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Cybersecurity and public administration in the time of corona(virus) – in the light of the recent Hungarian challenges

Abstract

Today, the digital revolution has also caught up with the administration. The digitalisation of the (public) administration has strong links to the security issues. Digitalisation could be interpreted as one of the tools for the good governance and it has several challenges, as well. The public administrations, as well, the Hungarian administrative law has been significantly impacted by the COVID-19 pandemic. The administrative procedural law has been influenced by the epidemic transformation. However, the rules on e-administration have not been reformed significantly (due to the digitalisation reforms of the last years), but several regulations and mainly the practice of the Hungarian administration has been transformed during the last two years. The pandemic situation had several challenges and opportunities, by which the traditional way of administration has been altered during these two years.

Key words: digitalization, e-administration, cybersecurity, Hungary, digitalization of municipal authorities, municipal administration

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Introduction

Today, the digital revolution has also caught up with the administration. E-governance has many advantages. For example, clients are not tied to office hours, do not have to meet with officers, they can access information more easily, and many tools are available to help them make decisions¹. The *e-government* is an umbrella term: in the literature it covers the government innovation and the government information and services. E-government creates a several methods and tools that in governments and citizens can communicate with each other².

The e-administration and e-government has not only benefit, but it has several risks. During the e-administration sensitive data are used and stored by the administrative bodies, and the sensitive data of the administrative decision-making can be used for these activities. Therefore, it became a major issue to defend the data and information on the citizens of a given administrative unit and the defence of the data and information on the given administrative body. Cybersecurity became an important element of the digitalisation of the public administrations³.

The COVID-19 pandemic has been an opportunity, a challenge, and a threat for the public administrations, especially for the e-administration. The application of the e-administration has been strengthened by the reduction of the contacts between persons. Therefore, the tools and institutions of e-administration has been widely used by the administrations during the time of pandemic. The application of the e-administration could be interpreted not only as a challenge and opportunity to build a more effective administration, but it has only several risks, as well. The cybersecurity issues of the different administrative systems have become a recent question, as well. These trends can be observed in Hungary. As it can be seen, the Hungarian administrative law had diversified and detailed regulation on e-administration, but the extended application of the tools and institutions of e-administration has had several – especially in the field of cybersecurity.

1 A. O'M. Bowman, R.C. Kearney, *State and Local Government*, Boston 2016, p. 223.

2 T.E. Wohlers, *Local E-Government Sophistication in the United States* [in:] red. H.J. Scholl, *E-Government: Information, Technology and Transformation*, London 2010, p. 89–90.

3 I. Hoffman, K.B. Cseh, *E-administration, cybersecurity and municipalities – the challenges of of cybersecurity issues for the municipalities in Hungary*, "Cybersecurity and Law" 2020, no. 2, p. 200–201.

Methods

First of all, the analysis is based on the methods of the *jurisprudence*. Therefore, firstly the concept and the legal regulation on the digitalisation of the administrative services will be reviewed. As part of this analysis the basic elements of the concept of the e-administrative services will be shortly shown. After that I would like to analyse the framework of the regulation on cybersecurity in the Hungarian municipalities. The impact of the COVID-19 pandemic on the e-administration will be further analysed. The analysis will be based mainly on the jurisprudential methods, but the practice of the e-administration will be shortly analysed, mainly on the basis of the methods of the administrative sciences.

The analysis of the general regulation on the e-administration in Hungary (in the time of coronavirus)

Firstly, I would like to examine the analysis of the regulation on eGovernment. After this analysis I would like to show the main challenges of the COVID-19 pandemic and the Hungarian answers on it.

E-administration in Hungary⁴

The e-services are different, and the different stages of e-administration is distinguished. Four main stages of the e-government development are distinguished. This classification is based on the integration of the different services and on the complexity of the structures and technology. The first stage is the *catalogue*, in which the online presence of the government is provided, the main tasks are catalogued, and the several forms could be downloaded. The second stage is the *transaction*, in which the services and forms are online, and the online transactions are supported by several working databases. The third stage is the *vertical integration*, in which the local systems are linked to higher systems (within similar functionalities). The fourth stage is the *horizontal*

4 The point is based on I. Hoffman, K.B. Cseh, *E-administration...*, p. 201–204.

integration, in which the systems with different functions are integrated and a real one-stop-shop is provided⁵.

Significant investments are required to fulfil these aims, and the costs of these investments are partly related to the cybersecurity issues⁶. The e-government technologies have several prerequisites. After Layne and Lee three vital conditions should be fulfilled to implement a successful e-government reform: universal access to the e-government tools, the defence of privacy and confidentiality and – last but not least – the citizen focus in government management⁷.

As I have mentioned, the framework of the Hungarian e-administration has evolved during the last two decades in Hungary. During the late 1990s, early 2000s the first general regulation on e-administration were passed in Hungary, and during the reforms of the Hungarian administrative procedure regulation these rules were transformed and partly developed.

From October of 2009 (with Act CXI of 2008) the general administrative procedure rules were amended. Electronic communication between clients and authority became available through the use of an online citizen portal dedicated to this end, called Client Gateway.

In April 2012, with the amendment of the Act CXL of 2004 on the General Rules of Administrative Procedures and Services by the Act CLXXIV of 2011, and the introduction of the so-called regulated electronic administration services, the legal preconditions for eGovernment services were established⁸. In addition to this, in July 2015 a new law on the Hungarian eID card has been adopted.

As the scope of the Hungarian eGovernment developments continuously grew, the need for a separate eGovernment law appeared. Act CCXXII of 2015 on the General Rules for Trust Services and Electronic Transactions (hereinafter referred to as ET Act) kept the achievements of the 2012 reform and further extended the possibilities of electronisation of processes.

5 K. Layne, J. Lee, *Developing fully functional E-government: A four-stage model*, "Government Information Quarterly" 2001, no. 2, pp. 124–125.

6 R. Heeks, *Implementing and Managing E-Government*, London 2006, p. 107 and I. Légárd, *Te is célpont vagy! – A közszolgálat felkészítése a kiberfenyegetésekre*, "Hadmérnök" 2020, no. 1, p. 92.

7 K. Layne, J. Lee, *Developing...*, p. 134.

8 B. Baranyi, *A kapcsolattartás általános szabályai* [in:] red. G. Barabás, B. Baranyi, A. Kovács, *Nagykommentár a közigazgatási eljárási törvényhez*, Budapest 2013, p. 222–225.

As of January 2018, a new act regulating administrative procedure entered into force (Act CL of 2016 on the Code of General Administrative Procedure – hereinafter: CGAP). In Section 26, the new act also regulates the communication of the authorities with clients and utilise the electronic communication means provided by the ET Act as a form of written communication. (It is also allowing electronic communication not in accordance with the ET Act, but that is regarded as oral communication.) The CGAP, according to its general concept, hasn't contain detailed regulation of this form of communication but rely entirely on the ET Act. There is also an option to deliver the decision by the ET Act, in place of an official document, regulated in Subsection 3 of Section 85⁹.

Clients shall have the option to make statements, take procedural steps and fulfil other obligations either through a single, personalized communication interface or through e-governance services platform if it is provided¹⁰. The ET Act contains the general rules of the electronic connection between the body providing e-governance services and the client, as well as the provisions on the IT cooperation between the body providing e-governance services and other bodies. There is an obligation to maintain electronic communication, then any statement not in compliance with this regulation shall be deemed invalid. The only exception under this regulation is when the client can't maintain electronic communication due to a failure of the system on behalf of the authority, when the electronic administration service cannot be accessed or when the required forms can't be reached because of it wasn't provided. For clients, ET Act does not make electronic communication mandatory, but it gives them the opportunity to use this form of communication. In 2019, the Hungarian legislator obliged all legal persons as well as legal representatives to use the electronic communication system through a "company gate" both in administrative and in court procedures¹¹.

A new tool, the E-Paper has been introduced by these reforms. E-Paper is a general electronic application form, a free, authenticated messaging application that connects clients electronically with the institutions and bodies connected to the service via the Internet. The purpose of the e-Paper service

9 B. Baranyi, *Az elektronikus ügyintézés szabályai* [in:] red. M. Fazekas, *Közigazgatási jog. Általános rész III*, Budapest 2020, p. 322–324.

10 See section 10 of the ET Act.

11 See M. Horvat, W. Piatek, L. Potěšil, K. Rozsnyai, *Public Administration's Adaptation to COVID-19 Pandemic – Czech, Hungarian, Polish and Slovak Experience*, "Central European Public Administration Review" 2020, no. 1, p. 141.

is to enable the client to submit a complaint to the authority electronically for those procedures or simple matters which are not supported by a system of expertise for their frequency or other reasons. The e-Paper service is available through Central Identification Agent, at <https://epapir.gov.hu>.

As we have mentioned earlier, this process requires significant human and financial resources. The digitalisation and the eGovernment investments and reforms in Hungary – as an element of the economic and regional development – is co-funded by the European Union. The support of the digital and e-administration has been an important objective of the operational programme (for the years 2014–2020) supporting the development of the Hungarian public administration and public services (*Közigazgatás -és Közszolgáltatás-fejlesztési Operatív Program – KÖFOP*). The municipal e-administration projects are funded by this programme, as well.

During the last decade new electronic platforms have been developed in Hungary. As I have mentioned earlier, the first major platform on e-administration has been the tax administration, the platform of the General Form Filler (GFF) (in Hungarian: *Általános Nyomtatványkitöltő – ÁNYK*). The GFF has been the system developed for the tax administration, which has had another e-administration platform, the *eBev* [*elektronikus bevallás (electronic tax declaration – eDec)*]. The GFF platform has been used by the social security declaration and application system, as well.

The public services have been widely centralised in Hungary during the 2010s, thus the formerly municipally managed public education, health care, residential social and child care and several cultural services are now provided by institutions which are mainly maintained by the central administration and by its territorial agencies¹². Therefore, new platforms have been evolved, which provide information and data for the service provision, as well for financing these services. Such an e-platform for the public education is the *KRÉTA* system, for the health care services the *EESZT (Elektronikus Egészségügyi Szolgáltató Tér – Electronic Health Care Provision Space)* and the unified social register. The providers – which are maintained mainly by the agencies of the central administration, however there are municipal maintainers and the churches and NGOs have maintainer tasks, as well – have direct connection

12 See I. Hoffman, J. Fazekas, K. Rozsnyai, *Concentrating or Centralising Public Services? The Changing Roles of the Hungarian Inter-municipal Associations in the Last Decades*, "Lex localis – Journal of Local Self-governments" 2016, no. 3, p. 462–467.

to these systems. The major elements of these platforms are regulated by Act of Parliaments and the executive decrees issued by the Government of Hungary.

There is also an online system, called The Local Government Office Portal (hereinafter: Portal) which is the location of the e-government administration in the local Application Service Provider (hereinafter: ASP) system. The Portal provides municipalities with a local government ASP system for both natural persons and legal entities, providing the opportunity to use electronically available services for specialist applications. Through the Portal, the clients can query for a local tax balance, the status of local government affairs electronically initiated by the Portal. They can also initiate an administrative action using it. At present, the local government's tax, industrial, commercial, estate inventory, estate protection, birth and social affairs are supported by system development through the local ASP system. The application provides customers with the opportunity to track the process of their administrative procedures over the Internet.

The Hungarian regulation on e-administration is quite a progressive one. During the first two decades of the 21st century, a detailed regulation and diversified systems have evolved. The approach of the Hungarian reforms has been based on the strong centralisation – actually the centralisation of the platform and the access to the data can be observed – and on a top-bottom approach, because these transformations have been initiated mainly by the central government. Legal framework for the cybersecurity issues in municipal administration.

Cybersecurity became an important issue of the public administration after the Millennials, especially after 2010, when the eGovernment and the municipal e-services begun to evolve rapidly. Thus, cybersecurity became part of the public order and safety policies of the Hungarian administrative system¹³.

After the challenges of the new era, especially to ensure a better defence of the administrative cyberspace, a new regulatory approach has been evolved after 2010. A general act on the cybersecurity of the central and local government bodies was passed in 2013. This framework act, the Act L of 2013

13 This transformation has been similar to the changes of other Visegrád Countries. See for example: M. Karpiuk, *Position of the Local Government of Commune Level in the Space of Security and Public Order*, „*Studia Iuridica Lublinensia*” 2019, no. 2, p. 30 and M. Czuryk, J. Kostrubiec, *The legal status of local self-government in the field of public security*, „*Studia nad Autorytaryzmem i Totalitaryzmem*” 2019, no. 1, p. 34–36.

on the cybersecurity of state and municipal bodies (hereinafter: CSA) follows the major principle of cybersecurity regulations. It is based on the 'CIA' principle. Security classes and measures are defined by the Act; however, the detailed regulation can be found in an implementing ministerial decree. Following the general approach, the tiers of cybersecurity defence are defined and regulated by the CSA. The Act follows the general regulation, and especially, because its scope is a very wide one, and even the Hungarian military forces are affected, it follows the NATO regulations as well, not only the EU rules (because of the Hungarian NATO-membership).

A centrally supervised system has been regulated: the major body responsible for cybersecurity issues is in Hungary the Ministry of Interior, because cybersecurity is interpreted in Hungary as mainly a public order and security issue, the military elements are important, but a general regulation has been established. The central body of the cybersecurity issues is one of the national security agencies (which are supervised by the Minister of Interior), by the Special Service for National Security¹⁴.

In the field of the legislation on e-administration and cybersecurity, Hungary has been prepared for the COVID-19 pandemic.

The COVID-19 pandemic and the Hungarian public administration

Related to that constitutional principle, fundamental (administrative) procedural rights can be restricted during the state of danger in Hungary¹⁵. These procedural constraints may be particularly acute in an epidemiological situation, because of procedural regulation should be impacted by the reduction of human contacts. This necessarily entails the requirement to amend the rules of administrative procedures. Challenges of modern epidemics include their economic effects. In a globalized world, the travel and trade restrictions can necessarily be linked to a decline in economic production, which should be – at least, partly – treated or compensated by administrative measures. It can be emphasised, the issues related to the reduction of the number of contacts have

14 Z. Juhász, G. Virányi, T. Hegedűs, T. Víztra, *A Nemzetbiztonsági Szakszolgálat hatósági feladatai*, „Nemzetbiztonsági Szemle” 2020, no. 1, p. 136–138.

15 Article 54 para. 1 of the Fundamental Law: ‘Under a special legal order, the exercise of fundamental rights – with the exception of the fundamental rights provided for in Articles II and III, and Article XXVIII (2) to (6) – may be suspended or may be restricted beyond the extent specified in Article I (3)’. A similar regulation has been institutionalised by the 9th Amendment of the Fundamental Law (amended para. 2 Article 52 of the Fundamental Law).

appeared in procedural law, the changes related to economic administration have had more significant role. Administrative proceedings are typically file-based proceedings in which the presence of clients is not as important as in court proceedings (litigation) based on the constitutional principle of public hearing. Therefore, in the administrative procedures – unlike to the court procedures – it has not been issued general and uniform special regulation for the state of danger, an ‘emergency administrative procedural code’ has not been published. The administrative procedures have been based on the regulation of the CGAP, just several additional sectoral regulations have been published by emergency government decrees. Because of the detailed regulation on e-administration, the amendments of these rules were not significantly. There were issued rules which had limitations on the number of the contacts¹⁶. Thus, the personal reception of the clients has been shortened and a – mainly on-line – registration have been required. Thus, the use of the tools of the e-administration have been preferred because these tools could provide a faster administration during the time of coronavirus. But because of the regulation on e-administration has been amended during the last years, the legislation has not been changed radically.

Challenges of the e-administration in the time of coronavirus

The COVID-19 has been a shock for the administrative systems all around the globe. It could be even considered as a ‘stress test’ of the administrative systems. A similar situation has been evolved Hungary. The COVID-19 pandemic can be considered as a challenge. I would like to analyse the main challenges and threats of the Hungarian public administration system.

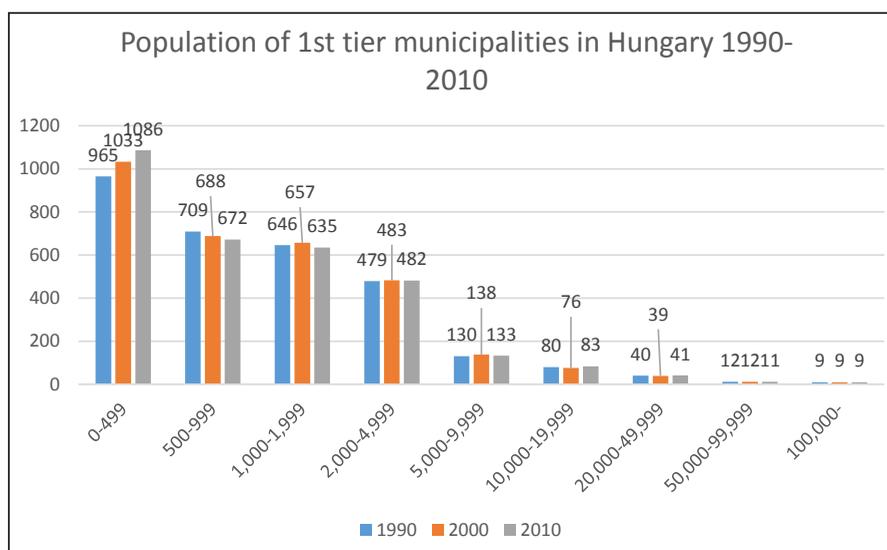
A fragmented system

The Hungarian public administrative system was a highly decentralised one before the reforms of 2011/2013. After the Democratic Transition a very fragmented and very autonomous municipal system evolved.

¹⁶ See for example the Government Decree no. 668/2020 (published on 28.12.2020).

Table and Figure 1. Population of the Hungarian municipalities (1990–2010)¹⁷

Year	0–499	500–999	1,000–1,999	2,000–4,999	5,000–9,999	10,000–19,999	20,000–49,999	50,000–99,999	100,000–	All
	Inhabitants									
1990	965	709	646	479	130	80	40	12	9	3,070
2000	1,033	688	657	483	138	76	39	12	9	3,135
2010	1,086	672	635	482	133	83	41	11	9	3,152



The majority of the tasks of the local authorities belonged to the competences of the local bodies especially as delegated administrative tasks of the officers of the Hungarian municipalities. After 2010 the recentralisation and the concentration of the public administration can be observed in Hungary. Till 2013 the municipal clerks were the major 1st tier authorities in the Hungarian system of the public authorities, but it changed by the establishment of the district offices of the county government offices and by the transfer of the competences to the district and county offices from these municipal officers (who performed state administration).

Therefore, the fragmented local administrative structure has been a challenge to the Hungarian public administration system. As I have

¹⁷ Source: E. Szigeti, *A közigazgatás területi változásai* [in:] red. T.M. Horváth, *Kilengések. Köszolgáltatási változások*. Budapest–Pécs 2013, p. 282.

mentioned, one answer was the centralisation of the competences to the district and county government offices.

The second answer of the administrative reforms to the fragmentation of the municipal system was the concentration of the competences. The new Act on the Local Self-Government of Hungary (Act CLXXXIX of 2011) stated, that joint municipal offices shall be established by the small municipalities (municipalities which have less than 2000 inhabitants). Thus, the main form of the rural local administration became the joint municipal offices (see Table 2).

Table 2. Joint municipal offices and independent municipal offices in Hungary (2019)¹⁸

Number of municipalities in Hungary	Independent municipal offices	joint municipal offices	Number of participant municipalities
3 153	521	749	2632

These transformations impacted the municipal e-services and the cybersecurity issues of them.

As I have mentioned earlier, the Hungarian system is *not only territorially but also sectorally fragmented*. First of all, based on the decision of the Hungarian Constitutional Court, the unified personal identification number has been terminated during the 1990's. Therefore, Hungary does not have a similar unified register, like the PESEL in Poland¹⁹, the different systems are separated, and they have separate identification number (for example social security number, tax number etc.). Therefore, it is a challenge to provide the access of the different data and the cooperation of these systems. It has been a real challenge, which could be observed during the COVID-19 vaccination campaign. Because of the limited interface of the address register and the social security register, the change of the address was not directly linked to the social security systems. And the vaccination campaign has been based on the social security system and on the EESZT, the Electronic Health Care Provision Space. Therefore, the planning on the vaccination points should be reconsidered during the campaign. However, this fragmentation has some advantages, as well. Because these systems are separated, the malevolent activities have difficulties: only the separated systems could be attacked at once.

¹⁸ Source: Hungarian Central Statistical office – www.ksh.hu.

¹⁹ See K. Chałubińska-Jentkiewicz, M. Karpiuk, J. Kostrubiec, *The Legal Status of Public Entities in the Field of Cybersecurity in Poland*, Maribor 2021, p. 44–45.

The challenges of COVID-19

The COVID-19 has had several opportunities and threats and challenges for the Hungarian public administration. These challenges can be distinguished. First of the challenges have been linked to the reduction of the human contacts²⁰. The main element of the reduction of the personal contact has been the reduction of the personal administration, as I have mentioned. Another tool for the reduction of the contacts can be the so-called 'home office', when the civil servants are performing their tasks and duties by teleworking. The Hungarian civil service has been impacted by the 'home-office revolution'²¹ resulted by the COVID-19 pandemic. This transformation has not been only a challenge, but even a threat, as well. First of all, the access to ICT²² of the civil servants has been a first issue. It could be emphasised, that mainly the access to the Internet has been provided. And that access was the main threat: the civil servants have access to the government systems, and the working places at the offices should apply detailed regulations on cybersecurity. But a home office of a civil servant has mainly weaker defence against cyber-attacks. This weaker and the provision of the CIA principle in public administration has been the greatest limitation of the 'home office' at the public administration. The possibility of the home office was limited because the defence of the national system required the presence at the offices.

However, the cybersecurity of the 'home offices' of the civil servants has been a limitations of the reduction of the personal contacts, but the e-administration of the clients have been encouraged by the Hungarian public administration, as I have mentioned earlier. The development of the government platform and the 'soft coercion' of the application of the e-tools (for example, the results of the official PCR-test and nCoV-19 antigen rapid test have been uploaded firstly to the EESZT, therefore if a citizens wanted to be informed on their test, they should use the electronic health care platform). However, this e-administration revolution had some disadvantages. These systems were designed for a lesser number of users, therefore, the

20 See J. Kostrubiec, *The Role of Public Order Regulations as Acts of Local Law in the Performance of Tasks in the Field of Public Security by Local Self-government in Poland*, "Lex localis – Journal of Local Self-governments" 2021, no. 1, p. 114.

21 See detailed: L. Nagel, *The influence of the COVID-19 pandemic on the digital transformation of work*, "International Journal of Sociology and Social Policy" 2020, no. 9/10, p. 862–863.

22 See detailed K. Chałubińska-Jentkiewicz, *Access to the ICT Network as a Public Task of Local Government*, "Lex localis – Journal of Local Self-governments" 2021, no. 1, p. 177.

vulnerability of the government systems have been increased, especially the potential threat of the denial of service and the distributed denial of service (DoS and DDoS) attacks.

Conclusions

The digitalisation and the e-administration are important issues of the public administration reforms of the last decades. The challenges of the new, digital ages resulted the transformation of the traditional administration. As we reviewed, the Hungarian regulation on eGovernment and on the digitalisation of the public administration transformed significantly. The regulation was focused on the development a horizontally integrated e-administration. The practice of the Hungarian e-administration is partly different. Thus, the major challenges of the cybersecurity of the Hungarian public administration are linked to these requirements. The fragmented spatial and sectoral structure of the e-administration, the home-office revolution and the extended use of the e-tools can be interpreted as a potential cybersecurity threats for the Hungarian system. Therefore, these circumstances can be an Achilles heel of the Hungarian system because they are increasing the vulnerability of the system.

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Legal Acts

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- Act CL of 2016 on the Code of General Administrative Procedure
- Act CCXXII of 2015 on the General Rules for Trust Services and Electronic Transactions (ET Act)
- Act L of 2013 on the cybersecurity of state and municipal bodies (CSA)
- Government Decree No. 668/2020 (published on 28.12.2020.)

Cyberbezpieczeństwo a administracja publiczna w czasach koronawirusa w odniesieniu do niedawnych wyzwań na Węgrzech

Streszczenie

Obecnie rewolucja cyfrowa ma miejsce także w dziedzinie administracji. Cyfryzacja administracji (publicznej) jest ściśle powiązana z kwestiami bezpieczeństwa. Digitalizacja może być postrzegana jako jedno z narzędzi do odpowiedniego zarządzania, z którym wiąże się także szereg wyzwań. Pandemia COVID-19 wywarła istotny wpływ na samorządy, w tym także węgierskie przepisy administracyjne. Zmiany związane z pandemią znalazły odzwierciedlenie w przepisach postępowania administracyjnego. Nie przeprowadzono jednak istotnych reform w zakresie przepisów dotyczących administracji elektronicznej (z uwagi na reformy w zakresie cyfryzacji na przestrzeni ostatnich lat). W ciągu ubiegłych dwóch lat miały natomiast miejsce zmiany w dziedzinie kilku regulacji, a przede wszystkim praktyk stosowanych w administracji węgierskiej. Pandemia przyniosła ze sobą szereg wyzwań i szans, które zmieniły tradycyjne oblicze administracji na przestrzeni tych dwóch lat.

Słowa kluczowe: cyfryzacja, e-administracja, cyberbezpieczeństwo, Węgry, cyfryzacja organów samorządowych, administracja samorządowa