



Study on Digitalisation of Business in the EU Member States

Executive summary

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Context and objectives

The Digital Decade Policy Programme of the European Union sets forth an ambitious roadmap to transform the Union into a digitally empowered economy and society by 2030. One of the core pillars of this initiative is the digital transformation of businesses, framed by explicit targets for the adoption of advanced technologies, the growth of innovative enterprises, and the integration of digital tools among small and medium-sized enterprises (SMEs). The Study on Digitalisation of Business in the EU Member States (Study) presents a comparative assessment of how Member States are progressing towards these targets, evaluating the effectiveness of policy measures, mapping common challenges, and identifying promising good practices that can inform future actions.

Within the context, this executive summary provides an overview of the comprehensive analysis of the digitalisation of businesses across 27 EU Member States and the respective country level reports developed as part of the Study. It covers six priority areas: **artificial intelligence (AI) uptake, tech uptake (adoption of cloud and data analytics technologies), development of scale-ups and unicorns, digitalisation among late adopters, integration of green digital technologies, and cybersecurity preparedness**. The findings aim to support EU institutions, national governments, and stakeholders in steering policy development and investment towards closing digital gaps and accelerating progress.

Methodology overview

Each of the individual country reports applied a **mixed-methods approach** that integrates quantitative indicators with an extensive qualitative review of policy strategies and instruments. The quantitative analysis relied on harmonised datasets, including those from Eurostat, the Digital Economy and Society Index (DESI), and national sources. These indicators are aligned with the Digital Decade monitoring framework and supplemented with additional metrics such as the Digital Maturity Assessment (DMA) scores and data on unicorn creation sourced from platforms like Dealroom.

In parallel, the qualitative component of the Study was based on the analysis of nearly 300 policy documents, covering both national and regional strategies, national Recovery and Resilience Plans, and digital transformation agendas. This Study identified over 2 000 individual support measures related to business digitalisation. These measures were categorised into thematic clusters based on the priority area addressed and support measures foreseen.

Key findings

AI uptake

AI is the most strategically prioritised technology in the Digital Decade agenda, yet adoption across EU businesses remains limited. As of 2023, the **average adoption rate of AI solutions by enterprises in the EU was 8%**, far below the 2030 target of 75%. Denmark and Finland reported the highest levels of adoption, nearing 15%, while countries such as Romania, Bulgaria, Poland, Greece and Hungary remained well below the average. The most commonly deployed AI technologies include process automation and text mining, while applications such as autonomous systems and logistics optimisation were far less prevalent.

A majority of Member States have developed national AI strategies or embedded AI policy within broader digitalisation frameworks. Support measures include dedicated grant schemes for AI research and development, public-private partnerships for AI application testing, regulatory sandboxes, and training programmes targeting both foundational and advanced skills. The effectiveness of these initiatives is often constrained by structural issues such as the shortage of specialised talent, fragmented data ecosystems, and limited access to high-performance

computing infrastructure. Despite these challenges, the growing alignment of policy instruments with industrial needs and regulatory preparedness indicates that the groundwork for broader AI diffusion is being laid.

Tech uptake

The adoption of cloud computing and data analytics technologies reflects similarly uneven progress across Member States. **Cloud computing adoption averaged 39% in 2023**, with Finland, Denmark, and Sweden reporting uptake rates above 60%. At the opposite end of the spectrum, Bulgaria, Romania, and Greece continue to exhibit adoption levels below 20%. The sectoral analysis reveals that information and communication services demonstrate the highest cloud adoption, while sectors such as hospitality and construction remain significantly under-digitised.

Data analytics uptake among EU companies stood at roughly 32%, with leading countries like Hungary and Croatia exceeding 50%. Businesses most commonly leveraged data analytics for transactional records and customer insights, but there was limited use of more advanced or real-time analytical tools.

Policy interventions in these areas have increasingly focused on facilitating open data access, supporting interoperability frameworks, and funding pilot projects. Numerous Member States are also investing in national cloud infrastructure initiatives and fostering cloud service provider certification to build trust. European Digital Innovation Hubs (EDIHs) play a significant role in promoting experimentation, upskilling, and vendor matchmaking. However, uptake remains hampered by concerns around data security, interoperability challenges, and the limited capacity of SMEs to integrate complex digital systems.

Late adopters

SMEs constitute over 99% of EU businesses, yet their digital maturity continues to trail larger firms. In 2023, **57.7% of SMEs in the EU had reached a basic level of digital intensity**, which is below the Digital Decade target of 90%. Finland and Sweden are approaching this target, while Romania and Bulgaria remain at the lower end, with fewer than 30% of SMEs meeting the digital intensity benchmark. The digital divide is particularly pronounced in sectors such as construction and accommodation services.

A wide range of national and EU-funded initiatives seek to address these gaps. Knowledge-building programmes have emerged as a central pillar of support, often delivered through EDIHs and complemented by peer learning models, digital diagnostic tools, and regional awareness campaigns. Financial support measures include grants and vouchers for software acquisition, infrastructure upgrades, and staff training. Some Member States are also leveraging tax incentives and simplified lending schemes to facilitate SME digitalisation. Despite this, many SMEs continue to report difficulties in accessing support or identifying technologies aligned with their business needs.

Scale-ups & unicorns

The start-up and scale-up ecosystem in the EU shows moderate growth, yet the ambition to double the number of unicorns by 2030 remains challenging. By the end of 2023, **the EU hosted 263 unicorns**, accounting for approximately 13% of the global total. Germany, France, Sweden, and the Netherlands lead in this space, while countries like Bulgaria, Slovakia, and Latvia are yet to establish a unicorn.

Growth in the start-up sector is supported by a combination of grants, equity financing, and public-private venture capital funds. Notable initiatives include Germany's Future Fund, Spain's NextTech Fund, and Czechia's Technology incubation programme. In addition to funding, policy efforts are increasingly directed towards scaling support, including matchmaking platforms, mentoring programmes, and internationalisation services. However, capital access gaps persist, especially for

late-stage funding rounds and in emerging sectors such as quantum technologies and AI-driven industrial platforms.

Green digitalisation

Although green digitalisation is emerging as a policy priority, its **integration into business practices remained limited and unevenly documented**. The share of enterprises that consider environmental impacts when procuring digital technologies varied widely between Member States. While Portugal, Italy, and Cyprus reported levels above 70%, countries such as Croatia and Greece fell below 30%. The adoption of energy-efficient digital practices, such as carbon tracking software or circular ICT procurement, remained largely voluntary and poorly measured.

Member States are responding with a combination of funding instruments, awareness campaigns, and cross-sectoral partnerships. Ecosystem collaboration, particularly between businesses and research institutions, is central to many green digitalisation programmes. Good practices include Belgium's Impact Estimation Dashboard, Finland's Green ICT ecosystem, and Bulgaria's grants for green tech development in SMEs. The inclusion of environmental criteria in digital transformation diagnostics and procurement processes is gradually becoming more common, but standardisation and benchmarking remain critical areas for improvement.

Cybersecurity

Among all dimensions, cybersecurity showed the highest level of uptake and maturity. **In 2023, approximately 92% of EU enterprises had implemented at least one form of cybersecurity measure**. Denmark and Finland led with adoption levels close to 98%. The most frequently used security practices included strong password authentication, data backups, and firewall deployment. Advanced measures such as biometric authentication were still rare, particularly among SMEs.

Policy measures in this field are well developed, with most Member States having adopted national cybersecurity strategies that incorporate both regulatory requirements and enterprise-level support. Programmes to raise cyber awareness, facilitate threat information sharing, and conduct simulation exercises have become more common. Several Member States are also using labels and certification schemes to promote best practices and raise trust in ICT service providers. Funding instruments for cybersecurity remain limited in scope but are beginning to emerge in support of SMEs and critical infrastructure sectors.

Priorities looking ahead

The Study highlights that while Member States have made tangible progress across many digitalisation dimensions, significant challenges remain if the EU is to achieve its 2030 Digital Decade targets. Based on current performance trends and the evolving policy landscape, the following priority areas were identified to guide national and EU-level action moving forward:

- **Close support gaps and improve policy coherence.** While most Member States have established overarching digitalisation strategies, many lack concrete, actionable support measures that directly benefit businesses, especially SMEs. Support is often insufficient in underperforming sectors such as construction, transportation, accommodation and food services, and parts of manufacturing. Scaling up targeted, tailored support is essential to address these uneven adoption patterns.
- **Ensure continuity and impact through monitoring and evaluation.** The effectiveness and visibility of support measures can be undermined by a lack of robust monitoring systems. Many Member States do not systematically track the outcomes of their digitalisation programmes, which can lead to early discontinuation or misallocation of resources. Establishing comprehensive evaluation frameworks is essential to identify

successful interventions, promote best practices, and recalibrate support where needed. Sharing impact evidence across borders can further strengthen the EU's collective knowledge base and strategic alignment.

- **Accelerate AI adoption as a cross-cutting enabler.** AI is expected to play a transformative role across all sectors, catalysing the uptake of other advanced technologies such as cloud computing, data analytics, and cybersecurity solutions. Strategic investments, innovation hubs, and collaborative research will continue to expand AI integration into business operations. It also holds significant potential to advance green digitalisation by improving efficiency and resource management. Realising this potential will require sustained support for skills development, regulatory guidance, and ethical innovation.