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THE STRATEGIC IMPORTANCE OF e-GOVERNMENT IN THE CONSTRUCTION OF e-SOCIETY (based on the example of e-Croatia)

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Abstract - *e-Government concept originated at the beginning of 21st century, mostly as a copy of e-commerce into public sector. All intentions were directed towards the presence of the public services on the Internet. In the early years of its development, e-government follows the evolutionary e-business evolving model, which in particular means that in the early days of e-government evolution, primary focus of the e-services was simple appearance of graphic user interfaces with no possibilities of interactions. Early enthusiasm during the mean time weakened but such experiences brought crucial acknowledgments. Today, because of those acknowledgments, the focus is on coordination and effective assessment of the needs, efficiency and public benefits for such services. The development of electronic public services enters in the new phase, which is mostly determined by reengineering of existing processes of public government. Public sector by its nature (based on information and communications) is ideal for international increase of efficiency and quality.*

1. INTRODUCTION

Public government disappointment is triggered by bureaucracy, information abuse for internal purposes, increasing cost of transactions and mostly because of lack of responsibility for the client. Especially in European countries the problem of ever-growing public sector is present, making the concept the efficient e-government even more important. Regarding the participants engaging in e-government activities, four models can be recognized:

- ◆ G2C (Government to Citizens),
- ◆ G2B (Government to Business),
- ◆ G2E (Government to Employees), and
- ◆ G2G (Government to Government). [1]

2. E-GOVERNMENT FRAMEWORK

The new doctrine of e-government requires organisations to integrate and synchronise the strategic vision and tactical delivery of services to clients with the information technology and service infrastructure needed to meet that vision and process execution. In the next few years, successful countries will restructure their public sector, process and technology infrastructure to ensure the successful realisation of e-government. [2]

ICTs were recognized to have tremendous 'administrative' potential. For example, ICTs may help create a networked structure for interconnectivity, service delivery, efficiency and effectiveness, interactivity,

decentralization, transparency, and accountability. Electronic government (e-government) cover all these functions and, generally speaking, refers to the intensive use of ICT in providing the citizens an improved access to information related to public administrations as well as in providing them superb service quality. E-government transformation is one of the biggest challenges within the IT-related sector from the perspective of scale and complexity. The main objective is to adapt existing e-government to new computing requirements based on the citizens' new service concept. [3]

According to Ebrahim and Irani the understanding of e-government architecture framework by public sector organisations is significance strategic phase toward reliable and effective e-government adoption. In their paper they describe how to use and manage information technologies to revitalise business processes, improve business decisionmaking, and gain competitive advantage from the adoption of e-government.

The architecture framework defines standards, identifies the infrastructure components, applications and technologies that are the guidelines for e-government adoption have highlighted the importance of integrating the existing information systems and applications in public sector organisations in order to establish an efficient framework for e-government architecture. They suggest that the architecture of e-government can be divided into four layers: access layer, e-government layer, e-business layer; and infrastructure layer. The authors also analyse significant barriers to the adoption of e-government. They classify these barriers into dimensions with practical examples that include: IT infrastructure, security and privacy, IT skills, organisational issues and cost. [4]

According to Lam here is a set of 17 barriers which were organised into one of four categories: strategy, technology, policy and organization. Strategy barriers include common e-government goals and objectives, delivery timeframes, and ownership and governance. Technology barriers include architecture interoperability, data standards and legacy systems. Policy barriers include citizen privacy, data ownership and policy implications. Organization barriers include pace of government reform, legacy government processes and management and technical skills. E-government is not simply a technical matter of getting IT systems to talk to each other, but something that requires strategic planning and considerable change management. [5]

The Economist [6] predicted the next Internet revolution (after e-commerce and e-business) to be e-government revolution. Contrary to such optimistic expectations regarding e-government, a disappointment on how the situation evolved in following years followed. The Gartner Group in 2004 brought analysis of e-government hype cycle in world. After “peak of inflated expectations” in 2002 “trough of disillusionment” follows, and finally “slope of enlightenment” is coming. [7]

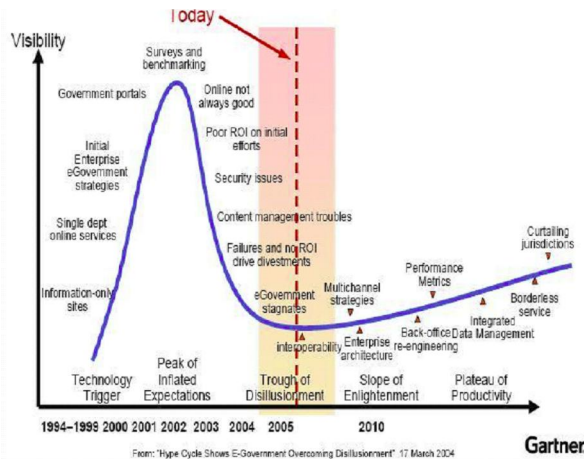


Figure 1. Gartner analysis – Hype cycle for e-Government

In order to achieve cost savings in a citizen-centered government through e-government services, governments need to know expectations of e-Government services. In order to acquire the information the following should be implemented:

- ◆ Information and service needs assessment. There is a need to systematically ask citizens about their actual information and service needs,
- ◆ Technology needs assessment. Governments cannot assume that a computer and Internet access are sufficient to engage in e-government,
- ◆ Information and technology literacy. A key aspect of e-government service delivery and availability is the ability of citizens to successfully use e-government services,
- ◆ Government literacy. How users interact with government services will depend greatly on how well they understand the structure of the government,
- ◆ Usability and functionality. There is a need to engage in an iterative design process that encompasses user assessment throughout the service’s development process,
- ◆ Accessibility. Increasingly aging populations and others in populations have a range of challenges tied to their abilities to use e-government services,
- ◆ Meeting user expectations. Consistency between sites and services has not been a high priority, nor has consistency of the materials provided,
- ◆ Understanding how citizens actually use e-government services.

Failure in any of the above areas could lead to diminished use of e-government services and loss of confidence

among citizens which would seriously hamper future development. [8]

The analysis discovered four key components that could encompass all initiatives in development of e-government and these initiatives are shown in Figure 2.

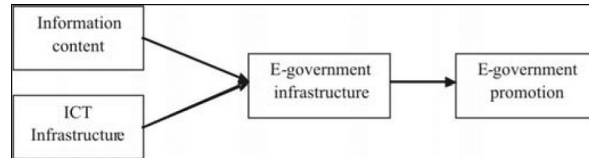


Figure 2. e-Government implementation framework [9]

3. CROATIAN E-GOVERNMENT STRATEGY

Even so, e-Croatia is not a project that is starting from scratch. Rather, it is building on a rather strong recent history of strategies and programs that the government has implemented in the past few years, including the following:

- ◆ Information and Communication Technology Strategy (2002),
- ◆ e-Croatia 2007 (2003),
- ◆ HITRO.hr Program Strategy (2004),
- ◆ National Program on Information Security (2005),
- ◆ Open Source Software Policy (2006),
- ◆ Broadband Strategy (2006),
- ◆ National Program of Digitalization of Archive, Library and Museum Heritage (2006),
- ◆ National Strategy for Development of e-Business.

For the purpose of providing proposals, opinions and expert views on different issues important for the state development, the Government of the Republic of Croatia forms its permanent working bodies: *Ministries, Offices of the Government, Central State Administrative Offices, State Administrative Organizations and Public Sector*. Unit in place to design eGovernment policies and to coordinate ministries, regional and local governments in this sense is the *Central State Administrative Office for e-Croatia* of the Government of the Republic of Croatia. It is headed by the State Secretary and the two Deputy State Secretaries who are appointed to the Office. Internal structure of the *Central State Administrative Office for e-Croatia* comprises the following departments with a broad scope of activities:

- ◆ The Department for the Rationalization of Investments in Information and Communication technologies,
- ◆ The Department for the Coordination of the Implementation of the e-Croatia programme,
- ◆ The Department of International Cooperation.

The ultimate goal of the Office is to coordinate and implement activities of the e-Croatia 2007 programme to make quicker steps towards the information society following the recommendations of European Union and Lisbon Agenda. [10]

4. IMPROVEMENT OF E-GOVERNMENT SERVICES IN CROATIA

The Republic of Croatia has prepared the State Administration Reform Strategy that was adopted by the Government in spring 2008. Basic elements of the Strategy represent the adoption of principles of good governance in line with EU standards, improvement of the legal system, provision of better services due to a modern, professional and trained civil service, simplification of administrative procedures and establishing e-administration. The responsibility for the implementation lays with the Central State Office for Administration. The Strategy has given great importance to the development of e-Government. The responsible institution for the implementation of e-Government is the Central State Office for e-Croatia.

The Central State Office for e-Croatia has coordinated activities in the field of e-Government through the Program of e-Croatia already from 2003 on. All activities that are prepared in all central state bodies were collected and systemized. That generated a good overview on what was going on in the field of e-activities. It has to be said that Croatia has developed a large number of e-Government services during the past years. Just to mention some of them: e-Company, IS OSG, e-Tax services, e-Pension, e-HealthInsurance, e-Cadastre, e-LandRegister.

At this moment the developed e-services are mostly:

- ◆ Developed by one institution and cover the responsibility area of one institution,
- ◆ Developed to give information to users.

Central State Office for e-Croatia has organised a working group with the task to analyse the current situation in the specific area and to make a proposition for a strategy that will represent the basis for the future development of integrated functions. The work started in autumn 2008. The Strategy for the Development of e-Government for the Republic of Croatia for the Period 2009-2012 was finished and adopted by the Government of Croatia in January 2009. [10]

The Strategy defines e-Government as an infrastructural transformation of the functioning of state administration bodies by using the information and communication technology to direct the business activities of the public administration versus the users. That requires a permanent adjustment of the legal and technological framework of state administration bodies with the goal to reach better effectiveness, more rational use of the budget and services of higher quality. The Strategy defines ten basic principles for the development of e-Government.

- ◆ The first principle is the principle of equality. All services and information have to be accessible to all users having in mind their specific needs,
- ◆ The existing services of the administration will not be abolished. The existing services will be reduced as the number of users of the new services increases,
- ◆ The existing non electronic services of the administration can not be revoked until all users, even

potential users have the access and knowledge to use the services of the electronic administration,

- ◆ The development of new services has to be based on ICT and the access to the services has to be based on different easy accessible channels,
- ◆ The information that is publicly accessible via electronic services has to be structured and delivered in a way that is simple, understandable and that grants free access,
- ◆ All information is entered just once into the e-Government system. All subjects that need the information have to communicate through an open communication format and will get the specific information if it is in accordance with the legal framework,
- ◆ All forms of electronic recording (electronic documents, web based forms, web pages) of the administration have to be in a format that does not oblige the user to purchase commercial products to get a service,
- ◆ The basic technology for the development of electronic services has to be independent of the manufacturer of products and services regarding computers, networks and software,
- ◆ The security and reliability of developed e-services has to be in line with adopted standards for information security and legal standards for the protection of personal data,
- ◆ The electronic services have to be supported by professionally trained experts. All employees have to have an appropriate level of computer skills in accordance with the European Computer Driving License. [11]

The Strategy has identified:

- ◆ The information and communication infrastructure,
 - ◆ The data/information and documentation basis,
 - ◆ Electronic services accessibility,
 - ◆ Human resources,
- as key elements for the development of e-Government.

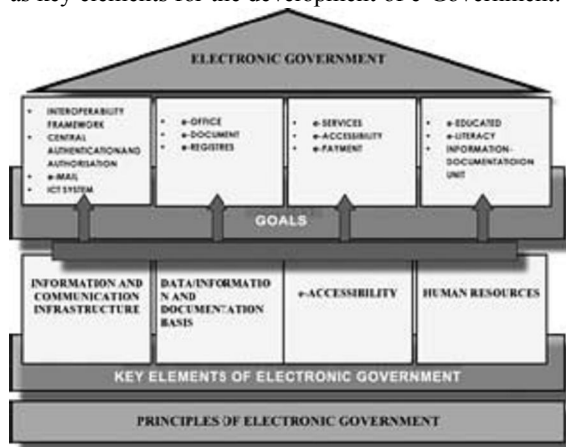


Figure 3. e-Government for e-Croatia [11]

The Information and Communication Infrastructure

The Strategy implies a standardization of the planning, procurement and maintenance process for

hardware/network components as well as for program solutions. It will start with a detailed inventory of existing computer systems. The basis of an interconnected electronic administration represents a secure, reliable and effective information and communication infrastructure. The HITRONet network has been developed as the backbone to interconnect all governmental institutions. It is based on the Internet environment with a virtual private network model. The network has to be evaluated especially from the aspect of information security. The interconnected ICT environment enables the exchange of messages and information between users. That requires a secure identification and authentication model where it is possible to uniquely identify all participants in the electronic communication. For that a central identification/authentication and authorization system will be put in place that will enable the identification not only of users but of civil servants too. At this moment the identification/authentication and authorization method is in the responsibility area of each application developer. The interconnected environment requires standards to be put in place. The communication has to be based on interoperability standards defined on the process, semantic and technological level. The interoperability framework will be one of the most important outcomes of the Strategy. It is important to create an efficient, secure, understandable and simple multichannel environment for electronic services of all public bodies including the delivery via internet, mobile phone, digital television and the support for the information agent. The precondition for a successful communication between the state administration bodies as well as the communication with costumers is a secure, reliable and legally defined electronic mailing system.

The Data/Information and Documentation Basis

Data and information incorporated into documents represent the basis of all activities of the state administration bodies regardless of the way they are conducting their businesses (electronic or non-electronic). To consolidate that area the introduction of an unambiguous system for the management of electronic documents based on the experience of countries with good practises in this field is foreseen. The goal is to prepare a unified system for the exchange of documents between all stakeholders regardless if the document is sent as an electronic form or as a formless document.

The Strategy define all activities needed to build, manage and maintain central basic registers based on ICT. It will define standards for connecting registers with other registers that have a legal basis to use the contents of the central registers. This will ensure not only the accuracy of the registers but also good management of data of the central state bodies. In addition it will be possible to access data needed for the administrative proceedings.

The goal is to enter data just one time and to make it accessible trough ICT solutions to all interested parties that have legal basis. To achieve the one-time data entry principle all personal data like gender, name, birth data and nationality regarding natural persons will be used from one source with a unique record structure and encoding system while the data on birth place will be adjusted with the spatial units register. The same applies

to legal persons. Their name and business activity, headquarters (harmonised with the special register), with data on natural persons have to be used from one only source in the state administration.

Accessibility of Electronic Services

Public information and data as well as services have to be accessible trough all technologically available and acceptable communication channels in any time from any place for all citizens regardless on gender, age, education, social group, financial capacity or any other specificity.

The system of e-Government is visible trough interconnected electronic services open for use trough the Internet and other communication channels. The most important characteristics are accessibility, security and reliability, expandability and interoperability and the technological independence. Every service has to be developed with defined goals that have to be achieved and in accordance with the legal framework that ensures the legal protection of the users of e- Government services.

Standards will be defined that central state bodies will be obliged to use while developing e-services. The whole cycle of e-services, development, introduction and use, has to be measured and indicators have to be set with a goal to analyse the success of the services, the satisfaction of the users as well as the financial efficacy.

Human Resources

The most important component are people – civil servants that understand on one side the technology and on the other the business rules and requirements. Therefore the success of the electronic administration system depends on the qualification of the civil servants. It is necessary to evaluate the acceptability of existing e-services and to define the needed level of knowledge and skills of the users. Then a unique model for informing the general public on basic rules in using ICT and the Internet in the domain of e- Government has to be prepared. [12]

5. E-CROATIA 2007 PROGRAMME OVERVIEW

The e-Croatia 2007 Programme is divided into two main areas:

- ◆ infrastructure, which comprises Broadband, Interoperability, Information security, and HITRONet Network;
- ◆ projects, which include eGovernment, e-Justice, e-Business, e-Education and e-Health.

To realize both areas, besides an institutional framework, legislation is required, and in that respect Croatia has already adopted several acts to support the ICT development and its application in private and business sector, such as Financial Agency Act, Electronic Signature Act, e-Commerce Act, Registry Number Act, Act on Personal Data Protection, Telecommunications Act, etc. [11], [12]

6. E-CROATIA 2007 PROGRAMME COMPONENTS

Broadband

In October 2006, the Government of the Republic of Croatia adopted the *Strategy for the Development of Broadband Internet Access by the year 2008* and *Implementation Action Plan of that Strategy for the year*

2007. Strategy and Action Plan for the development of broadband Internet access create prerequisites for the accelerated development and adoption of this technology. The goal of the Strategy is the reduction of the gap between Croatia and EU countries as well as to encourage an even-paced development through all Croatian regions and population categories.

Interoperability

In Croatia the *Croatian Standards Institute* is responsible to develop and align its standards to recommendations of international organizations for standardization. So far, some open standards are accepted to be implemented, such as Web Content Accessibility Guidelines 1.0 (implemented on all public administration web sites in 2007) developed and maintained by World Wide Web Consortium (W3C), standards for e-business developed and maintained by the Organization for Advancement of Structured Information Standards (OASIS). Croatia is also started to develop an interoperability framework for several segments of public administration (The Customs Administration, The Tax Administration, Spatial Data national infrastructure) to join national information systems (IS) with ISs of EU countries.

Information security

The precondition for eGovernment implementation is data interchange, so a security policy should be created and information security standards applied in that environment. Therefore, Croatia adopted *the National Programme for Information Security in the Republic of Croatia* as well as *the Plan for the Implementation of the National Programme for Information Security in the Republic of Croatia for the year 2005*. In the year 2007 the focus is on the strengthening of the appropriate security norms concerning the implementation of information and communication technologies. According to this, two ISO norms were adopted: 'Information technology – Security techniques – Code and practice for information security management (HRN ISO/IEC 17799:2006)' and 'Information technology – Security techniques – Information security management systems – Requirements (HRN ISO/IEC 27001:2006)'.

HITRONet Network

HITRONet Network is an information-communication network for state administration interlinked into a unique communication infrastructure. It links various bodies of state administration and provides common Internet access, access by remote users, assistance to users, system security, overseeing and managing the system as well as the subsystem of common network and application services. It is projected that the end of 2007 will have comprised 80% of eGovernment services of the central state administration bodies within HITRONet.

eGovernment

To enable the development of common electronic services and central access to information resources of the government administration, many projects have been initiated in the area of eGovernment. The main project that incorporates several electronic services is the HITRO.HR service intended for quick communication of citizens and business subjects with the state administration. HITRO.HR is based on the concept of "one-stop-shop" offering citizens and business subjects all

the information about the required documentation, as well as the forms and money orders, at the HITRO.HR web site and HITRO.HR counters. HITRO.HR comprises of several services: the establishment of Limited Liability Company, e-Regos (The Central Registry of Insured Persons), e-Tax, e- VAT, e-Pension, e-Craft, e-Cadastre, and e-Corner. Majority of the services mentioned require authorization for accessing the service and authentication of forms by applying smart cards with a digital certificate issued by the Financial Agency. Other projects that are taking place in the bodies of government administration are the e-Registries, the Electoral Register, the Central Database Registry on Personal Data and the Eurovoc Thesaurus.

e-Justice

e-Justice projects were initiated to introduce information and communication technology into the judicial system. Projects serve to citizens, judges and other judiciaries by enabling access to legal databases and registers. The *e-Portal of the Ministry of Justice* provides information on the activities, reforms and functioning of the judicial system. Some projects that are operational are: Integrated communication system for managing court cases (ICMS), the e-Land-registry Certificates Project, the e-Cadastre Project, the e-Court registry Project, the e- Judicial Practice Database Project, the Judges Web etc.

e-Business

The goal of e-Business projects is creating favourable conditions for the successful development of electronic business. Legal framework with several laws and decrees already exists, and the Strategy for the development of ebusiness should be adopted by the end of the year 2007. Two e-Business projects are incorporated into the HITRO.HR service (the e-REGOS project and the e-VAT project). Other projects are the e-Crew project and the e-Customs Project. However, despite the predominantly positive attitude towards electronic business, its potentials have not been utilized sufficiently. One study showed that main reasons for not using public services for business were lack of information about the services, habit of doing business in traditional way, the perception that a company doesn't have sufficient technical conditions for e-business and information security issues.

e-Education

Owing to the scope of its vision, the e-Education project is probably one of the most ambitious projects among e-Croatia projects. It includes several aspects, such as information-service infrastructure, application of ICT in teaching, and the development of standards and application of certifications in education, necessary for Croatia's further growth as a knowledge country. Some of the projects under e-Education umbrella are the following: the Information System of Elementary and Secondary Education, the Information System of Higher Education Institutions (ISVU), GigaCARNet, Mobile CARNet, free broadband access in student dormitories (StuDOM), the Croatian National Educational Standard (HNOS), the ECDL (European Computer Driving Licence) project, e-Indeks (student's electronic card).

e-Health

The computerisation and integration of the national health care system is one of the strategic goals of the Government of the Republic of Croatia, which is to provide better service to patients, improve quality of life and decrease the health care system's costs. An integrated computer system for primary health care has already been released in 350 medicine practices and has brought several advantages: doctors have access to patients' medical records, laboratory test results are forwarded to patients' doctors and patients can schedule appointments via Internet. By the end of 2008, all primary health care institutions will have been connected to the integrated computer system. The informatization of the hospital information system (IBIS) as well as that of the system of social welfare is also in progress. The HZZO Portal (the portal of the Croatian Institute for Health Insurance, <http://www.hzzo-net.hr/>) now offers a possibility to fill in an electronic health insurance form. [11], [12]

7. CONCLUSION

The advent of new communications and information technology is slowly modifying the destiny of democracy. Indeed, what is being witnessed is a change in the very idea of politics, no longer conceived of as the exclusive reserve of professional operators, but rather as a process in which citizens play an active role as parties to an ongoing debate. The web becomes a new metaphor for democracy, guaranteeing heightened availability of information by bringing down barriers of space and time while, at the same time, making it possible to establish collective decision-making procedures by readying new forms of access and spaces in which user can play an active role. But despite the opportunities for the development and consolidation of democratic processes offered by ICT, we still fall far short of being able to define democracy as a policy-making process in which those who govern, considered to be politically equals subject to controls, show themselves to be receptive to the preferences of the governed. The delay, so to speak, can most likely be traced to the fact that, together with a previously unimaginable potential for interaction, the new technology has also spawned a series of concrete risks and limits.

Many developing countries are in the initial phases of adopting electronic government (e-government) programs to improve public services and deliver them as efficiently and conveniently as possible. Experience with a variety of governments throughout the developing world at different stages of implementing e-government programs with citizens (G2C), businesses (G2B), and other entities of government (G2G) suggests that a major reason behind the success or failure of e-government projects is the extent to which, first, the governments address technological infrastructure encouraged by appropriate telecommunications policies; and second, the legal and regulatory instruments required for e-government. Information and communication technology (ICT) infrastructure development is at the heart of successful deployment and sustainability of e-government programs.

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