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# A COMPARATIVE STUDY OF EGOVERNMENT IMPLEMENTATION IN THE CZECH REPUBLIC AND OTHERS V4 COUNTRIES

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**Abstract.** The development of eGovernment is one of the strategic aims of development of an information society in the European Union. The Czech Republic as an EU member must reflect these objectives and eGovernment therefore belongs to preferred development areas. Analysis of current status and development in the area of eGovernment in CR may contribute to eGovernment development. Comparisons to V4 countries may be used and on the basis of their experience differences and development trends may be characterised. The article is focused on comparison of V4 countries from the year 2006 and their development in the field of e-goverment. The main aim is to identify common characteristic and barriers that should be overcome to achieve continuous development of e-goverment in Czech Republic.

**Keywords:** eGovernment, i2010, V4 countries, comparison, EU e-Government action plan.

**JEL classification:** O38.

## 1. Introduction

The Czech Republic as well as others V4 countries as a member state of the European Union (EU) must reflect the defined objectives of European strategies. One of the areas is development of information society directly related to development of e-Government.

The main aim in this direction is optimisation of conditions for development of international integration of e-Government services provided to citizens and companies regardless their country of origin. This is necessarily connected with the development of an environment supporting interoperability of the systems and key elements such as electronic signature or electronic identification. The purpose is assurance of accessibility across the EU, support for unified digital market, extension of existing legislation and focus on particular areas: electronic identification, electronic tendering, eJustice, eHealth etc.

As for the implementation itself, no particular instructions have been given but the minimum target status to be achieved is defined (European Commission 2013).

The targeted year being 2015, when increased use of electronic public administration services is assumed – in particular achievement of use of electronic administration services by 50% of citizens and 80% of companies (European Commission 2013).

According to the Ministry of the Interior of the Czech Republic the main aim of e-Government is assurance of mutual interconnections of services for the particular individual not to have to run from one office to another with the same document, which also respects strategic objectives of EU (Ministerstvo vnitra ČR 2010).

This objective also complied with the actual concept of e-Government, which may be understood according to Lidinský, Švarcová, Budiš *et al.* (2008) as utilisation of information technologies by public institutions for assurance of information exchange with citizens, private companies and other public institutions for the purpose of increased effectiveness of internal function and provision of quick, accessible and quality information services.

On the basis of the abovementioned objectives, increased attention needs to be paid to development of this area.

The purpose of this article is to compare V4 countries for analysis of the current status in the area of e-Government under the conditions of the Czech Republic.

## 2. Published studies

The study of Information and Communication Technology (ICT) in the public sector has made a long history and a considerable contribution to the modernization and study of adoption in public administration (Brudney, Selden 1995; Perry, Danziger 1979). Since their introduction in the early 1990s, electronic government applications (e-government) have been adopted by governments around the world.

The impact of new technologies in the administrative sector helped not only to improve the way of offering services to citizens, but also to increase the informatik transparency and reduce corruption (Cho, Choi 2004) and increase business competitiveness (Srivastava, Teo 2006; West 2004).

With expectations high, the effects of e-government have been studied at various levels of government, with some mixed findings (Lee, Perry 2002; Moon 2002; Norris, Moon 2005; Scott 2006).

Some report positive outcomes associated with e-government adoption, such as improvements in the effi ciency, availability, and accessibility of public services and the provision of information to Citizen (Ke, Wei 2004; Lee 2008; Lee, Tan, Trimi 2005), while others express disappointment in reaching the promise of transforming government service delivery and improving public trust in government (West 2004).

The disappointment seems most pronounced in the areas of e-democracy and online citizen participation, as they fall short of the promise of facilitating greater citizen participation and communication with the government (Edmiston 2003; Ho 2002). Case study (Ahn 2011) reports an innovative e-government experiment by a local government in Seoul.

Studies realized on the subject of the adoption of e-government have been concerned with measuring the implementation of e-government principles (e-Government adoption, implementation and their impacts ) and the impact it has upon providing online services, both for governments and for citizens and businesses (Brown 2007; Norris, Moon 2005; West 2004).

Also, studies undertaken on the degree of digitization of public institutions providing online public services revealed that there is considerable heterogeneity between different EU countries (Caldas *et al.* 2005; Torres *et al.* 2005; Capgemini 2007). Also, significant differences have been identified at the level of regions within the same country. In other words, not all institutions have the same degree of implementation of e-government, even if we speak of the same country.

Luhan and Neuwirth (2013) published a comparative study of Czech Republic and selected EU countries. This study focused on the comparison of the Czech Republic with one of the EU15 countries, and with one of the newly acceding countries.

One of the problems hindering the massive expansion of the use of e-government services in the Czech Republic appeared to be the lack of cooperation between state institutions, and potential wider integration into the commercial sector.

Another factor was the relatively high cost of installation and operation for public use.

## 3. eGovernment in V4 countries

The origin of development of e-Government in V4 countries dates back to late of the last century. Since then this area has rapidly developed and the development has affected the whole public sector where use of information technologies has been quickly progressing with increased emphasis on their efficiency.

The areas of application are multiple from cost reduction via more effective communication with citizens to interconnections of institutions and sharing information among them. At present these areas are very topical due to the current economic crisis.

Poland, Slovakia and Hungary were selected for the comparison of the state and development of the e-government services.

These countries were selected because they cooperate, together with the Czech Republic, within the V4 group. It might therefore be interesting to monitor the state of e-government development in these countries and their subsequent comparison with the situation in the Czech Republic. All countries joined the EU within the same accession wave, and have relatively similar possibilities of access to the EU resources.

A comparison of these countries may be very interesting from the perspective of their size (population), as Poland has about 4 times more inhabitants than the Czech Republic or Hungary, and Slovakia has half the population of the Czech Republic. Thus we can get an answer to the question whether it is easier to implement e-government in a small country than in a bigger one, and whether a small country, and, therefore, relatively easier to control, is also more efficient.

**Survey questions:**

- Were the socio-economic conditions for the establishment and development of e-government in the V4 countries similar?
- Is the development of e-government in the V4 countries similar?

– Are there significant differences in key infrastructure components for the e-government in individual countries?
– Is it easier to implement e-government in a small country than in a larger one?

### 3.1. Slovakia

According to Epractice.eu (2011) lives in Slovakia about 5.5 mil. Inhabitants, area of country is 48845 qkm, as a currency use Euro and unemployment rate is about 14.4%.

**eSignatures Legislation**

Act No. 215/2002 on Electronic Signatures
Act No. 214/2008, which entered into force on 1 January 2009, amended Act No. 215/2002 of Coll. On Electronic Signatures.

**The Central Public Administration Portal (CPAP)**, provides a central and unified access to information resources and services of public administration. Among the most important tasks of the portal include directing the interested party to use a particular eGovernment service of relevant information sources.

Since mid-2009, the electronic service 'general submission' has been available. It allows citizens and businesses to make an electronic submission, application, notice or notification for the public authorities which use a central electronic registry via CPAP. 409 government entities were registered at the end of 2010. More than 7 800 submissions were made with and 296 applications without an advanced electronic signature. The most utilised link is Points of single contact for criminal records: nearly 48 000 applications were implemented. Annual health insurance accounts are being provided by the portal through the eForm. This service was used by 800 000 people in 2010.

**GovNet** is a project aimed at building a physical network among Public Administration bodies, which was launched in the early 1990s. Govnet provides the public administration with services such as encrypted eCommunication, helpdesk, supervision, webhosting, antispam and antivirus protection.

The **JIFO** initiative has created new personal unique identifiers for citizens using cryptographic algorithms and will be used within all sectors of applications (SIFO).

An **eID card** project has been implemented since September 2009. It mainly aims to:

– introduce a single eID card as a means of identification and authentication of individuals within the domains of eGovernment, eHealth and possibly other areas from public and private services;
– create the conditions for personalisation of eID cards and provide the necessary hardware and software infrastructure that supports the process of collecting data from citizens and the production of documents;
– create the conditions for the central distribution of eID cards to citizens, together with supporting documents;
– make available electronic services of eID solutions to all citizens, including those without internet access;
– ensure availability of electronic services of eID solutions for eGovernment services at EU level;
– ensure the issuance of eID cards to all citizens, including disabled persons;
– ensure the clearing system for payments in issuing eID cards.

The call was concluded in September 2009 and implementation of the national project will continue until 2012.

### 3.2. Poland

According to Epractice.eu (2011) lives in Poland about 38.2 mil. Inhabitants, area of country is 312679 qkm, as a currency use Zloty and unemployment rate is about 9.6%.

**eSignatures Legislation**

Act on Electronic Signatures - Adopted on 18 September 2001, the Act on Electronic Signatures was amended in 2004 and 2005 respectively.

Draft Regulation on the Technical Requirements for Electronic Identity Card Layer and Communication Protocol for Electronic Identity Cards (2011) - The Regulation sets out the technical requirements for the electronic layer of the identity card and the electronic communication protocol with identity cards.

**ePUAP portal** The "Electronic Platform of Public Administration Services" (ePUAP) intended to electronically integrate all public registers and provide an integrated platform supporting a number of interactive services for citizens and businesses, with user identification/authentication, electronic case handling and ePayments, when needed. The platform is to be used by public bodies to ensure the availability of their services based on electronic communications channels using specific basic elements through a single Internet point.

The version of the portal, launched in early January 2011, has a two-fold purpose: First, to enhance the portal's convenience for citizens, and second, to facilitate the provision of eGovernment

services for public entities. These will be accomplished mainly via the 'trusted ePUAP profile', a free secure electronic signature backed by a qualified certificate, as required for most of citizens/businesses' contacts with the Public Administration, has been put in operation.

**STAP**, a Secure Network for Public Administration is a nationwide network linking Central Government departments, offices, agencies and Local Government. Its primary goals are: to integrate existing public networks in order to minimise maintenance and service costs (phone, Internet access and data transmission); to increase security; to enable the interoperability of applications; and to provide a communication infrastructure for the Electronic Platform of Public Administration Services (ePUAP).

**Commercial CAs Certificates** - Qualified and unqualified certification authorities (CAs) issue electronic identifiers to individual persons. These identifiers are usually Integrated Circuit Cards (ICC) with crypto-controller, private cryptographic keys and public key certificates installed inside or software-based tokens.

**National register numbers** - Each Polish citizen is obligatorily provided with two distinctive identifiers: PESEL number (General Electronic System for Citizens Evidence) and NIP (Tax Identification Number). With regard to the use of electronic signatures in eGovernment applications, both types of numbers appear particularly relevant as they have been envisaged to be used as the unique identifier in the certificate of the future eID card (but not in commercial CA certificates). Furthermore, the national registry number PESEL and NIP can be envisaged to become the identifiers to be used in the future for all back-office information exchanges in eGovernment applications for those who hold such numbers. Providers of applications based on national registry number are only allowed to use the national register number in specific cases which are strictly regulated.

**PL.ID project** - The development of a 'Multifunctional Personal Document' (MPD), which could be used as an intelligent PKI-ready smart card to replace the traditional plastic ID card, has been studied for years. The Ministry of the Interior and Administration is responsible for the MPD project. Necessary legislative changes constitute a part of the identification documents development strategy. The electronic ID is to be based on existing identification numbers and reference databases (PESEL for individuals and REGON for business). In November 2007, the Ministry of the Interior and Administration presented an update of the 'PESEL2' project, aimed at streamlining the provision of eServices for citizens. The second stage of the implementation of the 'PESEL2' project's activities continued under the 'PL.ID' project.

**eSignatures** - The Polish Government has started putting in place the infrastructure to enable citizens to submit documents electronically. The beginning of May 2008 was the deadline, as set out in the Act on Electronic Signatures (2001), for the Polish Government to provide services for citizens with electronic signatures.

### 3.3. Hungary

According to Epractice.eu (2011) lives in Hungary about 10 mil. Inhabitants, area of countra is 93000 qkm, as a currency use Forint and unemployment rate is about 11.2%.

**eSignature Legislation**

Act No. XXXV. of 2001 on Electronic Signature **-** The Act on Electronic Signature was adopted on 29 May 2001 and entered into force on 1 September 2001.

Government Decree 194/2005 (IX. 22.) on the requirements of electronic signatures and certificates used in (actions of) public administration and Certification Service Providers issuing those certificates.

**Hungary's eGovernment portal, Magyarorszag.hu (Hungary.hu)** was launched in September 2003. It is at the same time an institutional portal and a services platform. It generates and summarises contents from 46 government websites.

On 1 April 2005, the portal went fully transactional with the launch of a transactional gateway, called the „Client Gate" (Ügyfélkapu). This gateway allows users to securely identify themselves online and gain access to transactional eGovernment services through the portal.

Since early 2007, there has also been a possibility of a secure bidirectional document-based communication between the public authorities and citizens on the Government portal through the Client Gate. Citizens can download a General Form Filler application from the Government portal and with its help fill up the electronic forms of any public authority in offline mode. After completing the fill up, they go online and sign in at the Client Gate. Through its Secure Electronic Document Transmission Service, they can send the form to the addressee authority in a secure and authentic way. As part of their Client Gate, citizens also have a notification storage where they can receive documents from public authorities and store the documents received for unlimited time.

**The Electronic Government Backbone (EKG)** is a secure and extensive country-wide broadband network forming the basic infrastructure of electronic government in Hungary.

Launched in 2004, this high speed network connects the 18 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 and government intranet services.

Since April 2005, Hungary has a **comprehensive central identification solution** (Client Gate) for the identification of citizens for electronic transactions carried out between public authorities and citizens.

However, there has not yet been a comprehensive solution for the identification of citizens in electronic transactions carried out between public authorities. The Client Gate is capable of identifying citizens for any public authority that connects to it.

### 3.4. Czech Republic

According to Epractice.eu (2011) lives in the Czech Republic about 10.5 mil. Inhabitants, area of country is 78866 qkm, as a currency use Koruna and unemployment rate is about 7.3%.

**eSignature Legislation**

The Electronic Signatures Act (No. 227/2000) was adopted on 29 June 2000 and amended in 2004. The Act stipulates that only certified electronic signatures and qualified certificates issued by accredited providers of certification services can be used for electronically exchanging information with public authorities.

The Act on Electronic Actions and Authorised Document Conversion (300/2008 Coll.) entered into force on 1 July 2009. It lays down the provisions for the use of certified eSignatures. It states that each eDocument has to bear a guaranteed eSignature.

**The Public Administration Portal** (http://portal.gov.cz) serves as an official single electronic gateway of the Czech Republic for citizens, businesses and institutions, enabling them to communicate with Public Administration (PA) entities. The informational section of the portal comprises: a complete PA directory; links to both Czech and European legislation; a detailed database of recommended solutions for more than 468 specific life situations; the electronic Commercial Register; a facility for viewing parts of the Land Register; a public procurement overview; and news from individual Government bodies.

The main objective of the map services is to provide citizens with access to as much information as possible on a territory of interest while using the maximum amount and type of map data produced by the Government.

**Portal for Data Boxes**

(www.mojedatovaschranka.cz) The portal was launched in June 2011 to provide a more comprehensive service to users of Data Boxes, which serve as a secure repository of official electronic communications with public authorities. The new portal provides, in one place, comprehensive information on, and the services for the information system of Data Boxes (ISDS). In addition, the portal provides users with several secure ways to login, and also makes available interactive electronic forms.

**Public Administration Communication Infrastructure (KIVS)**

The KIVS enables the interconnection of all Public Administration (PA) bodies, ensures secure and cost-efficient data and voice communications, as well as access to central information resources. Government bodies that are connected to the countrywide private network gain access to a number of services, including secure and reliable Internet access, a protected email system and the secure exchange of data. All public sector bodies connected to the network can access the same services under the same terms and conditions.

**Czech POINT** is a network of one-stop access points to eGovernment services intended to prevent citizens from visiting several offices, thus significantly reducing excessive administrative burden. Through these one-stop points, the general public is able to access all public records and to obtain transcripts/extracts, as well as information statements from the national registers. The Czech Points are primarily located at post offices, municipal authority offices, registry offices and Czech embassies.

Since July 2009, Czech Points have been in charge of converting paper-based administrative documents into electronic form, processing applications for the establishment of personal Data Boxes and terminating/re-creating these Boxes, when needed and upon request.

In the future, the accessibility of Czech POINT remotely via the Internet is expected to enable citizens to locate required documents from their home.

**eSignatures** - The identification of persons, the authentication of documents in the Internet and access to several transactional electronic public services are based on electronic signatures. Only the qualified certificates can be used for online transactions. eSignatures based on non-qualified certificates issued by other businesses can only be used for commercial services.

### 3.5. Comparisons

The period of 2006 - 2013 was selected for the comparison (or 2010 - depending on data availability). The year 2006 was selected as the start for comparison for the compared countries introduced their e-government systems around 2000 and about 5-year period appears sufficient for at least partial visibility of results of the first projects.

The first criterion of comparison was the use of internet as the necessary condition for implementation of e-Government.

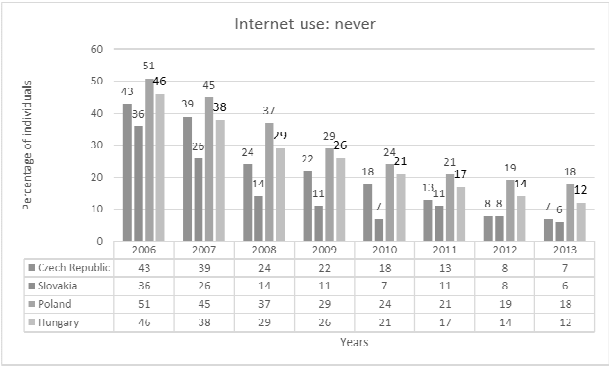


**Fig. 1.** Non-use of Internet (Source: Eurostat)

According to Fig. 1 the obtained data allow for the assumption that the starting point in 2006 and the development till 2013 was very similar in all countries. By 2013, all 4 countries, however, managed to reduce the proportion of individuals definitely not using the internet from the 2006 starting value to 35% in Poland, 26% in Hungary and 16% in the Czech and Slovak Republics in relative terms. This indicator represents the necessary precondition of successful implementation of e-government and all countries achieved the same progress in this and therefore application of the projects and policies for support of computer literacy was similarly successful. It could be said that the application in a larger country such as Poland may be less easy than in a small one.

Another criterion was willingness of transaction conclusion via internet see Fig. 2.

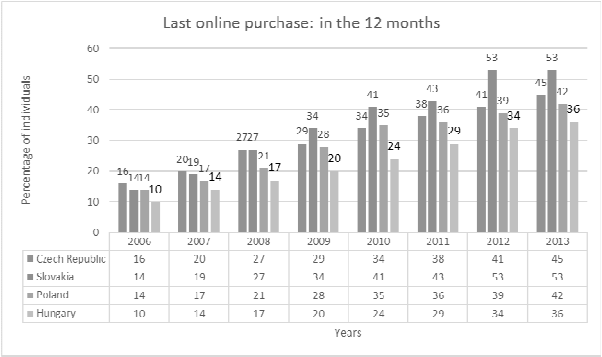


**Fig. 2.** Implemented online purchases in past 12 months (Source: Eurostat)

As is seen from Fig. 2, the advantage of former EU member manifested itself here too. There is an assumption that if people are willing to use internet for goods purchase they will also be willing to use the same environment for communication with public administration and other institutions. All V4 countries show an increasing trend of willingness to use internet for these purposes. In absolute numbers Slovakia is a little better off than other V4 countries.

Even here the steps performed by the states for support of willingness of their citizens to use the internet appear to have a positive effect in increased willingness (including active use of IT at schools of all types and accompanying educational programmes for adults) or activities of many companies (usually in the form appropriate ads) are positively perceived by residents and brings a positive effect.It seems that in a small country such as Slovakia, the size of the country could have an impact on the application.

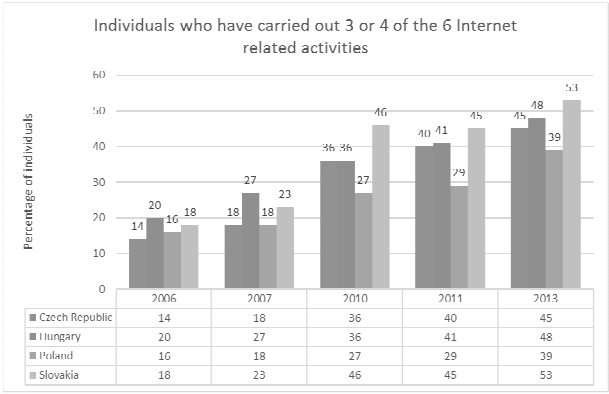


**Fig. 3.** Individuals who have carried out 3 or 4 of the 6 internet related activities (Source: Eurostat)

Internet activities: Individuals who have used a search engine to find information; sent an email with attached files; posted messages to chat rooms, newsgroups or an online discussion forum; used the Internet to make phone calls; created a Web page; used peer-to-peer file sharing for exchanging movies, music, etc.

The Czech Republic has experienced proportionally the largest increase compared to the values of 2006 as regards this criterion. The growth rates in the Czech and Slovak Republics were similar, as well as the growth rates in Hungary and Poland. Even here the steps performed by the states for support of willingness of their citizens to use the internet appear to have a positive effect in increased willingness (including active use of IT at schools of all types and accompanying educational programmes for adults) and activities of many companies (training courses etc.).

Even with this criterion, it seems that the size of the country could have an impact on the ease of application.

A more detailed view of the issue may be provided by the indicator of the use of the internet for acquisition of official forms and documents and their filling out and sending back. See Figs 4 and 5.

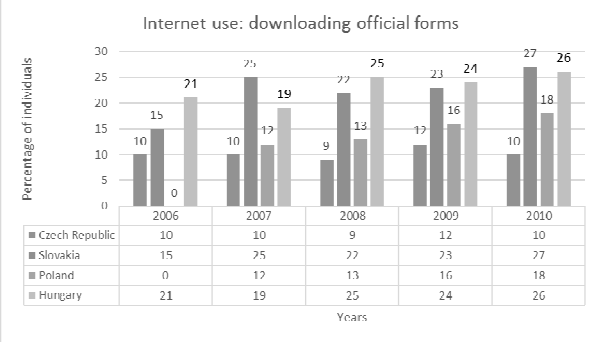


**Fig. 4.** Use of internet for downloading official forms and documents (Source: Eurostat)

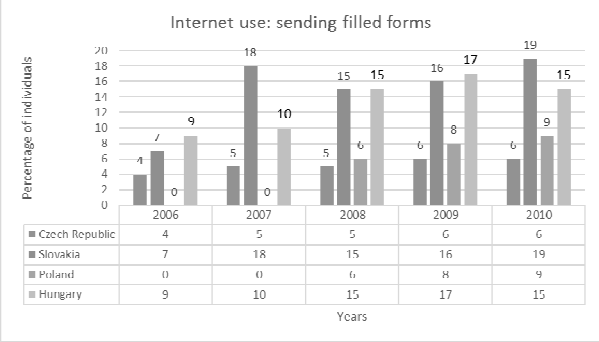


**Fig. 5.** Use of internet for sending back forms and documents (Source: Eurostat)

It is clear that from the beginning of the e-government development relatively comparable results were achieved in Slovakia and Hungary up to 2010. In 2007, Slovakia managed to maintain the apparent increase. In the middle of 2005, Hungary opened the "client gate" portal, which got Hungary, if compared to other countries, in a better starting position for the 2006 comparison. Poland implemented e-government as late as in 2007-8, but there is a noticeable upward trend of use. In contrast, there is evident stagnation in this area in the Czech Republic. Regarding this area, it may be assumed that the results of some of the objectives and subsequent implementation of the related projects were not as successful as in other countries.

With regard to the essence of functioning of e-Government information flow assurance is essential. Therefore further selected indicators include use of online platforms (including internet) for obtaining information of public administration and mutual interactions – see Fig. 6 and 7.

Even here, it is seen that in analysis period there was a gradual growth, especially in Hungary, Slovakia and Poland.

For all countries could be relatively well-defined period, when the egovernment were introduced. It can be concluded that this development is directly linked with well-chosen strategies of e-Government and in particular with the appropriate combination of various related projects implemented in different countries. The practical impact of the gradual elimination of the concept of communication with the government as a completely different way than conventional forms of communication, which are widely used.

In the Czech Republic can be recorded stagnant development except in 2009, when the Czechpoints were opened. However, due to the subsequent decline in this indicator remains debatable success deployment of this project to the general public.

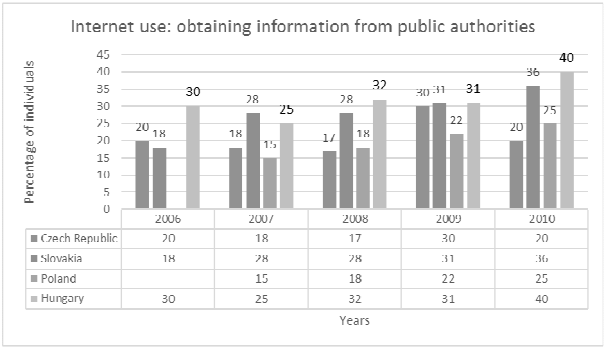


**Fig. 6.** Online information obtaining from public administration (Source: Eurostat)

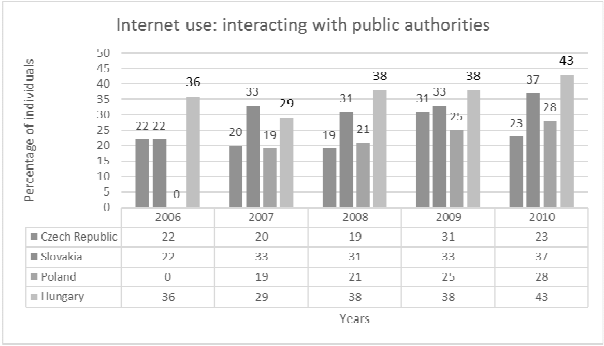


**Fig. 7.** Interactions with state administration (Source: Eurostat)

It may be stated that with regard to the necessary conditions for preparation and implementation of active use of e-Government the steps taken in the compared countries were similarly successful and brought similarly positive results.

The basic projects of building communication infrastructure of public administration, interconnection of its registers and establishment of access to and communication with public administration for citizens and companies were implemented in

all compared countries and used the same basic principles and securities.

The differences between the countries may be seen in ease of use and options of further use of the tools for communication with state administration in facilitation of life. A barrier of mass use of e-Government may be seen in increased financial demand of the beginning of active use of e-government by individuals.

In all compared countries there is a functioning service of unambiguous deliveries of electronic documents to and from public administrative authorities. The countries differ in the access to the security elements by the citizens.

For complex comparison the action plan eEurope 2002 may be used. The plan defined 20 services to be made available to citizens and companies (Obec a finance 2010). For particular data see Table 1.

**Table 1.** Comparison of e-Government services (Source: Obec a finance 2010)

| Services of e-Government in individual countries | | CZ | HU | PL | SK |
|---|---|---|---|---|---|
| Citizens | 1. Tax return and income tax payment | ✓ | ✓ | ✓ | ✓ |
| | 2. Job seeking | ☝ | ✓ | ✓ | × |
| | 3. Social allowances | ☝ | ✓ | ☝ | ☝ |
| | 4. Applications for identity card and passport issue | ☝ | ☝ | ☝ | ☝ |
| | 5. Vehicle registration | ☝ | ✓ | ☝ | ☝ |
| | 6. Building permits | ☝ | ☝ | ☝ | ☝ |
| | 7. Police reporting | ☝ | ☝ | ☝ | ☝ |
| | 8. Lending library catalogues | ✓ | ☝ | ☝ | ✓ |
| | 9. Applications for birth certificates and wedding certificates | ☝ | ☝ | ☝ | ☝ |
| | 10. Applications for admission to secondary and higher education schools | ☝ | ☝ | ☝ | ☝ |
| | 11. Change of address | ☝ | ☝ | ☝ | ☝ |
| | 12. Public healthcare services | ☝ | ☝ | ☝ | ☝ |
| Firms | 1. Social security and health insurance of employees | ✓ | ✓ | ✓ | ☝ |
| | 2. Tax returns | ✓ | ✓ | ✓ | ✓ |
| | 3. VAT payments | ✓ | ✓ | ✓ | ✓ |
| | 4. Business registration | ✓ | ✓ | ☝ | ✓ |
| | 5. Statistics | ✓ | ✓ | ✓ | ✓ |
| | 6. Customs declarations | ✓ | ☝ | ✓ | ✓ |
| | 7. Applications for environment-related permits | ✓ | ✓ | ☝ | ☝ |
| | 8. Public tendering | ✓ | ✓ | ✓ | ✓ |
| ⊘ | Not applicable to the country | | | | |
| × | Service inaccessible online | | | | |
| ☝ | Service partly accessible online | | | | |
| ✓ | Service accessible online | | | | |

This shows that the scope of services is comparable but the previous analyses show certain differences, especially in the area of interconnections, quality of processing and overall concepts. The following chapter identifies selected examples.

### 3.6. Selected identified problems

The barriers identifiable in the Czech Republic include the necessity to pay an annual fee for the electronic signature before the citizen even begins to communicate with public administrative authorities. The fee is about 15€ a year and the use of the electronic signatures is connected with no other benefits for the citizen apart from communication with public administration. Since June 2011 is an incoming correspondence box available for free on the www.mojedatovaschranka.cz.

In Poland is the situation of having to use the electronic signature similar. The few eServices requiring the use of an eSignature in Poland have not been widely used, due to the high cost of an eSignature for Polish citizens. Since 2008 is an incoming correspondence box available for free on the Electronic Platform of Public Administration Services website (ePUAP). The gradual introduction of new eServices requiring an eSignature (e.g. tax declaration online with the new eDeclarations system) and the replacement of the national ID cards with new ID cards pre-equipped with eSignatures are expected to change this situation.

In Slovakia, the need for the acquisition of electronic signatures of individuals was resolved by the introduction of ID cards supporting the possibility of electronic signature.

There was a space for a similar step in the Czech Republic for identity cards and other documents were replaced several times in the recent years but the space was not used.

In Hungary the identification of person was established through the portal Client gate in 2005, with further enhancement of services in 2007.

In the Czech Republic there are also projects striving at unified personal identification on the internet for communication in the commercial area, such as MojeID, providing by NIC.cz (http://www.mojeid.cz), but connection to a wider application and especially to e-Government is still missing.

The abovementioned also points to the issue of insufficient cooperation between the public administration and commercial sphere and subsequent integration of public benefit projects. A good example may be the healthcare area. In the Czech Republic efforts have been made to establish a similar portal as the Slovak healthcare portal, but the project of IZIP implemented by the General Health

Insurance Company of CR shows drawbacks restricting its progress. The reason of the failure may be implementation for a selected population segment only (in relation to the given insurance company) and not for the whole population.

This fragmentation is manifested in other areas where synergic effects cannot occur and competition develops instead.

NERV in its report "Framework of Competition Strategy" (Havlíček 2012) further identifies the issue of resortism as a political issue of the Czech Republic, making eGovernment more expensive and opposing its aim to facilitate cooperation with authorities and effective use of resources.

Other issues include coordination of project management in the area of digital agenda (such as basic registers) and absence of overall architecture of state institutions, which leads to duplicity of certain projects and suppresses their positive effects.

The report further emphasizes missing control over public tenders in IT area and missing institution that would check eligibility of technological investment.

## 4. Conclusions

For all the countries under study, it can be said that the initial socio-economic conditions were similar.

In all the countries under study a similar infrastructure in general has been built for the operation of e-government.

All V4 countries have built a similar infrastructure for the provision of e-government services. However, the countries differ in the way of how individuals can access these services. Some countries have barriers in the form of electronic signatures necessary for the communication between individuals and public administration entities.

It could seem that it is easier to implement e-government in a small country than in a larger one. Based on the acquired information and data analysis, however, we conclude that a clearly defined concept and chosen strategy of e-government development is far more important than the size of the country.

If e-government projects are addressed comprehensively, they are more successful on a global level than projects developed separately and then subsequently banded together.

In the Czech Republic, the current political situation also contributes to this condition, when left and right parties alternate in power every four years, and, therefore, frequent changes in legislation can be expected, as well as the growing separation of the individual components of the government, which should conversely be integrated with respect to all ICT projects.

A continuous and targeted information campaign focusing on individuals is also very important, as people are often unaware of the possibilities and conditions of use of e-government services.

Our assumption is proved e.g. by the number of data boxes set up individuals (a necessary condition for communication with the public administration entities in the Czech Republic). According to Czech Statistical Office in the period from June 30, 2009, to August 6, 2013, 35927 data boxes were opened by individuals, which is about 0.8% of the population in the 18-50 year age group.

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