



# **Digital Economy and Society Index (DESI) 2021**

**Hungary**

---

## About the DESI

---

*The European Commission has monitored Member States' progress on digital and published annual Digital Economy and Society Index (DESI) reports since 2014. Each year, the reports include country profiles, which help Member States identify areas for priority action, and thematic chapters providing an EU-level analysis in the key digital policy areas.*

*In 2021, the Commission adjusted DESI to reflect the two major policy initiatives that will have an impact on digital transformation in the EU over the coming years: the Recovery and Resilience Facility and the Digital Decade Compass.*

*To align DESI with the four cardinal points and the targets under the Digital Compass, to improve the methodology and take account of the latest technological and policy developments, the Commission made a number of changes to the 2021 edition of the DESI. The indicators are now structured around the four main areas in the Digital Compass, replacing the previous five-dimension structure. 11 of the DESI 2021 indicators measure targets set in the Digital Compass. In future, the DESI will be aligned even more closely with the Digital Compass to ensure that all targets are discussed in the reports.*

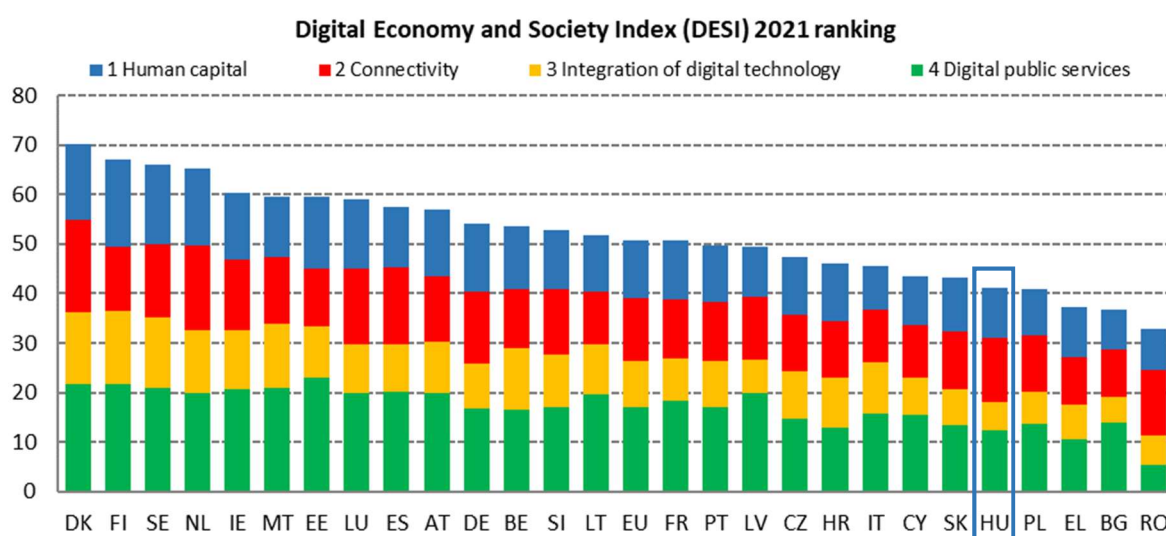
*In addition, DESI now includes an indicator measuring the level of support that adopted ICT technologies provided companies in taking more environmentally-friendly measures (ICT for environmental sustainability) and the take up of gigabit services, plus the percentage of companies offering ICT training and using e-invoicing.*

*The DESI scores and rankings of previous years were re-calculated for all countries to reflect the changes in the choice of indicators and corrections made to the underlying data.*

*For further information, see the DESI website: <https://digital-strategy.ec.europa.eu/en/policies/desi>.*

## Overview

	Hungary		EU
	rank	score	score
DESI 2021	23	41.2	50.7



Hungary ranks 23<sup>th</sup> out of 27 EU Member States in the Digital Economy and Society Index (DESI) 2021. Over the last few years, its score has improved broadly in line with the EU average.

Hungary scores above average on broadband Connectivity. It is the leader in the take-up of at least 1Gbps broadband (13.2% of lines compared with the EU average of 1.3%) and performs well in 5G readiness, overall fixed broadband take-up and at least 100 Mbps take-up. On Human Capital, it ranks 22<sup>nd</sup>, scoring below average on most of the indicators. Only 49% of Hungarians have at least basic digital skills, which is significantly below the EU average of 56%; other indicators also reveal a relatively low level of digital skills. To address shortcomings in digital skills, Hungary has developed an ambitious policy framework.

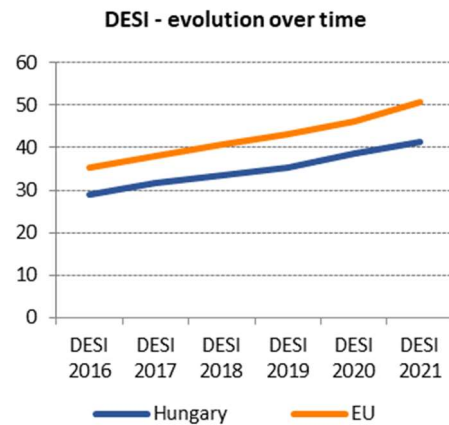
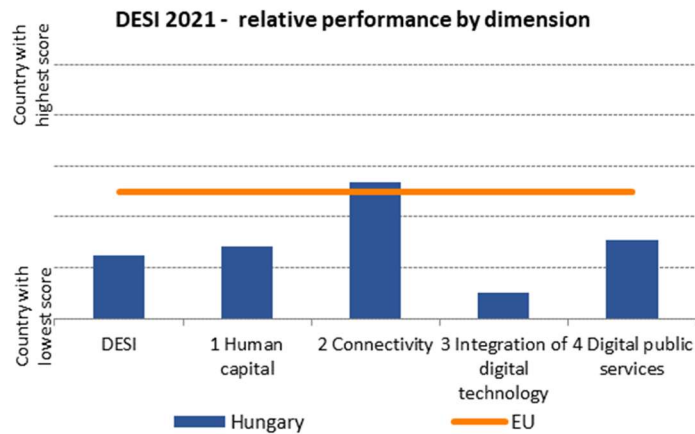
The most challenging DESI dimensions for Hungary remain Integration of digital technology and Digital public services. Only 46% of SMEs have at least a basic level of digital intensity, compared with a 60% average for the EU, and the adoption of key digital technologies (big data, AI and cloud) is low. To foster the digital transformation of SMEs, more, and more effective, support is necessary. For Digital public services, the key indicators measuring the online provision of services show a need for improvement. A stronger focus on users would improve the acceptance and quality of the services.

Hungary has largely completed the implementation of the National Infocommunication Strategy 2014-2020 and the Digital Success Programme 2.0 (*'Digitális Jólét Program – DJP 2.0'*) launched in 2017.

In autumn 2021, Hungary adopted a new strategic framework for the next 10 years, the National Digitalisation Strategy (NDS) 2021-2030<sup>1</sup>. The strategy is structured around four main pillars corresponding to the DESI dimensions: digital infrastructure, digital skills, digital economy and digital state. The overarching objective of the NDS is to identify and exploit the potential of digitalisation in the economy, education, research, development and innovation (RDI) as well as the public

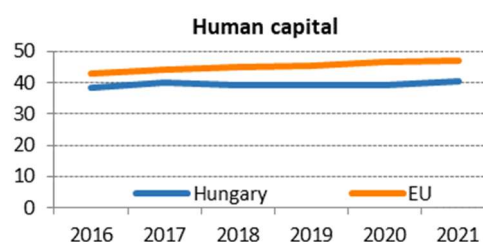
<sup>1</sup> <https://2015-2019.kormany.hu/download/f/58/d1000/NDS.pdf>

administration, thereby improving the country's competitiveness and the well-being of its citizens. Hungary aims to exceed the EU average in digital development by the middle of the decade and be among the 10 leading EU economies in terms of digitalisation by 2030.



# 1 Human capital

1 Human capital	Hungary		EU
	rank	score	score
DESI 2021	22	40.5	47.1



	Hungary			EU
	DESI 2019	DESI 2020	DESI 2021	DESI 2021
<b>1a1 At least basic digital skills</b>	<b>50%</b>	<b>49%</b>	<b>49%</b>	<b>56%</b>
% individuals	2017	2019	2019	2019
<b>1a2 Above basic digital skills</b>	<b>26%</b>	<b>25%</b>	<b>25%</b>	<b>31%</b>
% individuals	2017	2019	2019	2019
<b>1a3 At least basic software skills</b>	<b>52%</b>	<b>51%</b>	<b>51%</b>	<b>58%</b>
% individuals	2017	2019	2019	2019
<b>1b1 ICT specialists</b>	<b>3.7%</b>	<b>3.4%</b>	<b>3.8%</b>	<b>4.3%</b>
% individuals in employment aged 15-74	2018	2019	2020	2020
<b>1b2 Female ICT specialists</b>	<b>9%</b>	<b>11%</b>	<b>12%</b>	<b>19%</b>
% ICT specialists	2018	2019	2020	2020
<b>1b3 Enterprises providing ICT training</b>	<b>17%</b>	<b>16%</b>	<b>16%</b>	<b>20%</b>
% enterprises	2018	2019	2020	2020
<b>1b4 ICT graduates</b>	<b>4.3%</b>	<b>4.6%</b>	<b>4.9%</b>	<b>3.9%</b>
% graduates	2017	2018	2019	2019

Hungary ranks 22<sup>nd</sup> among EU countries on Human capital. Only about half of the population possess at least basic digital skills (49% compared to the EU average of 56%), while the percentage of Hungarians with at least basic software skills is also modest. Only a quarter of the population aged between 16 and 74 has above basic digital skills, below the EU average of 31%. The proportion of ICT specialists in the workforce has increased slightly (3.8%) but remains below the EU average (4.3%). However, the share of ICT graduates among all graduates (4.9%) is above the EU average (3.9%). The proportion of female ICT specialists is still very low (12%). In 2020, 16% of enterprises provided ICT training to their employees, compared with 20% in the EU overall.

Hungary has recently introduced several measures to improve digital education. Under the Digital Competence Development priority project<sup>2</sup> supported by the European Social Fund (EUR 130 million), 45,630 notebooks and 24,000 tablets were provided to schools; broadband network connectivity was upgraded in 429 primary schools, 265 secondary schools and 39 vocational schools. WiFi networks are under construction in more than 400 vocational schools (more than 3,500 primary and secondary schools already have a WiFi connection). The Educational Authority offers students and teachers free-of-charge access to digital educational content, such as specific digital textbooks (smartbooks) and digital copies of traditional textbooks. To improve teachers' digital and digital pedagogical competences, online training was offered to 40,000 teachers. On 1 September 2020, the new national core curriculum was launched for grades 1, 5 and 9 (pupils aged 6, 10 and 14). It modernises ICT education by emphasising computational thinking and information and media literacy. The curriculum also promotes the use of ICT tools in all subjects for tasks such as information search, data use and manipulation, and for digital assignments.

<sup>2</sup> <https://kk.gov.hu/efop-3-2-4-16-2016-00001>

To upskill the workforce, the government has launched several training programmes, including an eight-week long online IT training programme under the economic protection action plan.

Regarding basic digital competences, so far 238,500 people have participated in digital competency development training (93% of the target)<sup>3</sup>.

Following the outbreak of the pandemic, several IT companies offered help, via the National Coalition for Digital Skills and Jobs, to teachers, parents and students to develop their digital competences and support the transition to digital education. The Coalition also carried out a number of research projects to support policymaking, including a labour market survey which revealed a growing shortage of IT professionals in Hungary (employers could hire 44 000 additional digital professionals in the next 2 years).

Hungary's new digital strategy lists three priority areas for digital skills: (1) developing digital competence (based on the DigKomp<sup>4</sup> framework); (2) increasing the number and qualifications of IT professionals and engineers; and (3) supporting the structural change needed to develop digital skills in education and vocational training. Under digital competence development, the government plans large-scale programmes for citizens, with an emphasis on social inclusion and e-health (improving the competence of both citizens and healthcare workers). Three sub-priorities have been set for the education and training system: (1) developing digital pedagogical methodologies and preparing a digital education strategy 2.0; (2) developing digital tools and competences required for the 21st century education system; and (3) labour market adjustment programmes across the education system.

The policy framework to upgrade digital skills is ambitious. It covers both the development of basic skills of citizens and the supply of IT professionals with support from ESF+.

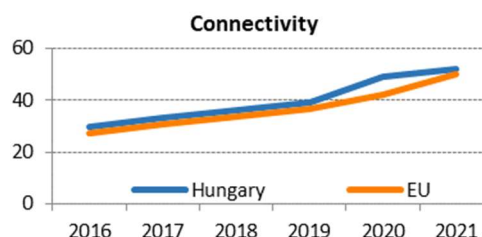
---

<sup>3</sup> EDIOP 6.1.2 – Decreasing the digital skills gap programme

<sup>4</sup> <https://ec.europa.eu/jrc/en/digcomp/digital-competence-framework>

## 2 Connectivity

2 Connectivity	Hungary		EU
	rank	score	score
DESI 2021	12	52.0	50.2



	Hungary			EU
	DESI 2019	DESI 2020	DESI 2021	DESI 2021
<b>2a1 Overall fixed broadband take-up</b>	<b>77%</b>	<b>82%</b>	<b>81%</b>	<b>77%</b>
% households	2018	2019	2020	2020
<b>2a2 At least 100 Mbps fixed broadband take-up</b>	<b>40%</b>	<b>51%</b>	<b>56%</b>	<b>34%</b>
% households	2018	2019	2020	2020
<b>2a3 At least 1 Gbps take-up</b>	<b>NA</b>	<b>9.26%</b>	<b>13.21%</b>	<b>1.3%</b>
% households		2019	2020	2020
<b>2b1 Fast broadband (NGA) coverage</b>	<b>87%</b>	<b>90%</b>	<b>89%</b>	<b>87%</b>
% households	2018	2019	2020	2020
<b>2b2 Fixed Very High Capacity Network (VHCN) coverage</b>	<b>36%</b>	<b>43%</b>	<b>49%</b>	<b>59%</b>
% households	2018	2019	2020	2020
<b>2c1 4G coverage</b>	<b>99.2%</b>	<b>99.2%</b>	<b>99.3%</b>	<b>99.7%</b>
% populated areas	2018	2019	2020	2020
<b>2c2 5G readiness</b>	<b>8%</b>	<b>60%</b>	<b>60%</b>	<b>51%</b>
Assigned spectrum as a % of total harmonised 5G spectrum	2019	2020	2021	2021
<b>2c3 5G coverage</b>	<b>NA</b>	<b>NA</b>	<b>7%</b>	<b>14%</b>
% populated areas			2020	2020
<b>2c4 Mobile broadband take-up</b>	<b>58%</b>	<b>69%</b>	<b>69%</b>	<b>71%</b>
% individuals	2018	2019	2019	2019
<b>2d1 Broadband price index</b>	<b>NA</b>	<b>64</b>	<b>64</b>	<b>69</b>
Score (0-100)		2019	2020	2020

On Connectivity, Hungary ranks 12<sup>th</sup>. Fast broadband coverage has stagnated at around 89% of households, slightly above the EU average of 87%. Fixed broadband take-up has stagnated as well, at 81%, but above the EU average of 77%. Connection speeds have seen a significant improvement, 56% of homes, against the EU average of 34%, subscribe to at least 100 Mbps fixed broadband, mainly owing to the country's widespread cable network. Hungary stands out for at least 1 Gbps take-up, with 13.2% compared to the 1.3% EU average. VHCN coverage stands at 49%, below the EU average of 59%. However, rural VHCN coverage grew by 7 percentage points last year and is, at 36%, above the EU average of 28%. The 4G coverage of 99.3% is just below the EU average of 99.7%, while the 7% 5G coverage is also below the EU average of 14%. Mobile broadband take-up stands at 69% compared with the EU average of 71%.

The development of digital infrastructure is one of the pillars of Hungary's 2014-2020 National Infocommunication Strategy<sup>5</sup>. This strategy was updated at the end of 2015 with the adoption of the Digital Success Programme and the launch of the Superfast Internet Programme (SIP). In addition, one of the objectives of the new NDS 2021-2030 is to cover 95% of households by gigabit networks.

<sup>5</sup> [https://joinup.ec.europa.eu/sites/default/files/document/2016-11/nis\\_en\\_clear.pdf](https://joinup.ec.europa.eu/sites/default/files/document/2016-11/nis_en_clear.pdf)

The vast majority of projects under the SIP deployed FTTH (fibre to the home) technology, enabling speeds envisaged in the Gigabit Society targets. SIP intended to cover all Hungarian households – broadband coverage for almost 410,000 households is financed from EU Structural Funds, with networks supplying at least 30 Mbps broadband internet service by 2023. For areas that are not commercially viable, a EUR 250 million State aid scheme has been set up to ensure broadband roll-out. By the end of 2020, 245 325 households were covered by at least 30 Mbps broadband through the SIP.

The SIP gives preference to future-proof FTTH solutions and most of the participating undertakings are deploying this technology (86% of the coverage area).

60% of the total harmonised 5G spectrum has been assigned in Hungary, mainly through the two spectrum auctions organised in the past 2 years. Three mobile network operators have launched commercial 5G services in Hungary.

The multi-band award process for the 700 MHz and 3.4-3.8 GHz bands and remaining spectrum in the 2.1 GHz and 2.6 GHz bands took place on 26 March 2020. Magyar Telekom, Telenor and Vodafone obtained licences for a total amount of HUF 128.5 billion (approximately EUR 360 million).

In January 2021, the National Media and Infocommunications Authority (NMHH) held an auction for the 900 MHz and 1800 MHz frequency bands. The incumbent operators, Magyar Telekom, Telenor and Vodafone, paid a total of HUF 150.2 billion (approximately EUR 420 million) for a 15-year licence with the possibility of an extension for 5 years.

The application of the fourth mobile operator, DIGI, to participate in the auction held in March 2020 was rejected, inter alia, because it had previously been found in breach of merger rules. DIGI did not participate in the second auction as it included similar exclusion criteria and, in its view, the conditions did not allow for the successful participation of a new entrant in these bands.

#### **Main market & regulatory developments**

At the end of 2020 there were 364 fixed internet service providers, down from 373 in December 2019; this high number is due to the high number of small cable operators. Over the same period, the number of fixed telephony operators remained stable at 157. In October 2020, there were 17 mobile voice service providers and 21 mobile broadband providers, including mobile virtual network operators.

Based on the number of access points, the market shares for fixed broadband services in Q3 2020 were: 38.3% for Magyar Telekom, 23% for the DIGI group and 21.4% for Vodafone (former UPC) and 17.3% for small operators. In the market for mobile broadband services, market shares based on the number of SIM cards with mobile broadband traffic were: 43.2% for Magyar Telekom, 27.8% for Telenor, 27.1% for Vodafone and 2% for other operators.

On 1 April 2020, Vodafone completed the acquisition of Liberty Global's (UPC) cable business in Czechia, Germany, Hungary and Romania. The Commission approved the acquisition, on the condition that Vodafone complied fully with the commitments it had offered on 18 July 2019, and did not raise any concerns over competition in the Hungarian market. UPC's fixed network footprint ensures that Vodafone Hungary is a strong challenger, offering bundled fixed and mobile services.



Two wholesale-only companies entered the market as a spin-off from two mobile operators, Vantage Towers Hungary from Vodafone and CETIN Hungary from Telenor. In both cases the mobile network infrastructure was transferred to the newly formed companies.

Operators complain about the conditions set by electricity companies for accessing their infrastructure to construct telecommunication networks. The time and cost implications are a significant obstacle to developing both fixed and mobile networks.

Hungary has adopted the measures transposing the European Electronic Communications Code, which entered into force on 21 December 2020; it has since notified full transposition. In April 2021, it submitted its roadmap towards the implementation of the connectivity Toolbox.

On 18 February 2020, NMHH notified to the Commission and BEREC the analysis of market 18 of the 2003 Commission Recommendation<sup>6</sup> on broadcasting transmission services. In March 2020, the NRA adopted its decision to further regulate the market, designating Antenna Hungária as an operator having significant market power.

On 19 November 2020, NMHH notified to the Commission and BEREC the analysis of market 2 of the 2014 Commission Recommendation<sup>7</sup> on wholesale voice call termination on individual mobile networks. The Commission issued no comments.

During the pandemic, due to teleworking arrangements, there was higher demand for bandwidth and higher expectations regarding availability of services. However, no significant problems were detected in connection with availability and network capacity.

To ensure affordability and seamless use of digital services, government decision 501/2020 entitled teachers and pupils/students to benefit from free subscriptions to fixed broadband services during the COVID emergency.

In September 2020, the European Court of Justice issued a preliminary ruling in joint cases C-807/18 and C-39/19 in relation to proceedings between Telenor and NMHH. The Court ruled that discriminatory traffic management practices in the form of zero-rating policies were incompatible with Articles 3(2) and 3(3) of the Net Neutrality Regulation; such zero-rating practices were likely to negatively affect the exercise of end users' rights, in breach of Article 3(2). They were also deemed to be in breach of Article 3(3) due to discriminatory internet traffic management measures undertaken solely for commercial reasons, rather than being based on technical or other purposes that might otherwise have been acceptable under the Net Neutrality Regulation.

To make emergency communications more efficient and ensure compliance with the new requirements of the European Electronic Communications Code, Hungary participated in the Commission-financed HELP 112 II project to deploy advanced mobile location (AML), a handset-derived location solution, by July 2020.

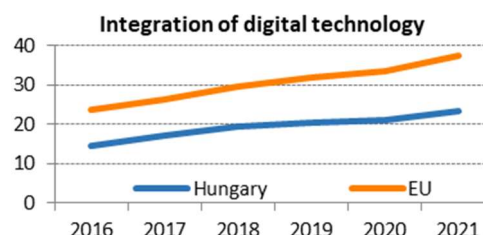
Fixed broadband coverage and take-up increased in 2020. In mobile broadband take-up, Hungary managed to reach the EU average. Thanks to the completion of the auction for two of the 5G pioneer bands, Hungary scores well in terms of 5G readiness. However, the fourth mobile operator contested the 5G multi-band auction in March 2020 and the 900 MHz and 1800 MHz auction in January 2021 as it could not participate in them.

<sup>6</sup> Recommendation 2003/311/EC.

<sup>7</sup> Recommendation 2014/710/EU.

### 3 Integration of digital technology

3 Integration of digital technology	Hungary		EU
	rank	score	score
DESI 2021	26	23.3	37.6



	DESI 2019	Hungary DESI 2020	DESI 2021	EU DESI 2021
<b>3a1 SMEs with at least a basic level of digital intensity</b> % SMEs	NA	NA	46% 2020	60% 2020
<b>3b1 Electronic information sharing</b> % enterprises	14% 2017	14% 2019	14% 2019	36% 2019
<b>3b2 Social media</b> % enterprises	15% 2017	12% 2019	12% 2019	23% 2019
<b>3b3 Big data</b> % enterprises	6% 2018	6% 2018	7% 2020	14% 2020
<b>3b4 Cloud</b> % enterprises	11% 2018	11% 2018	17% 2020	26% 2020
<b>3b5 AI</b> % enterprises	NA	NA	17% 2020	25% 2020
<b>3b6 ICT for environmental sustainability</b> % enterprises having medium/high intensity of green action through ICT	NA	NA	65% 2021	66% 2021
<b>3b7 e-Invoices</b> % enterprises	10% 2018	10% 2018	13% 2020	32% 2020
<b>3c1 SMEs selling online</b> % SMEs	12% 2018	12% 2019	13% 2020	17% 2020
<b>3c2 e-Commerce turnover</b> % SME turnover	9% 2018	11% 2019	9% 2020	12% 2020
<b>3c3 Selling online cross-border</b> % SMEs	5% 2017	5% 2019	5% 2019	8% 2019

On the Integration of digital technology in enterprises' activities, Hungary ranks 26<sup>th</sup> among EU countries. Hungarian enterprises perform poorly on most technology indicators: only 14% of enterprises have an integrated system for electronic information sharing (ERP), which is less than half the EU average (36%); the use of e-invoices has slightly increased in recent years but remains low (13%); social media engagement (12%), use of big data (7%), cloud (17%) and AI (17%) are all at a relatively low level; and SMEs' online sales performance is also below the EU average. On the other hand, 65% of enterprises reported that their use of ICT triggered environmentally-friendly actions to a significant extent, which is close to the EU average (66%).

Hungary joined the EuroHPC Joint Undertaking in 2018, in which it has been an active participant, and also joined the Leonardo consortium developing a top-of-the-range supercomputer located in Bologna. The existing High Performance Computing (HPC) infrastructure in Hungary is insufficient to meet the growing demand, although new capacity (5 PetaFlops) will become available in the first half of 2022. The European Structural and Investment Funds supported the development of HPC infrastructure with EUR 16.5 million and national financing covers the operational costs of EUR 2 million/year. To support the use of HPC and foster a national ecosystem, Hungary set up a national

HPC Competence Centre (in operation since 1 August 2020), which is part of the EuroHPC Competence Centres network.

Hungary adopted a national AI strategy in September 2020. One of its goals is faster uptake of AI-enabled solutions in both the private and public sectors to further develop the quality and efficiency of services.

In 2020, Hungary launched a national quantum technology programme involving research institutions, universities and private companies.

The new NDS 2021-2030 recognises that more support is needed to digitalise the economy. It focuses on: (1) increasing SMEs' use of digital technology; (2) developing digital start-ups; (3) targeted development of the ICT industry through support programmes; (4) using State data assets for economic purposes.

Among other measures, Hungary plans to extend the Modern Enterprises Programme and launch a new financing scheme for business digitalisation.

To close the digital gap between Hungarian SMEs and the EU average, it is necessary not only to increase the size of the support but also its effectiveness.

#### Highlight 2020/2021 – National Laboratories

In 2020, Hungary launched the National Laboratories Programme<sup>8</sup>. The main objective of the programme is to bring together research institutions, universities and industry in a given research field, and to make available future-oriented technologies that could be used by domestic research organisations to implement world-class research and innovation programmes. The programme also seeks to develop the competences that are essential for this purpose and to make the most of research results.

The programme covers 17 laboratories in the areas of 'Industry and digitalisation', 'Culture and family', 'Health' and 'Secure society and environment'.

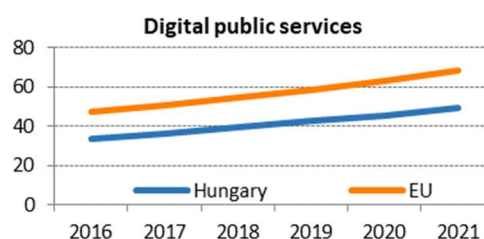
Several of the laboratories cover advanced digital technologies, notably:

- The Autonomous Systems National Laboratory, which carries out research and development in relation to road vehicles, aircrafts and mobile robots.
- The Security Technologies National Laboratory, which integrates research in technology-based security, namely institutional security, settlement security and cyber security.
- The Digital Heritage National Laboratory, which focuses on developing a methodology for the AI-based processing, research and education of national cultural heritage, and ensuring the widest possible accessibility thereof.
- The ICT and IT National Laboratory, which focuses on 5G-related cyber defence, applications of AI in cyber defence, development of cyber skills and vulnerability of protocols and encryption algorithms.
- The Quantum Information National Laboratory, which aims to set up a regional quantum communication network, develop hardware components for quantum informatics and build a domestic base of experts with state-of-the-art knowledge.
- The Artificial Intelligence National Laboratory, which has flagship projects in medical image processing, transport, manufacturing and logistics.

<sup>8</sup> <https://nkfih.gov.hu/for-the-applicants/innovation-ecosystem/national-laboratories-programme>

## 4 Digital public services

4 Digital public services	Hungary	EU
	rank	score
DESI 2021	25	49.2
		68.1



	DESI 2019	Hungary	DESI 2021	EU
		DESI 2020		DESI 2021
<b>4a1 e-Government users</b>	<b>67%</b>	<b>64%</b>	<b>70%</b>	<b>64%</b>
% internet users	2018	2019	2020	2020
<b>4a2 Pre-filled forms</b>	<b>NA</b>	<b>NA</b>	<b>60</b>	<b>63</b>
Score (0 to 100)			2020	2020
<b>4a3 Digital public services for citizens</b>	<b>NA</b>	<b>NA</b>	<b>54</b>	<b>75</b>
Score (0 to 100)			2020	2020
<b>4a4 Digital public services for businesses</b>	<b>NA</b>	<b>NA</b>	<b>76</b>	<b>84</b>
Score (0 to 100)			2020	2020
<b>4a5 Open data</b>	<b>NA</b>	<b>NA</b>	<b>34%</b>	<b>78%</b>
% maximum score			2020	2020

The digitalisation of public services has proven to be challenging in Hungary. The country ranks 25<sup>th</sup> on this dimension and performs below the EU average on all indicators except e-government users (70% of internet users interacted online with the administration last year). According to the indicators on Digital public services for citizens and Digital public services for business, the quality of e-government is relatively low, mainly because of the lack of cross-border services. In addition, Hungary has the weakest performance in the EU on Open data.

Under the e-Administration Act, since January 2018 the use of online administration has been obligatory for businesses and a right for citizens. Practically all relevant public services are available online and the most important ones have their own structured online forms, online applications or applets. All other services are available via the e-paper online form service, which allows users to submit authenticated electronic documents to the public administration. The development of dedicated and structured online forms continues, as does the migration from the old electronic forms to more user-friendly ones.

As of 31 March 2021, 57% of the population (approximately 5.5 million) had an e-ID card. The Hungarian e-ID scheme is not yet part of the eIDAS Network but is expected to join by 2022; the node is ready, connectivity tests have been successful and bilateral interoperability tests are under way.

Launched in 2017, the National e-Health Infrastructure (EESZT) provides a single communication space for health service providers and patients<sup>9</sup>. Every healthcare provider is obliged to connect to EESZT. During the pandemic, more than 20 new functionalities were implemented, including collecting and reporting pandemic-related data, ordering protective materials and devices, and registering for COVID vaccinations.

<sup>9</sup> The development of this single communication space was supported by the European Social Fund with EUR 46 million.

One of the four main pillars of the new NDS focuses on further digitalisation of the public administration, with the following main priorities: (1) coordinated, user-centric digital development of central and regional administrations and professional systems on all platforms; this will be done by creating barrier-free, customer-centric services, with a greater emphasis on proactivity and automation, and by introducing emerging technologies, such as AI, where their use is appropriate and offers real added value; (2) establishing a data-driven administration by further enhancing interoperable data links between public registries and relevant back-end systems, as well as e-government services; (3) developing smart settlements and smart areas; (4) increasing the information security of government electronic services; and (5) digital development of public services (e.g. in healthcare, transport, energy, education and culture).

To improve the quality and acceptance of digital public services, it is important to make them more user-friendly. This is a key challenge for the NDS and more generally for the digital transformation of the country.