Building a Regional Structure of an Information Society on the Basis of e-Administration

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Abstract

The aim of this paper is to present basic assumptions underlying the idea of information society and to show the main works related to the evolution and implementation of information society development strategy for a Polish region. Particular attention was paid to the development of administration as one of the pillars of the information society. The Electronic Communication System for Public Administration (SEKAP) as a "good practice" in the information society development has been presented.

Keywords: information society, e-administration; information and communication technology; transition economies, Poland

Introduction

The development of a contemporary society is determined by many factors. Among the most important, above all, are factors of:

- political (Fox, 2006);
- economic (Hamel & Breen 2007; Fox, 2006; Tapscot & Willimas, 2006, Newell, Robertson, Scarbrough & Swan, 2009; Kassicieh, 2010; Hanna, 2010a; Ichimura, 2003);
- social, and demographic (Tapscot, 2009; Araya & Peters, 2010; Olszak & Ziemba, 2010); and
- technological nature ("A New Economy", 2000; Tapscot & Willimas, 2006; King, 2007; Hoving, 2007; Newell et al., 2009, Hanna, 2010a).

Undoubtedly, technological factors, especially rapid development of information and communication technology (ICT), including the Internet, contributed to radical changes in the functioning of society and economy (Olszak & Ziemba, 2008; 2010, 2011a, 2011b; Gołuchowski & Ziemba, 2003; Rivard, Aubert & Patery, 2004; Roztocki & Weistroffer, 2008, 2009a, 2009b; Tapscot & Willimas, 2006; Hanna, 2009). Mainly, thanks to ICT, the undeniable role of knowledge in the development of a society, a state, an economy and various organizations was recognized. Information and knowledge began to be treated as strategic economic resources, factors determining competitiveness. Naturally, such changes in the way of thinking and action taking, imply the need to redefine many existing economic, social, financial and market rules.

The creation of information society (IS), where information lays the basis for cre-

ating wealth and power, and becomes a source of creating national income, competitive advantage and social interactions, has become a priority issue for many countries and regions. They have noticed new development possibilities as well as an opportunity to become attractive partners on the global and competitive market. Many countries have incorporated the idea of building the information society into their strategic planning. This also applies to Central and Eastern European countries which, in this respect, have a lot to do to compensate for the lost time. This is even reflected in the indicators compiled by the World Bank, such as: Knowledge Economy Index and Knowledge Index. These indicators characterize innovation, education and human resources, ICT and economic factors (Economic Incentive Regime) of individual countries ("Knowledge for", 2009).

Poland also saw a great opportunity for itself in a transformation of society into the information society. The opportunity to accelerate economic development and to become a more competitive partner in the international arena. Poland, as one of the countries of Central and Eastern Europe since World War II until the late 80s of twentieth century, functioned within a political doctrine, which prevented the development of competitiveness and free markets. The country had also restricted access to the latest technologies, including the information technology. Political and economic changes, and taking place a technological revolution (the Internet) have opened an unprecedented opportunity to accelerate economic development and transformation of Polish society into the information society.

The World Bank analysis shows that Poland has a great potential to become the information society. Nevertheless, in order to achieve this, it is necessary to undertake many more activities and do much work in this area ("Knowledge for", 2009). Due to this fact, both at the national and regional levels, various initiatives related to the information society have been undertaken recently. A great deal of attention was paid to the creation of a regional structure of the information society. As it is believed, that the regions should inspire wide-ranging undertakings referring to building of the information society (Kassicieh, 2010). The example of Silicon Valley can be used as a good illustration confirming the thesis that developing the information society is a highly regional phenomenon.

The development of the information society is not possible without smoothly operating e-administration (Kamal, Themisrocleous & Moabito, 2008; Hanna, 2010b; Heeks, 2008). Its creation, with the implementation of manifold ICT, should be conducted in a planned, studied way and result from needs and strategies of a region. There is a need for a regional will and determination as well as an appreciation of new needs and readiness for changes. The availability of new ICT solutions is not sufficient for economic and social development growth.

The aim of this article is to present the most important assumptions and directions of operations underlying the basis of creating a regional strategy for an information society, which take into account the area of e-administration as well as presentation of selected research results in this respect. The structure of the article has been subordinated to this objective. The paper identifies the term of information society and its models of development. Next, the role of e-administration in the information society development is presented. Then, the steps of work methodology on the development of information society strategy for the Silesian Voivodship have been explored. The last part of the research findings presents the Electronic Communication System for Public Administration (SEKAP) as an example of a "good practice" in the information society development. The discussion includes some issues and solutions which are universal, and may serve as a "best practice" for others regions and countries.

The empirical material was collected on the basis of an action research and a case study and refers to devising of the development strategy for the information society for the Silesian region in Poland. Many ideas and solutions presented in this paper are the result of the authors' participa-

tion in the works of a committee of experts for the Information Society Development Strategies for the Silesian Voivodship.

Literature Review

The Nature and Models of an Information Society and Stages of its Development

In the literature on the subject, the topic of an information society is the basis of many analyses and discussions. The beginnings of the concept of an information society date back to the 60s of the twentieth century. In 1962 Machlup introduced the concept of the knowledge industry and distinguished five sectors of the knowledge sector: education, research and development, mass media, information technologies, information services. Based on this categorization, he calculated that in 1959 29% of the gross national product in the USA would be produced in knowledge industries (Machlup, 1962). Large contributions to the development of information society were brought by the outline of a new kind of society – the post-industrial society, which would replace the industrial society and be information-led, service-oriented (Bell, 1973). Next breakthrough was brought by an in-depth analysis of the major global transformation taking place, from the age of capitalism to the knowledge society, and the examination of profound effects it would have on society, politics, and business then and in the years to come (Drucker, 1993). Another analysis investigated the social and economic changes associated with the technological revolution, described the global economy as a constant flow of information and created a theory of the network society (Castells, 1996). The study of different concepts of information society has led to the adoption, for the purposes of this article, of the following definition: the information society is a society with a high level of IT availability and literacy in the population as a whole, which can use IT to capture, create and apply information and knowledge for achieving different objectives of social, economic, cultural, educational, etc nature.

According to various authors there is not one, a definite information society model (Castells & Himanen, 2001, 2002). Similarly, as there existed different models of industrial societies, the information society can take different forms too. There are commonly known three models: Silicon Valley, Singaporean and Finnish (Castells & Himanen, 2002; Himanen, 2004). Although all of them comply to the requirements of the above mentioned definition, there are significant differences among them. These are driven from the fact that a form of an information society model, created by different societies, depends on the values declared by people, companies and governments.

The first model, known as the Silicon Valley model, is characterized by the neoliberal economic policy with the emphasis on the lack of state interventionism in the economy, privatization, low custom and fiscal duties. This means the limitation of a welfare state role to its indispensable minimum. This is a model, which can be compared with a liberal democracy, with a free press and a vibrant civil society, open towards different traditions, religions, cultures and customs.

The Singaporean model is an authoritarian version of the information society. In this model, the state oversees the citizens' behavior and sometimes interferes in their lives very deeply, both in the public and private sphere. The state tries to lead the economic growth by pointing at the preferential economic sectors and creating preferential conditions for their development.

The last of the mentioned models, the Finnish model, represents a liberal democracy and an open civil society. Contrary to the previous models, it embraces the idea of an information society with a welfare state. The examples of which are: free education, common heath insurance and a developed system of social security (Castells & Himanen, 2001, 2002).

The common feature of the above described models is their competitiveness on the world markets and a strong position held by the information sector within the economy. So far, each of them has proved their economic strength and been able to generate new products and services of a high degree of knowledge saturation. These models are ideal ones and do not exist in a pure form anywhere else. They owe their name to the fact that Silicon Valley, Singapore and Finland represent, to the greatest extend, features characteristic for a given model. A thorough analysis of the described models shows clearly, that within the frame of the same paradigm of the information society, there is a considerable scope of activity for taking various initiatives, making choices and creating diversified strategies of the information society development. But generally the program of their creation can be put into the following stages (Heeks, 2008; Stanley, 2003):

1) Assuring access to the ICT infrastructure. The development of information society is conditioned by a common, fast and cheap access to ICT. The Internet and computers should be within reach of all citizens, at their homes, workplaces and public places such as pubs, cafes, post offices, bus stations, clinics, cultural centers, youth centers. Therefore, it is necessary to remove barriers that hinder economic and technical access to ICT.
2) Awaking awareness among citizens about potential ICT and Internet opportunities. The actual construction of computer networks and providing physical access to the Internet and computers are not enough to ensure full participation in the information society. There is a need for awareness among citizens on how they can use ICT to achieve their career, personal, economic, social, educational, consumer etc. goals. Consequently, it is necessary to carry out a wide information campaign in various media (press, radio, television, billboards, etc.), having to raise awareness of potential opportunities offered by ICT and the Internet.
3) Provide citizens with the development of various digital skills. In the information society it is important to be able to use technologies, to search for the right information, knowledge and services and then apply them in private, social and professional life. For that reason, there is a demand for ensuring proper education of society. This cannot be only confined to school education and organizing training ICT courses in formal education and training institutions. In such circumstances the use of informal support networks should be also foreseen. People, who know how to use ICT and digital services, can be encouraged to the free sharing of their knowledge.
4) Ensuring legal and institutional regulations for the development and use of information infrastructure. In order to build the information society a number of different economic, legal, etc. regulations is necessary to enable and encourage citizens, businesses, offices to undertake innovative projects, and to enhance self-development, entrepreneurship, etc.
5) Involving the whole community, especially local communities, to undertake initiatives and projects concerning the development of IS. In creation of the information society and implementation of projects on information society different environments, such as schools, businesses, public administration, social organizations, government, local authorities and citizens should be involved.

The Role of E-administration in the Information Society Development

After reading strategic documents, conducting empirical research on the information society as well as experiences of many countries and regions it can be stated that the information society development is not possible without an efficient public administration (Beaumaster, 2002**;** **“**i2010”, 2010; “eEurope”*,* 2000; “eEurope 2002”, 2002; Hanna, 2010b; Lam, 2005; Sahu, Dwivedi & Weerakkody, 2009; Gupta & Jana, 2003;). This, in turn, requires boosting the role of ICT in the public management as well as building and developing of electronic public administra-

tion, embracing the relationships among public administration offices (Administration To Administration – A2A), public administration and businesses (Administration To Business – A2B, Business To Administration – B2A) and among public administration offices and citizens (Administration To Citizen – A2C, Citizen To Administration – C2A). The e-administration means implementation of ICT in the public administration, which is tightly connected with essential organizational changes and new skills acquired by the public services, in order to improve the quality of services rendered by the public administration as well as making the process of this exercising policy more efficient (Aldrich, Berlot & McClure, 2002; Layne & Lee, 2001).

Depending on the relationship on the line: public administration – citizen and public administration – business, there are distinguished four levels of e-administration services maturity ("European Interoperability", 2004):

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

The integration level allows citizens and enterprises to fulfill all necessary operations in order to settle a given official matter entirely electronically – from obtaining 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 is the most mature and targeted level. Its implementation, however, is a very complex and difficult undertaking, requiring various issues of organizational, legal, informational and technological nature to be solved. 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 (the EU). It requires entering into 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, implemented in order to cooperate efficiently with each other.

The rules of interoperability refer to three levels ("European Interoperability", 2004):

- technical – it is a description of recommended technologies and their standards in the division into front-office (data presentation and exchange, interface projects, types of files and document formats), back-office (data integration, XML and EDI standards, network services and distributed solutions, architecture of data communication systems, file and message transfer protocol, data structure definition) and security standards;\
- semantic – means uniform data understanding on an international scale, embracing, among the others: uniform identification documents for citizens, companies and administration, standard metadata, XML schemes etc.; and
- organizational – means uniform business interface (Business Interoperability Interface) for domestic administration processes specification.

In 2000, the European Commission recommended the 20 basic public services, which should be available on-line in the EU countries from 2005 on the third level of maturity of services – the so-

called transactional one (Table 1). Unfortunately, this level is two times lower in Poland than the EU average. In 2009 it amounted to 54%, with the average for the EU – 71% and the average for the four EU countries that are the leaders in this category – 100% ("Smarter, Faster", 2009). Only four services reached the transactional level. These include: employment agency, customs declaration, mandatory social insurance, sending statistical data.

Table 1: List of 20 basic public services available online

No.	Services for citizens	No.	Business services
1.	Income taxes	13.	Social contributors
2.	Job search	14.	Corporate tax
3.	Social security benefits (unemployment benefits, family allowances, sickness insurance, scholarship)	15.	VAT
4.	Personal documents (passport, identity card, driving license)	16.	Company registration
5.	Car registration	17.	Statistical data
6.	Building permission	18.	Customs declaration
7.	Declaration to police	19.	Environment-related permits
8.	Public libraries	20.	Public procurement
9.	Certificates (birth certificate, marriage certificate, death certificate)		
10.	Enrolment in higher education		
11.	Announcement of moving		
12.	Health-related services (interactive advice on the availability of medical services in various clinical settings, an appointment with a doctor)		

Source: ("eEurope", 2000).

Under such circumstances, it is difficult not to agree with the statement that Poland, in order to join the countries leading in the field of the development of information society, should take various initiatives, including those concerning the development of administration at the regional level. In recent times, including the Silesian region, work towards the development of information society has been intensified. The authors have been involved in these efforts since 2008.

Research Methodology

In order to present the essence of creating a regional information structure an action research and a case study have been used. The aim of action research is to find "a solution to a local problem in a local setting" (Ellis & Levy, 2009, p. 329; Leedy & Ormrod, 2005, p. 114). A case study is used to "explore, describe, or explain phenomena by an exhaustive study within their natural setting" (Ellis & Levy, 2009, p. 327). In our study these methods refer to creating of the information strategy for the Silesian region, with a special focus on e-administration.

The Silesian Voivodship is one of the most economically developed regions of Poland. It is simultaneously characterized by both: the highest level of population density and industrialization in the country. The region has been well-known for heavy industry for many years and is undergoing transformation into a service region. Recently many new software companies, institutes of tertiary education, research and high technologies centers have been created here. Hence, not

without reason, the Silesian Voivodship is regarded as a strategic region for domestic as well as international investors. It is thought that its further expansion will be highly determined by the development of policy on information society. Creating the regional development strategy of the information society has become a priority issue for Silesia.

The basis of the national strategy for information society development laid the foundation for the development strategy of information society for the Silesian Voivodeship , which corresponds to the Finnish model of information society development ("Strategia rozwoju", 2008). Its mission is to enable citizens to use knowledge, information and ICT commonly and freely in a harmonious development of social, economic and personal dimension. Consequently, the development objectives of the regional structure of information society are defined as follows:

- shaping the awareness of residents, businesses in the region in the scope of ICT application;
- pursue a policy of anti-social exclusion;
- taking care of improving competitiveness and attractiveness of the region;
- taking action for professional reorientation and stimulation activities in the field of education and innovation;
- integration of research and development of information society into investment plans and structural changes in regions; and
- promotion of regional information society initiatives, including pilot projects.

In 2008, work began on the development of information society in the Silesian Voivodship. The Silesian Centre of Information Society has been operating as a coordinator of the project. The authors of this article were appointed as experts and their tasks were, among others:

- working out the scope and methodology for the development of information society strategy in the voivodship;
- methodological supervision over the implementation work;
- evaluation of the results obtained during the execution of particular work; and
- formulation of recommendations concerning the information society development in Silesia.

The following steps have been identified in the methodology of the work on the development of information society strategy for the Silesian Voivodship:

1. Making a diagnosis of the information society development in the Silesian region, including the three areas of ICT infrastructure, services and digital content, the competence of citizens and businesses;
2. Conducting a SWOT analysis for the Silesian Voivodship from the perspective of an information society;
3. Identifying the mission and strategic goals of information society development in the voivodship;
4. Identifying actions leading to the achievement of the strategic objectives of information society development; and
5. Implementing and monitoring works related to information society development.

The particular stages of the work were performed in project teams. Each team consisted of experts (also the authors) and, depending on the nature of the work, representatives of various bodies: business, science, government, regional authorities, and etc. The project teams worked on the basis of the Metaplan approach. The foundations for the diagnosis of the information society development in the Silesian Voivodship were prepared by the project team cross-sectional studies, which used a questionnaire survey.

Selected results of work on the IS development strategy in the Silesian region, with particular emphasis on implementing e-administration, are presented in the next sections.

Research Findings

Diagnosis of the Information Society Development in Silesia

The first step in developing strategies was a diagnosis of the information society development in the voivodship. The diagnosis was made on the basis of cross-sectional studies and statistical data published by the Central Statistical Office. The attention was focused on ICT infrastructure, services and digital content and the competence of citizens and businesses. It turned out that:

- there is a lack of adequate technical infrastructure (fiber optic and wireless networks) for access to the broadband Internet – on the map of the region "uncharted territories" can be found all the time;
- costs of the broadband Internet access are relatively high, both for citizens, schools, libraries and other institutions, as well as small and medium-sized enterprises; there is a lack of services and content, which could benefit the citizens, companies and various institutions;
- very often citizens and businesses (especially small and medium-sized enterprises) have no knowledge of the existence of digital services and content (even e-public services) and see no need to use such services; and
- quite often citizens, businesses (especially small and medium-sized enterprises) and other institutions do not have the competence to use the available digital services and content.

The SWOT Analysis for the Silesian Voivodship in the Context of the Information Society

In accordance with the methodology, the diagnosis of the state of institutional infrastructure development for the information society of the Silesian Voivodship has laid the foundations for the SWOT analysis of the region. The outcome of this analysis is presented in Table 2.

The SWOT analysis was conducted to identify optimal solutions necessary to implement a strategy for the information society and creating a competitive region. It was considered that while building the strategy, on the one hand the region's strengths and opportunities provided by the environment should be used, on the other hand, the focus should be on eliminating its weaknesses.

The Mission and Strategic Objectives of Information Society Development in the Silesian Voivodship

The SWOT analysis has become the basis for the formulation of a mission and strategic goals of the information society development. The mission of the voivodship is characterized by the slogan "*Information-Founded Silesia*", which means that in the Silesian Voivodship is and still will be conducted transformation from the industrial region into a region, where information, knowledge and ICT are of primary importance.

In order to achieve the mission of "*Information-Founded Silesia*" five strategic goals of the information society development were adopted. They relate to ICT infrastructure, human capital, digital services and content, economy and management (Figure 1). These objectives are aimed at using the strengths of the voivodship and eliminating its weaknesses, as well as taking advantage of the opportunities and counteracting the threats. Simultaneously, the undertakings and initia-

tives of citizens, businesses and public administration will be subordinated to the objectives of this project.

Table 2: The SWOT analysis for the Silesian Voivodeship in the context of information society strategy

Strengths	Weaknesses
• High concentration of ICT network users • Big number of small ICT businesses which, due to the scale of their operations, have direct contact with end users of ICT applications • Relatively easy access to ICT networks due to a high level of urbanization • Big educational potential (technical and business sciences) • The Electronic Communication of Public Administration System in place • Silesian e- health cards • Big number of R&D centers	• Lack of coordination of ICT initiatives and projects at the regional level • Small amount, limited range and low quality of online public services • Limited access to wireless networks • Financial constraints on investment (internal and external) in ICT companies • Insufficient competence of administration, preventing it from provision of e-services
Opportunities	**Threats**
• Growing interest in the information society at the EU level (relatively substantial percentage of funds allocated for the information society projects) • Attractiveness of the ICT sector for investors (including foreign ones) • Growth of online services, their universality and accessibility at the national and global level	• Unstable and complex system of legal regulations in the ICT area • Persistent high costs of using the telecommunications network • Resistance against necessary changes in the lifestyle due to ICT development • "Not-in-my-term-in-office" attitude of authorities to introduction of reforms, innovations and investment

Source: (Olszak & Ziemba, 2009).

As particularly important for the development of the information society was considered to raise the awareness and competence in the field of possibilities of exploiting the information technology potential among beneficiaries. This is inseparably connected with the education, investment in people and the advancement in their creativity. The education within the frame of ICT usage as well as services and electronic resources have been regarded as essential, moreover, there are included activities aiming at popularization of the information society idea among the inhabitants of the voivodeship.

The development of the information society in Silesia is also contingent upon common, quick and cheap access to an information and communication infrastructure. Therefore, the abolition is necessary, or at least a limitation, of technical and economic barriers impending the use of ICT. As the most urgent work in this area was regarded coordination of operations aiming at the extension of the ICT networks in the region as well as improvement and modernization of the ICT infrastructure.

In the information society it is an imperative to allow for access to high quality digital services, embracing: e-administration, e-health care, e-education, e-culture. In Silesia their number is not sufficient and their quality requires improvement. Hence, it is necessary to support the public administration, companies, institutions, universities and other organizations in creating and providing digital services and contents. Simultaneously, it was assumed, that raising the number and usefulness of digital services as well as contents is possible through the expansion of public e-

services interoperability platforms as well as integration and promotion of electronic information about the voivodship.

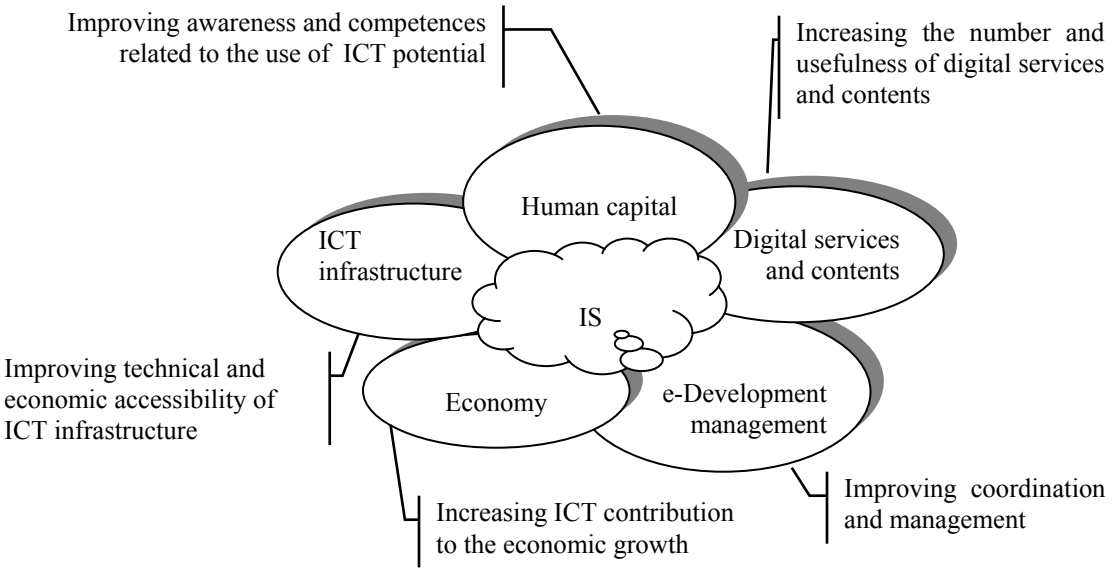

Figure 1: Strategic goals for the information society development
Source: author's own elaboration based on ("Strategia rozwoju", 2009)

Actions Leading to the Strategic Objectives of Information Society Development in Silesia – the Creation of E-administration

The conducted diagnosis of the information society development and SWOT analysis confirmed that an important direction in the transformation of the region is the development of e-administration. Therefore, such a development was reflected in the strategic objectives of regional development of information society structures in the Silesian Voivodship (Table 3).

Table 3: The role of e-administration in the strategic development of information society in Silesia

Strategic objectives	Activities
1. Raising awareness and competence in the field of possible use of ICT potential	• promotion of possibilities of use of e-services platforms (eg SEKAP) • to educate society about the new forms of contacts with public administration • training for administrative staff in the use of e-services, • training for administrative staff in the regulations governing the work of administration (an electronic document, electronic signature) • dissemination of electronic signature • training for administrative staff on the use of geographic information systems (GIS) for environmental management and protection
2. Improving the technical and economic availability of ICT infrastructure	• elimination of "uncharted territories" in the Internet access • support the development of information systems to ensure interoperability mechanisms

Strategic objectives	Activities
3. Increasing the number and usefulness of digital services and content	• design, development and standardization of electronic public services, and their integration into the platforms of public services (extension of SEKAP) • development of electronic communications in public institutions, including the implementation of ERP systems, workflow systems and document management systems • digitization of resources and content connected with science, education, culture, protection and condition of environment, spatium, public transport and developing tools to access the content • creating a system of standardization of service delivery • devising multilingual integrated digital platform combining in one place a variety of content services (administration, social work, education, health, tourism, arts and culture, business, employment agencies, protection, resources and environment) • integration of spatial information in the region, with particular emphasis on information about the environment and its protection • building cluster systems for the integration of the business community, companies, universities, R&D units, units of public administration of the region

Source: ("Strategia rozwoju", 2009).

Activities enumerated in the table are to contribute to the significant re-building of internal administration processes and the ways of rendering these services. As a consequence there should be created e-administration which:

- is oriented towards citizens' and companies' needs and provides them with high quality services;
- operates on the basis of straightforward and transparent regulations;
- does not create barriers for the growth of Polish economy competitiveness on the global market, on the contrary it favors competitiveness;
- is oriented towards electronic circulation of documents; and
- is cost-effective and process-oriented.

It is planned that by the year 2020, the idea of e-administration will be fully completed and implemented. This means that services will be delivered on the fourth level of maturity (integration) and will meet the requirements of interoperability. Thanks to that fact, the administration will be citizen-friendly and company-friendly, and available at any place and any time, by the means of the Internet, without the need of the citizen's personal participation in the complicated administrative procedures.

Implementation and Monitoring Works Related to Information Society Development

The responsibility for introducing the development strategy of the information society of the Silesian Voivodeship rests on the Silesian Voivodeship Board. In order to coordinate activities related to the implementation of the strategy, a committee for the implementation and monitoring of information society strategy was set up, where the authors participate actively. The committee has a total of 19 members and its chairperson is the Marshal of the Silesian Voivodship. Depending on needs arising the committee creates a permanent or emergency working groups. Each group has its leader, who organizes its work, and in its meetings not only can participate the members of the group but also other people who specialize in a given field. So far, in the work of all five groups

participated several dozens of people from different backgrounds. The permanent groups are defined in the following areas: e-services, e-education, e-health, broadband networks, spatial information systems.

The tasks of the committee include:

- tracking the implementation of the strategic objectives of the information society;
- monitoring activities identified in the strategy, leading to the achievement of strategic objectives; and
- evaluating the rapprochement level to the state of development of the information society (including an e-administration) in Silesia in comparison to the view presented in the strategy.

The committee is currently working on a report on the monitoring of implementation strategy for the annual period from October 2009 to October 2010.

The Empirical Dimension of the E-administration in the Silesian Voivodship

The role of Electronic Communication System for Public Administration (SEKAP) is strategic for the development of e-administration in the Silesian region. The project was conducted in the period of 2005-2008 and its partners were 54 units of the local government, with a leadership of the Self-Government for the Silesian Voivodship. The project was mainly co-funded from the financial means of the European Regional Development Fund. Its mission is to increase the quality of the living standards of the society in Silesia and raise the competitiveness of the region throughout allowing the access to cutting edge technological solutions for citizens, civil servants and entrepreneurs, and consequently developing and improving C2A, B2A and A2A relations. The mission is connected with the sub-objectives, which have been defined in the following way:

- decreasing costs of public services provision;
- improving quality of public services;
- creating the range of services rendered electronically;
- improving the conditions of starting and maintaining business operations;
- enlarging the extent to which ICT are used by the inhabitants and companies of the region; and
- increasing the region's competitiveness on the domestic and European scale.

Currently 118 public administration offices are providing their services throughout the SEKAP system (www. sekap.pl). The SEKAP includes 501 various public e-services (Table 4), in particular all services recommended by the European Commission (Table 1). The list of these services contains 212 public e-services reached the transactional level.

Nearly all presented SEKAP system services are now available for users and they represent, so called, the first level of maturity (the information level). This means that citizens and businesses can familiarize with the procedure of dealing with the matter, get to know the rules governing the matter and get the necessary forms, which then must be completed and either personally or by postal mail submitted to the office. Only a few services reached the third level of maturity - the transactional level. A person, wishing to use such a service, completes an electronic form, sends it electronically to an office and electronically receives a decision. Moreover, they may, at any time, check the status of their case and determine at what stage of development it is. In order to use these services a person must have an electronic signature (qualified or unqualified). For a purpose of obtaining a free unqualified signature of CC SEKAP they need to complete and submit an electronic request to the Certification Center SEKAP and sign a civil legal contract. Upon the receipt of an electronic signature they can fully benefit from the SEKAP services (Figure 2).

Table 4: The services of the SEKAP system	
Group of services	**Services**
identity cards, registration of residence	all procedures connected with identity cards, registration of residence and registration of voters
economic activities	a register of entrepreneurs, certificates (e.g. of registration in the register of economic activities), decisions (e.g. on removal from the register of economic activities), permissions (e.g. to sell alcoholic beverages) and duplicates of certificates, decisions and permissions;
geodesy, cartography	a register of land and buildings, maps, divisions of real property, land classifications and joining, land joining and exchange, agricultural geodesy
communications, road engineering and transport	vehicle registration, driving licenses and permissions
culture, sports, tourism, education	register of schools, public and non-public institutions, granting the public school rights, register of sports clubs and school sports clubs
environmental protection	issuing opinions on location of investments and workshops, specification of conditions, decisions about pollution bans or limitations, water management and environmental protection
taxes and charges	notification of tax obligation and its termination, correction of tax returns related to forestry, agricultural, property and means of transport taxes, dog fees, application for reimbursement of stamp charge, application for allowances (waivers, postponements, installments), certificates of outstanding taxes and certificates of no outstanding tax liability, applications for interpretations of fiscal law provisions
agriculture, forestry, hunting, angling	exclusion from agricultural production, crop and animal production, fishing, veterinary medicine
health and social issues	healthcare, sanitary issues, social benefits, allowances, non-cash aid, issues concerning disabled people, foster families
regional development	Silesian Voivodeship scholarships for pupils and students, cultural grants, arrangements concerning requirements studies and spatial development directions of communes and municipalities, projects concerning local spatial development plans, information about approval to requirements studies and spatial development directions, information about approval to spatial development plans
public utilities	maintenance of cleanliness and landfill sites, gas, electricity, public areas lighting, water and sewage systems, cemeteries, green belts and small architecture; war tombs and places of remembrance
real property, residential and business premises	property of a commune or a municipality, a district and the State Treasury, sale, exchange, hire, lease, lending for use or handing over for permanent administration, perpetual usufruct, management of residential and business premises

Source: (www.sekap.pl).

The procedures of settling administrative matters within the SEKAP system have been agreed upon and standardized, a coherent repository of document forms has been designed as well as the workflow system, and the system of verification of electronic signatures. The system guarantees

the security of transmission and payments as well as the identification of a stakeholder (a citizen, a company). In order to accomplish the above mentioned tasks such software is used:

- Document Management System along with the Workflow System;
- Data Exchange Module;
- Electronic Forms Platform;
- Integration Brokers;
- Public e-Services Platform;
- System of Automatic Electronic Signature Verification;
- Payments System; and
- Security System.

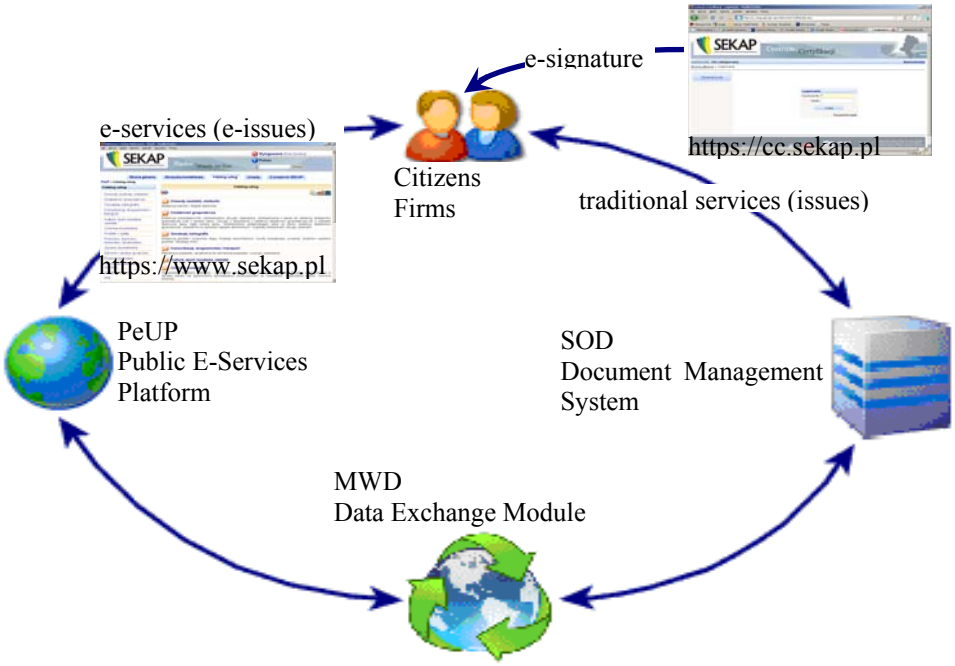

Figure 2: Handling of an issue/an enquiry at the e-office, using the SEKAP system.

In the SEKAP system the rules of interoperability were implemented at the organizational level. This was achieved through the development of the Integrated Library of Procedures, which:

- defines all the administrative procedures for handling matters under the general legal requirements (the Base of procedures);
- contains the input and output repository forms (the Base of forms);
- includes all acts constituting the legal basis of procedures in the Base of the procedures (the Legislative database); and
- identifies and systematizes the authorities and those who use the electronic system (the Base of bodies types).

The analysis of the SEKAP system efficiency and opportunities allows us to state that it matches the strategic objectives of the information society development, especially the one which refers to the increase of quantity and effectiveness of digital services and contents. The initial analysis and the research results show that the implementation of the SEKAP project contributes largely to better work efficiency of the local government administration, increasing the quality of the ser-

vices provided for the inhabitants and entrepreneurs and the speed of performing administrative procedures.

Within the frame of realization of strategic objectives for information society development in the Silesian Voivodship (Table 3), the improvement and dissemination of the SEKAP system as well as provision of inhabitants with the necessary network infrastructure have been planned for. Among others, the work on the project SEKAP II has begun. For its accomplishment the funding from the European Union was obtained. The expansion of the system was outlined, mainly through the introduction of new services to the third level of maturity – the transactional level. Moreover, the continuation of work on interoperability at the organizational level, as well as technical and semantic levels will be carried out. The project is also scheduled to intensify work aimed at better dissemination system SEKAP in municipalities.

As an important issue was recognized the expansion of the SEKAP system into these communes which have not yet participated in the project (over 100 municipalities) and the extension of wired networks, wireless networks and public access to the Internet points (Public Internet Access Points). These tasks are planned to be taken within new projects, some of which will be financed from the EU funds.

Although the SEKAP project constitutes a "good practice" in the e-administration development in the region, it still requires constant monitoring and evaluation. This task is at the responsibility of the Committee on the implementation and monitoring of information society strategy.

Discussion and recommendations

Analysis of the literature on the subject, and particularly the practical experience shows that the transformation of a society towards an information society is an extremely complex undertaking. It requires a great determination of state authorities, and especially a regional self-government and representatives of various bodies (business, academics, representatives of public administration). Besides, a huge financial support is necessary. Despite these undoubted difficulties, it seems that the only chance for countries, which want to accelerate economic development is the construction of information society. The countries that have already achieved a high position in the information society development, derive clear benefits from this fact. The circle of partners widens for them, the partners who not only take advantage of the same technological standard in their actions, but also of similar e-services and apply a similar approach to the management of information resources.

Poland, due to its strategic location in Europe, with about 40 million of inhabitants, who are considered, according to a recent study, as the most enterprising citizens of the European Union, has inscribed into the program of building an information society. An example of Silesia is all the more meaningful. The region until recently has been considered a region of the industrial era, it invested in new technologies, environmental protection, development of academic and research centers, and software companies. It is also a good example of competent use of various financial resources, including the EU Structural Funds.

The concentration of representatives of various bodies from all over the region resulted in the creation of the development strategy for the information society for the region. Creating such a strategy, experience has shown, is, to a large extend, an individual matter, depending on the specific nature and needs of a region. Nevertheless, many issues and solutions are universal, and may serve as a "best practice" for others. The work on strategy and its results showed that:

- The development of an information society must involve all of its beneficiaries and, above all, citizens, businesses and public administration;

- The regional structure of information society is the foundation for transformation of a society into an information society;
- In the methodology of work over the development strategy of information society in a region the following points should be considered: (a) diagnosis of the current state of information society development, (b) SWOT analysis and assessment of the region from the perspective of an information society, (c) identification of the strategic objectives of the information society related to the use of strengths and opportunities of the region and countering weaknesses and threats, (d) identification of actions leading to the achievement of strategic objectives, and (e) implementation and monitoring of information society development strategy;
- In order to develop the information society is necessary to build awareness of citizens, businesses and public administration. Shaping an adequate information culture in a society, influencing of human behavior and motivating to use e-services are the basis of the information society development;
- An important element in developing the information society is e-administration. The development of e-administration requires the creation of one, common corporate architecture for the administration, including people, processes, organizational structures and systems.

The authors believe that only many-sided program of the information society building is a guarantor of a balanced and purposeful development. The created strategy of the information society for the Silesian Voivodeship corresponds to the Finnish model of information society development. Its mission is to enable citizens to use knowledge, information and ICT commonly and freely in harmonious development of social, economic and personal dimension. In our opinion strategy of information society for the Silesian Voivodeship may be treated as recommendations for these regions and countries that are faced with transforming their society into the information society. At the same time they may also reduce a risk of failure in completing such a transformation.

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