Nierówności Społeczne a Wzrost Gospodarczy, nr 52 (4/2017)
DOI: 10.15584/nsawg.2017.4.12 **ISSN 1898-5084**

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Public E-administration Condition and Perspectives in Podkarpackie Voivodship

Introduction

E-administration is a modern model of the state administration applying information technologies (IT) to enhance the quality of public services [Papińska-Kacperek, 2013, p. 79; Popiołek, 2013, p. 161]

According to the assumptions of the Europe Strategy 2020 [The Europe 2020…, 2014, (http)], the EU member states shall have achieved the expected results within e-administration by the year 2020. They regard first of all the development of a new, digital society, using the public sector potential. New approach to informative systems aims at supporting all activities based on information system integration so they provide access do various databases concerning references. It means that any activities regarding implementation of information systems must be subordinated to coherent information flow within a society. Such an approach concerns both the government administration as well as local authorities.

The aim of this thesis is to present the condition and future prospects of e-administration development within Podkarpackie voivodship. Empirical studies will evaluate selected aspects of e-administration functioning in local authorities' units within a scope of:

- Access to documents regarding geodesy and cartographic documents and services.
- Websites of local authorities units adjustment to international standards of websites availability.

On the basis of the Head Office of Land Surveying and Cartography data available at Geoportal2 website [(http)], it has been evaluated which geodesy and cartographic databases are made available by the local government authorities of Podkarpackie voivodship. Information websites of all local authorities units with-

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in Podkarpackie voivodship were also checked plus additionally for comparative purposes these of Marshal Offices and District Councils in Poland taking into account the standards of websites availability.

PUBLIC E-ADMINISTRATION DEVELOPMENT IN POLAND

First attempts of IT implementation in Poland were taken early in the sixties of the previous century when in 1961 computer manufacturing started on industrial scale as well as works began on pilot software for information systems. That time the construction of the net of Zakłady Elektroniczne Techniki Obliczeniowej (ZETO) began. Obviously, nobody then thought about e-services as there were no proper conditions for that. There weren't any personal computers and the Internet itself originated 30 years later. Information system of those times served other purposes which aimed at creating databases with the use of computer systems.

In June 1970 the decision was taken to prepare the Universal Electronic System for Population Registration which is valid till today – the so-called PESEL system. Setting up of the system had a revolutionary character as one number allowed to unequivocally identify a citizen. Besides vital statistics regarding personal data and place of residence it was also scheduled for healthcare and pension schemes access. Works on the PESEL systems were finally completed in 1984. Throughout those years it was possible to enter into the system personal details of more than 30 million citizens. In the eighties of the XXth century one more project was executed by GUS that is the Register of Socialised Economy Units which operates till present known as REGON [Czubkowska, 2014].

The nineties of the XXth century are characterised with dynamic development of information technology in almost every area of life. The so-called IT revolution began worldwide. With the origin of the Internet a lot of business entities began launching online services. Year 2000 is considered as the beginning of the modern e-administration (English terms e-administration, e-government) and publishing of the document by the Scientific Research Committee entitled *'Global Information Society in the Context of Poland Accession to the European Union'*. An important date in Polish IT implementation was 2001 and the Act on Access to Public information passed which introduced the obligation of running the Public Information Bulletin (BIP) whereas the Act on Electronic Signature made it possible for a person to authenticate him/herself in the information systems. Poland joining the European Union resulted in acquiring European targets within the determined strategies among others e.g. Lisbonian according to which it is necessary to implement information technology in public administration etc. Also, with financial resources it was possible to run (in two stages) ,among others, e-PUAP – portal which gives access for local authorities units to operate electronic inbox, public information bulletin as well as provide

e-services. Works were also performed on other projects which remained incomplete. Among those project was ZMOKU (Integrated Module of End User Service) and PESEL. The first one aimed at communes linking with the government reference databases, the latter concerned introducing new IDs which would have had electronic signature. The PESEL project completion had been scheduled on 2008 then put off till 2011 and finally the idea was given up [Stec, 2014, pp. 8–9].

In the meantime an uncoordinated process of IT systems took place. A lot of branch systems were created which did not conform to interoperable provisions. Most of them were incompatible with other systems which made data transfer impossible. In 2009 the Ministry of Internal Affairs and Administration together with district authorities began works on so-called 'Government and Local Government Cooperation Line' Works were completed in 2010, though, no proper documents were signed. In 2013, once again the document 'Government and Local Government Cooperation Line' was signed but it regulated only the principles of governmental operation with local government regarding consultation of information technology systems assumptions. The technical part determining the crucial areas of interoperability of such systems was missing. The accepted in 2003 approach to information technology gave a stimulus to activities regarding IT implementation at the local authorities level [*Strategy for the Computerization...,* p.10]. It drew upon Lisboan Strategy and e-Europe Action Plans. It established four areas of activity regarded as priorities: broadband Internet, Polish texts in the Internet, public information technology education and introduced the assumptions regarding a very important project 'The Gates of Poland'. The project focused on building a central information system which would give access for citizens and business entities to provide services online [Ganczar, 2009, p. 46].

The condition of public e-administration development in Podkarpackie voivodship

'The Gates of Poland' project was followed by the construction (in several districts including Podkarpackie) of regional portals fulfilling the requirements of the central portal. In 2004, the Marshall Office of Podkarpackie voivodship undertook the execution of the project 'Gate to the Podkarpackie' which in 85% was sponsored from the Integrated Operational Program of Regional Development for the years 2004–2006. Besides the information website and Public Information Bulletin of Podkarpackie Voivodship, the Marshall Office included also BIP websites of other communes and local councils. In 2006 the project Gate to the Podkarpackie had its second edition during which the Marshall Office implemented the system of electronic workflow and became equipped with the latest hardware including servers and safe net edge devices. The portal Gate to the Podkarpackie was extended by the 'Digital Government'

module which task was to give access for citizens to contact administration via electronical communication.

The obligations imposed by the acts have resulted in the need for the development of information systems in local government offices. Some of these systems have been built using European Union funds. Analysis of the use of these systems leads to the conclusion that, while IT equipment (computers, servers, network edge protection devices, printers etc.) is effectively used, software for electronic document management is not fully utilized. As experience shows, many of the information systems that are being deployed life are no longer used at the end of their service. This was also the case with the 'Gate to Podkarpackie' project and the system of electronic documents circulation resulting from the implementation of this project.

A number of important IT projects have been implemented in the Podkarpackie voivodship in the 2007–2013 financial perspective. Within the framework of Priority Axis III of ROP WP 2007-2013, 60 IT projects worth over PLN 346 million were implemented, including two key ones for the district: PSeAP- Podkarpacki e-Public Administration System and PSIM-Podkarpacki Medical Information System. The realization of these projects was completed in October 2013. The PSeAP project was implemented by employees of the Marshal Office of the Podkarpackie voivodship, and it was participated by Podkarpackie voivodship and 159 local self-government units. The total value of this project amounted to almost PLN 100 million. The project enabled the implementation of electronic document circulation. In addition, the offices are equipped with printers, servers, computers, as well as network edge protection devices. A Category 6E LAN has been manufactured. The central part is an internet portal where it will be possible to share services provided by the offices electronically. Each of the JST is integrated with the ePUAP system. Within the framework of the project, 200 e-services were implemented at level 1, 150 at level 2, 50 at level 3 and 20 at level 4 [PSeAP..., (http)]. Within the framework of the Pomorskie ROP for the years 2007-2013 9 projects modernizing spatial information systems (GIS) were also implemented, which enabled to equip local authorities with IT infrastructure and modernized land and building register databases (EGiB). Several municipalities, using the resources of the EU, have built free internet infrastructure in their area. An example of such a project is the RESMAN project, which offers access to the Internet to the residents of Rzeszow. This network is also used by schools and city administration.

It can be noted that the largest number of IT projects was implemented by self-government units. By analyzing spatial distribution of the projects on a regional scale, the majority of them are implemented by beneficiaries from urban areas (54 out of 60). It should be noted, however, that the scale of the impact of projects within the framework of Priority Axis III of the Pomorskie ROP 2007-2013 is transregional. This means that projects implemented in urban areas also affect rural areas. It is worth noting that 7 projects were implemented in the area of more than one poviat, and the PSeAP project in all poviats [Marshal's Office, 2015].

A large project – the Broadband Network of Eastern Poland - Podkarpackie Voivodship was also implemented from the resources of the Operational Program Development of Eastern Poland. Its value is over 350 millon. The built backbone fiber optic network covers the area of Podkarpackie voivodship. Within this amount, more than 2,000 km of backbone broadband network was built. On the basis of this backbone, there is the possibility for local operators to provide access services, the so called 'last mile'[Projekt SSPW, (http)].

Analysis of the effects of the implementation of IT projects indicates that at present the saturation of JTS with technical means is significant. However, the research conducted by the researcher points to another problem, which is the low level of use of the software deployed by the authorities. This problem is largely due to the human factor, including the reluctance to change and the need to acquire new skills.

In the Podkarpackie voivodship between 2007 and 2013 there is an increase in households with access to the Internet. While in 2007 the percentage was less than 30% (13th place in the country), in the following years significant improvement was observed. In 2009 it was 45.6%, in 2011 59.1% to reach 68.8% in 2013, which gave the examined district the 5th place in the country. A very important area for information society is the enterprise sector. In 2006, the percentage of companies operating in Podkarpackie voivodship using computers was 91% and was only 2% lower than the national average [Central Statistical Office of Poland, 2008]. While in the case of access to the Internet Podkarpackie enterprises did not stand out from the rest of the country, only 36.2% (data for 2007) of employees used computers in their work. At present, IT equipment has become widely available. While young people easily use IT equipment, the problem remains the so-called digital exclusion of the elderly (50+) [Central Statistical Office of Poland, 2014].

In 2011, the author of the article, through the tool for asking for public information, conducted a study on the state of implementation of electronic document circulation [Stec, 2011, p. 292; Stec 2011a, pp. 286–298]. The request for the public information was addressed by 22 (88%) county offices and cities with poviat status and 115 municipal offices (73.7%). Research shows that at that time 21% of municipal self-government units and 36% of poviats used electronic documents in their work. The situation is much better now. The implementation of the Podkarpackie Public e-Government (PSeAP) project has resulted in the fact that almost all of the Podkarpackie JSTs have an electronic document circulation system.

IT introduction to public administration is reduced to two basic activities:
- support for fulfilling statutory tasks through the use of IT tools,
- use of IT tools to handle official matters without the presence of a petitioner in the office.

Legal changes introduced in the Code of Administrative Procedure and the adoption of necessary laws have enabled citizens to access public administration via the Internet. Such access has generally been defined by the concept of e-services provided by the administration. This name covers both the sharing of informa-

tion about the office and the matters it handles, as well as the ability to send letters and documents electronically. Depending on the nature of such access, e-services have been classified by maturity levels.

The first two levels allow the interested parties to learn about this service (level 1) and to download the right forms (level 2). E-service of level 3 is already a two-way interaction and enables initiation of the case and sending the necessary documents via the Internet. However, to complete the settlement of the case the party must appear at the office, for example associated with the receipt of issued documents or certificates. Level 4 services allow for a complete electronic settlement of the matter, including obtaining a response from the office via the Internet, issuing a decision and making the necessary payments for the on-line service (as required by law).

The Podkarpackie voivodship is one of the leaders in the country in terms of access by local governments to hotspots located in public places, and there are as much as 321 of them. More such places are in the Lubelskie, Mazowieckie and Lower Silesian voivodships [*Evaluation of the impact ...*, p. 35]. However, it should be noted that in most of the voivodship's area there is a little number of such hotspots, and this result is being built by the city of Rzeszow and the poviat of Krosno.

EMPIRICAL STUDIES

The article presents selected aspects of the research on the state of preparation of territorial self-government units for the provision of documents and services using electronic means of communication. It should be added that the obligation to make some databases available in electronic form by JST was defined by the law [Act of 17th of May 1989].

For companies and residents, one of the most important areas that depend on the administration are matters related to geodesy and cartography. Easy access to data collected in geodetic registers, the ability to use the Internet to handle geodetic and cartographic affairs is a significant facilitation and provides tangible benefits. Access to such databases as Land and Property Register (EGES), Geodetic Records of Utility Networks (GESUT), Topographic Objects Database in a scale of 1 : 500 (BDOT500), Detailed Geodetic Control Networks, Register of real property prices and values (Prices).

All local self-government units of the poviat and municipality level (municipality and city) of Podkarpackie voivodship were included in the research. The aim of the conducted research was to determine the degree of fulfillment of tasks resulting from the law provisions. Figure 1 shows a database of the data provided by county offices and cities with poviat status under the act on geodetic law.

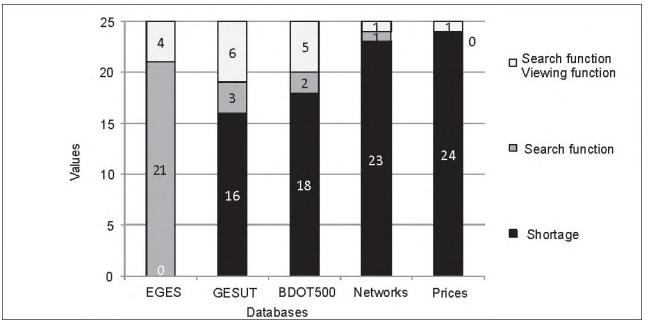

Figure 1. Databases provided with the use of the Internet by county offices of the Podkarpackie voivodship

Source: own elaboration on the basis of the data: geoportal.gov.pl/metadane/ewidencja/Ewidencja_ziudp.xls.

The database which is most often made available by county offices and cities with poviat status, is the Land and Buildings Register (EGiB). It is available to all poviats in the Podkarpackie voivodship, while 21 poviats (84%) are providing it with search function and 4 poviats (16%) with search and viewing functions. The remaining databases are less accessible. From among the 25 district entities fulfilling tasks at the poviat level, the GESUT databases are provided by 9 JSTs (36%) and the BDOT500 base by7 JSTs (28%). The remaining databases are made available by a small number of self-government entities.

On the other hand, in Figure 2, a comparison of databases provided by county offices and cities with poviat rights under the Geodetic and Cartographic Law Act is presented. The status of provision of database on the register of localities, streets and addresses (EMUiA), Study of conditions and directions of spatial development (Study) and Register of local spatial development plans (Register) were presented.

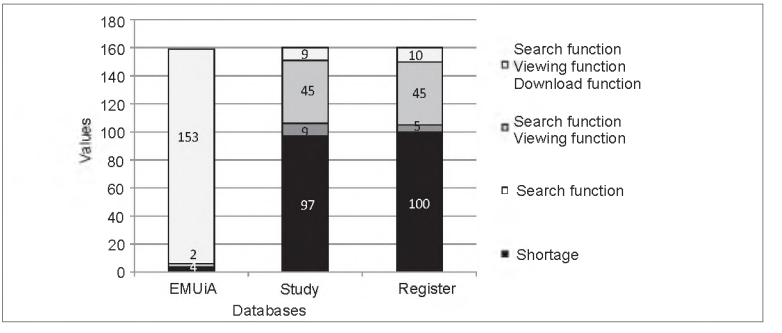

Figure 2. Databases provided with the use of the Internet by cities and municipalities of the Podkarpackie voivodship

Source: own elaboration on the basis of the data: geoportal.gov.pl/metadane/ewidencja/Ewidencja_ziudp.xls.

The greatest number of territorial self-government units (JSTs) provides the EMUiA database, 155 municipalities (95,6%). The registers like a study of conditions and directions of spatial management - 63 JSTs (39,4%) and the Register of local spatial development plans – 60 JSTs (37,5%) are made available to a much smaller extent.

Further research concerned the adjustment of the parties by the self-government units of the Podkarpackie voivodship to the requirements of WCAG 2.0. WCAG 2.0 is a set of international web accessibility standards for people with disabilities, as well as older people who use the Internet. The information websites of all district self-government units were analyzed. For comparison, the information websites of Marshal and District Offices were also evaluated. Internet service availability was assessed through an online software tool [https://www.validator.utilitia.pl]. Its use for testing of virtually every subpage of a service in an automated process. After analyzing the source code, a report with a rating of 0.0 to 10.0 points is generated. It specifies the level of portal availability, while a value of less than 5 points means that the service is unavailable, in the range of 5 to 7 points that it is hardly accessible, the result above 7 points indicates a service where only occasional problems can arise with the availability of information. Table 1 summarizes statistics showing the status of adjustment of online portals to WCAG 2.0.

Table 1. Adjustment of websites to WCAG 2.0*

Statistical characteristics	UM	UW	Poviats	Cities	Municipalities	Total
average	5,16	6,33	5,53	5,52	5,65	5,62
median	5,40	6,00	5,40	5,40	5,4	5,4
max	7,1	8,9	8,9	8,4	10	10
min	3,8	5,4	3,8	3,8	2,7	2,7

*UM – Marshal's Offices, UW – District Offices, Poviats – Local Government Units of Podkarpackie district, Cities and Municipalities – JSTs with the status of a city and municipality respectively
Source: own elaboration.

From among the self-government units of the Podkarpackie voivodship, the best in terms of adjustment of websites to the WCAG 2.0 standards (average 5.65 points) are the portals of municipalities. However, the differences in average values between individual LGs are small and have no statistical significance. The results obtained indicate that the status of the portals should be determined by the software manufacturer as difficult to access. It should be noted, however, that these assessments vary between municipalities and range from 2.7 points to 10 points. According to the analyzed criterion, the average adjustment rate for WCAG 2.0 is higher in district offices than in local government offices.

Perspectives for development of e-administration in Podkarpackie voivodship

In the 2014–2020 financial perspective, the Regional Operational Program for Podkarpackie voivodship will provide an amount of over EUR 81 million for projects related to the development of the information society, in particular public e-services. In 2016, two competitions were announced (within the second priority axis – Increasing effectiveness and availability of e-services). In the first of them, the subsidy for the total amount of more than 51 million was received by 20 projects, 17 of which are projects implemented by self-government units of Podkarpackie voivodship and 3 by higher education institutions. The purpose of each proposal is to provide public e-services at least at the third level of maturity. The second competition received 33 applications for co-financing, the largest of which – the Podkarpackie Spatial Information System is to cost over 180 million zlotys. Its purpose is to increase the efficiency of providing public geodesic and cartographic e-services and to modernize databases such as EGiB, GESUT, BDOT500 and BDOT10k. Realization of the subsidized objectives will significantly contribute to improving the quality of e-services provided by the self-government units of the Podkarpackie voivodship.

Final conclusions

The tasks related to the development of public information systems and their mutual integration, including access to state registers, will remain in the exclusive competence of the public administration. This requires appropriate coordination, especially with regard to the functioning of IT systems of local administration. These activities are associated with large financial expenditures, but it is necessary for state and local government institutions to achieve the efficiency required by the EU institutions and identified in these strategies.

Empirical study covered two aspects of tasks carried out by self-government units of the Podkarpackie voivodship. These include: providing geodetic datasets and adjusting web portals to the requirements of WCAG 2.0. All the self-government units of the Podkarpackie voivodship were included in the study, and in the case of evaluation of portals, for comparison purposes, all portals of marshals and district offices in Poland were also examined.

References

Act of 17th of May 1989, *Geodesy and Cartography Law,* Journal of Laws of 2015, item. 520.

Central Statistical Office of Poland, 2008, *Information society in Poland. Results of statistical surveys in the years 2004–2006,* Department of Statistical Publishing, Warsaw.

Central Statistical Office of Poland, 2014, *Information society in Poland. Results of statistical surveys in the years 2010–2014*, Department of Statistical Publishing, Warsaw.
Czubkowska S., 2014, *How Poles gained access to the computer*, „Legal newspaper", No. 24.
Ganczar M., 2009, *Computerization of public administration. New quality of public services for citizens and entrepreneurs*, CeDeWu, Warsaw.
http://www.geoportal.gov.pl (accessed on 11.08.2016).
http://www.podkarpackie.pl/index.php/si/sspw (accessed on 11.08.2016).
https://www.pseap.pl (accessed on 11.08.2016).
https://www.validator.utilitia.pl (accessed on 17.08.2016).
Marshal's Office of Podkarpackie Voivodship in Rzeszow, 2015, *Evaluation of the impact of support granted under ROP WP 2007-2013 on the development of the information society in the Podkarpackie Voivodeship. Final report.* Study: Agrotec Poland, Rzeszow.
Ministry of Science and Information Technology, 2003, *Strategy for the Computerization of the Republic of Poland – ePoland for 2004–2006.*
Papińska-Kacperek J., 2013, *Digital Services. Perspectives of implementation and acceptance of digital public administration services in Poland,* Publisher University of Lodz, Lodz.
Popiołek M., 2013, *Barriers to the development of e-government in Poland,* Scientific Letters University of Szczecin No 763. Economic problems of service No. 105. European Space for Electronic Communications, Publisher University of Szczecin, Szczecin.
Stec M., 2011, *The public e-administration functioning*, „Statistical News", No. 6.
Stec M., 2011a, *Estimation of selected aspects of the functioning electronic public administration in the Podkarpackie voivodship* [in:] *Social Inequalities and Economic Growth,* ed. by M.G. Woźniak, Scientific Letters No. 23, Publisher University of Rzeszow, Rzeszow.
Stec T., 2014, *Security of information systems in e-government,* Master's thesis. Higher School of Computer Science and Management in Rzeszow, Rzeszow.
The Europe 2020 Competitiveness Report. Building a More Competitive Europe (2014), World Economic Forum, http://www.weforum.org/reports/europe-2020-competitiveness-report-building-more-competitive-europe, (accessed on 22.05.2016).

Public E-administration Condition and Perspectives in Podkarpackie Voivodship

Summary

The paper presents the situation and perspectives for development of e-government in Podkarpackie voivodship. In empirical studies, some aspects of e-government functioning of local self-government entities are rated. Providing of documents for geodetic and cartographic services are investigated as well as adapting of local self-government entities websites to international standards. The results show that the level of implementation of geodetic and cartographic e-services in Podkarpackie voivodship is varied. Most of the Internet portals do not satisfy the WCAG 2.0 standard and their its quality is disappointing.

Keywords: public administration, information society, e-government, Podkarpackie voivodship, WCAG 2.0

Stan i perspektywy rozwoju e-administracji publicznej w województwie podkarpackim

Streszczenie

W pracy przedstawiono stan i perspektywy rozwoju e-administracji publicznej województwa podkarpackiego. W badaniach empirycznych oceniono wybrane aspekty funkcjonowania e-administracji jednostek samorządu terytorialnego. Zbadano stan udostępniania dokumentów i usług geodezyjnych i kartograficznych oraz dostosowanie stron internetowych jednostek samorządowych województwa podkarpackiego do międzynarodowych standardów. Wyniki badań pokazują, że w województwie podkarpackim jednostki samorządu terytorialnego wykazują zróżnicowany poziom realizacji e-usług w zakresie geodezji i kartografii. Większość portali internetowych nie spełnia standardu WCAG 2.0, a jego jakość jest niewystarczająca.

Słowa kluczowe: administracja publiczna, społeczeństwo informacyjne, e-administracja, województwo podkarpackie, WCAG 2.0

JEL: H1, H83, L86