

MEASURING THE DEVELOPMENT OF THE HUNGARIAN ELECTRONIC ADMINISTRATION

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Abstract

The creation of electronic administration and the measurement of the results achieved have been one of the central themes of research into the development of the information society for two decades. The European Commission publishes annually e-government comparative analyses (eGovernment Benchmark reports), providing insight into the use of ICT in the public sector in the countries examined.

In recent years, the measuring system has been modified and supplemented several times. The Digital Economy and Society Index (DESI) and the benchlearning approach assess the performance of e-administration on the basis of additional considerations. Hungary's performance is improving, but still below the EU average. Exploring the causes of the underperformance is a priority for catching up.

On the basis of a survey of students at the National University of Public Service, the author analyses user characteristics (digital skills, ICT use) and the characteristics of public administration (quality of electronic administration services) in their context.

Keywords: *electronic administration, performance measurement, benchmarking, DESI, benchlearning*

1. Introduction

The European Union has examined the implementation of its strategies and programmes from the outset by means of indicators, comparing Member States' performance (rankings), highlighting the best-qualified (best practice) model.

In March 2000, the European Council adopted the Lisbon Strategy², based on guidelines and recommendations, which aims to make Europe the most competitive and dynamic knowledge-based society in the world by 2010. [11]

The tasks of developing the information society were formulated on the basis of the eEurope initiative launched in 1999. [9] Action plans (eEurope 2002 [10], eEurope 2005 [12], i2010 [14]) have been developed to achieve these goals.

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² The mid-term evaluations [29] [25] have already highlighted the errors and relaunched the strategy in 2005. [13] On the basis of the competitiveness reports, new substantive changes were made in 2008. [4] [5]

The strategic goals were intended to be achieved through open coordination³ and benchmarking⁴ methods, which is a simple and useful tool for comparing Member States, but has the disadvantage of focusing too much on benchmarks and ignoring national, territorial specificities.

Initially, the evaluation of electronic public services focused on online preparedness, infrastructure, provision and use of customer-side services [8], and was gradually supplemented with other indicators (e.g. customer experience, life events, service background).

The Europe 2020 Strategy has been developed on the basis of the lessons of the Lisbon Strategy. The aim of the renewed strategy has been to overcome the crisis, to achieve a smart, sustainable and inclusive economy, with stronger governance. [16]

One of the seven main objectives is to disseminate the accessibility and use of information and communication technologies, to improve their quality and to create a digital single market. The necessary measures for smart, sustainable and inclusive growth are set out in the Digital Agenda for Europe. [15] [18]

In line with the change in strategic goals, the performance measurement framework has also been transformed. The development of the information society is illustrated by more than 100 selected indicators, including a comparison of eGovernment performance over time and between Member States. In 2015, the implementation of the European Digital Single Market was a high priority [19], and a new measurement framework, the Digital Economy and Society Measurement System, was developed to monitor strategic goals.[21]

The study further illustrates the measurability of eGovernment development through data from Hungary on the basis of various international indicators.

2. eGovernment Benchmark reports

E-government benchmarking over the past decade⁵ has assessed the accessibility, quality and usability of e-government services in four main areas. The four complex indicators are calculated on the basis of the weighted averages of several sub-indicators.

An important element of the evaluation system is the Mystery Shopping and the examination of the life event (starting a business, losing and finding job, studying, family life, business operations, moving, owning and driving a car, starting a small claim procedure). In the odd and even years, different life situations are examined, leading to delays in the appearance of results. Time is an important factor in evaluating data, and due to methodological changes, data may not always be comparable.[7]

³ The main components of this method are: definition of directives; the development of quantitative and qualitative indicators; comparison of Member States, sectors and best practices; taking into account national specificities; regular monitoring and evaluation of the results achieved in the framework of the mutual learning processes. [11 pp. 37-38]

⁴ Benchmarking is a tool for continuously monitoring progress and evaluating the situation, allowing you to compare performance levels qualitatively and quantitatively, and thus to rank. It is an important tool for learning about best practices that can lead to higher performance in line with your goals. [27]

⁵ The measurement framework has changed several times in line with eGovernment action plans (2011-2015, 2016-2020). [17] [20] [22] [23]

The four key indicators and their components are:

- User centricity: online availability, usability, and (from 2016) mobile friendship.
- Transparency: provision of services, control of public organizations and personal data.
- Cross-border mobility: online accessibility, usability, and (two key factors from 2016) cross-border use of electronic identification (eID) and authentic electronic documents (eDocument).
- Key enablers: electronic identification (eID), authentic electronic documents (eDocument), authentic data sources and (from 2016) digital post (digital storage).⁶

Top Level Benchmarks (Biennial averages ⁷)	2012 + 2013		2013 + 2014		2014 + 2015		2015 + 2016		2016 + 2017		2017 + 2018	
	HU	EU	HU	EU	HU	EU	HU	EU	HU	EU	HU	EU
User centricity	45	70	46	73	53	77	68	80	68.8	82.8	78.8	84.8
Transparency	23	48	25	51	27	55	26	59	32.8	58.6	47.3	62.3
Cross-border mobility	17	44	24	58	24	55						
<i>Citizen</i>							40	61	13.3	47.8	15.3	47.5
<i>Business</i>							30	65	37.5	61.0	49.0	63.0
Key enablers	30	49	30	50	20	54	33	52	46.5	53.5	62.6	58.3

Table 1: Hungarian e-government development compared to EU28+ average values

Source: National Interoperability Framework Observatory (NIFO) [28], own edition

The data generally show progress, although the performance of Hungarian e-administration is lagging behind the EU average. Hungary shows the worst result in the provision of cross-border services to EU citizens⁸. The Hungarian e-administration outperformed the EU average, which is mainly due to the 100% value of digital post (storage) services. We are still lagging behind in the area of transparency, although the control of personal data has improved significantly. Differences in interpretation, methodological changes and scoring of different life event can lead to contradictory results (e.g. key enablers 20, cross-border services for citizens 40). Although aggregations involve a significant loss of information, examination of detailed data can reveal problematic areas.

3. Digital Economy and Society Index (DESI)

Since 2015, the Digital Economy and Society Index (DESI) has been introduced to measure the progress of the Digital Agenda. The five main dimensions of DESI are subdivided into over 30 indicators⁹. [24]

According to the aggregate index Hungary is one of the poorly performing countries, despite the developments in recent years it ranks 23rd. The level of network interconnection is slightly above the EU average. The use of Internet services shows fluctuations. Social networking is outstanding, but

⁶ Modified indicators: ease of use, speed of use, secure electronic storage (eSafe) and single sign-on (SSO)

⁷ The benchmark estimates that a country's performance is insufficient between 0-25%, moderate between 25-50%, fair between 50-75% and good over 75%.

⁸ Although one of the objectives of the digital state is: "by 2018 citizens and enterprises should be able to manage all their public administration affairs electronically (where the nature of the process allows it, including cross-border management of affairs as well);" [26 pp. 81]

⁹ DESI's methodology, indicator system and weighting of indicators have also changed year on year.

online voting, learning, banking and shopping are low. Hungary has the worst results in terms of digital technology integration and digital public services.

Dimension	2014	2015	2016	2017	2018	2019
Connectivity	17.	17.	14.	15.	15.	14.
Human Capital	19.	18.	18.	18.	19.	20.
Use of Internet	18.	15.	13.	14.	17.	18.
Integration of Digital Technology	24.	25.	24.	24.	24.	25.
Digital Public Services	22.	26.	27.	27.	26.	26.
DESI	22.	21.	20.	23.	23.	23.

Table 2: Corrected ranks of Hungary¹⁰ in DESI dimensions
 Source: <https://digital-agenda-data.eu/datasets/desi>, own edition

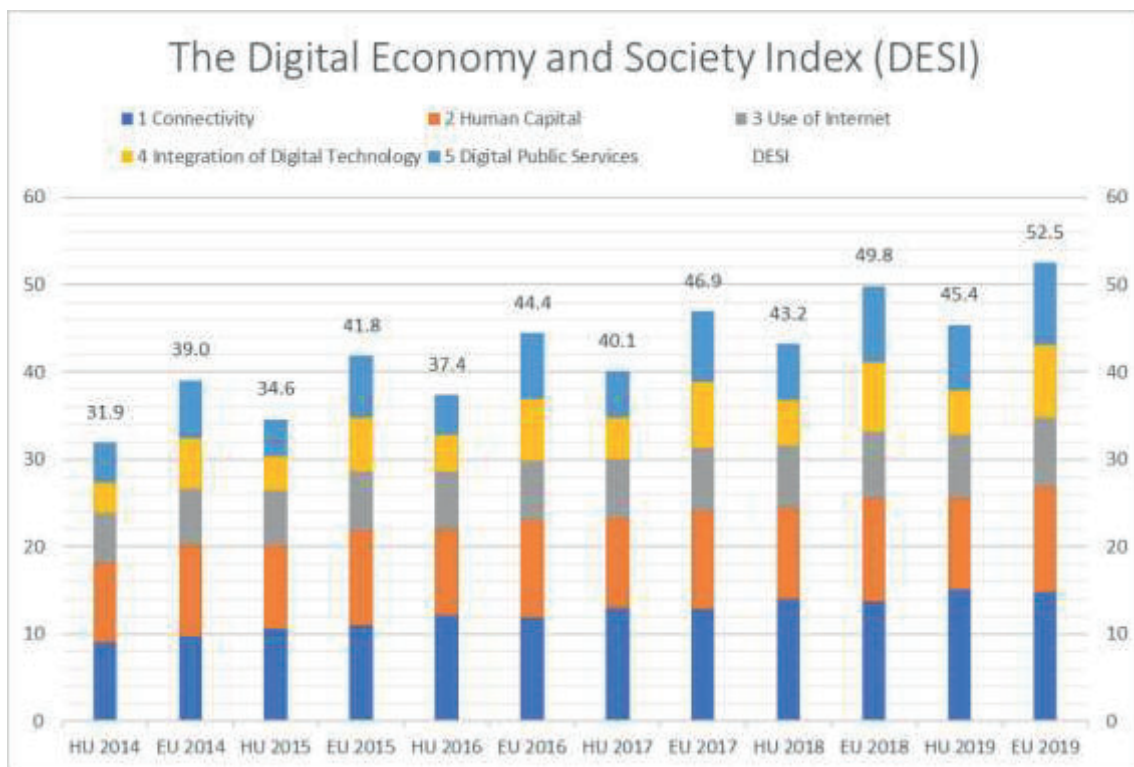


Figure 1: Change in time based on the values of Hungary and EU28 DESI
 Source: <https://digital-agenda-data.eu/datasets/desi>, own edition

Among the digital public services, the performance of the Hungarian e-administration is improving, but it is still below expectations. With regard to open access data, the data source has changed since 2017, and Hungarian values are no longer known in recent reports. In the field of eHealth, the impact of launching the National eHealth Infrastructure (EESZT) has already appeared in 2019, but citizens' access to eHealth services is still low.

The main advantage of DESI is the ability to produce international comparisons and benchmarking at the level of dimensions, subdimensions and indicators. The methodological differences, the topicality of the data (use of earlier data), and the subsequent corrections are the disadvantages of the measuring system.¹¹

¹⁰ Recalculated based on update and adjustments for metrics, so the rankings published in the annual reports have also changed.

¹¹ For more information on the analysis of the measuring system, see [1] [2] [6] [7]

The benchlearning approach: clustering of countries to drive learning

The benchlearning approach is used to link the assessment of eGovernment performance with the mutual learning process. The method used since 2015 compares countries with similar environmental characteristics.

The performance of eGovernment is measured through two main dimensions (absolute indicators). Penetration shows the availability of online eGovernment services. The degree of digitization (as an average of 4 indicators) is the level of digitization of administrative front office and back office processes. It is possible to highlight the relationship between these indicators. The analysis also covers influencing external factors (relative indicators): user characteristics (digital skills, ICT usage), administrative characteristics (quality of public administration services, openness) and characteristics of the digital environment (interconnection, digitalisation of the private sector).

Hungary was still a progressive group¹² based on 2012-2013 data, but has been reclassified as a high-potential country¹³ in the following years. Despite developments, Hungary still belongs to the non-consolidated eGovernment group based on low-level digitization and medium-low penetration.

	Performance (Absolute)		Environment characteristics (Relative)					
	Penetration	Digitisation	User characteristics		Government characteristics		Context characteristics	
			Digital Skills	ICT usage	Quality	Openness	Connectivity	Digital in private sector
2017 EU28	52%	65%	51%	48%	71%	59%	60%	35%
2017 HU	31%	41%	44%	51%	58%	55%	60%	21%
2018 EU28	53%	63%	55%	53%	71%	72%	64%	41%
2018 HU	35%	42%	48%	54%	57%	53%	62%	25%
2019 EU28	57%	68%	49%	53%	70%	68%	60%	42%
2019 HU	42%	56%	42%	48%	57%	n/a	60%	25%

Table 3: Benchlearning indicators in Hungary compared to the EU average

Source: eGovernment Benchmark 2017, 2018, 2019 [3] own edition

Although the level of network connectivity is good, most indicators are below the EU average, and the country is still below the EU average in terms of digitization and penetration. There is a greater lag in digitization in the private sector and data of openness are unknown in 2019.

4. Examining the influencing factors (questionnaire survey among student)

The survey conducted among the students of the National University of Public Service Faculty of Political Governance and International Studies focuses on the use of ICT, Internet services and e-government services. The questionnaire was completed by 494 people.

Respondents have internet access: 88.1% with fixed broadband, 75.7% with mobile broadband. Only 3 people have no internet access at home. The Internet is used daily, often all day (99%). Smartphones (99.2%) and tablets (92.3%) are mostly used to access the Internet. Only 2 people have not used a mobile device.

¹² Medium-level penetration and medium-level digitisation

¹³ Medium-level penetration and low digitisation

Internet, e-mail, messaging and social networking are outstanding, but there is a low level of published public and political opinion. The low level of use of e-learning and blended learning courses was surprising, as the university uses an e-learning framework for both undergraduate and graduate courses.

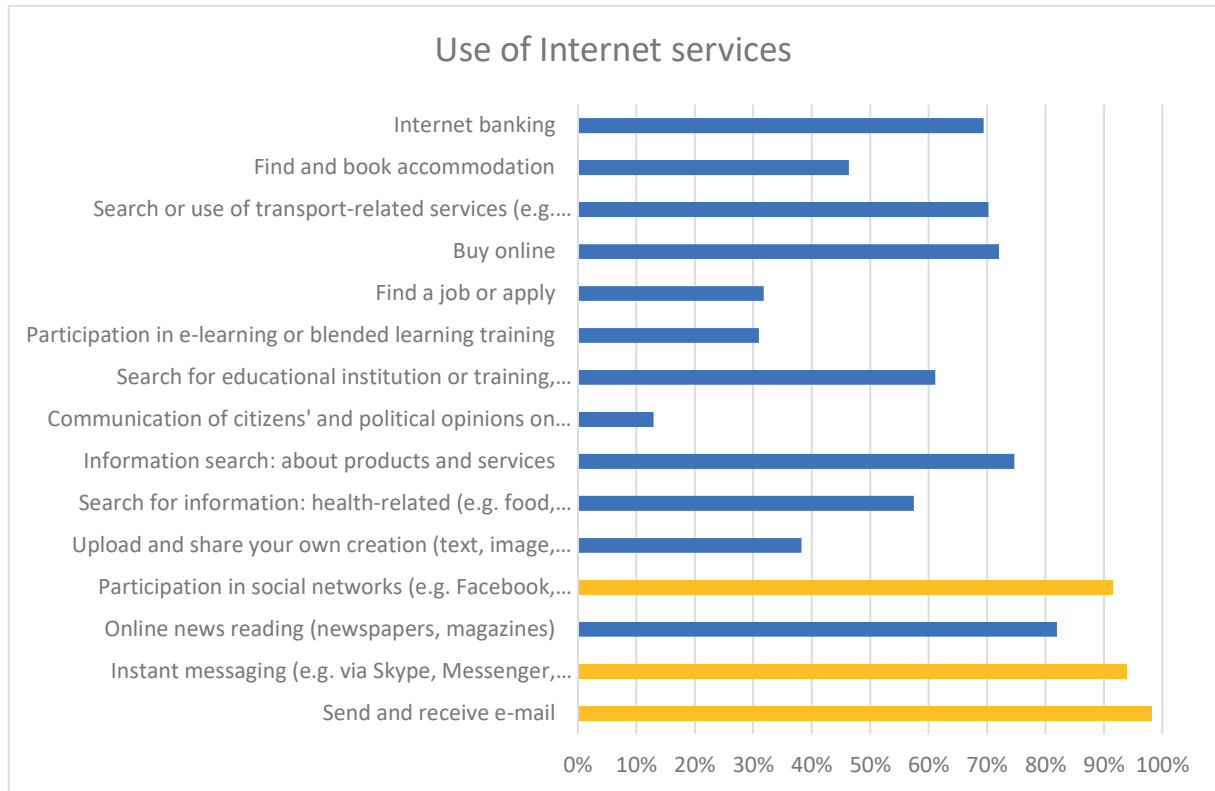


Figure 2: Using Internet Services as a citizen
 Source: own edition based on questionnaire data¹⁴

Students have an ID for e-administration (Client Gate 98.6%). One in five students has an e-ID card but they are not using it due to the lack of a card reader.

Use of online public services is lagging behind. Most of the time they just get information on the web pages or download, print forms. Form completion and submission are low.

The most used services were the higher education enrolment procedure¹⁵ and the proactive tax return, but they also requested documents, certificates and queried databases (real estate, motor vehicle, social security). Respondents rated the quality of eGovernment services on a scale from 1 to 7 points. Although services are generally rated as good (5 points on average), the need for future re-use of services is lower (4.2 points on average).

¹⁴ The values are higher than the DESI data because the respondents are students.

¹⁵ Electronic administration is mandatory

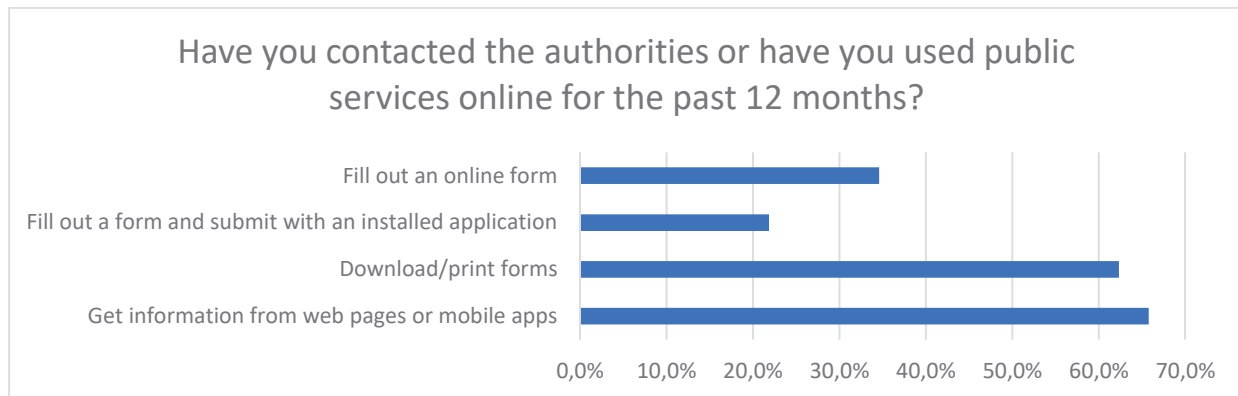


Figure 3: Use of e-government services
Source: own edition based on questionnaire data¹⁶

Although the questionnaire respondents had a high level of technical background, they only had basic digital skills (mostly searching for information, copying, moving, deleting folders, basic word processing, and spreadsheeting). The level of e-public services was rated better (5.5 point) assessed by those who, by their own admission, had little basic capabilities or no such skills.

5. Summary and recommendations

Evaluating the performance of eGovernment at international level is also a challenge. The main objective of the European index systems presented in this study is to assess the performance levels of the Member States, providing guidance for further development. Most reports provide a snapshot of the examined period (or previous period) based on aggregate metrics. At the same time, it is a problem to follow longer-term developments due to changes in measurement methods and indicators.

It can be stated that Hungary is lagging behind in several areas besides continuous development. The positive impact of developments that have already been implemented or are ongoing (e.g. e-administration default, introduction of the Electronic Health Service Space, launch of a new personalized administration platform, Digital Welfare Program) are expected in the coming years.

The student survey data so far indicate that the prerequisites (Internet access, tools) for using e-public services are available, and Internet services are also used regularly. There would be a need to develop digital and administrative skills, digital public service knowledge (e-citizen knowledge). Experience has shown that most people are not even familiar with e-administration options or are too complicated for them, so they prefer to do their administration in person.

Once the legal framework and infrastructure are in place, another challenge is to encourage and prepare the client side to use the services.

Further research is needed to determine the impact of external factors affecting national performance (user characteristics, administrative characteristics and characteristics of the digital environment).

¹⁶ The values are higher than the DESI data because the respondents are students.

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