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**THE STAGE OF E-GOVERNMENT
MATURITY IN A POLISH
REGION – SILESIA**

Introduction

Over the recent years there has been an enormous development of Information and Communication Technology (ICT) systems towards e-government applications¹. Similarly, governments have also considered an e-government as a powerful tool that can change ways in which they conduct and deliver their core business services to citizens and how citizens can interact with their governments. Also, there are higher expectations that the implementation and use of e-government application would improve efficiency, effectiveness, accountability, and transparency of government service delivery, and, at the same time, improve active participation of citizens in public decision-making processes – hence the realization of socio-economic development².

Various studies show that while most of developed countries are at the final stages of e-government development – developing countries are still at the early stages of e-government development³. This gap is heavily influenced by the existence of issues that are technologically and non-technologically related, including the lack of proper ICT infrastructures, readiness, awareness, economic and political will⁴.

This article aims to assess the development of e-government in the Silesian region, on the basis of the use of e-government services by citizens and businesses. To perform such an assessment the cross-sectional studies have been conducted, where a questionnaire was used as a research tool. The research took place at the turn of years 2009 and 2010 and was carried out in the Upper-Silesia. 176 citizens and 500 enterprises participated in the research.

¹ N.K. Hanna: *Transforming Government and Building the Information Society: Challenges and Opportunities for the Developing World*. Springer, New York 2010; *E-government Development and Diffusion: Inhibitors and Facilitators of Digital Democracy*. Eds. G.P. Sahu, Y.K. Dwivedi, V. Weerakkody. IGI Global, Hershey 2009; *E-Government Survey. From E-government to Connected Governance*. United Nations, New York 2008; *E-Government Survey. Leveraging E-government at a Time of Financial and Economic Crisis*. United Nations, New York 2010.

² G. Karokola, L. Yngström: *Discussing E-Government Maturity Models for Developing World-Security View*. Proceedings of Information Security for South Africa ISSA'2009, Johannesburg 2009.

³ *E-Government Survey. From...*, op. cit.; *E-Government Survey. Leveraging E-government at a Time of Financial and Economic Crisis*. United Nations, New York 2010.

⁴ D. Aldrich, J.C. Berlot, C.R. McClure: *E-Government: Initiatives, Development and Issues*. "Government Information Quarterly" 2002, 19 (4).

1. Literature review

1.1. Scope and definition of e-government

The notion of e-government is quite diverse⁵. It assumes a narrow perspective when defined as a use of ICT by government agencies and a wider perspective when defined as a catalyst for inducing administrative and policy reforms⁶. Some use the term of e-government to mean an extension of e-commerce to government procurement. D. Chaffey defines an e-government as the application of e-commerce technologies to government and public services for citizens and businesses⁷. According to E. Turban an e-government means the use of information technology in general, and e-commerce in particular, to provide citizens and organizations with more convenient access to government information and services and to provide delivery of public services to citizens, business partners, and those working in the public sector⁸. It is also an efficient and effective way of conducting government business transactions with citizens and businesses and among the governments themselves. R. Heeks (2006) sums it all by stating that it is similar to a socio-technical information system⁹. The OECD has defined an e-government as the use of information and communication technologies, particularly the Internet, as a tool to achieve better governance¹⁰. The Gartner Group, a well known IT consulting firm has defined an e-government as follows: an e-government is the transformation of public sector internal and external relationships through net-enabled operations, information technology, and communications to optimize the delivery of government service, constituency participation and governance¹¹. Another definition of e-government was presented by the World Bank: 'e-government refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile

⁵ B. Maheshwari, V. Kumar, U. Kumar, V. Sharn: *A Framework for E-government Portal Development*. In: *E-government Development and Diffusion: Inhibitors and Facilitators of Digital Democracy*. Eds. G.P. Sahu, Y.K. Dwivedi, V. Weerakkody. IGI Global, Hershey 2009.

⁶ K. Kraemer, J.L. King: *Information Technology and Administrative Reform: will E-government be Different?* "International Journal of Electronic Government Research" 2006, 2(1).

⁷ D. Chaffey: *E-business and E-commerce Management*. Prentice-Hall, New Jersey 2007.

⁸ E. Turban, D. King, J. Lee, D. Viehland: *Electronic Commerce: A Managerial Perspective*. Pearson Prentice Hall, New Jersey 2004.

⁹ R. Heeks: *Benchmarking E-government: Improving the National and International Measurement, Evaluation and Comparison of E-government*. In: *E-government Development...*, op. cit.

¹⁰ OECD: *The e-Government Project*, <http://www.oecd.org>, 2001.

¹¹ Gartner Group: *Gartner's four Phases of e-Government Model*, <http://www.gartner.com>, 2000.

computing) that have the ability to transform relations with citizens, businesses, and other agencies of government'¹².

Summing up, there are various definitions of e-government among researchers and specialists, but most of them agreed to define electronic government as a government use of ICT to offer citizens and businesses the opportunity to interact and conduct business with a government by using different electronic media such as a telephone touch pad, fax, smart cards, self-service kiosks, e-mail, the Internet, and EDI. It is about how government organizes itself: its administration, rules, regulations and frameworks set up to carry out service delivery and to coordinate, communicate and integrate processes within itself¹³. Table 1 lists the major attributes of e-government initiative found in the literature. They include: use of ICT, information and service delivery, transparency and accountability, organizational and structural transformation, integration, effective governance.

Table 1

E-government attributes

Attributes	Description
Use of ICT	E-government means the use of information and communication technology so it is just an extension of the government
Information and service delivery	The undertaken initiatives should be able to disseminate all information and services to citizens
Transparency and accountability	An e-government initiative should be transparent and accountable to internal as well as external stakeholders to infuse trustworthiness
Organizational and structural transformation	E-government initiatives often require the organization to undergo transformation so the objects of those initiatives can be met
Integration	Integration of different government departments and agency websites to offer the user a single-point of access
Effective governance	An effective governance model for the initiatives is important so that all the above-mentioned attributes are efficiently and effectively managed

Source: Based on: B. Maheshwari, V. Kumar, U. Kumar, V. Sharn: *A Framework for E-government Portal Development*. In: *E-government Development and Diffusion: Inhibitors and Facilitators of Digital Democracy*. Eds. G.P. Sahu, Y.K. Dwivedi, V. Weerakkody. IGI Global, Hershey 2009.

¹² <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/EXTEGOVERNMENT/0,,contentMDK:20507153~menuPK:702592~pagePK:148956~piPK:216618~theSitePK:702586,00.html>.

¹³ T. Almarabeh, A. AbuAli: *A General Framework for E-Government: Definition Maturity Challenges, Opportunities, and Success*. "European Journal of Scientific Research" 2010, Vol. 39, No. 1.

1.2. Main categories of e-government services

Constituent interactions of a government can be categorized into four main groups (Figure 1): government-to-government (G2G), government-to-business (G2B) and government-to-citizen (G2C), government-to-employees (G2E)¹⁴. This categorization is useful for analyzing differences in the types of information needs that are necessary for a successful execution of specific types of service delivery. It is also helpful in identifying the organizational changes necessary for implementation and measurement of the willingness of all parties to use new ways to deal with the government¹⁵.

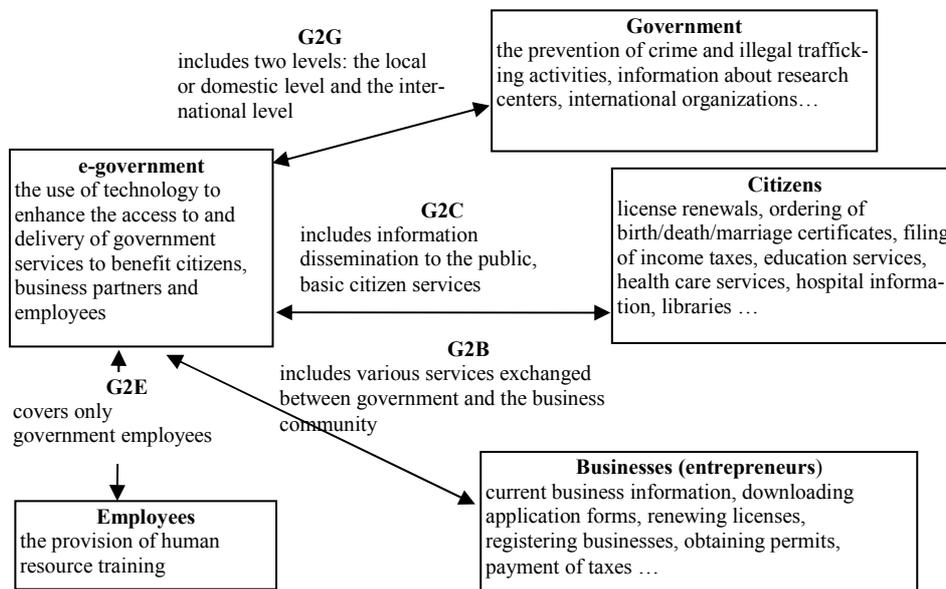


Figure 1. The main categories of e-government services

The G2G category consists of activities among the units of government as well as those entities within a single governmental body, i.e. an information exchange across ministerial bodies of an executive branch, or among legislative and judicial branches of government. Interactions between two different governments may also fall under this category. Theoretically, smoother G2G interactions should lead to greater seamless cooperation between administrative agen-

¹⁴ A. Meier, H. Stormer: *eBusiness & eCommerce. Managing the Digital Value Chain*. Springer-Verlag, Berlin 2009.

¹⁵ M. Ramaswamy, A.N. Selian: *e-Government in Transition Countries: Prospects and Challenges*. Proceedings of the 39th Annual Hawaii International Conference on System Sciences HICSS'06, Kauai 2006.

cies across organizational boundaries and even across hierarchical echelons¹⁶. But in some instances, information itself is the primary medium of value and exchange, and sharing of such a powerful resource may result in a complex mixture of conflict and cooperation between entities¹⁷.

The G2B category includes the needs of government to automate a range of their interactions with businesses and private sector entities in general. The relationship in G2B works in two ways: government-to-business and business-to-government. Thus, G2B refers to e-commerce in which government sells to businesses or provides them with services, as well as to businesses selling products and services to a government¹⁸. Contemporary information systems such as enterprise resource planning (ERP) and procurement systems attempt to integrate departments and functions across an organization into a single system that can serve the needs of respective departments. G2B interactions may be considered as an extension of ERP systems. Two key G2B areas are e-procurement and the auctioning of government surpluses.

The G2C category is probably the most contentious and visible, and includes the range of interactions between a government and its citizens that can take place electronically, be performed through mobile networks or the Internet. The main objective of such interactions is to enable citizens to request and receive public services from their government through a digital medium – from their homes or from their local community Internet centers. Citizens may ask questions and receive answers from government agencies, make or receive payments using G2C applications, apply for licenses or certificates, or update existing official documentation regarding their status across a number of administrative areas. In addition, governments can disseminate information on the Web, conduct training and help citizens to find employment. Solving the problems of citizens is yet another G2C activity that is addressed by customer relationship management (CRM) type software, which assigns inquiries and tracking of problem cases to an appropriate civil servant/staff members¹⁹.

A government employs a large number of people. Therefore, governments are interested, as private-sector organizations, in providing services and information electronically to their employees. Indeed, because employees of federal and state governments often work in a variety of geographic locations, G2E applications may be especially useful in enabling efficient communication.

¹⁶ Wimmer M.R., Traunmueller R., Lenk K.: *Electronic Business Invading the Public Sector: Considerations on Change and Design*. Proceedings of the 34th Hawaii International Conference on System Sciences. System Sciences (HICSS-34), Hawaii 2001.

¹⁷ V. Homburg, V. Bekkers: *The Back-Office of eGovernment*. Proceedings of 35th Hawaii International Conference on System Sciences HICSS'35, Big Island 2002.

¹⁸ E. Turban et al.: Op. cit.

¹⁹ M. Ramaswamy, A.N. Selian: Op. cit.

1.3. Stages of e-government services maturity

Implementing an e-government is a continuing process and most often its development is conceptualized into stages²⁰. Several maturity models exist in the e-government literature. They range from two to six level models. As the information in Table 2 points out the stages in various maturity models are not consistent with each other and even differ in technology.

Table 2

The maturity models of e-government services

Authors	Model description	Maturity stages
Reddick (2004)	Two-stage maturity model	Catalogue, transaction
Howard (2001)	Three-level maturity model	Publish interact, transact
Layne & Lee (2001)	Four-level maturity model	Catalogue, transaction, vertical integration, horizontal integration
Anderson & Henriksen (2006)	Four-level maturity model	Cultivation, extension, maturity, revolution
Moon (2002)	Five-level maturity model	Information dissemination/catalogue, two-way communications, service and financial transaction, vertical and horizontal integration, political participation
UN/ASPA (2002)	Five-level maturity model	Emerging, enhanced, interactive, transactional and fully integrated
Safari et al. (2004)	Five-level maturity model	Close, preparation, develop, manage and seamless
Siau & Long (2004)	Five-level maturity model	Web presence, interaction, transaction, transformation and e-democracy
Turban et al. (2004) Wong (2000)	Six-level maturity model	Information publishing, official two-way transaction with one department at time, multipurpose portals, portal personalization, clustering of common services, full integration and enterprise transformation

Source: Based on C.G. Reddick: *A Two-stage Model of E-government Growth: Theories and Empirical Evidence for US Cities*. "Government Information Quarterly" 2004, 21(1); M. Howard: *E-government Across the Globe*. "Government Finance Review" 2001, 17(4); K. Layne, J. Lee: *Developing Fully Functional e-Government: A Four Stage Model*. "Government Information Quarterly" 2001, Vol. 18, Iss. 2; K.V. Andersen, H.Z. Henriksen: *E-government Maturity Models: Extension of the Layne and Lee model*. "Government Information Quarterly" 2006, Vol. 23, Iss. 2; M.J. Moon: *The Evolution of E-government Among Municipalities: Rhetoric or Reality?* "Public Administration Review" 2002, 62(4); UN/ASPA: *Benchmarking E-Government: A Global Perspective*. United Union – American Standard Public Administration, 2002, www.ncc.gov.ph/files/unaspa5stagesgovt.pdf; H. Safari, K. Haki, A. Mohammadian, E. Farazmand, G. Khoshsima, A. Moslehi: *eGovernment Maturity Model (eGMM)*. Proceedings of the 6th International Conference on Enterprise Information Systems. Porto 2004; K. Siau, Y. Long: *Factors Impacting E-government Development*. International Conference in Information Systems. Dec. 11-15, Washington DC 2004; E. Turban, D. King, J. Lee, D. Viehland: *Electronic Commerce: A Managerial Perspective*. Pearson Prentice Hall, New Jersey 2004; W.Y. Wong: *At the Dawn of E-government. Deloitte and Touche Study Report*. Deloitte & Touche, New York 2000.

²⁰ T. Almarabeh, A. AbuAli: Op. cit.

The widely known maturity model suggested by K. Layne and J. Lee who see e-government as an evolutionary phenomenon, from which e-government initiatives should be derived and implemented²¹. They assume four stages of growth model for an e-government: (1) cataloguing, (2) transaction, (3) vertical integration, and (4) horizontal integration. This model is developed by an increasing level of complexity and integration from (1) to (4). K.V. Andersen and H.Z. Henriksen complement the maturity model with strategic ambitions of governments' use of IT and present what they call the PSPR (Public Sector Process Rebuilding) model²². They argue that Layne and Lee's model build on the same rationale that have dominated the traditional motives for ICT adoption; increase in information quality and efficiency, and effectiveness. The PSPR model expands the e-government focus to include the front-end of government. The major difference between Layne and Lee's model and the PSPR model presents the activity and customer centric approach rather than the technological capability.

The World Bank provides an example of this analogue to the e-commerce stage models by arguing that e-commerce has already evolved through four stages: (1) publishing, (2) interactivity, (3) completing transactions, and (4) delivery. To this date, most e-government activity has concentrated on publishing²³.

Complementary to the World Bank model, the UN has identified five stages that essentially embrace the same issues²⁴. The emerging stage is where there is an official government online presence is established; the stage two (enhanced) is where the government sites increase and information becomes more dynamic. The level three is the interactive stage where users can download forms, e-mail officials, and interact via the Web. The level four is the transactional stage where users can actually pay for services and other transactions online. The stage five is the seamless level where there is full integration of e-services across administrative boundaries.

The business consulting firm Deloitte & Touche has conducted a study that identified six stages in the transformation into an e-government²⁵. These stages include: information publishing (dissemination), official two-way transaction

²¹ K. Layne, J. Lee: *Developing Fully Functional e-Government: A Four Stage Model*. "Government Information Quarterly" 2001, Vol. 18, Iss. 2.

²² K.V. Andersen, H.Z. Henriksen: *E-government Maturity Models: Extension of the Layne and Lee model*. "Government Information Quarterly" 2006, Vol. 23, Iss. 2.

²³ *A Definition of E-Government*. The World Bank, Washington DC 2003.

²⁴ UN/ASPA: *Benchmarking E-Government: A Global Perspective*. United Union – American Standard Public Administration, 2002, www.ncc.gov.ph/files/un-aspas5stagesegovt.pdf.

²⁵ W.Y. Wong: *At the Dawn of E-government. Deloitte and Touche Study Report*. Deloitte & Touche, New York 2000.

with one department at a time, multipurpose portals, portal personalization, clustering of common services, full integration and enterprise transformation²⁶.

You will notice that integration is one of the most important criteria in e-government development research. It has been analyzed in various studies by examining e-government maturity models. The maturity stage of an e-government is an indicator of the degree of sophistication and integration with the users²⁷.

In Europe, there are distinguished four levels of e-government services maturity:

- information level – public administration offices publish information online and citizens, as well as entrepreneurs, acquire necessary information by browsing the internet services of the offices on computers or in special information kiosks;
- interactive level – citizens and entrepreneurs communicate electronically with individual public administration offices, but the offices do not necessarily communicate with them in an electronic way;
- transactional level – citizens and entrepreneurs communicate electronically with individual offices and the offices answer them electronically;
- integration level – internet portals make the information from different public administration offices available and allow for realisation of relations on the transactional level²⁸.

The integration level allows to fulfil all necessary operations in order to settle a given official matter entirely electronically – from obtaining the information, through downloading appropriate application forms, filling them in (also by using online application forms on a website) and sending them back electronically, up to making required payments and receiving an official permit, certificate, decision or any other document that is requested by a given person or entrepreneur. This level is the most mature and of destination. Its implementation, however, is a very complex and difficult undertaking, requiring a variety of problems to overcome of organizational, legal, informational and technological nature. First of all, it should be coherent and create a common information and public services system available for citizens, entrepreneurs in the whole country, and also in various countries e.g. the European Union (EU). It requires entering the frame of the so-called interoperability, which should be seen as a set of assumptions, methodologies, standards and specifications recommended for public administration offices, in order to cooperate efficiently with each other.

²⁶ E. Turban et al.: Op. cit.

²⁷ J. Hiller, F. Belanger: *Privacy Strategies for Electronic Government*. Rowman and Littlefield Publishers, Oxford 2001.

²⁸ *European Interoperability Framework for European Public Services (EIF). Version 2.0*, 2009, www.mswia.gov.pl/portal/pl/256/7879/Europejskie_Ramy_Interoperacyjnosci_20.html.

2. Research methodology

In order to present the e-government development in Silesian region, European model of e-government services maturity were used. The cross-sectional studies have been conducted²⁹, where a questionnaire was used as a research tool. The research took place at the turn of years 2009 and 2010 and was carried out in the Upper-Silesia, namely one of the most dynamically developing Polish regions. 176 citizens and 500 enterprises participated in the research. The selection of respondents in the sample was purposeful. The sample selection criterion was the fact of the Internet use by citizens and the possession of e-mail address by the company.

The average age of citizens was: men – 47 years, women – 45 years. Men often held a degree in secondary (39,1%) or professional education (37,7%) and most were working (88,5%). Among the surveyed women, 51% had secondary education and 24,6% higher. 72,7% of women were economically active.

As it has already been noted, the research covered also business entities. Most of surveyed enterprises were micro-enterprises (employing up to 9 employees), which constituted nearly 45% of the sample. Every fourth company was a small enterprise (from 10 to 49 employees), about 19% of the selection composed of medium-enterprises (from 50 to 249 employees). The smallest participation in the sample had big enterprises (over 250 employees), which accounted for 12% of the cross section. The leading business profile among the researched entities were services. Manufacturing companies and trade accounted for a similar proportion in the sample, 23% and 22% respectively. However, a mixed-type enterprise accounted for only more than 7%. Nearly every third company carried out the activity on the domestic or international market, and every sixth on the regional one. Over 22% of enterprises focused their activities exclusively on the local market.

The research analysis was carried out by means of the Statistical Package for the Social Science (SPSS) for Windows – comprehensive statistical software used for data analyses and data management.

²⁹ *Kierunki rozwoju społeczeństwa informacyjnego i gospodarki opartej na wiedzy w świetle śląskich uwarunkowań regionalnych*. Eds. C.M. Olszak, E. Ziemia. University of Economics, Katowice 2010.

3. Research findings

3.1. The diagnosis of G2C services in the Silesian region

The research allowed to diagnose whether citizens benefit from e-government services and what the level of e-government services maturity is. The research, on the state of e-government development along the line: citizens-government, reveals that 24% of people do not use the Internet to settle an official matter. More than half of them occasionally use the network (one-two times a year). Only about 18% of citizens want to make official use of the Internet (Figure 2).

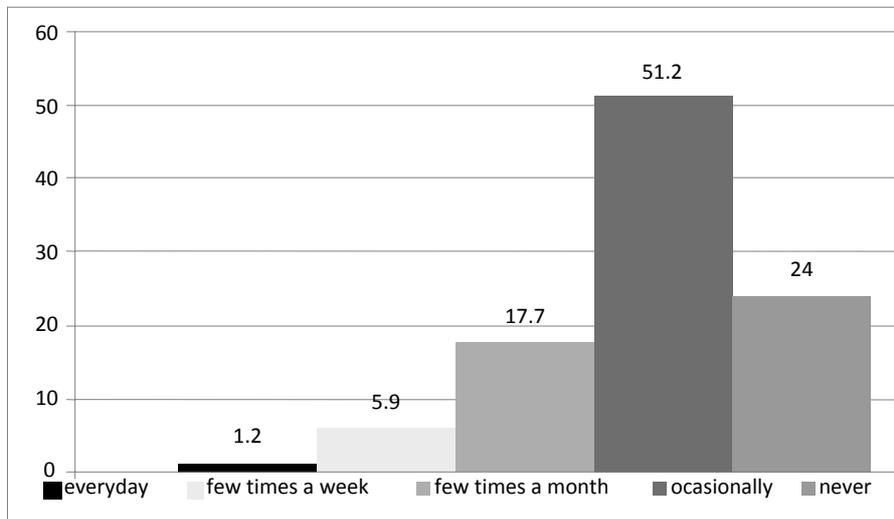


Figure 2. The frequency of the Internet use for G2C services (% of the citizens sampled)

Nearly 75% of citizens using the Internet to settle an official matter acquire information from the office or download the forms. This way of interaction corresponds to the information level of e-government services maturity. Approximately 12% of citizens send information or forms for offices via the Internet, which corresponds to the interactive level of e-government services maturity. Only about 14% of citizens comprehensively resolve a problem at the office electronically – this corresponds to the transactional level of e-government services maturity (Figure 3).

The development of e-government, especially its higher levels of maturity, is associated with the use of e-signature. Unfortunately, the vast majority of citizens in the Silesian region has no such a signature. Only less than 2% of people have qualified or unqualified e-signature. Among the citizens who have the electronic signature less than 65% of them use it. The broad majority of respondents do not have a signature because they see no such a need (almost 90%). Every sixth respondent as the reason for the lack of e-signatures have pointed to low prevalence in the use of such a signature, and for less than 7% of respondents the cause is too high costs of obtaining an electronic signature.

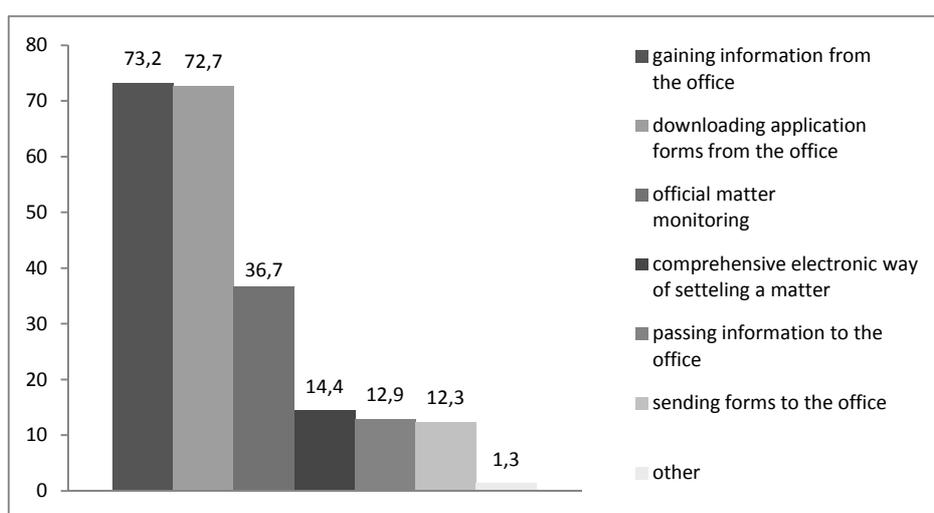


Figure 3. The levels of e-government services maturity in Silesia (% of the citizens sampled)

3.2. The diagnosis G2B service in the Silesian region

The conducted research allowed to diagnose whether the Silesian companies use e-government services and what the level of e-government services maturity is.

The diagnosis of G2B services shows that more than half of the surveyed companies use the Internet to adjust the tax (56,8%) and insurance liabilities (59,9%), and send a declaration of insurance (50,3%). 65% of companies use the Internet Public Information Bulletin. However, only to a very limited degree, internet technologies are used for communication with the customs authorities, the city authorities (municipalities, counties) or the exchange of correspondence with the Inland Revenue Offices and ZUS (Social Insurance Institution). Send-

ing ZUS returns service, as one of few is conducted on the transactional level of e-government services maturity. The remaining services should belong to the interactive levels of e-government services maturity (e.g. settlement of social insurance liabilities, settling tax liabilities) and information levels of e-government services maturity (e.g. access to the Internet Public Information Bulletin, exchange of correspondence with ZUS). Many of the processes concerning communication with the administration are conducted by using traditional means, i.e. pencil and paper (Table 3).

Table 3

The use of the Internet for G2B services (of the companies sampled)

Specification	Issue does not concern my company	The company uses the Internet	The company uses		The company is not capable of dealing with the issue
			paper and pencil	computer and software	
Sending tax return forms to tax authorities	11,9	37,1	35,2	15,7	0,0
Exchange of correspondence with tax authorities	13,8	24,5	43,4	17,6	0,6
Settling tax liabilities	11,6	56,8	22,6	9,0	0,0
Communication with customs authorities	62,3	10,4	18,8	3,9	4,5
Sending ZUS returns	13,4	50,3	25,5	10,8	0,0
Exchange of correspondence with ZUS	13,0	29,2	42,9	14,9	0,0
Settlement of social insurance liabilities	10,2	59,9	22,9	7,0	0,0
Communication with city, municipal or county offices	22,2	19,0	46,2	12,0	0,6
Access to the Internet Public Information Bulletin	25,0	65,0	7,5	1,9	0,6

Most often companies use G2B services that are on the information level of e-government services maturity. In addition to the above, nearly half of enterprises, use the Internet to look for information on assistance funding from the European Union, and every fifth information on assistance funding and internships from the Employment Offices (Figure 4). Over 36% of companies draw from the Internet expertise on public procurement and every third company on the documentation required for tendering. The Internet is a source of information on starting and conducting business for every fifth researched company.

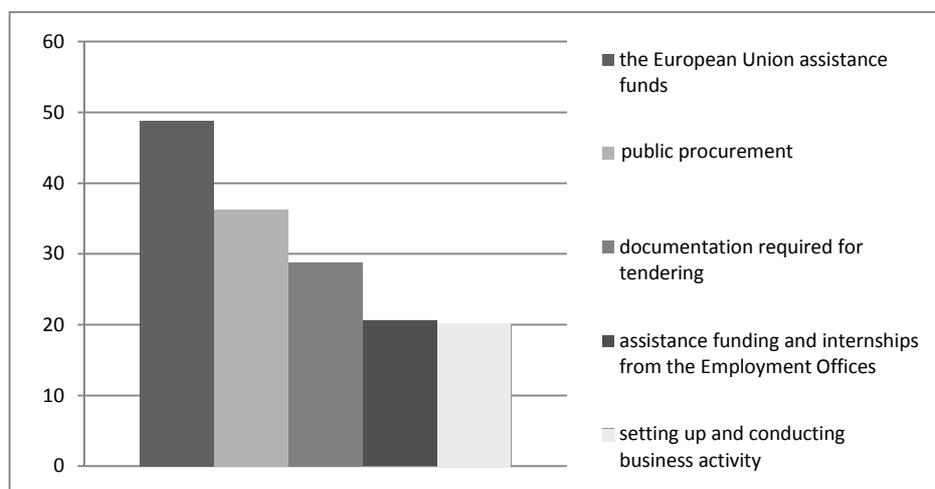


Figure 4. Using the selected G2B services at the information level of e-government services maturity (of the companies sampled)

Silesian companies more often than the citizens use an electronic signature. Every third company have a qualified electronic signature, and about 6% of the companies – the non-qualified signature. Unfortunately, the majority of the surveyed companies do not have an electronic signature. Enterprises with an electronic signature use it primarily for communication with ZUS (Social Insurance Institution) (almost 85%). Almost 40% of companies use it to communicate with tax authorities, and every tenth company benefit from a signature in correspondence with the city, municipal or county offices. More than half of the surveyed companies as a reason for not having an electronic signature mention no such a need. In every third company the reason is the low prevalence of use, and one in six do not have an electronic signature due to the high cost of obtaining it.

Conclusions

Summing up, the use by citizens of the G2C services is marginal. Citizens are not aware of the existence of such services, very often see no need to use them and do not have appropriate skills. As a barrier to the use of G2C services the citizens see high cost (cost of: computer, Internet, e-signature).

In comparison with e-government services to citizens the Silesian companies use more advanced e-government services. Most often, however, these are services on the information level of e-government services maturity, more rarely

on the interactive level of e-government services maturity, and even more seldom – the transactional level of e-government services maturity. According to the companies the reasons for this are: the lack of financial resources, lack of information about the existence of relevant services, lack of appropriate services, lack of skills of workers, lack of technological conditions.

The research shows that the state of e-government development in the Silesian region is not satisfactory, and the use of the Internet for the development of G2B and G2C services requires improvement. Most often used G2C and G2B services are of informational (the information level of e-government services maturity) or interactive character (the interactive level of e-government services maturity). Situations where businesses and citizens use services of a transactional or integrated character are very rare. On the other hand, it turned out, that companies and citizens do not benefit from existing e-government services because they do not know that such services are available. Most citizens and businesses do not know about the SEKAP (Electronic Communication System for Public Administration)³⁰, which provides G2C and G3C services at different levels of maturity.

The research shows recommendations for the Silesian region as well as other regions and countries that are faced with transforming their government into e-government. The recommendations cover:

- the introduction of e-government services of the third level of maturity – the transactional level – is the main goal of the government transformation;
- in order to develop e-government it is necessary to build its awareness among citizens, entrepreneurs public administration; shaping an adequate information culture, influencing human behavior and motivating to use e-services are the basis of e-government development;
- it is necessary to take actions aiming at promoting the e-government and supporting the development of competence (in enterprises and among the inhabitants of the region) essential for an effective use of G2C and G2B services;
- it is necessary to abolish all barriers to use the e-government services; this refers primarily to economic barriers; they are related to the cost of access to ICT (costs of: computers, the Internet access, servers, e-signature) and can become a factor of the digital divide, for citizens as well as small and medium-sized organizations.

³⁰ C.M. Olszak, E. Ziemia: *The Information Society Developments on a Regional Level*. „The Journal of Issues in Informing Science and Information Technology” 2009, Vol. 6.

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