overall performance with regard to the adoption of cloud computing, data analytics and AI technologies**, significantly exceeding the EU averages across all three areas. However, **large enterprises have consistently higher adoption rates that SMEs – particularly for AI – than SMEs.** Reducing this disparity could further strengthen the digital industrial ecosystem and enhance the competitiveness of SMEs within the Dutch economy. Adoption of cloud and data analytics, as well as the adoption of the three technologies together, were not measured in 2024.

2024 recommendation on adoption of digital technologies by enterprises: continue to support the adoption of advanced digital technologies, with particular attention to scaling up successful AI innovations and improving access to finance, data and computing infrastructure.
The Netherlands continued to implement existing measures, but did not introduce any new measures in 2024. See more details in the sections below.

- **Cloud**

According to the latest available data, the adoption of cloud computing in the Netherlands reached 68.54% in 2024 (the 2030 national target is 75% and the national trajectory reaches 85.3%), up significantly from 60.39% in 2023. However, a disparity persists between SMEs and larger enterprises. While SMEs achieved a cloud uptake of 67.75%, large enterprises' adoption rate of 89.65% was significantly higher. This translates into a 21.9 percentage point difference in cloud adoption between the two groups. Nevertheless, this gap has narrowed compared to 2023, when the difference was 24.37 percentage points, indicating a trend towards greater convergence in cloud computing adoption rates.

In its adjusted roadmap, the Netherlands projected to have 85.3% of enterprises adopting cloud computing by 2030, which is higher than the EU's 75% target.

[7] The cloud graph does not include the EU average because, while the Netherlands has data for cloud for 2024, this was not collected at EU level in 2024.

2024 recommendation on cloud: (i) ensure the broad uptake of the next generation of cloud infrastructure and services under development in the IPCEI-CIS by companies of all sizes, including by developing a country-specific dissemination strategy; (ii) contribute to the dissemination activities led by the Cloud IPCEI Exploitation Office.

In 2024, the Netherlands continued to implement an existing measure, namely the IPCEI-CIS, and actively promoted its three projects. Aside from participating in European coordination meetings and forums to discuss the IPCEI-CIS (i.e. the IPCEI CIS governance bodies), the government made public announcements and published press releases to provide updates on the state of the play of its IPCEI-CIS projects. In January 2025, the Ministry of Economic Affairs published a Parliamentary letter addressed to the House of Representatives about the progress of the IPCEI-CIS. The letter mentioned:

- the government's close contact and meetings with the Dutch companies involved in the three projects;
- the progress of the Dutch projects (which started end of 2023);
- the release of the first concrete results for one of the projects (Open FEDerated ecosystem), which was also covered in the Dutch media;
- the plan to present progress at EU level this year.

Furthermore, the Netherlands intends to host the IPCEI-CIS General Assembly 2026. In this event, special attention will be given to the dissemination of the project's results over the wider cloud community.

Aside from the involvement in the IPCEI-CIS, **the country's efforts in cloud computing are mainly focused on addressing the Parliament's economic and security concerns around the government's heavy reliance on a small number of external public cloud services.** In mid-March 2025, the Dutch Parliament approved motions urging the government to reduce its reliance on US cloud providers by developing an alternative Dutch cloud platform. A new government cloud strategy for cloud use by public authorities in the Netherlands is expected to be released soon (around Q2 2025). The government also signalled its great interest in EU-wide action to build and stimulate the growth of federative European alternatives to hyperscale cloud providers.

- **Data analytics**

Data from 2023 showed that 50.77% of Dutch enterprises used data analytics (the 2030 national target is 75%), showing a strong lead compared with the EU average of 33.25%. For SMEs, the percentage was 49.43%, while the uptake was notably higher among large enterprises at 88.19%. This resulted in a gap of 38.76 percentage points between SMEs and large enterprises, which is similar to the average gap in other EU countries. Despite aligning its national target for the adoption of data analytics with that of the EU (75%), **the current trajectory suggests that Dutch enterprises may fall short of this goal**, with only 61.20% projected to adopt the technology by 2030.

The Centre of Excellence for Data Sharing and Cloud remains the main measure promoting the use of data analytics and cloud computing by companies in the Netherlands. In 2024, it continued to provide information on data-sharing tips and tools, data sharing initiatives and practical solutions to scale up market adoption through a knowledge base on its website, and through articles and public events. For instance, the Centre hosted the Data Sharing Festival in February 2024 in collaboration with the Dutch government to discuss best practices in scaling up the market adoption of safe and secure data sharing

practices. The Centre also joined the Dutch pavilion at the Hannover Messe trade fair in April 2024 to showcase Dutch companies' innovative solutions related to data analytics (and cloud services).

- **Artificial intelligence**

According to new data collected in 2024, 23.06% of enterprises in the Netherlands reported using AI technology (the national 2030 target is set at 75%, although the 2030 national trajectory reaches 85.1%), well ahead of the EU average of 13.48%. This reveals a high average growth rate (63.5%) compared with 2023, when AI uptake was 14.1%. Overall, **the country is on track according to its national trajectory.**

Although the AI adoption rate is higher than the EU average for all enterprises, only 1 in 5 SMEs (21.9%) used AI in 2024 (EU average of 12.64%), while over half (54.07%) of large enterprises were able to adopt AI technology (EU average of 41.17%). This gap of 32.17 percentage points slightly exceeds the EU gap of 28.53 percentage points. According to the Dutch National Statistical Institute's 2024 AI Monitor, most companies use AI technologies for text mining (13.5%) and natural language generation (12.3%). The information and communication industry was most likely to use AI technology (about 58% of companies), followed by companies specialising in business and financial services (39.8% and 37.3% respectively). Finally, for those companies who reported never using AI, most of them (74.6%) explained that this is due to a lack of knowledge of the technology, while others (more than half of the companies) mentioned privacy concerns.

A report from TechLeap reveals a more nuanced picture of the AI ecosystem in the Netherlands, describing the strengths and challenges of 'AI companies'. These are companies that use AI technologies in their core services; develop AI infrastructure and algorithms; produce hardware; and are end-users of AI solutions**.** According to the report, AI companies represent 9% of the total Dutch tech scale-up landscape. Most scale-ups have been set up recently and are currently looking for funding for their early-stage growth. These companies tend to encounter recurring challenges, with funding being the most common barrier, followed by a lack of industry awareness, difficulties for smaller companies to access the market and a lack of talent. Other challenges include difficulties accessing data and computing power, the burden of regulations and ethical concerns. With regards to funding, the report highlights that Dutch venture capital firms often prefer not to invest in AI scale-ups because they are deemed too risky.

AI innovation in the Netherlands is largely driven by (regional) public-private partnerships. The Dutch AI Coalition is a key example of this, founded and funded by several central government departments and bringing together more than 500 companies, organisations and institutions involved in the world of AI to stimulate collaboration, development and innovation. The coalition operates in different local AI hubs, located across various regions of the country. Notable hubs include the AI Hub Amsterdam, which focuses on the research and development of AI applications primarily in healthcare, business innovation and services for individuals, and the AI Hub Brainport, which specialises in AI applications for healthcare, mobility and manufacturing. Since 2025, the Dutch AI Coalition has joined forces with another public-private initiative, AiNed, to form the AI Coalition 4 Netherlands. This merger aims to further stimulate AI innovation in the country. The coalition has been actively supporting AI projects, and notable successes include the AiNED MIT call for projects in 2024, which awarded a total grant of EUR 3.55 million to 14 projects that aim to stimulate AI innovation in SMEs. Another similar call for projects is planned in 2025, together with the launch of five applied learning communities, four innovation labs and the preparation for the start of the new European Language and Speech Technology for AI labs.

The government's regional approach to AI presents both challenges and opportunities. On the one hand, the fragmented funding that is spread across seven regional hubs can sometimes be a hurdle for smaller enterprises looking for funding. On the other hand, the regional and sectoral organisations, each producing their own vision and agenda for AI, can also be considered a strength. For instance, in 2024, the municipality of Amsterdam, with the help of its residents, developed its own vision for AI, focusing on how the technology can improve decision-making processes and help build a smarter city, while always respecting core human values like public trust and privacy. Other regional initiatives and guidelines also emerged in the same year, aiming to promote the responsible development and use of AI. For example, the Union of Water Boards developed its AI compass to help water companies use AI intelligently and ethically. The Association of Provincial Authorities also published a Guide on Digital Ethics, with a section focusing on AI use.

Aside from leveraging its strong regional AI Network, the Netherlands also intends to build up its AI infrastructure and invest in attracting talent. AI will be one of the priorities of the new Netherlands Digitalisation Strategy expected in Q2 2025, which will address the need to accelerate AI adoption for innovation in the public sector. The government also reported on plans to develop a new direction for the Strategic Action Plan on AI (2019). Finally, the Netherlands is exploring the possibility of building an AI Factory to enhance its computing power.

The country is also taking a proactive approach when it comes to mitigating AI's potential risks and aligning with EU rules. It launched the National Algorithm and AI Register for the public sector and published its vision on Generative AI in January 2024. Subsequently, the country adopted a guide on AI Regulation in October 2024. This guide provides organisations and businesses with insights into how to interpret and apply the EU AI Act. Overall, according to the Eurobarometer on the Digital Decade 2025, a staggering 88% of Dutch citizens agree there is a need for public authorities to play a proactive role in ensuring that the development of AI and new technologies aligns with EU rights and values.

Unicorns, scale-ups and start-ups

At the beginning of 2025, the Netherlands had 32 unicorns, with two new unicorns emerging in 2024, which indicates a mature tech ecosystem. However, as underlined in the State of Dutch Tech Report 2024, the country is currently facing a period of stagnation, characterised by declining investments and a decrease (from 39 to 30) in the number of start-ups that are able to successfully scale up. Accessing venture capital and issues linked to regulatory requirements are some of the main challenges faced by Dutch start-ups.

The start-up scene in the Netherlands is quite diverse, with most tech companies concentrated in three key regions: North and South Holland and Utrecht. In 2024, the two key areas driving the most investments were the cloud hosting industry (accounting for about 20% of venture capital investment) and the semiconductor industry. Conversely, Dutch AI investments lagged behind other EU Member States' investments, showing that the sector is still relatively small and has not yet reached maturity.

Looking closely at investments, although the Dutch venture capital landscape grew significantly by 47% from 2023 to 2024 to reach a total of EUR 3.1 billion, a more nuanced picture emerges in the background. **Early-stage investments and domestic investments have experienced a sharp decline** (from 61% in 2023 to 15% in 2024), suggesting a shift in investor sentiment. Furthermore, the investment landscape appears to be quite cautious, with larger institutional investors, such as pension funds, preferring to invest in real estate rather than new tech businesses. Scale-ups are having a hard time reaching full commercialisation, especially when seeking funding exceeding EUR 50 million. Additionally, studies show that Dutch SMEs are 40% less likely to apply for a bank loan than SMEs in

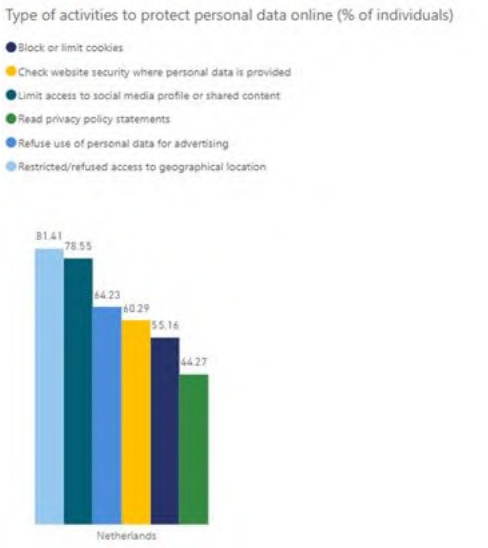
other Member States. All these factors ultimately hinder SMEs and start-ups from accessing the financing they need to grow and thrive.

Several existing financing schemes for start-ups and scale-ups have been boosted to address some of the above challenges. In 2024, for example, Invest-NL introduced an additional EUR 100 million in blended finance instruments to attract institutional investors and support scale-ups. With an eye to national security, the government also proposed extending the Dutch investment screening law to include screenings of foreign investments on sensitive technologies like AI and biotech. Another example of public support for start-ups and scale-ups is the government-led Techleap initiative, which focuses on helping start-ups to scale-up, attract investments and take advantage of other stakeholders' and entrepreneurs' knowledge.

It is important to note that an increase in the regulatory and administrative burden is negatively impacting companies, particularly SMEs, start-ups and scale-ups. In 2024, more than half of the Dutch companies (51%) reported encountering regulatory burdens, up from 42% in 2023. Almost half (49%) of the Dutch SMEs reported devoting more than 10% of their staff to address regulatory requirements and reporting, which is one of the highest levels in the EU. The government mentioned that it wants to cut red tape and invest more in digital technology companies, but did not provide more details on how this will be achieved.

Strengthening Cybersecurity & Resilience

Dutch individuals demonstrate a high level of awareness regarding digital threats and take proactive measures to protect themselves. According to a Eurostat analysis on the safety component of the Digital Skills Indicator, 92.7% of individuals have taken at least one action to safeguard their online data (see the graph below for more information on the types of action analysed). This is significantly above the EU average of 69.55%. Furthermore, 77.39% of individuals have adopted three or more precautionary measures, with the most common being restricting or refusing access to their geographical location (81.41%). In contrast, reading privacy policy statements is the least frequent action, undertaken by only 44.27% of individuals.



In the business sector, enterprises are increasingly implementing cybersecurity measures, although ongoing security challenges highlight the need for continued awareness-raising efforts. The number of Dutch enterprises experiencing ICT security incidents due to external attacks, such as ransomware and denial-of-service attacks, decreased slightly from 6.89% in 2022 to 5.05% in 2024. Although this represents a decline, the incidence rate remains higher than the EU average of 3.43%. The government's cybersecurity assessment report highlights that in 2024, the most common ICT security incidents were ransomware attacks resulting in data breaches, with the ICT sector being the most affected industry. In terms of common consequences, according to EUROSTAT data, 25.75% of enterprises experienced ICT-related security incidents leading to the unavailability of ICT services, the destruction or corruption of data, or the disclosure of confidential data. More broadly, the government's assessment report highlights the increased pace

and complexity of cyberattacks by state actors, which are due to the current geopolitical tensions, and large-scale system failures, which often arise because of dependencies on a limited number of digital providers.

In light of these challenges, Dutch enterprises are taking significant steps to enhance their cybersecurity. A significant 95.75% of enterprises have deployed ICT security measures, exceeding the EU average of 92.76%. However, there is still room for improvement, particularly in terms of employee awareness and the perception of cybersecurity as a strategic added value. Currently, only half (50.01%) of the enterprises have made employees aware of their obligations in ICT security-related issues, highlighting the need for greater emphasis on cybersecurity awareness and training. At national level, the Dutch Trust Centre and the National Cybersecurity Centre put together some key steps that organisations can follow to meet basic security needs, including: identifying and assessing risks; promoting safe behaviour in the workplace; protecting systems, applications and devices through secure settings and threat detection; restricting access rights to sensitive data sets; and preparing for cyber incidents in advance.

When it comes to efforts by public authorities, 91% of Dutch citizens who replied to the Eurobarometer on the Digital Decade 2025 believe that measures to enhance cybersecurity, better safeguard online data and ensure the overall safety of digital technologies are crucial in facilitating the daily use of digital technologies. The 2022-2028 Dutch Cybersecurity Strategy remains the primary government initiative to enhance digital resilience and counter digital threats. The October 2024 progress report sheds light on some notable developments in 2024, including:

- the establishment of the foundation for the Cyber Resilience Network, which aims to strengthen cybersecurity cooperation between private and public entities;
- preparatory work to merge the three government cybersecurity organisations (the National Cybersecurity Centre, the Digital Trust Centre and the Computer Security Incident Response Team for Digital Service Providers) into a single entity;
- progress on transposing the revised European Network and Information Security Directive into Dutch law through the Cybersecurity Act.

The Netherlands had also launched several initiatives in 2024 that are interesting in the light of the Commission's Action Plan to strengthen the cybersecurity of hospitals and healthcare providers, with several initiatives launched, including:

- the update, with new implementation tools to be released in 2025, of the NEN-7510 standard for information security, with which healthcare providers must now comply;
- the upgrade of the open-source tool (OpenKAT Tool), that helps healthcare institutions identify potential security vulnerabilities, was improved last year;
- the extension of the National Cybersecurity Centre for Healthcare's network to more healthcare sectors, including ambulance care and home care, and the development of a new testing framework to simulate real-world cyberattacks on healthcare institutions.

Finally, the Netherlands is making good progress in deploying secure internet standards, particularly with the adoption of the Internet Protocol version 6 (IPv6). On the server side, the country achieved a notable adoption rate of 39% as of Q3 2024, surpassing the EU average of 17%. End users are also embracing IPv6, with a deployment rate of 34%, which is roughly in line with the EU average of 36% during the same period. Domain Name System Security Extensions, which introduces security features

to DNS, is another important standard that has been rolled out. In the Netherlands, the DNSSEC validation rate was 58% in Q3 2024, which was above the EU average of 47%.

Protecting and empowering EU people and society

Empowering people and bringing the digital transformation closer to their needs

The Netherlands continues its efforts to ensure that no one is left behind in the digital transition by providing people with human support (a measure deemed important by 92% of citizens) **and improving government services for individuals and enterprises.** With its upcoming Netherlands Digitalisation Strategy, the government wants to improve its digital public services to ensure that they are interoperable, accessible and easy to use. Nonetheless, **shortages of ICT specialists in the labour market and declining basic skills (including digital skills),** especially among students in economically disadvantaged contexts**, remain significant challenges for the country's productivity, competitiveness and digital transformation.**

In 2024, a growing number of Dutch individuals engaged in online political and civic activities. However, like in many EU countries, the digital space is also plagued by disinformation and hostile messages. To address these issues, the Dutch government has announced new measures, including a reporting facility for disinformation and funding for fact-checkers, while also focusing on protecting children's rights in the digital environment and promoting mental health support for younger people.

Equipping people with digital skills

Basic Digital Skills

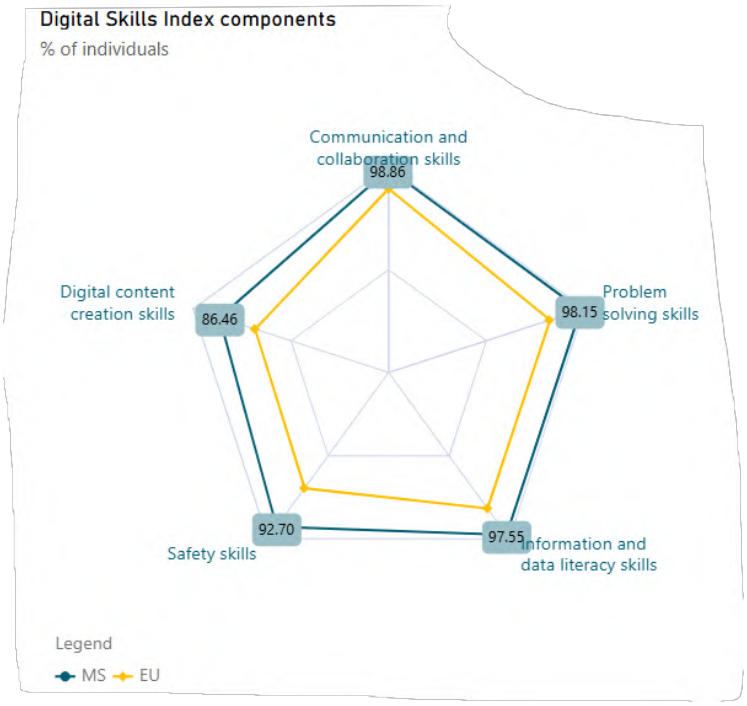
The Netherlands has a strong digital skills profile, with very good scores across geography and gender. According to data from 2023, the country has already reached the 2030 EU target, with a high proportion (82.70%) of its population having basic digital skills (the 2030 national target is 100%), which far surpasses the EU average (55.56%). However, some differences still exist across age groups and education levels. Moreover, data shows declining basic skills and underachievement, particularly in STEM subjects.

While there is no new data for 2024, an in-depth analysis based on demographics provides a view of the country's digital proficiency:

- **Age groups:** 91.13% of 16 to 24-year-olds are very digitally proficient, which is much higher than the EU average (69.98%). However, 65 to 74-years-olds are the least digitally proficient, with only 66.54% of this age group having basic digital skills, showing efforts are still needed to address this section of the population. Nonetheless, this is still much higher than the EU average of 28.19%.
- **Education level:** the correlation between education and digital skills is evident. An impressive 94.38% of the Dutch population with higher education have basic digital skills, a figure that greatly exceeds the EU average (79.83%). For those with lower education levels, 68.09% have basic digital skills, which is 14.61 percentage points lower than the national average. An EU study on computer and information literacy reveals that more than half of the eighth-grade students surveyed were low-achievers in digital skills. The report also highlights the large disparities in basic digital skills between students with different parental education levels.

Moreover, disadvantaged schools tend to have higher shortages of teachers, impacting the quality of STEM education in some parts of the country.

- **Living areas:** geography also appears to have some impact on the level of basic digital skills. 80.06% of rural residents in the Netherlands have basic digital skills, which is the lowest proportion across all the living areas. Still, this is considerably higher than the EU average in rural areas.
- **Gender gap**: 82.83% of men and 82.56% of women had basic digital skills in 2023, which does not indicate a clear gender gap.
- **Digital Skills Index components:** the Netherlands excels in the Digital Skills Index competencies, with scores above the EU average in all categories. The country has an exceptionally high score in communication and collaboration skills (98.86%), and even its lowest-scoring area, digital content creation (86.46%), scores well above the EU average.



In the 2024 adjustment of the roadmap, the Netherlands formalised its national target for basic digital skills, aiming to reach 100% of the population. If the current measures are extended and implemented correctly, the target seems realistically achievable by the end of the decade.

2024 recommendation on basic digital skills: introduce measures to help concretise national plans to boost digital skills and awareness in schools, to complement the ongoing efforts at local and regional level to ensure digital inclusion.

In 2024, the Netherlands continued to implement existing measures but did not take any new measures. The country continued to implement actions outlined in its roadmap, including the 'Count on Skills' programme, which leverages a network of municipalities to fund courses and training aimed at improving adults' basic skills, including digital literacy. While the programme officially concluded in 2024, research indicates that its local, community-based approach to training and funding has been highly effective, leading to the decision to continue its implementation. Other initiatives that take a similar decentralised approach, such as '#AllDigital', the 'Digital Society Alliance' and 'Information Points Digital Government', continued to operate in 2024. They aim both to improve basic digital skills and to foster individuals' participation in the digital society. However, with regard to tackling digital inclusion, the adjusted roadmap did not propose any new measures, specifically addressing the digital skills gaps across different age groups and education levels.

ICT specialists

In 2024, ICT specialists represented 7% of the Netherlands' total workforce (the 2030 national target is 9.2%), which is higher than the EU average of 5%. However, the country is lagging behind its national trajectory. With ICT specialists representing 6.9% of the total workforce in 2023, the growth rate observed in the Netherlands (+1.4%) is much lower than the EU average (+4.2%).

There are still large gender differences in employed ICT specialists. In 2024, 81.30% of the ICT specialists in employment were men and 18.70% were women. **Eurostat also indicated a slight drop in the proportion of female ICT specialists in employment** from 2023 to 2024. In 2023, 18.9% of ICT specialists in the Netherlands were female, compared with 19.4% for the EU. This figure decreased slightly to 18.7% in 2024, while the figure for the EU increased to 19.5%. The overall trend is worrying, particularly given the lack of targeted measures currently in place.

TechLeap's report is useful in shedding light on some significant issues faced by Dutch companies when looking for digital talent. It highlights that the country lacks technical experts like engineers and software developers most of all. 71.9% of online job advertisements are for ICT specialists and 48% of companies report that these profiles are the hardest ones to find. This can partly be explained by the low proportion of STEM students and graduates. In 2022, the proportion of students in STEM subjects was 17.4%, which was much lower than the EU average of 27.1%, and only 5% of them were women (which is below the EU average of 8.6%). Moreover, the proportion of STEM graduates was 20.1% of all tertiary graduates, which was lower than the EU average of 26.6%. Companies also report difficulties in attracting and retaining talent, due to limited resources and strong international competition. These significant labour shortages are also evident in other sectors of the economy, with some reports predicting a shortfall of approximately 1.4 million workers by 2030, which will impact the digital and tech sectors in particular.

The Netherlands' target for ICT specialists remains 9.2% of the total workforce, which is close to the EU target of 10% by 2030. Given that this indicator is growing at a slow rate, it is unlikely that the target will be achieved, unless ongoing efforts start having an impact soon.

2024 recommendation on ICT specialists: Closely monitor the implementation of existing measures and partnerships to upskill and retain ICT specialists, including women. Design incentive schemes to increase the attractiveness of STEM disciplines, particularly for girls, and to boost the number of young people interested in taking up ICT-related studies or careers. Further reinforce collaboration between industries, education institutions and the public administration to improve the link between vocational education and the labour market needs.

The Netherlands made some efforts to address the recommendations through new policy actions in 2024. Published in 2023, the 'Action Plan on Green and Digital Jobs' will continue to be the guiding initiative to boost enrolment in STEM courses, help ICT specialists find a job, improve productivity and strengthen governance through to 2030.

- The government plans to monitor the implementation of the action plan using new indicators and enhanced data. A public website (Monitor – AGDB), providing accessible information and statistics on education and the labour market, is set to be launched in 2025.
- In 2024, the government announced a EUR 750 million investment by the National Growth Fund to support the programmes *TechWadraat* and *Sterk Techniekonderwijs* over the next eight years. The aim is to strengthen STEM and technology education in primary and secondary schools. In both programmes, attention will be paid to involving under-represented groups, including girls. In parallel, the Co-teach Informatica initiative continues to support schools in teaching ICT-related topics with the help of ICT professionals.
- As part of the 'Human Capital Agenda ICT', in 2024 10 Dutch regions developed regional action plans to increase the ICT workforce and address the ongoing demand for ICT skills development and reskilling. In October 2024, a new taskforce was launched to improve both the number and quality of cybersecurity professionals. The regional plans can be found on the programme's website. Following the discontinuation of the National Growth Fund, some funding was reduced while the strategies were still being implemented. As a result, the regions are working to secure regional investments, as well as national and EU subsidies. A dashboard (pr-eDICT), providing the regions with information about education, transitions from education to the ICT labour market and vacancies, is also available. The tool is designed to help streamline regional strategies and anticipate market needs.
- In 2024, the 'Taskforce for Diversity and Inclusion' continued its efforts to foster diversity within the technology industry by sharing knowledge and best practices. Although the subsidy for the taskforce ended in December 2024, the initiative will continue under the banner 'digital talent' supported by stakeholders from the digital sector. The government will also continue to work with the companies that participated in the initiative.
- 'I-Strategy-Programme', 'I-Vakmanschap' and 'RADIO' also continue to improve civil servants' digital skills, boost the number of ICT specialists and enhance the level of IT research within the government.

In addition to the above measures, the government is planning to reduce labour market shortages through a broad labour market agenda, which was presented in a letter to Parliament on 13 December 2024. Its initiatives will include improving the quality of work, reducing the regulatory burden to make it easier for companies to employ people, improving labour market matching and investing in technologies that contribute to labour productivity. More concrete plans are scheduled to be unveiled in the course of 2025.

Despite ongoing efforts, the recent budget cuts in higher education (approximately EUR 1.2 billion), combined with the recently announced Spring Memorandum (which includes an additional cut of EUR 59 million in higher education), **could potentially force universities to reduce the number of ICT courses that they offer, thus exacerbating the existing ICT workforce shortages.** Additionally, the decline in foreign students across most disciplines, with even steeper declines in AI-related courses (-13%), could further negatively impact the ICT workforce, leaving more positions unfilled. The Dutch labour market also features a high proportion of self-employed and part-time workers, which is

affecting overall productivity and discouraging companies – particularly smaller enterprises – from investing in long-term training for their employees. In 2024, 79.32% of large companies (with 250 employees or more) provided ICT training to their personnel, while a much smaller proportion of small companies (19.47%) (with 10 to 49 employees) were able to provide this kind of training. In 2022, 29.1% of enterprises with 10 or more employees offered ICT training, a figure that decreased to 26.57% in 2024. Although that figure is still above the EU's average of 22.29%, the country's annual growth rate of -4.4% in this area is significantly lower than that of the EU (-0.2%).

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

The Netherlands consistently excels in digital public services, outperforming the EU average for both citizens and businesses. In 2023, the country achieved a total score of 85.87 for digital public services for citizens, surpassing the EU's score of 79.44. This upward trend continued in 2024, with the Netherlands scoring 88.53 (the 2030 national target is 100) and exceeding the EU's score of 82.32. Despite a strong overall performance, the growth rate for the Netherlands in this category was 3.1%, which is slightly lower than the EU average growth rate of 3.6%. In the area of cross-border digital public services for citizens, the Netherlands scored 78.27 in 2023 and 80.27 in 2024, both of which surpass the EU's respective scores of 68.37 and 71.28.

The Netherlands also performs well in digital public services for businesses, outpacing the EU in terms of total scores. In 2023, the country scored 86.67, compared with the EU's score of 85.42, and in 2024, it scored 88.75 (the 2030 national target is 100), exceeding the EU's score of 86.23. Additionally, the Netherlands excelled in cross-border digital public services for businesses, scoring 73.33 in 2023 and 77.5 in 2024, which are both higher than the EU's scores of 73.13 and 73.76, respectively. Notably, the country's growth rate in this category was 5.7%, significantly outpacing that of the EU (0.9%).

The Netherlands faces some challenges in providing access to e-health records, with a score of 72.47 in 2023, which was lower than the EU's score of 79.12. This gap widened in 2024, with the country scoring 65.18, compared with to the EU's score of 82.7. This decline can be attributed to the discontinuation of a pilot program in 2024, which had previously assisted legal guardians and authorised persons in accessing health data on behalf of others. The termination of this service resulted in a decrease in two sub-indicators. As in 2023, three of the six applicable categories of healthcare providers (which are all private in the Netherlands) are connected and supply data to the national health database. Rehabilitation centres, geriatric nursing homes and mental health facilities are not yet included.

e-ID

In line with the EU eIDAS Regulation, the Dutch authorities are on track to introduce an EU digital wallet. As scheduled, the first version of the Dutch public e-ID wallet was launched in 2024, with initial testing conducted in collaboration with the municipalities of Amsterdam and Nijmegen. The pilot programme involved 57 users with varying digital skills from different age groups, who used the wallet to access online public services. The results showed a generally positive user experience, although there are still some areas for improvement. Future iterations of the Dutch wallet will build on this foundation, incorporating key features such as the generic issuance of Electronic Attestations of Attributes, backup and recovery options, wallet-to-wallet interaction, offline functionality and additional enhancements.

The government also reported that online digital identity login methods are becoming increasingly popular, with Dutch people logging in over 550 million times using DigiD (an e-ID service available in the country) in 2024, which is an almost 15% increase compared with 2023. Other existing e-ID systems, including include eHerkenning and eIDAS, are being consolidated into a single, secure access system. This system ensures secure and reliable access to government services by requiring individuals and businesses to use recognised login tools. However, it still offers the flexibility to choose from multiple login methods, addressing potential issues of vulnerability and system malfunctions.

The Netherlands co-leads the new WE BUILD (Wallet Ecosystem for Business & Payment Use cases, Identification, Legal person representation and Data-sharing) consortium that will pilot the use of EU Digital Identity Wallets. Six Member States and over 170 entities from various public and private sectors are participating in the project. It focuses on piloting the wallets with regard to identification, legal representation and data-sharing across 13 use cases in the areas of businesses, supply chain and payments. Several Dutch stakeholders are also participating in the **APTITUTE (Advanced Project for Trusted Identity Technologies and Unified Digital Ecosystem) consortium** that focuses 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.

Digitalisation of public services for citizens and businesses

The proportion of Dutch individuals using public authorities' websites or apps remained stable, at 96.38% in 2024, which is very close to the 96.85% reported in 2022. This proportion remains far above the 2024 EU average of 77.71%. Similarly, a notable majority of citizens (94%) see digital technologies are important means to access public services, according to the Eurobarometer on the Digital Decade 2025. To meet this high demand, the Netherlands **formalised its national targets in 2024, aiming to reach a score of 100 for the digitalisation of public services for citizens and businesses. For both KPIs, the country is on track according to its national trajectory.**

In the last year, the country advanced the digitalisation of its public services by continuing to implement existing measures. The Service Public Communication (DPC) has improved the online solution that helps competent authorities to implement the Single Digital Gateway regulation, making it easier to find and edit texts. Moreover, to assess and optimise online government websites, the government commissioned a study focusing on users' experience of overheid.nl (the central government platform that provides individuals and businesses with access to private information and public services), and of Mijnoverheid (a personal digital mailbox for mail from the government). The study's findings indicate that users are generally satisfied with the platforms and perceive them as reliable and easily accessible entry points. However, opportunities remain to create a more seamless, unified and interoperable government experience. Furthermore, the study highlights the potential for leveraging AI to enhance the accessibility and efficiency of government services, which is a promising avenue for future development. Finally, the government postponed the coming into effect of the second part of the Modernisation of Electronic Administrative Communication Act from January 2024 to January 2026. The Act will make it mandatory for administrative bodies to enable individuals and businesses to formally get in touch with them through digital means.

e-Health

The Netherlands still does not explicitly refer to a national target or trajectory for access to e-health records, as these would be difficult to establish given the country's decentralised healthcare system. In its revised roadmap, the country increased the total budget for e-health and introduced a new measure, namely '*MijnGezondheidsoverzicht*' ('My Health Overview'). This is a digital platform where

all individuals will be able to access their health data at any time. Unlike the Personal Health Environment, which is an optional platform with personalised functionalities like self-tracking and video consultations, 'My Health Overview' will give individuals a central and complete view of their official health data. The nationwide roll-out of the platform is expected to take place gradually, with the first products made available around 2027.

2024 recommendation on e-health: make more health data types available to citizens through the online access service and increase the supply of health data by onboarding more categories of healthcare providers.
The Netherlands addressed the recommendation by continuing existing measures and putting in place new policy actions in 2024. With an allocated budget of EUR 27.7 million, 'My Health Overview' will give Dutch individuals access to a more complete set of health data. In 2024, the government also worked with healthcare organisations to make a more diverse and complete health data set accessible online, including not only medical records and test results, but also medication history, vaccination records and treatment plans. This is also thanks to the collaboration with a wider range of healthcare providers (i.e. mental health professionals, pharmacies etc.). It remains to be seen how these efforts will influence the e-health indicator in the future.

Several Dutch companies have also developed innovative ways to integrate digital solutions like AI to reduce administrative costs and free up the health workforce. Autoscriber.com, for instance, transforms conversations between patients and doctors intro structured e-health records through AI-powered speech recognition.

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

Dutch individuals are increasingly engaging in political and civic activities online. In 2024, 29.58% of them used the internet to participate in consultations, vote or express opinions, surpassing the EU average of 20.45% after increasing steadily from 22.95% in 2022. **However, like in many other Member States, the digital space is plagued by misleading content and disinformation**. In 2023, 70.71% of individuals reported encountering false or dubious content online, a figure significantly higher than the EU average of 49.25%. Of particular concern is that 80.69% of those affected by misleading content were young people aged 16-24. Fewer than half of users (46.93%) verified the accuracy of the information they encountered, compared with 59.99% of young users (16 to 24-year-olds).

Hostile and degrading messages, affecting young people and female users in particular, are also quite common in the Dutch online space. Almost half of the population (48.40%) reported encountering hostile or degrading messages online in 2023. Young people (16 to 24-year-olds) were particularly affected, with 61.19% reporting such experiences compared with 48.75% of adults (25 to 64-year-olds). The proportion of female users encountering these kinds of messages online is among the highest in the EU (50.68%).

To counter disinformation, the Dutch government announced a new package in 2024 in a letter to Parliament. The letter focuses on the progress made with the 2022 government-wide Strategy for Effectively Tackling Disinformation and highlights a commitment to focus on new measures, including:

- setting up a reporting facility where people can report harmful content, including disinformation on social media platforms;

- setting up a dispute resolution body that allows people to seek dispute resolution regarding content moderation decisions taken by online platforms;
- strengthening the Dutch network of fact-checkers by providing additional funding to the Belgium-Netherlands Digital Media and Disinformation Observatory consortium, while also exploring new funding models to support the independent work of fact-checkers in the future.

In parallel, some studies are being carried out to provide evidence for potential future actions against disinformation. Wageningen University & Research is conducting a research study on the impact of disinformation on public health, policymaking and societal trust. In parallel, the University of Amsterdam is leading an empirical analysis on how digital online platforms approach moderation. The analysis covers not only how much content is subject to moderation, but also what kind of content is most commonly removed or flagged. The Netherlands is also funding the Network Media Literacy for its management of the *isdatechtzo.nl* website, which provides people with information and tools to recognise fake content through fact-checking.

With 93% of Dutch citizens recognising an urgent need for public authorities to mitigate the negative impact of social media on children's mental health, as well as to combat cyberbullying and online harassment, the Netherlands reinforced its commitment to safeguarding children's rights in the digital environment in 2024, marked by a series of key developments. The multifaceted Dutch approach integrates legislation and policy with supervision and awareness efforts. This includes ensuring compliance with the General Data Protection Regulation, using tools such as the Children's Rights Impact Assessment to help organisations assess the effects of digital products on children's rights, and promoting the Dutch Code for Children's Rights, which outlines principles to help developers mitigate online risks for children. Additionally, the country is actively raising awareness through campaigns about online risks targeted at children and caregivers, while also introducing at a later time the Children's Rights Label and Game Check tool to help parents make informed decisions about the digital platforms and games their children use.

Beyond digital rights, **the Netherlands is also focusing on broader mental health support for younger generations.** Initiatives like @ease – a free platform designed for students, teachers, and parents – offer resources, advice and tools to manage mental health challenges such as stress and anxiety. This initiative is part of a wider effort to improve mental health awareness and support, ensuring that young people have the resources they need to navigate digital spaces and personal well-being. Moving forward, the introduction of tools such as age-verification methods in restricting access to inappropriate content for children remains to be seen, a measure that 88% of Dutch citizens consider essential to protecting children online.

Leveraging digital transformation for a smart greening

The Netherlands is intensifying its efforts towards achieving sustainable digitalisation. The Sustainable Digitalisation Action Plan (launched in June 2024), which also features in the 'Green & Digital' cluster of the Digital Decade's Best Practice Accelerator, marks a significant step forward. This plan focuses on harnessing digitalisation to promote sustainability across various sectors, including energy, mobility, industry, buildings, agriculture and government. It also emphasises the need to make the digital sector more sustainable, targeting key areas such as hardware, software and end-user devices. The plan also aims to strengthen public-private collaboration, and focuses on information-sharing, standardisation and fostering innovation.

When it comes to purchasing and disposing of ICT equipment, Dutch consumers and enterprises exhibit distinct priorities and behaviours, reflecting a mix of environmental awareness and practical considerations. Most Dutch consumers (75.89%) prioritise the brand, design and size of the equipment when buying ICT equipment. A smaller percentage of buyers (19.63%) took the equipment's energy efficiency into consideration, which is line with the EU average of 19.35%. Even fewer buyers (5.13%) based their decision to buy a product mainly on the possibility of extending its lifespan. Around half (48.1%) of enterprises selected ICT services or equipment on the basis of their environmental impact, which is below the EU average of 58.5%.

Recycling old ICT equipment seems to be more of a common practice in the Netherlands than in other EU countries, with 27.87% of people recycling their old desktop computers, 12.96% recycling their mobile phones and 16.21% recycling their laptops or tablets in 2024. This is more than the EU averages of 14.66%, 10.93% and 11.31%, respectively. 72.6% of enterprises also recycle ICT equipment, although this is slightly lower than the EU average of 77.4%. Overall, according to the Eurobarometer on the Digital Decade 2025, a growing majority of Dutch citizens (75%, up 3 percentage points from last year) believe that digital technologies play a crucial role in combating climate change, with 83% emphasising the need for public authorities to take decisive action in this area.

2024 recommendations on green ICT: (i) continue developing a coherent approach to twinning the digital and green transitions, including by supporting relevant pilots. First, continue to promote 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
The Netherlands addressed the recommendations by putting new policy actions in place. In June 2024, as anticipated in the 2023 roadmap, the country set out the Sustainable Digitalisation Action Plan. It consists of 44 action points to make the digital sector more sustainable; take advantage of digitalisation to advance sustainability in different sectors; and ensure there is a solid framework to support the first two lines of action (with, for example, the establishment of knowledge centres for sustainable digitalisation). The actions will be implemented through cross-governmental participation (across ministries and national organisations) and public-private collaboration.

The Netherlands

The Dutch government has made significant strides in recent months as part of the action plan. In 2024, it commissioned two research papers, which are currently in the final stages of completion. One explores the energy and water usage of AI, and the other aims to expand the inventory of available data and databases on sustainable digitalisation. Additionally, the Netherlands has prioritised the greening of data centres, developing a comprehensive list of recognised measures to reduce energy consumption in these facilities. The country is also in the process of setting up a Sustainable Digitalisation knowledge centre. This will be a dedicated (potentially online) platform where public and private organisations can access reliable information on the digital and green transition, including EU regulations, subsidy opportunities, standardisation guides, upcoming events and interactive tools designed to foster sustainable digitalisation practices. A key component of the action plan is the National Coalition of Sustainable Digitalisation, a private-public partnership that has grown steadily over the past eight months. The coalition's achievements include a highly successful National Conference on Sustainable Digitalisation and the forthcoming Sustainable Impact Assessment, scheduled for release in mid-2025.

An evaluation of the action plan is currently underway (Q4 2025), with the possibility of new actions soon.

In parallel**, the Netherlands has also been collaborating with other countries on the topic of sustainable digitalisation.** It has exchanged knowledge and best practices with French policy advisers and regulators on methods for monitoring the environmental impact of digital technologies. It has also contributed to the OECD Working Party on Connectivity Services and Infrastructures' recent revision of the recommendation on ICT and the environment. The recommendation confirms the importance of aligning digital technologies with environmental sustainability.

On top of government initiatives, several Dutch companies are offering digital solutions to improve sustainable practices. An example of such a solution is HULO.ai, which uses AI algorithms to detect and locate water leaks in real time.

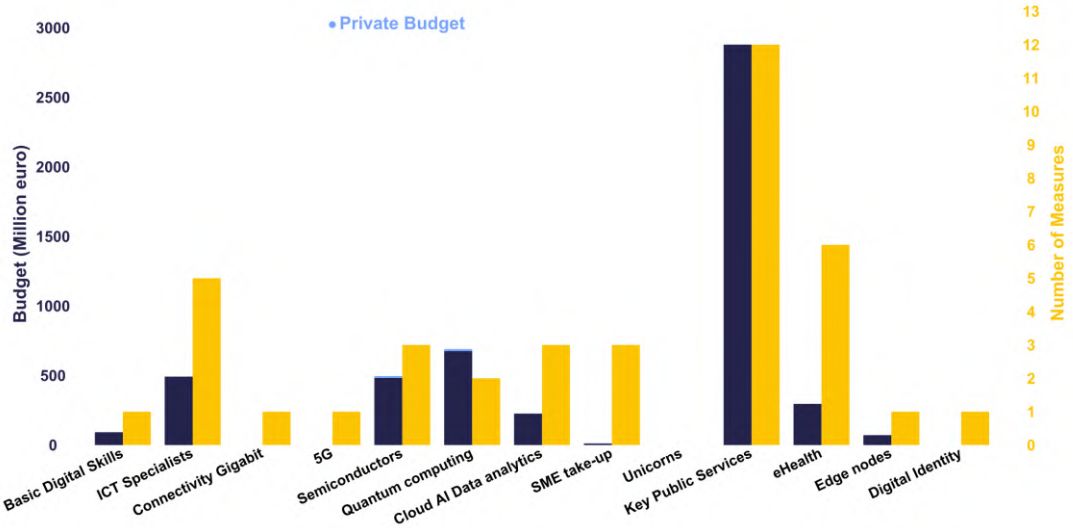
Annex I – National roadmap analysis

On 31 January 2025, the Netherlands submitted a fully revised national Digital Decade roadmap containing around 15 new measures and four revised targets. The budgets of several measures included in the original roadmap have been revised slightly upwards or downwards. Some edits were made because of clerical mistakes or to adjust new planned and allocated budgets. Overall, **the 2024 adjustment addresses a substantial number of roadmap recommendations issued in 2024.** However, the 2023 national roadmap has not yet been published online.

With regards to targets, the Netherlands proposed a target and trajectory for at least basic digital skills (100%) and for the digitalisation of public services for both citizens and businesses (100 out of 100). The country did not provide a target and trajectory for unicorns and edge nodes, because it favours a more quality-oriented target. Nor did the country present a target and trajectory for access to e-health records, as this would be difficult to establish given the Netherlands' decentralised healthcare system. The country raised its national targets for VHCN (to 99.9%), for SMEs with at least a basic level of digital intensity (to 95%) and for the take-up of data analytics by enterprises (to 75%). For ICT specialists as a proportion of people in employment, the Netherlands opted to keep the original national target for 2030 (9.2% of people in employment, which is still very close to the EU target of 10%).

With regards to measures, the Netherlands introduced five new measures in its national roadmap to support ICT specialists, highlighting its commitment to continue and closely monitor their implementation. The measures focus on boosting enrolment in STEM courses, providing regional support to help ICT specialists find jobs, as well as strengthening STEM and technology education in primary schools. Some measures also focus on continuing efforts to foster diversity within the technology sector and improving the digital skills of civil servants. One measure ('Smart Makers Academy') was associated with the ICT specialists target, although its main objective is to support SMEs in the manufacturing industry to adopt digital technologies.

Measures and budget in national roadmap[8]



[8] 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.

The Netherlands

Some measures included in the roadmap were linked to the relevant parts of the declaration on **digital rights and principles** and the Digital Decade general objectives, aligning in particular with the Commission's priorities on the green and digital transitions. The revised roadmap includes more details on the **consultation with stakeholders** than the original roadmap did.

In total, the national roadmap includes **59 measures with a budget of EUR 5.25 billion, comprising EUR 5.22 billion from public budgets** (equivalent to 0.46% of the Netherlands' GDP). The highest number of measures and the highest share of the budget are targeted at digital public services.

Annex II – Multi-country projects (MCPs) and funding

Multi-country projects and best practices

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 Netherlands requested to be an observer in the prospective EDIC in the area of public administration, for which the formal application has been submitted. It is also a candidate to host an EDIC in the area of mobility and logistics and is working towards setting up an EDIC in the area of digital common goods (i.e. open-source software and hardware, open data, open educational resources, open standards etc.).

The Netherlands is participating directly in the IPCEI on Microelectronics and Communication Technologies and in the IPCEI on Next-Generation Cloud Infrastructure and Services. The Netherlands 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 by sharing two best practices in the 'Business Uptake' cluster (with the National technology Strategy) and the 'Green & Digital' cluster (with the Sustainable Digitalisation Action Plan).

EU funding for digital policies in the Netherlands

The Netherlands allocates 26% of its total Recovery and Resilience Plan to digital (EUR 1.2 billion)[9]. In addition, 11% of the country's total cohesion policy funds (EUR 170 million) is dedicated to advancing the Netherlands' digital transformation[10]. According to JRC estimates, EUR 892 million directly contribute to achieving Digital Decade targets (of which EUR 834 million come from the RRF and EUR 58 million from cohesion policy funds)[11].

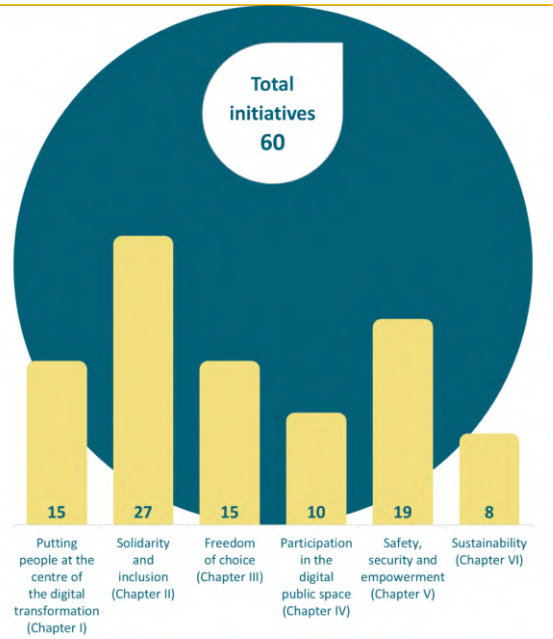
The most significant digital measures in the Dutch Recovery and Resilience Plan are dedicated to investments in innovative digital technologies, notably quantum technologies and AI; the development of digital skills across different levels of the education system, including efforts to make education more inclusive; investments in ICT infrastructure and sector-specific expertise and knowledge in the education system; and the digitalisation of key public services, with an emphasis on enhancing transparency and accessibility for citizens and businesses.

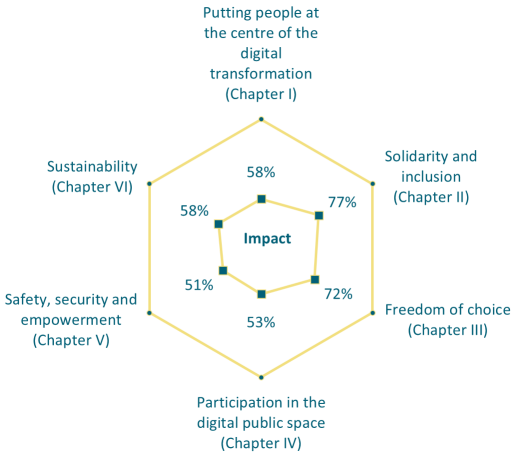
[9] The share of financial allocations that contribute to digital objectives has been calculated using Annex VII to the Recovery and Resilience Facility Regulation. Last data update: 16 May 2025.

[10] 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.

[11] 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[12]





Activity on Digital Rights and Principles (Figure 1)

According to a support study, the Netherlands has been **relatively active in implementing digital rights and principles**, with 60 initiatives overall and three new initiatives launched in 2024, **showing limited progress towards its commitments.** The same study shows that the Netherlands is most active in ensuring people remain at the centre of the digital transformation. There is room for improvement, especially with regards to ensuring a fair digital environment, 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 the Netherlands (mainly national government) and how these are perceived by citizens.

The indicators suggest that **the Netherlands is mostly successful in implementing commitments related to solidarity and inclusion**, while efforts in areas such as digital safety, security and empowerment seem to have a more limited impact.

According to the Special Eurobarometer 'Digital Decade 2025', **51% of Dutch citizens think that the EU protects their digital rights well** (a 6% increase since 2024). This is above the EU average of 44%. Citizens are particularly confident about getting freedom of assembly and of association in the digital environment (75%, above the EU average of 59%). They are most worried that their right to a safe digital environment and content for children and young people is not well protected (57%, above the EU average of 48%).

[12] 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.