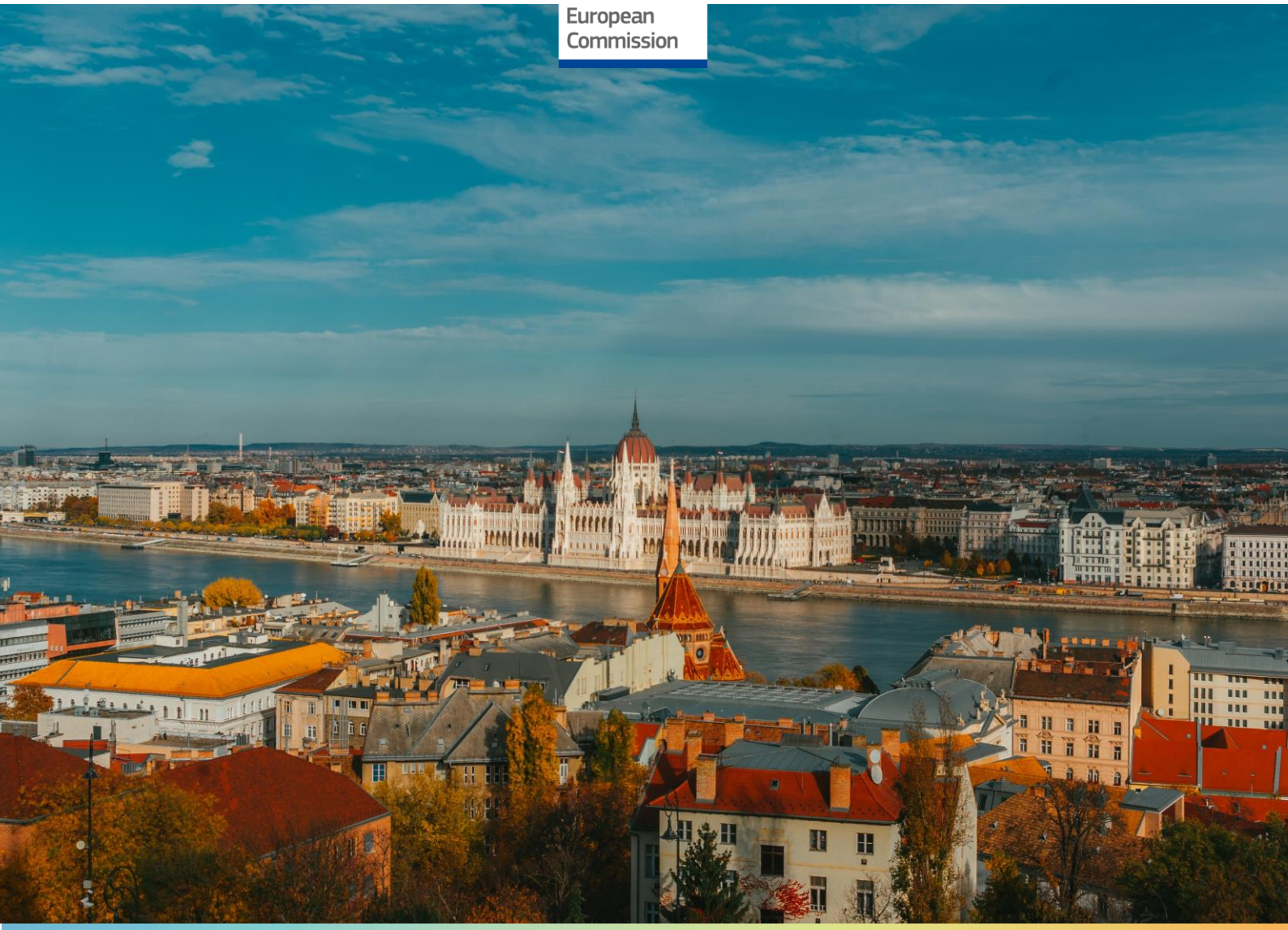
European Commission



Digital Public Administration factsheet 2023

Hungary

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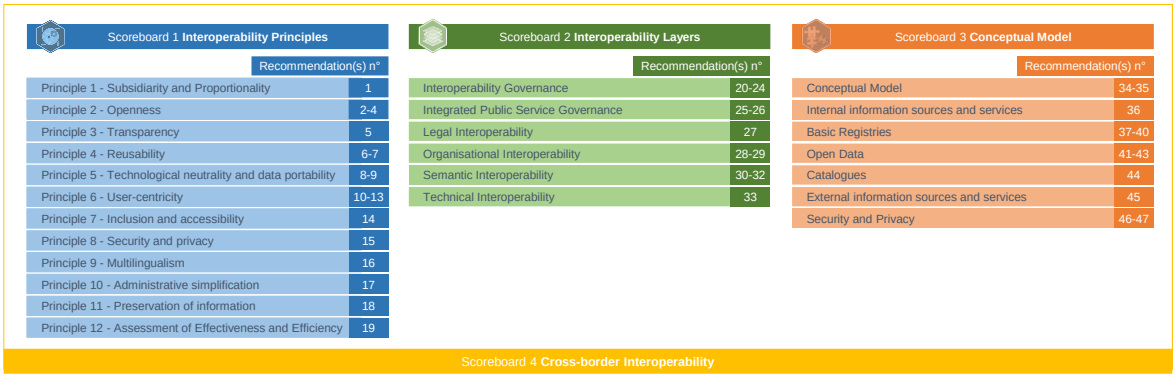
1 Interoperability State of Play

1 Interoperability State of Play

In 2017, the European Commission published the European Interoperability Framework (EIF) to give specific guidance on how to set up interoperable digital public services through a set of 47 recommendations divided in three pillars. The EIF Monitoring Mechanism (MM) was built on these pillars to evaluate the level of implementation of the framework within the Member States. Whereas during the previous, the MM relied upon three scoreboards, the 2022 edition includes an additional scoreboard on cross-border interoperability, assessing the level of implementation of 35 Recommendations. The mechanism is based on a set of 91 Key Performance Indicators (KPIs) clustered within the four scoreboards (Principles, Layers, Conceptual model and Cross-border interoperability), outlined below.



Scoreboard 1 **Interoperability Principles**

	Recommendation(s) n°
Principle 1 - Subsidiarity and Proportionality	1
Principle 2 - Openness	2-4
Principle 3 - Transparency	5
Principle 4 - Reusability	6-7
Principle 5 - Technological neutrality and data portability	8-9
Principle 6 - User-centricity	10-13
Principle 7 - Inclusion and accessibility	14
Principle 8 - Security and privacy	15
Principle 9 - Multilingualism	16
Principle 10 - Administrative simplification	17
Principle 11 - Preservation of information	18
Principle 12 - Assessment of Effectiveness and Efficiency	19

Scoreboard 2 **Interoperability Layers**

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	Recommendation(s) n°
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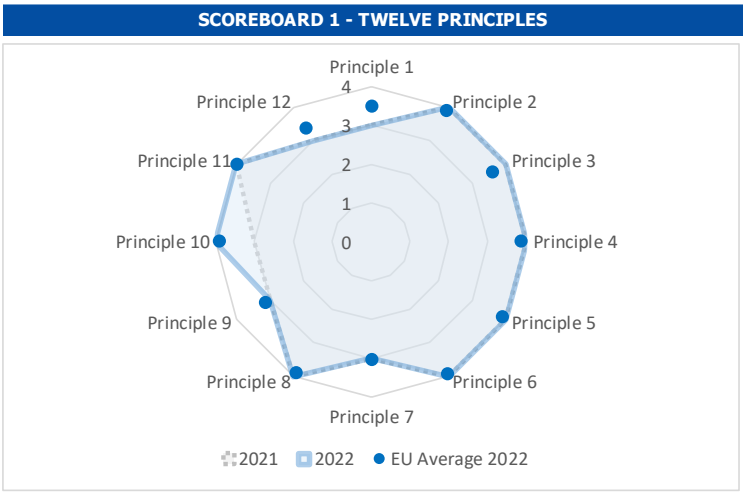
Internal information sources and services	36
Basic Registries	37-40
Open Data	41-43
Catalogues	44
External information sources and services	45
Security and Privacy	46-47

Scoreboard 4 **Cross-border Interoperability**

Source: European Interoperability Framework Monitoring Mechanism 2022

Each scoreboard breaks down the results into thematic areas (i.e. principles). The thematic areas are evaluated on a scale from one to four, where one means a lower level of implementation and four means a higher level of implementation. The graphs below show the result of the EIF MM data collection exercise for Hungary in 2022, comparing it with the EU average as well as the performance of the country in 2021.



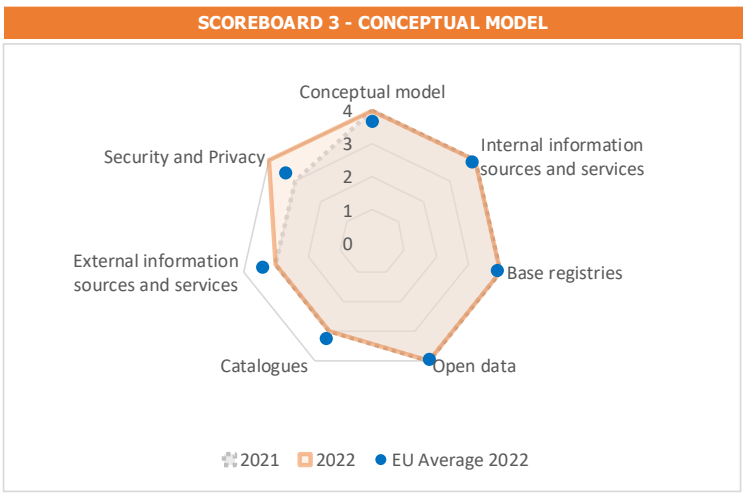
Source: European Interoperability Framework Monitoring Mechanism 2022

Hungary's results in Scoreboard 1 show an overall good implementation of the EIF Principles, with all principles falling within the EU average for which it scored 3. It is worth mentioning the performance of Principle 10 (Administrative simplification) implementation, which increased from a score of 3 to 4 in 2022. The areas for improvement are concentrated in Principles 1 (Subsidiarity and Proportionality), 7 (Inclusion and accessibility), 9 (Multilingualism) and 12 (Assessment of Effectiveness and Efficiency) for which the score of 3 shows an upper-medium performance in the implementation of corresponding recommendations. Indeed, the alignment and tailoring of national interoperability frameworks and interoperability strategies with the EIF

(Principle 1 – Recommendation 1), the use of e-accessibility specifications to ensure all public services are accessible to all citizens, including persons with disabilities, the elderly and other disadvantaged groups (Principle 7 – Recommendation 14), the availability of information systems and technical architectures that cater for multilingualism (Principle 9 – Recommendation 16) and the implementation of evaluation mechanisms to assess the effectiveness and efficiency of interoperable solutions (Principle 12 – Recommendation 19) are partial and could be bettered to reach the maximum score of 4.

Source: European Interoperability Framework Monitoring Mechanism 2022

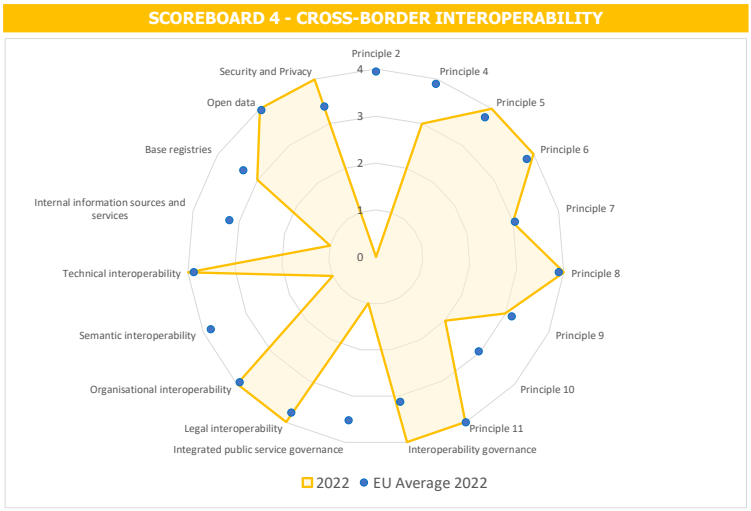
The Hungarian results for the implementation of interoperability layers assessed for Scoreboard 2 show an overall high performance with a score of 4, with the exception of the area of interoperability governance, for which Hungary scored 3. This score could be particularly improved with the existence of defined processes for the selection and adoption of standards and specifications (Recommendation 21), the use of a structured, transparent, objective and common approach for the assessment and selection of standards and specifications (Recommendation 22) and the consultation of relevant catalogues for standards, specifications and guidelines at the national and EU level (Recommendation 23) by Hungary.



Source: European Interoperability Framework Monitoring Mechanism 2022

Hungary's scores assessing the Conceptual Model in Scoreboard 3 show a good performance in the implementation of recommendations associated with the conceptual model, internal information sources and services, base registries and open data. It is worth mentioning that the implementation of the recommendations relating to security and privacy has led to the score moving from 3 to 4 in 2022. However, some improvements can be made in implementing recommendations related to the catalogues, external information sources services. In particular, putting in place catalogues of public services, public data, and interoperability solutions

(Catalogues - Recommendation 44) as well as the lack of use of external information sources and services while developing European public services (External information and services – Recommendation 45).



Source: European Interoperability Framework Monitoring Mechanism 2022

The results of Hungary concerning Cross-border Interoperability in Scoreboard 4 show an at upper-middle performance of the country in 16 indicators. Particularly, Hungary has a high performance with the maximum score of four in Principle 8 and 11 (i.e. Security and privacy, Preservation of information) as well as Legal interoperability and Open Data (i.e. Recommendation 27, 41 and 43). However, Hungary has still margin for improvement. For instance, efforts could focus on the reuse and share solutions, and cooperate in the development of joint solutions when implementing European public services (i.e. Recommendation 6) and on simplifying processes and use digital channels whenever appropriate for the delivery of European public services, to respond promptly and with high quality to users' requests and reduce the administrative burden on public administrations, businesses and citizens. (i.e. Recommendation 17).

Additional information on Hungary's results on the EIF Monitoring Mechanism is available online through interactive dashboards.

Curious about the state-of-play on digital public administrations in this country?

Please find here some relevant indicators and resources on this topic:

- Eurostat Information Society Indicators
- Digital Economy and Society Index (DESI)
- eGovernment Benchmark

2 Digital Public Administration Political Communications

2 Digital Public Administration Political Communications

2.1 Specific Political Communications on Digital Public Administration

Berlin Declaration on Digital Society and Value-Based Digital Government

In December 2020, the Hungarian government signed the Berlin Declaration on Digital Society and Value-Based Digital Government, thus re-affirming its commitment – together with other European Union (EU) Member States – to foster digital transformation in order to allow citizens and businesses to harness the benefits and opportunities offered by modern digital technologies. The Declaration aims to contribute to a value-based digital transformation by addressing and strengthening digital participation and digital inclusion in European societies.

new National Digitalisation Strategy 2022–2030

The government adopted the National Digitalisation Strategy 2022–2030 in November 2022. The strategy builds on the results of the previous National Infocommunication Strategy 2014-2020 and the Digital Success Programme 2.0.
Aiming to develop the economy, education, innovation and research, and public administration, the strategy is based on four pillars and the following focus areas:

- Digital infrastructure: promote the development of gigabit-capable networks and 5G, expand the digital infrastructures for schools and higher education institutions, ensure the continued development of the National Telecommunication Backbone Network, and increase the supercomputing capacity for small and medium-sized enterprises (SMEs), research networks and public institutions;
- Digital skills: create programmes for digital competency, increase the number and capacity of information technology (IT) professionals and support the learning of digital skills in education;
- Digital economy: increase the digital reach and use of SMEs, develop digital start-up businesses, create support programmes for the information and communication technology (ICT) industry and its development, and utilise data assets of the government for economic purposes; and
- Digital State: support the digital development of both central and local, and cross-border public administration with user-friendly systems and customer-centric services, develop smart towns and smart areas, and increase electronic services.

new National Digital Citizen Programme 2022–2026

The government adopted the National Digital Citizen Programme 2022–2026 in December 2022 as a sectoral strategic programme introducing the 'digital citizen' concept. This concept aims to reinterpret the relationship between the State and the citizen based on the digital identity initiative launched by the EU, through basic services (eID, ePost, eDocuments and ePayment) and user-friendly channels operating on a single platform, with a 'mobile first' approach.
One of the most important basic services is Mia Chatbot easy-to-use digital identification service, which can support many complex administration processes. In this context, a new mobile application will be developed and implemented for electronic identification (eID), in accordance with the legal provisions of the successor regulation of the Regulation on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation), which will establish the framework for a European digital identity. With the help of the new mobile wallet to be developed, citizens can log in to the digital citizen platform and use the main digital public services according to the life events covered.
In accordance with EU requirements, the application will be able to receive and store user data, with an appropriate level of encryption. Its functions include mutual authentication for external (public or private) parties, the sharing of designated data and the creation of authentic eSignatures. The application will provide the above-mentioned functions on a simple, user-friendly interface and will be compatible with the systems of other (including foreign)

stakeholders. According to the schedule of the National Digital Citizenship Programme, by 2026 citizens will be able to use all necessary digital public services online, on their mobile devices.

2.2 Interoperability

new

National Digitalisation Strategy 2022–2030

The National Digitalisation Strategy 2022–2030 presents increased interoperability as one of the requirements for the fourth pillar on the development of a digital State. More specifically, it identifies the need to establish a data-based administration in the country, with interoperable data connections between administrative services on different levels (local, national and European) and aspects (legal, organisational, semantic and technical).
In addition to technology neutrality and IT security requirements, a development based on software with open-source codes needs to be encouraged. The necessary legislative framework to that end was established according to the National Infocommunication Strategy 2014–2020 with the adoption of Act No. CCXXII of 2015 on the General Rules for Electronic Administration and Trust Services (hereinafter, the eAdministration Act). Pursuant to the eAdministration Act, from 1 January 2018 the cooperating bodies involved in administrative processes shall obtain information (data or documents) from another cooperating body rather than asking the customer (citizen or business) to resubmit it. Information must be obtained by automated data exchange processes, where possible, or otherwise by a simple secure information exchange. Furthermore, according to the eAdministration Act electronically cooperating organisations are obliged to prepare and publish information transfer rules, as well as send them to the Electronic Administration Supervisory Authority (EÜF) within the Ministry of the Interior.

2.3 Key Enablers

2.3.1 Open Data, Reusability and Access to Public Information

Public Sector Information Reuse

In 2012, the public sector information (PSI) Directive was fully implemented in line with all EU requirements in the form of the Public Data Act (Act No. LXIII of 2012). The 2013 amendment of the PSI Directive was then implemented by the deadline of 2015 (Act No. XCVI of 2015), with the Hungarian implementation going beyond the provisions of the PSI Directive in some aspects. The Public Data Act was subsequently modified in 2022 to implement the Open Data Directive (Directive (EU) 2019/1024), ensuring full harmonisation with EU law in this respect.
Furthermore, the new Strategy on Artificial Intelligence 2020–2030 was adopted, including a dedicated part on data policy and data reuse which calls for a proper institutional background and a one-way-access data portal. Within the framework of the strategy, the national open data portal has been launched and the National Data Asset Management Agency (*Nemzeti Adatvagyon Ügynökség,* NAVÜ) has been established with the main purpose of facilitating and coordinating the reuse of public sector data among public sector bodies. The Agency also provides analysis and information services to public sector bodies. That way, the proper institutional background outlined in the strategy has been successfully created.

2.3.2 eID and Trust Services

new

Central Authentication Agent

The Central Authentication Agent building block supports the use of different eID services, including the Client Gate trusted profile, Client Gate+ (the two-factor version of the Client Gate), the national eID card, partial code telephone authentication and video-based facial recognition authentication. All eServices integrated with the Central Authentication Agent can be accessed via all these eID methods.
eIDAS authentication will also be available within the Central Authentication Agent. The Hungarian eIDAS node's development has been finished and the bilateral tests conducted with Member States should be completed by the first half of 2023. Once this process is ended, it should be possible to publish eIDAS identification in the Central Authentication Agent service and to put the eIDAS identification option into operation in the Central Authentication Agent for

the connected sector-specific systems. The latter may also need to examine their administrative processes and implement the necessary developments to be able to accept eIDAS identification.
In January 2023, the number of valid, chip-containing eID cards issued since the launch in January 2016 surpassed 6.6 million and the number of Client Gate accounts exceeded 5.5 million.

2.3.3 Security Aspects

Cybersecurity Strategy

The Cybersecurity Strategy of Hungary was adopted at the end of December 2018 (1838/2018 (XII 28)) by governmental resolution, aiming to establish a free, safe, innovative and competitive cyberspace, increase Hungary's competitiveness, introduce innovations and new technologies in a secure manner, and adapt them to the digitalised public administration, government and economy. The strategy has created a safer electronic public administration system and led to an innovative development of public services, as well as raised awareness in all areas of society.

Digital Government Projects and Cybersecurity

The National Cyberdefence Centre of the Special Service for National Security must assess the conformity of each public administration IT and eGovernment service development project with the rules of Act No. L of 2013. The National Cyberdefence Centre has to audit ongoing and completed projects.

2.3.4 Interconnection of Base Registries

new

eAdministration Act

Article 150 of the implementing decree of the eAdministration Act, Government Decree 451/2016 (XII 19) on the Detailed Rules of Electronic Administration, lists a total of 44 base registries and information systems that are obliged to provide their data exchange services via the Central Government Service Bus (KKSZB) technical interoperability platform. As a result, in Hungary the interconnection of base registries is not a matter of political communication, but a legal obligation.

2.3.5 eProcurement

No political communication has been adopted in this field to date.

2.4 Domain-specific Political Communications

new

National Digital Citizen Programme

The Hungarian government adopted the National Digital Citizen Programme, aimed at creating the conditions for simple, convenient and efficient administration, as reported by the Digital Hungary Agency at the end of December 2022. The programme formulates the policy objectives and principles for the first half of the period covered by the National Digitalisation Strategy, i.e. 2022–2026, by which the goals and measures formulated in the strategy shall be achieved.

In practice, the concept aims to create a truly user-friendly service environment entirely meeting customers' needs, with services that are fully functional on mobile devices, and eID for domestic and cross-border use.
In other words, the programme aims to create public administrative spaces that can be accessed online at any time and are suitable for handling all administrative formalities that can be dealt with in person. A Digital Citizen Mobile App will be developed, where all important services will be available in a user-friendly way on smartphones. It will include digital citizenship, as well as the use of national data assets and the application of cloud technology.
The goal of the first strategic phase – namely that citizens should be able to handle almost all public administration matters online – is set to be reached in 2026. However, the development of the most important services will start in 2023.

National Digital Agricultural Strategy

The National Digital Agricultural Strategy, adopted in 2019, aims to support the increase in efficiency of the agricultural sector. It focuses on improving profitability through the use of available environmental resources and technological operations based on collecting and processing information, automation and robotisation.

Fintech Strategy

The Hungarian National Bank and the Digital Success Programme published the Hungarian Fintech Strategy, discussing their regulatory, educational and innovation efforts. The two organisations are constantly cooperating in supporting the development of the Hungarian fintech ecosystem. The aim of Hungary's Fintech Strategy, as part of the Digital Success Programme, is to create a favourable regulatory and market environment for both traditional and new stakeholders of the financial market, enabling them to supply customers with innovative, easy-to-use and cost-effective solutions.

2.5 Innovative Technologies

2.5.1 Artificial Intelligence (AI)

Artificial Intelligence Coalition

The Hungarian Artificial Intelligence Coalition was founded on 9 October 2018 with the following goals:

- Providing a continuous cooperation forum for artificial intelligence (AI) developers, market operators, State participants representing AI users, academics and professional organisations;
- Developing a Hungarian AI Strategy; and
- Analysing the social and economic impacts related to the spread of AI.

The Coalition has developed an action plan that lays the groundwork for the Hungarian data market and the institutional framework of the local AI ecosystem. It also defines the legislative and infrastructural structure of data capital management by creating data markets and making personally non-identifiable public data searchable. In addition, widespread multi-stage awareness-raising campaigns have been launched by relying on a diverse range of communication tools. In May 2020, the Coalition presented the Artificial Intelligence Strategy 2020–2030, offering an overview of the current state of development of AI, but also setting the objectives and target indicators to be met. The strategy was officially approved and announced in September 2020.

2.5.2 Distributed Ledger Technologies

new

Blockchain Coalition

Hungary is a member of the European Blockchain Partnership, in the framework of which it has established its own European Blockchain Service Infrastructure node (in cooperation between the Digital Success Programme and the Governmental Agency for IT Development or KIFÜ). The aim is to become more involved in European cooperation.
To build a broader industry consensus on the applicability of blockchain technology, in March 2022 Hungary established a Blockchain Coalition. This new cooperation platform is a permanently open forum for public, educational, civic and corporate stakeholders active in the Hungarian blockchain ecosystem and seeks to build international partnerships.

The Hungarian National Bank – as a key supporter of blockchain technology –developed in May 2022 a dedicated non-fungible token (NFT) platform based on a private blockchain, which could be considered a global first.
An amendment passed in December 2022 introduced financial assets issued using distributed ledger technology (DLT) into the definition of financial assets in the Law concerning investment companies and commodity exchange service providers, as well as the rules for the activities they can perform.

2.5.3 Big Data

No political communication has been adopted in this field to date.

2.5.4 Cloud Computing

new

Government Data Centre

According to the National Digital Citizen Programme adopted by the government in December 2022, the development of the cloud for public administration use is one of the main strategic goals of the Digital Hungary Agency for the upcoming years. It will contribute to better policy making and internal management within the public administration, by providing more secure, more economic and easily scalable services that can further improve the efficiency of the functioning of the public sector.

As part of this goal, the Digital Hungary Agency aims to establish a data centre in Hungary in collaboration with an international cloud service provider, where a dedicated server space would be created for the Hungarian digital public service systems. Such a cooperation between the public and the private sector would be mutually beneficial: as in the region at the moment only one leading cloud provider has a data centre (in Vienna), this could result in potential gains for international cloud providers, while keeping the costs lower for the State budget.

On a short term, a mixed cloud service model is planned, based on a close cooperation between a cloud service provider and the government's own cloud service offered on the basis of the already existing Government Data Centre. On a longer term, a multi-cloud model is envisioned, where more international cloud operators become part of this cooperation.

According to the classification of data, non-classified data can be stored in the public cloud in an encrypted form, while classified data remain in the local Government Data Centre. Therefore, the Government Data Centre also has to be further developed so that it can support systems that cannot be channelled into the international cloud service, with modern functions.

In line with the above-mentioned goals, new eGovernment applications and systems need to be developed in a way that is fully optimised for the cloud environment.

2.5.5 Internet of Things (IoT)

No political communication has been adopted in this field to date.

2.5.6 High-performance Computing

new

High Performance Computing Infrastructure and Ecosystem

Government Decision 1422/2020 (VII 23) set the direction for the development of the Hungarian high performance computing (HPC) ecosystem. It also appointed KIFÜ as the operator of the National HPC Competence Centre, and provided EUR 1.36 million for the infrastructure and EUR 0.66 million for the National HPC Competence Centre operation for 2022.

In the framework of the Economic Development and Innovation Operational Programme (GINOP), KIFÜ procured and installed a new 5-PetaFlops HPC called 'Komondor', which was put into operation in December 2022 at the premises of the Debrecen University. The project, with an overall budget amounting to EUR 16.5 million, was finalised in the first quarter of 2023. The 'Komondor' HPC is built with modern, energy-efficient technologies. As a result, despite the large computing power, the electricity need is just over 300 kW. In addition, the machine uses a hot water-cooling solution, enabling the recycling of the waste heat produced by the machine.

Currently, together with the Komondor, KIFÜ operates three different HPCs with an overall capacity of 5.4 PetaFlops, offering specialized AI, big data, graphics programming unit (GPU) and central processing unit (CPU) partitions. The main clients of KIFÜ's HPCs are educational and research institutes, as well as SMEs.

Hungary is among the founding States of the EuroHPC joint undertaking (JU). Together with the EuroHPC JU, KIFÜ is working on a project aimed at building and hosting in Hungary the 20-PetaFlops HPC called 'Levente' by 2025 at the latest. In parallel, in cooperation with the German partners Jülich Research Centre and ParTec AG, work has started towards extending 'Levente' with a quantum module. The demanding and ambitious Hungarian plans towards research and implementation of a quantum computing module into the modular structure of the future 'Levente' HPC has also resulted in an ambitious German-Hungarian 4-party framework agreement. In addition to quantum development, it is aimed at HPC software and parallel

algorithm development work, as well as HPC application development for analysing and modelling challenging problems such as the energy crisis and climate change, increasing the quality of meteorological services, supporting the Industry 4.0 and 5.0, etc.
KIFÜ also successfully took part in the action called 'National Competence Centres in the Framework of EuroHPC', which ended in December 2022. The overall budget of the action was EUR 2 million, with 50% of the funds provided by the EuroHPC call and 50% by the national budget. Based on the results of this action, KIFÜ started the preparations for participating in EuroCC 2, which starts in the first quarter of 2023.
As part of the EuroHPC launched activities, the National HPC Competence Centre has joined the consortium of the European Competence Centres. The yearly budget of the National HPC Competence Centre amounts to EUR 1 million, of which 50% is covered by EuroHPC support and 50% by national financing.

2.5.7 High-speed Broadband Connectivity

new Superfast Broadband Programme

The Hungarian government launched the Superfast Broadband Programme in 2015. The original aim was to reach 100% broadband connectivity footprint, with minimum 30Mbps download speed, by the end of 2018. The programme has then continued beyond 2018, aiming at meeting higher bandwidth needs and also including the development of fibre optic backhaul connectivity, especially in rural areas. The programme includes the direct deployment of the State aid network as well as the operators' own developments coordinated by the Ministry.

5G Coalition

The objective of the Hungarian government is to make Hungary a frontrunner in 5G development in terms of regulation and technological advances in the fields of automotive industry (autonomous and connected vehicles), industrial Internet of Things (IoT), health, transport and other areas. The Digital Success Programme 2.0 has described clear and definite goals regarding the introduction of 5G technologies, as the establishment of the 5G Coalition (5GC) and the preparation of the 5G Strategy of Hungary. In this context, the programme has called for all partners intending to work together to achieve the ambitious goals set by the Coalition.
The Coalition was established on 19 June 2017 with 46 founding members, now reaching 86, and held more than 70 working group meetings, with more than 1 250 participants. In the five working groups, more than 211 professionals are working together to provide strategic inputs to the government.
The 5GC's intention is to contribute to increasing the social awareness, understanding, acceptance and recognition of successful 5G solutions via its members' independent but coordinated communication activities and the presentation of successful 5G solutions. More specifically, the key priorities of the 5GC are:

- Making Hungary evolve to reach a target position as a major European centre for 5G developments;
- Contributing to the creation of a world-class 5G test environment;
- Introducing 5G in Hungary among the first in the world; and
- Ensuring continuous development of 5G capacities and extending its coverage.

2.5.8 GovTech

No political communication has been adopted in this field to date.

3 Digital Public Administration Legislation

3 Digital Public Administration Legislation

3.1 Specific Legislation on Digital Public Administration

eAdministration Act

For a wide range of administrative bodies, electronic administration is regulated according to the unified principles of the eAdministration Act, which was rolled out over the two-year period 2016–2018.
To extend regulation to all organisations concerned, an implementing decree was adopted in December 2016 (451/2016 (XII 19)), stipulating a detailed set of rules on eAdministration, including precise rules for electronic administration and communications, and regulated electronic administration services (SZEÜSZ) and central electronic administration services (KEÜSZ), i.e. the building blocks of eGovernment services.

eGovernment Legislation

The most important laws regulating eGovernment are the following:

- Act No. CCXXII of 2015 on the General Rules for Electronic Administration and Trust Services, setting out (i) the general rules applying to electronic administration, and the relationship and contacts between citizens and public bodies providing eAdministration services; (ii) the rules for the renewal of interoperability; (iii) the legal provisions necessary to implement the eIDAS Regulation; and (iv) the rules of authenticity of electronic and paper-based documents. The eAdministration Act also introduces the underlying principles for electronic administration, defines the role of the EÜF and establishes the so-called regulated electronic administration services;
- Government Decree 451/2016 (XII 19) on the Detailed Rules for Electronic Administration, containing the detailed rules applying to electronic administration and communications, and regulated electronic administration services and central electronic administration services;
- Government Decree 257/2016 (VIII 31) on the ASP System of Local Governments;
- Act No. CL of 2016 on the Code of General Administrative Procedure;
- Government Decree 84/2012 (IV 21) on the Assignment of Certain Organisations Related to Electronic Administration;
- Government Decree 335/2005 (XII 29) on the Common Provisions for Document Management in Public Administrative Bodies;
- Government Decree 346/2010 (XII 28) on the Networks for Governmental Purpose (National Telecommunication Backbone Network);
- Government Decree 309/2011 (XII 23) on the Centralised IT and Electronic Communication Services, introducing the National Infocommunication Service Provider Ltd.;
- Decree of the Ministry of Innovation and Technology 1/2018 (VI 29) on the Rules for Digital Archiving; and
- Decree of the Ministry of Human Capacities 39/2016 (XII 21) on the Detailed Rules regarding the Electronic Health Cooperation Service Space (EESZT), including its obligatory usage.

3.2 Interoperability

eAdministration Act

The third part of the eAdministration Act regulates interoperability and cooperation in the field of IT between bodies providing electronic administrative services. The eAdministration Act aims to achieve interoperability and cooperation between State registries. More specifically, it strongly encourages bodies to obtain information, decisions and statements from cooperating bodies if the information, decisions or statements are made or already obtained by these cooperating bodies by electronic means.

3.3 Key Enablers

3.3.1 Open Data, Reusability and Access to Public Information

new

Act on the Reuse of Public Data and Open Data Directive

Act No. LXIII of 2012 on the Reuse of Public Data regulates the reuse of public data and public cultural data held by public bodies (and private bodies with a public service mission) for the purpose of reuse by private persons or entities. The Public Data Act was modified in 2022 to implement the Open Data Directive (Directive (EU) 2019/1024), ensuring full harmonisation with EU law in this respect.

Act on Informational Self-Determination and Freedom of Information

Act No. CXII of 2011 on Informational Self-Determination and Freedom of Information (also available in English) is a combined data protection and freedom of information act. It sets rules and safeguards for the processing of personal data by public and private bodies. In addition, based on this act, access to public information is free upon request and public bodies are obliged to proactively publish fundamental information on their operation on their websites. The application is overseen by the National Data Protection and Freedom of Information Authority. In addition, Government Decree 305/2005 includes detailed rules on the electronic publication of public data and establishes a public data search system.

Government Decree 314/2018 (XII 27)

Government Decree 314/2018 (XII 27) aims to develop software under centralized regulatory control, thereby ensuring that uniform and regulated procedures are used during the development process, and that the use and re-use of the public administration's software assets is optimized.

3.3.2 eID and Trust Services

Act on the General Rules for Electronic Administration and Trust Services

The eAdministration Act sets out the general rules on electronic signatures. More in detail, it introduces the legal provisions necessary to implement the eIDAS Regulation, as well as the rules of authenticity of electronic and paper-based documents (repealing previous legislation on electronic signatures). With the new rules, the use of electronic stamps instead of organisational signatures becomes obligatory. This is to be achieved in the context of the eIDAS Regulation. Further detailed provisions are to be found in several other decrees (see below).

Government Decree 137/2016 (VI 13)

Government Decree 137/2016 (VI 13) sets out the requirements concerning electronic signatures and stamps for providing eAdministration services.

Government Decree 451/2016 (XII 19)

To extend regulation to all organisations concerned by the eAdministration Act, an implementing decree, Government Decree 451/2016 (XII 19) on the Detailed Rules for Electronic Administration, was issued.

Decree of the Ministry of the Interior 24/2016 (VI 30)

Decree of the Ministry of the Interior 24/2016 (VI 30) establishes detailed requirements concerning trust services and their providers.

3.3.3 Security Aspects

Act on the Electronic Information Security of State and Municipal Bodies

Act No. L on the Electronic Information Security of State and Municipal Bodies is the legal act dealing with cybersecurity aspects of digital government. The electronic information systems covered by the act must be implemented ensuring:

- The confidentiality, integrity and availability of data and information processes in the electronic information system; and
- The integrity and availability of the electronic system, as well as the closed, full, continuous and proportionate protection of its elements.

3.3.4 Interconnection of Base Registries

Government Decree 451/2016 (XII 19)

Government Decree 451/2016 (XII 19) on the Detailed Rules for Electronic Administration enumerates 27 base registries that are obliged to provide their data exchange services via the KKSZB. Nevertheless, the use of the KKSZB is spreading further, as more and more services and base registries become available through the platform (see also Section 6.3).

Act on Citizens' Personal Data and Address of Registration

Act No. LXVI of 1992 on Citizens' Personal Data and Address of Registration defines the content, concept and functions of the Civil Registry. More in detail, the act regulates the organisation of records, competence and jurisdiction, data records, reporting from the Registry, the registration process, data security and other aspects. Another part worth mentioning is the one relating to data sources, clearly defining how the Civil Registry collects data from different sources.

Act on Public Company Information, Company Registration and Winding-up Proceedings

Act No. V of 2006 on Public Company Information, Company Registration and Winding-up Proceedings is the primary piece of legislation in Hungary regulating the Business Registry. The purpose of this act is to lay down the appropriate legal framework to facilitate the establishment and registration of companies, and to provide full public access, directly or by way of electronic means, to information from registries of official company records. The act also contains related definitions, such as that of company or corporate name, though not exclusively. Other important aspects covered in this act are access to company documents submitted on paper or by electronic means, access to company documents converted into electronic format, the specific content of the Business Registry and registration proceedings.

3.3.5 eProcurement

Government Decree on Electronic Public Procurement

Act No. CXLIII of 2015 on Public Procurement and Government Decree 424/2017 (XII 19) on the Detailed Rules for Electronic Public Procurement establish the main rules on public procurement, including the compulsory use of electronic communication in public procurements and the basic procedural rules thereof. Moreover, the Government Decree further provides for the technical rules on eProcurement relating to the Public Procurement Act. eProcurement became compulsory on 1 February 2017 for central purchasing bodies and on 15 April 2018 for all contracting authorities.

3.4 Domain-specific Legislation

eCommerce Legislation

Legislation in the field of eCommerce includes the following acts:

- Decree of the Ministry of Justice 25/2006 (V 18) on the Electronic Payment of Fees for Public Notices in the Administration of Business Processes;
- Decree of the Ministry of Finance 46/2007 (XII 29) on Electronic Invoices;
- Decree of the Ministry of Justice 24/2006 (V 18) on Certain Aspects of the Electronic Business Registration Procedure and the Electronic Business Registry;

- Decree of the Ministry of National Economy 23/2014 (VI 30) on the Identification of Invoices, Simplified Invoices and Receipts for the Tax Administration, as well as on the Tax Authority's Inspection of Invoices Stored in Electronic Form; and
- Act No. CVIII of 2001 on Electronic Commerce and Information Society Services, adopted on 18 December 2001 and implementing Directive 2000/31/EC on certain legal aspects of information society services, in particular electronic commerce. The act governs the eCommerce legal relationships of individuals, legal entities and organisations without legal personality.

Vocational Training Act

The Vocational Training Act was adopted in 2019, with the Vocational Training Innovation Council acting as a functional institution. The act aims to respond to rapidly changing professional needs by promoting the growth of skills and qualifications through the development of digital curriculums.

3.5 Innovative Technologies

3.5.1 Artificial Intelligence (AI)

Government Decree 451/2016 (XII 19)

An amendment of Government Decree 451/2016 (XII 19) on the Detailed Rules for Electronic Administration came into force on 10 December 2021, setting the rules for using the newly developed AI-based eGovernment building blocks available for public administration reuse, such as the AI-based chat-robot, voice generator and voice description services provided by the government.

3.5.2 Distributed Ledger Technologies

No legislation has been adopted in this field to date.

3.5.3 Big Data

No legislation has been adopted in this field to date.

3.5.4 Cloud Computing

Government Decree 467/2017 (XII 28)

Avoiding using external (public and hybrid) cloud services in the public administration is a key element of the Hungarian government's policy. In this regard, Government Decree 467/2017 (XII 28) defines the central and local government systems and development projects that are obliged to use the Government Data Centre provided by the State-owned company National Info communication Service Provider Ltd. (NISZ Zrt). It also establishes for which systems the government provides the possibility of placement in the Government Data Centre.

3.5.5 Internet of Things (IoT)

No legislation has been adopted in this field to date.

3.5.6 High-performance Computing

new

High Performance Computing Infrastructure and Ecosystem

Government Decree 1422/2020 (VII 23) has defined a two-phase development process for the national HPC infrastructure and ecosystem.
In the first phase, a 5-PetaFlops national supercomputer was established by the end of 2022, with joint financing under the Economic Development and Innovation Operational Programme, and the national financial sources defined by the Government Decree.

The second phase of development is under implementation, with the aim to build and operate a national HPC infrastructure of at least 20-PetaFlops by 2025.

3.5.7 High-speed Broadband Connectivity

No legislation has been adopted in this field to date.

3.5.8 GovTech

No legislation has been adopted in this field to date.

4 Digital Public Administration Infrastructure

4 Digital Public Administration Infrastructure

4.1 Platforms and applications

4.1.1 National Platforms and Applications

Magyarorszag.hu

The new customisable eAdministration user interface has been available on the Magyarorszag.hu (hungary.hu) portal under the same URL since the end of February 2020 as the point of single contact of Hungary. The Magyarorszag.hu portal features a modern design as well as a life event-based approach to publish existing eGovernment services, and boasts a built-in intelligent online form system (iFORM), ePayment service integration as well as several integrated applets.
According to the eAdministration Act, all public administration bodies providing eGovernment services are obliged to publish their services on the portal. To that end, the portal provides connected service providers with a specific content management solution, a service management functionality, as well as a built-in online form editing and management system.
As for clients, both companies and citizens, the services provided by the portal can be used after electronic identification and authentication, by Client Gate account, national eID card or other eID methods available (Client Gate+, telephone code and video-based facial recognition). Through the portal, clients can access their personal digital post-box or, if they are officially assigned one, their Company Gate or Office Gate digital post-boxes.
In compliance with the Single Digital Gateway Regulation, the English language page of the portal has also been publicly available since July 2021, so far with 191 service descriptions.
As of 1 January 2023, 4 616 public services had been published on the portal, 1 077 of which are available via smart online forms and 23 through fully integrated applets.

National Open Data Portal

As for the reuse of PSI, the specification of the data structure of a new data reuse portal was completed in December 2017 and the development of the new portal was then started. In addition, with the adoption of the Artificial Intelligence Strategy in September 2020, the strategic and political frameworks for the establishment of the new portal were also defined. In this context, Act No. XCI of 2021 on the National Data Asset set forth the set-up of the Open Data Portal to the National Data Asset Management Agency. The portal was finally launched in 2022.
The aim is to establish a complete and responsible national data management scheme, which includes sharing non-personal data assets created in the public sector and having a significant multiplier effect to exploit the potential economic stimulation effect associated with their wide availability. An additional goal is the creation of an integrated public approach, which can help exploit the benefits of such economic growth considering the investment needed to guarantee such open access to data. Based on this principle, different types of data shall be identified and either made freely available or funnelled into the data market.
The new National Open Data Portal includes the public data cadastre, i.e. a list of registries and databases containing reusable public data in Hungary, and provides a free one-stop connection opportunity to the national datasets, based on EU legislation. At the same time, it will make the relationship between State and businesses (G2B), and State and clients (G2C), as well as among States (G2G), possible.

Kormany.hu

The government of Hungary has an official information website which is constantly updated with the latest news, events and multimedia coverage concerning the cabinet activity. The 'Documents' section contains information material that the government must publish according to the law and various other publications of interest to citizens. The portal was renewed in 2020. The English version of the official website is abouthungary.hu.

eEgeszsegugy.gov.hu

The state-of-the-art national eHealth infrastructure called Electronic Health Cooperation Service Space (EESZT) enables communication and collaboration between healthcare service providers. The services are based on a cloud-based centralised platform and service-oriented architecture (SOA).
The system electronically stores information about patients (health status, treatments, etc.) and provides access thereto for physicians, pharmacists, therapists, nurses, etc. working in different institutions, so that the same data are used. At the same time, citizens have access to the data concerning their medical treatment through a single centralised interface, as personal health records can be accessed on the citizen portal of the EESZT (eeszt.gov.hu) following eID authentication.
The portal contains all medical data uploaded to the EESZT cloud after 1 November 2017 by institutions who have joined the service. During the first five years of operation of the platform, more than 300 outpatient and more than 100 inpatient institutions (practically all publicly-funded healthcare institutions), 10 000 private healthcare service providers and more than 3 200 pharmacies were connected to the system. 35 000 physicians, 14 000 pharmacists and more than 6 000 general medical practitioners are using the services on a daily basis, while every day 40 000 citizens use the services of the EESZT portal to consult their medical data and 800 000 ePrescriptions are issued in the system. As of December 2022, the EESZT contained 2 billion healthcare data, more than 500 million healthcare events and more than 250 million electronic health records documents.

4.1.2 Subnational Platforms and Applications

eMunicipality Portal

The eMunicipality Portal (*e-Önkormányzat Portál*) provides a single point of contact to all eGovernment services provided by local governments (more than 99% of the 3 200 Hungarian local governments), using the Municipality ASP service. The Municipality ASP service provides online form templates (at the moment 154) to be published by the municipalities themselves, while the portal provides access to services such as eIdentification, eAuthentication, eDelivery, pre-filling of personal data, follow-up of cases, etc. ePayment was also introduced in March 2020 country-wide. The portal is aligned with the Magyarorszag.hu Portal in terms of design and Single-Sign-On is provided for the two portals. On average 56 000 online forms were submitted monthly to municipalities by clients all over the country in 2022.

4.2 Networks

Superfast Internet Programme

The Superfast Internet Programme was started in 2015 with the goal of providing at least 30 Mbps broadband connection in every part of Hungary. As part of the programme, 500 000 new network termination points were established by the end of 2018, with further developments under way.
The Superfast Internet Programme 2.0 was launched in January 2019, aiming to further develop the networks, raise the capacity to at least 100 Mbps available anywhere in the country and further develop optical networks with gigabit capabilities to expand the gigabit broadband network coverage.

Student Network Programme

The Student Network Programme was started in 2019. The goal is to provide adequate internet bandwidth and a centrally-managed WiFi service covering classrooms and public spaces in all public education institutions. The development of the digital education infrastructure, agreed with and accepted by the institution maintainers, and managed by KIFÜ, is being implemented with the support of the EU and the government of Hungary.

National Telecommunication Backbone Network

The National Telecommunication Backbone Network (NTG) is a secure and extensive country-wide broadband network forming the basic infrastructure of electronic government in Hungary. Launched in 2012 with the upgrade of the former Electronic Government Backbone (EKG), introduced in 2004, this high-speed network connects the 19 county seats with Budapest, providing the central administration, as well as regional institutions, with a secured and monitored communication infrastructure, supporting data communication, internet access, electronic mail, government intranet and other services.

Trans European Services for Telematics between Administrations

Hungary uses the Trans European Services for Telematics between Administrations (TESTA) network as the main cross-border infrastructure to communicate digitally among EU agencies, institutions and Member States.

4.3 Data Exchange

Central Government Service Bus

The Hungarian Central Government Service Bus (KKSZB) is an interoperability platform that aims to ensure a service-oriented and standardised connection between national base registries and the different specific public administration information systems by unifying communication methods. More specifically, the KKSZB makes it possible to connect systems with different technological, operational and integrational levels, as well as to reduce redundant data storage and data integrity errors resulting from former practice. That way, the KKSZB ensures electronic communication, interoperability and secure data exchange of authentic data among public administrative authorities.
The KKSZB may be joined as service provider and client at the same time, making it technically possible for applications targeted at citizens and businesses to reach all services provided by the connected service providers via the KKSZB, as long as they have permission to do so.
205 organisations are now using the platform to provide data exchange services and 356 services related to base registries are available, including most of the 27 registries enumerated by Government Decree 451/2016 (XII 19) on the Detailed Rules for Electronic Administration (i.e. the implementing decree of the eAdministration Act).

Municipality ASP

Following the successful Municipality ASP pilot project carried out in 2015–2016, with approximately 100 municipalities involved, the nationwide expansion of the central application service provider for municipalities was launched in 2016 (Municipality ASP 2.0 project) and finished in 2020. As of January 2019, practically all 3 197 local governments of Hungary were connected to the service.
The goal of Municipality ASP is to provide modern, integrated and cost-effective state-of-the-art IT solutions for local governments based on the application service provider's central hardware and software infrastructure, fostering standardised internal operation of local governments and a common platform-based provision of local eGovernment services to citizens and businesses. The service provides integrated back-office systems (financial management software, municipal tax software, document management software, industrial and commercial management software, property cadastre, eAdministration web portal and online form management) for the daily tasks of municipalities, as well as client-side eGovernment services, on a single platform for 99% of all municipalities.

4.4 eID and Trust Services

Central Authentication Agent

In January 2016, a new central identification solution, the Central Authentication Agent, was launched, supporting the use of different electronic identification and authentication services, including the Client Gate, the Client Gate+, the national eID card, the partial code telephone

authentication and the video-based facial recognition authentication. According to the schedule, eIDAS authentication will be made available via the service in 2023.

Client Gate

A comprehensive central identification solution, called Client Gate (*Ügyfélkapu*), has been available in Hungary since April 2005 for the identification of citizens for electronic transactions between public authorities and citizens. The Client Gate account can be obtained either in person in one of the government one-stop-shops or online with the use of the national eID card. Client Gate is capable of identifying citizens for any public authority that connects to it. At the end of 2022 the number of Client Gate accounts in use surpassed 5.5 million, with an 8% increase compared to the previous year.

new Client Gate+

The Client Gate+ (*Ügyfélkapu+*) service is a further developed version of the popular Client Gate eID service. Client Gate+ provides a two-factor authentication, where the first factor are the Client Gate username and password, and the second factor is a one-time password generated by an authenticator application that can be installed on a mobile device. Client Gate+ was launched on 3 June 2022.

National eID card

Since February 2018 eServices already integrated with the Central Authentication Agent service can be accessed with the use of the Hungarian eID card (*eSzemélyi*) as well, by relaying on a Near Field Communication (NFC) chip reader or an Android smartphone with such functionality. In January 2023, the number of valid eID cards issued reached 6.6 million.

new Video-based facial recognition authentication

The video-based facial recognition (VKTA) electronic identification service was introduced on 1 February 2021. The VKTA is an end-to-end identification service based on biometry through video means, providing citizens with the necessary registration and identification for eAdministration. The solution is also capable of taking the photographs or signature images required for applying for documents, a function which is used e.g. in the new service for the issuance of driver's licenses (see below in relation to its blockchain technology).

new eIDAS authentication

The Hungarian eIDAS node's development has been finished and the bilateral tests conducted with Member States should have been be finalised by 31 March 2023. Once this process is ended, it should be possible to publish eIDAS identification in the Central Authentication Agent service and to put the eIDAS identification option into operation in the Central Authentication Agent for the connected sector-specific systems during this year.

4.5 eProcurement

Public Procurement Legislation

Public procurement and electronic procurement issues are controlled and managed by one Ministry in Hungary. The Public Procurement Act and its implementing decrees are prepared by the Office of the Prime Minister, which is also responsible for the eProcurement policy. The monitoring of public procurement is carried out by the Office of the Prime Minister (in procurement procedures financed both by domestic budget and EU funds) and the Public Procurement Authority, subordinated to the Parliament (monitoring of contract and award notices, etc.).

System for eProcurement Infrastructure

The use of a single national eProcurement solution, the EKR, is mandated by the Public Procurement Act for all contracting authorities and contracting entities in public procurement procedures both below and above EU public procurement thresholds. The EKR used to be

operated by NEKSZT Ltd., a State-owned company under the control of the Office of the Prime Minister. The new operator of the EKR solution is now Ujvilag.
The EKR was developed in late 2017 and from 1 January to 14 April 2018 was used on a voluntary basis. However, eProcurement through the EKR has become compulsory for all contracting authorities since 15 April 2018 (though central purchasing bodies may partially use their own platforms). The paper-based administration of procurements has ceased since then.

Online Invoice System

Since July 2018 eInvoicing has become obligatory for transactions between domestic taxpayers including an output VAT of more than HUF 100 000 (approximately EUR 320). In July 2020, the amount of output VAT was reduced to HUF 0, with all invoices issued between domestic taxpayers being exchanged through the available system.
In January 2021, the obligation of sending invoice data was extended to all kinds of invoices issued by domestic taxpayers, but taxpayers had an additional three months to prepare themselves for fulfilling the obligation without any sanction. For this purpose, the National Tax and Customs Administration (NTCA) has developed and launched a central Online Invoice System connected to the financial management software or the enterprise resource planning (ERP) system of businesses via machine-to-machine interface. In case of paper invoices, data must be provided manually using the online service within five days, also encouraging businesses to turn to the use of eInvoicing. The NTCA also provides an online invoicing solution free of charge, mainly for SMEs, that can be used to issue eInvoices as well as paper invoices, and automatically sends the invoice data to the NTCA, regardless of the amount of output VAT. To promote and encourage eInvoicing and digital administration, in May 2020 this free online invoicing programme was made available through a mobile app, also helping to reduce administrative burdens.

eInvoicing in Public Procurement

To comply with Directive 2014/55/EU on electronic invoicing in public procurement, since 18 April 2019 the Public Procurement Act has been requiring contracting authorities to receive and process invoices complying with the relevant European standard. The Public Procurement Act does not clarify further the means to process invoices, leaving it to the contracting authorities to choose the method of transmission and processing.
A so-called eInvoicing module is also available in the EKR, enabling to verify whether an invoice complies with the European standard EN 16931-1:2017 and the syntax list published by the European Commission in the Official Journal of the EU. The eInvoicing module can help contracting authorities to decide whether they have a legal obligation to receive and process a specific invoice or not.

4.6 ePayment

Electronic Payment and Settlement System

NISZ Zrt., as provider of the Electronic Payment and Settlement System (EFER), offers an electronic payment service for both electronic and traditional paper-based procedures. EFER is a central electronic payment service (with an associated settlement system) that allows customers to fulfil their payment obligations to electronic administration bodies using a bank card, a virtual bank card or an internet bank. Furthermore, it allows for a single transaction to be used to pay fees related to a given case but payable on a different basis, as well as for the paid amount to be cleared to the target accounts.

4.7 Knowledge Management

No particular infrastructure in this field has been reported to date.

4.8 Cross-border infrastructures

No particular infrastructure in this field has been reported to date.

4.9 Base registries

Personal Data and Address Registry

As the most important base registry, the Personal Data and Address Registry, maintained by the Ministry of the Interior, is a public official registry that contains and certifies the personal data and notification addresses specified by law for registered citizens, as well as any changes thereto. The role of the registry is to collect and manage the data and changes specified in Act LXVI of 1992 on the Registration of Citizens' Personal Data and Addresses, to issue documents and to provide data on them to those entitled under the act. Data are provided to other eGovernment services via the KKSZB data exchange platform.

new Client Settings Register

The Client Settings Register records the client's provisions on powers and mandates for electronic administration and makes this information available to other entitled public bodies providing digital public services. A statement recorded in the register is effective in dealings with public bodies providing eAdministration services. According to the eAdministration Act businesses have to report their official electronic contact address (Company Gate secure eDelivery address) to the Client Settings Register within eight days after their registration or establishment.

Association Registry

The Association Registry helps to connect associated public administration registries and professional systems via an interoperable programmed service interface, ensuring interoperability between full sets of data and facilitating the exchange of data based on the encrypted contact code. To protect personal data in line with the strict Hungarian privacy rules prohibiting the use of a single identification number for individuals, the Association Registry does not include any personal information or other sectoral ID, but uses encrypted contact codes instead.

Electronic Register of Registers

The EÜF, in accordance with the eAdministration Act and the related implementing regulations, shall manage and publish the Register of Information Sources (based on the content of the information transfer rules submitted), and the List of Data and Document Titles. The purpose of the Register of Information Sources is to identify redundant administrative burdens in public services, as well as to enable citizens and other organisations to know what public administration organisation keeps what kind of records and under what procedure, and how to claim data. The Electronic Register of Registers (NyENy) is a registration system where (i) information transfer rules can be prepared and recorded; and (ii) the Register of Information Sources, and the List of Data and Document Titles can be managed. The NyENy helps to develop the interpretation of standard definitions, to simplify the process of administration, to extend the recent information system techniques and technological solutions, and to guide clients (citizens or representatives of public services).

4.10 Innovative Technologies

4.10.1 Artificial intelligence (AI)

AI-assisted building block services

Following the regulatory measures supporting the uptake of AI-based solutions by the public sector mentioned above, the following three AI-assisted building block services developed by the Ministry of the Interior have become available for public administration reuse: the AI-assisted voice generator service (text-to-speech), the AI-assisted voice description service (speech-to-text) and the AI-assisted communication assistant (chatbot), a software solution capable of conducting conversation and interactive communication very similar to human dialogue in a collaborative manner automatically, with or without human intervention, through a machine self-learning process. All three AI-assisted services use deep learning to learn

continuously in a supervised way. The new central AI-based building block services are offered from the Government Data Centre, thus ensuring the highest security requirements for closed electronic information systems, so that services used by the client will not be available to third parties.

For illustration, the AI-supported MIA Chatbot of the Government Hotline was introduced in May 2021 for responding to written inquiries using a combination of artificial and human intelligence. Based on the communication of customer service operators, the chatbot offers response options to operators and then, continuously learning from the accepted response suggestions, it can enter into fully automatic mode. The MIA Chatbot currently provides assistance to citizens in using the Client Gate service, the Company Gate eDelivery service for businesses. In 2022 the Government Hotline answered more than 600 000 customer questions via the MIA Chatbot service, of which 38% automatically, 60% semi-automatically (with the operator choosing from the options suggested by the bot) and only 2% by manual answering. The use of the MIA Chatbot is planned to be further expanded in 2023 by adding further services, with new functions.

4.10.2 Distributed ledger technologies

new

Blockchain Module

A blockchain module has been implemented to issue the first driver's licenses through an automated service. The module deals with the management of the certification data, the verification of the conditions for the driver's license and document issuance. The received exam data are handled in an irrevocable and irrefutable way by linking the received data packages to each other and authenticating them with a time stamp, depending on the person and the procedure. More in detail, the blockchain module:

- Processes the chronologically-chained certification data received, linking them to the person;
- Based on the received data, makes an evaluation decision as to whether all the conditions for the driver's license are met, i.e. whether the document issuance procedure can be initiated;
- is capable of providing a snapshot of the entire history of the data container at a given moment in time, as well as transmitting only valid data; and
- after the successful issuance of the driver's license, closes the data containers and monitors the data retention period for data protection reasons.

As another example, the Hungarian National Bank – as a key supporter of blockchain technology – developed in May 2022 a dedicated NFT platform based on a private blockchain.

4.10.3 Big data

No particular infrastructure in this field has been reported to date.

4.10.4 Cloud computing

Government Data Centre

Avoiding using external (public and hybrid) cloud services in the public administration is a key element of the Hungarian government's IT policy. For this reason, the Hungarian government started to develop the Government Data Centre. The Government Data Centre is a geo-redundant data centre offering central IT infrastructure capable of providing a cloud-based service environment for government, public administration and public services. The service provider of the Government Data Centre is the State-owned NISZ Zrt., designated by law and controlled by the Ministry of the Interior. As a result of last years' development, the share of the cloud-enabled data centre capacity provided by NISZ Zrt. accounts for 24.6% of the total governmental server room infrastructure. More than 100 public administration systems have been set up and installed, and are running in the Government Data Centre.

4.10.5 Internet of Things (IoT)

No particular infrastructure in this field has been reported to date.

4.10.6 High-performance computing

new

High Performance Computing Infrastructure and Ecosystem

As Hungary's supercomputer infrastructure was underdeveloped (with a total capacity of less than 0.5 PetaFlops), the country was not able to serve the growing needs of research and development (R&D), and industrial innovation. As a result, the Ministry of Innovation and Technology has started working to significantly improve the available national HPC capacity.
Hungary's supercomputer infrastructure is now being expanded in accordance with the two-phase development process defined by Government Decree 1422/2020. The first phase, aimed to increase Hungary's capacity to 5 PetaFlops, was concluded by the end of 2022 and the 5-PetaFlops HPC called 'Komondor' has been in operation since January 2023 in the campus of the Debrecen University. The second phase is now under implementation, with the goal to build and operate a national HPC infrastructure of at least 20 PetaFlops by 2025.

4.10.7 High-speed broadband connectivity

Superfast Broadband Programme

The Hungarian government launched the Superfast Broadband Programme in 2015. The original aim was to reach 100% broadband connectivity footprint, with minimum 30Mbps download speed, by the end of 2018. The programme has then continued beyond 2018, aiming at meeting higher bandwidth needs and including also the development of fibre optic backhaul connectivity, especially in rural areas. The programme includes the direct deployment of the State aid network and the operators' own developments coordinated by the Ministry.
The main results of the programme by the end of 2022 were the following:

- Deployment of 19 000 km of new fibre optic network;
- Building of 3 000 km of new passive infrastructure (mainly cable ducts);
- Covering of 87% of the new endpoints built under the programme with fibre-to-the-home (FTTH);
- EUR 178 million of direct State-aid (funded mainly by the EU); and
- Total project funding of EUR 460 million (including also operators' own financing).

To promote and coordinate 5G developments the government has also established a non-profit organisation called 5G Coalition. This body includes the Ministry, mobile network operators, equipment vendors and leading IT firms, as well as universities and representatives of potential industrial leaders.

4.10.8 GovTech

No particular infrastructure in this field has been reported to date.

5 Digital Public Administration Governance

5 Digital Public Administration Governance

For more details on Hungary's responsible bodies for digital policy and interoperability, its main actors, as well as relevant digital initiatives, please visit the NIFO collection on Joinup.

5.1 National

new Cabinet Office of the Prime Minister

According to Government Decree 182/2022 (V 24) on the Competences and Powers of the Members of the Government, the Cabinet Office of the Prime Minister is responsible for eGovernment, IT, harmonisation of eGovernment and IT development within the public sector, government IT infrastructure, electronic communications and audiovisual media. The Cabinet Office of the Prime Minister delegates most of its eGovernment and IT tasks to the Digital Hungary Agency.
Another important stakeholder in shaping the government's digital policy is the 100% State-owned DKÜ Digital Government Agency Ltd. Under the supervision of the Cabinet Office of the Prime Minister, it is responsible for the consolidation of IT-related procurement of public sector bodies.

new Digital Hungary Agency

According to Government Decree 307/2022 (VIII 11), the Digital Hungary Agency has been established under the Cabinet Office of the Prime Minister to take responsibility for eGovernment, IT, government ICT, harmonisation of eGovernment and IT development, government IT infrastructure and electronic communication for government purposes. Strategic governance, policy formulation, project planning, definition of policy criteria for development projects, provision of eGovernment building blocks and supervision of ICT public procurement related to the above-mentioned tasks belong now to the responsibilities of the Digital Hungary Agency.

new Ministry for Economic Development

As part of its industry and business development tasks, the Ministry for Economic Development is responsible for the ICT industry and the digitalisation of industry and businesses, and supports the uptake of emerging technologies (AI, 5G, blockchain, drones, etc.).

Ministry of the Interior

As ministry responsible for public education and social inclusion, the Ministry of the Interior plays an important role in developing digital skills. In addition, it is also responsible for eHealth and the development of the above-mentioned national eHealth platform (EESZT).

new Ministry of Culture and Innovation

As ministry responsible for higher education, vocational education and adult education, the Ministry of Culture and Innovation is responsible for innovation policy and plays an important role in developing digital skills and training ICT specialists.

National Infocommunication Service Provider Ltd.

Functioning under the control of the Digital Hungary Agency, the fully State-owned NISZ Zrt. is the main IT service provider for Hungarian government organisations. In addition to maintaining the government IT infrastructure (including the Government Data Centre) and services, the strategic goals of the company also include the development of eGovernment solutions. As a result, most of the government IT infrastructure, regulated electronic administrative services (building blocks) and eGovernment services are provided by NISZ Zrt.

Governmental Information Technology Development Agency

The Governmental Information Technology Development Agency (KIFU) serves as a framework for the development and operation of the research network in Hungary. At the same time, the National Information Infrastructure Development (NIIF) Programme, in accordance with international practices, plays a leading role in the development and introduction of the most advanced networking technologies in Hungary.
In 2020, KIFU also established the National HPC Competence Centre, which joined the network of the EuroHPC Competence Centres on 1 September 2020.

Digital Success Point Network

Within the framework of the Digital Success Point Network, the government supported the development of existing community internet access points (Digital Success Points) and the establishment of new ones by broadening the service portfolio and developing their infrastructure, tools and services. That way, citizens who were not connected could become part of the digital world.
The plan was to support at least 1 500 community internet access points countrywide. By the end of 2018, the aim of the project was fulfilled and the technical device installation completed. In addition, more than 1 500 mentors were trained to help citizens who needed assistance to use ICT or electronic public services.

State Application Development Environment and Catalogue

The State Application Development Environment (FLORA) and the State Application Catalogue (LIBRA) were set up in January 2020 and have been functioning since then. Their aim is to promote standardisation and transparency in application development within the Hungarian public administration, with the objective of avoiding duplication of developments, fostering reusability and reducing supplier/vendor dependencies.
LIBRA provides a detailed picture of the current situation of State software assets at technology level, helping to prevent parallel, unjustified State developments and thus fostering reuse. In February 2023, 156 public bodies were connected to LIBRA, containing to date more than 3 400 software applications.
FLORA also provides an application development platform (ORION), i.e. a cloud-based, state-of-the-art IT system that covers the entire development process (building, testing and deploying) of new and unique applications of State interest meeting the goals of Government Decree 314/2018 (XII 27) on the State Application Development Environment and Catalogue.

5.2 Subnational (federal, regional and local)

Cabinet Office of the Prime Minister

The Permanent Secretary of State is responsible for the coordination of tasks related to eGovernment and IT policy and strategy-making, which is done via the Digital Hungary Agency.

new Digital Hungary Agency

According to Government Decree 307/2022 (VIII 11), the Digital Hungary Agency has been established under the Cabinet Office of the Prime Minister to take responsibility for eGovernment, IT, government ICT, harmonisation of eGovernment and IT development, government IT infrastructure and electronic communication for government purposes. Strategic governance, policy formulation, project planning, definition of policy criteria for development projects, provision of eGovernment building blocks and supervision of ICT public procurement related to the above-mentioned tasks belong now to the responsibilities of the Digital Hungary Agency.

Deputy Secretary of State for Informatics, Ministry of the Interior

The Deputy Secretary of State for Informatics within the Ministry of the Interior is responsible for tasks related to policy- and strategy-making on local government public administration IT infrastructure and eGovernment services (e.g. Municipality ASP, Smart City Platform), in cooperation with the Secretary of State for Local Governments of the Ministry.

Secretary of State for Regional Public Administration, Office of the Prime Minister

The Secretary of State for Regional Public Administration is responsible for policy- and strategy-making in the field of the development of local public administration and governmental one-stop-shops.

National Association of Local Authorities

The National Association of Local Authorities (TÖOSZ) is the representative organisation of the majority of Hungarian municipalities, promoting the interests of its members towards the central government and providing them with support services.

Association of Cities of County Rank

The Association of Cities of County Rank (MJVSZ) represents the collective rights of Hungary's largest cities (23), protecting and promoting their interests, developing the operation of local self-governments, and cooperating with other national and international associations of local governments in support of the government's central eGovernance system and policy.

National Association of Intelligent Local Authorities

The National Association of Intelligent Local Authorities (ITOSZ) is dedicated to promoting cooperation among local authorities in the field of ICT and information management, planned and implemented at central level.

6 Cross-border Digital Public Administration Services

6 Cross-border Digital Public Administration Services

Further to the information on national digital public services provided in the previous chapters, this final chapter presents an overview of the basic cross-border public services provided to citizens and businesses in other European countries. Your Europe is taken as reference, as it is the EU one-stop shop which aims to simplify the life of both citizens and businesses by avoiding unnecessary inconvenience and red tape in regard to 'life and travel', as well as 'doing business' abroad. In order to do so, Your Europe offers information on basic rights under EU law, but also on how these rights are implemented in each individual country (where information has been provided by the national authorities). Free email or telephone contact with EU assistance services, to get more personalised or detailed help and advice is also available.

Please note that, in most cases, the EU rights described in Your Europe apply to all EU member countries plus Iceland, Liechtenstein and Norway, and sometimes to Switzerland. Information on Your Europe is provided by the relevant departments of the European Commission and complemented by content provided by the authorities of every country it covers. As the website consists of two sections - one for citizens and one for businesses, both managed by DG Internal Market, Industry, Entrepreneurship and SMEs (DG GROW) - below the main groups of services for each section are listed.

6.1 Life and Travel

For citizens, the following groups of services can be found on the website:

- Travel (e.g. Documents needed for travelling in Europe);
- Work and retirement (e.g. Unemployment and Benefits);
- Vehicles (e.g. Registration);
- Residence formalities (e.g. Elections abroad);
- Education and youth (e.g. Researchers);
- Health (e.g. Medical Treatment abroad);
- Family (e.g. Couples);
- Consumers (e.g. Shopping).

6.2 Doing Business

Regarding businesses, the groups of services on the website concern:

- Running a business (e.g. Developing a business);
- Taxation (e.g. Business tax);
- Selling in the EU (e.g. Public contracts);
- Human Resources (e.g. Employment contracts);
- Product requirements (e.g. Standards);
- Financing and Funding (e.g. Accounting);
- Dealing with Customers (e.g. Data protection).

Last update: June 2023

The Digital Public Administration Factsheets

The factsheets present an overview of the state and progress of Digital Public Administration and Interoperability within European countries.
The factsheets are published on the Joinup platform, which is a joint initiative by the Directorate General for Informatics (DG DIGIT) and the Directorate General for Communications Networks, Content & Technology (DG CONNECT). This factsheet received valuable contribution from the Digital Hungary Agency.

The Digital Public Administration factsheets are prepared for the European Commission by Wavestone.

An action supported by Interoperable Europe

The ISA² Programme has evolved into Interoperable Europe - the initiative of the European Commission for a reinforced interoperability policy.
The work of the European Commission and its partners in public administrations across Europe to enhance interoperability continues at full speed despite the end of the ISA² programme. Indeed, enhanced interoperability will be necessary to unlock the potential of data use and reuse for improved public services, to enable cross-border collaboration, and to support the sector-specific policy goals set by the Commission for the future.

Interoperable Europe will lead the process of achieving these goals and creating a reinforced interoperability policy that will work for everyone. The initiative is supported by the Digital Europe Programme.

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