

Information Society and eGovernment Developments in Croatia

Božidar Kliček

University of Zagreb, Faculty of Organization and Informatics

Pavlinka 2, HR-42000 Varaždin, Croatia

E-mail: bozidar.klicsek@foi.hr

Dijana Plantak Vukovac

University of Zagreb, Faculty of Organization and Informatics

Pavlinka 2, HR-42000 Varaždin, Croatia

E-mail: dijana.plantak@foi.hr

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The aim of this paper is to provide insights into the current state in the field of eGovernment in the Republic of Croatia. In the paper a brief historical outline of the efforts undertaken so far is presented, certain key problems identified and development potentials in this area proposed. First, an overview of Croatian governmental organisations and actors that play an important role in adopting the eGovernment strategy is given. Then, results of the evaluation of the progress in the field of eGovernment are briefly presented by means of the European Commission's indicator for online availability, which lists twenty basic public services to be benchmarked. Next, the e-Croatia 2007 Programme projects and areas for development are discussed, with the analysis of the achievements so far. Finally, key issues concerning eGovernment are summed up in the conclusion, along with the propositions for future work.

Povzetek: Predstavljena je strategija razvoja elektronske uprave na Hrvaškem.

1 Introduction

In the 1980s Croatia was by far one of the most promising communist countries in Europe, and one of the countries in the region to claim the level of economic and democratic development not much unlike that in Western European countries. The disintegration of Yugoslavia as a multinational country was followed by an escalation of war and intensification of social, economic and political problems, all of which would provide a major hindrance to transition. This explains why Croatia is among the last post-communist countries to join the European Union. On the other hand, Croatia is commonly referred to as a stability factor, as a country at the forefront of the democracy movement in the Western Balkans, that is, ex-Yugoslav countries to have arisen from its disintegration. The last urgent conditions to be fulfilled by Croatia in the pre-accession phase, as defined by the European Commission, encompass jurisdiction, fight against corruption, and protection of ethnic minority rights.

One of the technologies which can lead to considerable improvements in all these components is eGovernment, which is why special emphasis should be put on it: not only can it increase the quality of life for its citizens, but it also contributes to faster integration of the Croatian society as a whole into that of contemporary Europe. Unfortunately, in its relatively brief history, eGovernment has been heavily marked by trends

plaguing all developments in Croatia. Thus the state of eGovernment sophistication in Croatia is behind that of European Union countries, but ahead of Western Balkans countries. The Croatian Government, aware of the significance of this technology, has determined its priorities and trends with a view to making eGovernment one of the most propulsive segments of the Croatian state administration upon its eventual accession to the European Union.

2 History

2.1 eGovernment history in Croatia

In middle 70s, state administration and large companies applied information and telecommunication technologies (ICT) to a considerable extent, while in mid-80s ICT entered into small and medium-sized enterprises. However, in early 1990s, due to war, stagnation and even regression in the ICT sector was evident [3], leaving information society development and eGovernment strategies aside.

The Stabilisation and Association Agreement between Croatia and the European Union signed in 2001 [11] was the first step toward establishing stronger relationships with EU countries. It also emphasized importance and need to further develop the information society by creating

legal and institutional frameworks as well as adopting standardized benchmark methodology to monitor the progress of the development.

In January 2002, the Croatian Parliament adopted a strategy entitled *Information and Communication Technology – Croatia in the 21st Century* and introduced the *General Measures for the Development of the Information Society*. At the end of year 2003, the Government of the Republic of Croatia adopted *e-Croatia 2007 Programme* following the guidelines of *The Action Plan e-Europe 2005*, supplemented with *The recommendations for the Action plan after 2005 (eGovernment beyond 2005)* and finally harmonized with *The i2010 Initiative*.

The *e-Croatia 2007 Programme* goal is to "provide the Croatian citizens and the economy with the highest level of information services and the most widespread use and exchange of information, thus creating opportunity for their active participation in global developments" [1]. The programme includes the mechanisms of implementation and monitoring of the activities and projects planned for the periods of one year duration. The latest programme is elaborated in the *Operational Plan for the Implementation of the e-Croatia 2007 Programme for the year 2007* [14] and was published by the *Central State Administrative Office for e-Croatia*. It relies on previous *e-Croatia 2007 Programme for the year 2006*

which resulted in significant improvements, especially in areas of the informatization of education (e-Education), the informatization of justice (e-Justice) and the informatization of health (e-Health) [4].

In the scope of eEurope, evaluation of information society development rate is conducted in sequential time intervals as standardized methodology. The results of evaluation are expressed with adequate indicators. In the field of eGovernment, the European Commission and member states have determined 12 basic services for citizens and 8 basic services for businesses, whose online availability is monitored [2]. Adopting the same methodology, three benchmark studies have been conducted in Croatia, which indicated distinctive progress in online availability of public services during last three years, 43.12% in services for citizens and 55.12% in business services (see Figure 1). This remarkable increase has enabled Croatia to take the leading position among other Western Balkans non-EU countries (see Figure 2) but when comparing the availability of public services on the Internet in Croatia and EU countries, a significant gap still exists (see Figure 3) [15]. Thus, more efforts are needed to adapt the Croatian legal and institutional frameworks in order to transform the Croatian society into an information society. Familiarization with the best practices from other countries, especially with those having a similar jurisdiction system, like Austria and Slovenia, may prove extremely helpful in that respect.

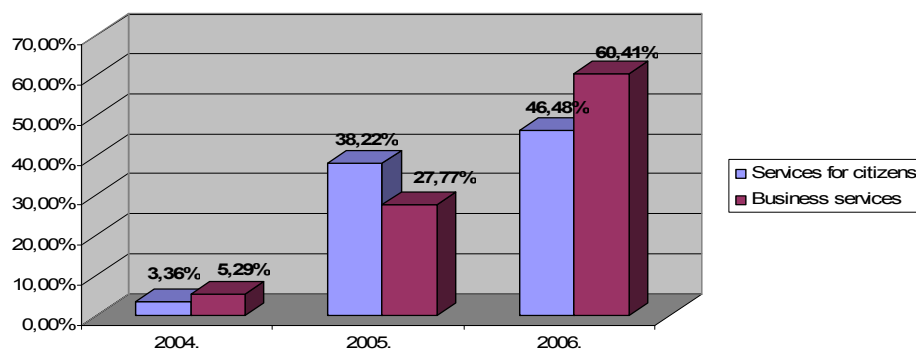


Figure 1: Progress of online availability of public services in Croatia from 2004 to 2006 (source adapted from [15])

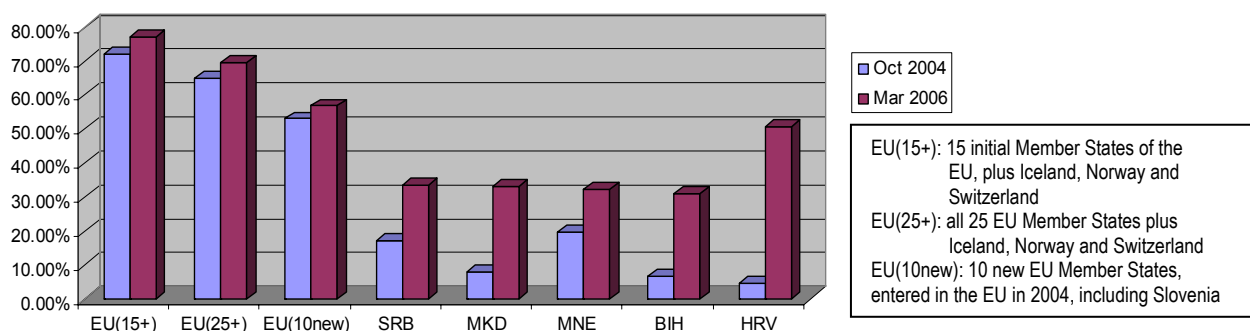


Figure 2: eGovernment benchmark of EU countries and Western Balkan non-EU countries (source adapted from [6])

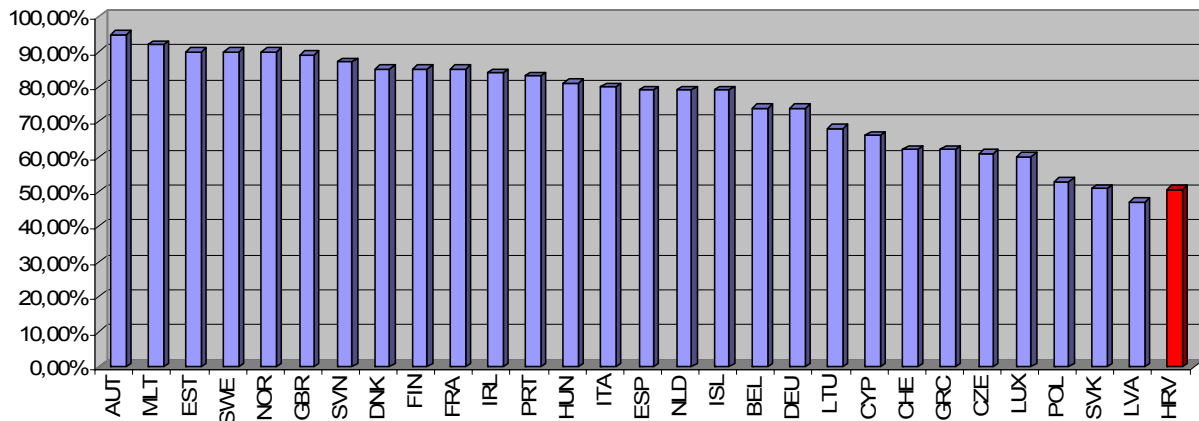


Figure 3: Online sophistication of public services in the different countries in 2006 (source adapted from [15])

3 State of the art

3.1 Croatian eGovernment strategy

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 [13].

3.2 e-Croatia 2007 Programme overview

The implementation of the e-Croatia 2007 programme is incorporated in the *Operational Plan for the Implementation of the e-Croatia 2007 Programme*. So far, three documents were issued: for the year 2004 and 2005, for the year 2006 and for the year 2007. All the bodies of state administration as well as other

institutions, whose activities include the implementation of the e-Croatia 2007 programme, create institutional framework and participate in the programme preparation. The Government of the Republic of Croatia approves the annual operational plan, after it has been considered and evaluated by the *National Council for Information Society*. The bodies of state administration in charge of the implementation of particular measures submit their semi-annual reports to the *Central State Office for e-Croatia* regarding the current state of the implementation of those measures. The *Central State Office for e-Croatia* generates their consolidated report to be submitted to the Government of the Republic of Croatia and the *National Council for Information Society* [14].

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-uprava), e-Justice (e-Pravosuđe), e-Business (e-Poslovanje), e-Education (e-Obrazovanje) and e-Health (e-Zdravstvo)*.

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.

3.3 e-Croatia 2007 Programme components

Broadband

A basic infrastructure of the information society and knowledge-based economy as its economical counterpart is high-speed Internet access. It must be available, affordable and useful to every citizen, household, school, company and public administration. 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. Thus the Government of the Republic of Croatia decided to stimulate with about 5 mil euros the development of infrastructure for broadband in areas of the country where the interest of telecommunication operators continues to remain low, such as highland areas and islands [1].

Interoperability

Interoperability is defined as the ability of information and communication systems and business processes to support data flow and enable the exchange of information and knowledge. It can be achieved by adopting national and international technical norms [1].

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), etc. 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 [14].

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*. The *National Programme* defines goals for information security at the national level, the jurisdiction and duties of particular institutions in the area of information security, as well as the necessary mutual coordination of all factors of information security [1].

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)' [14].

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. The network is developing in phases, and the third phase anticipates broadening of the HITRONet access points to the level of cities, which will create conditions for a universal linking of state administration bodies into their virtual private networks [1]. It is projected that the end of 2007 will have comprised 80% of eGovernment services of the central state administration bodies within HITRONet [14].

eGovernment (e-uprava)

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 [7].

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-Pravosude)

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 [1]. 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 (e-Poslovanje)

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 e-business 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 [5]. In order to promote its services for business, the *Ministry of Economy, Labour and Entrepreneurship* together with the *Croatian Chamber of Economy*, initiated the campaign to ensure a broader acceptance of electronic business.

e-Education (e-Obrazovanje)

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 [1]. 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), etc.

e-Health (e-Zdravstvo)

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 [1]. 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.

4 Conclusions and future work

Croatia has realised its national ICT strategies and incorporated eGovernment into its National Strategy by introducing the *e-Croatia 2007 Programme* in the year 2003 and annually upgrading operational plans and activities within the Programme ever since (the latest version of the document being issued in the year 2007). By implementing the *e-Croatia 2007 Programme*, the Republic of Croatia will meet the preconditions for increasing the competitiveness of the country a whole as well as enable its equal and active participation in the development of the knowledge-based society, a much sought-after goal.

The progress in online availability of public services achieved so far, measured by the standardized EU methodology, shows that Croatia have already made significant steps in the implementation of eGovernment. The changes that have been occurring cannot only be monitored by means of standard EU instruments for measuring annual progress but are also evident in everyday life. In order to popularize eGovernment services, the *Central Administrative State Office for e-Croatia* initiated a new HITRO.hr service called "e-KUTAK" (*e-Corner*), a free educational service intended to encourage entrepreneurs and craftsmen to enter in the world of electronic business. National and commercial television channels have been broadcasting video clips promoting governmental e-services for both citizens and entrepreneurs (HITRO.hr and the Croatian Government portal, <http://www.vlada.hr>). Very recently, a new internet portal of the Government of the Republic of Croatia, called "Moja Uprava" (*My Government*, <http://mojauprava.hr/> [10]), has been implemented. Based on the experiences of the other countries, the portal offers relevant administrative content and governmental services to citizens, businesses and other users, all in one place. The portal has been developed according to guidelines of W3C, making it accessible and usable to a wider public.

However, 42.6% of state, local and public sector offices and service providers still do not have a web site [15]. Many existing web sites, on the other hand, are not compliant with WCAG standard and are not multilingual. Also, some of the e-Croatia 2007 Programme strategic documents are only available in Croatian. New annual report regarding the current state of the implementation of the activities and measures set up in the *Operational Plan for the Implementation of the e-Croatia 2007 Programme for the year 2007* should be issued by the end of the year to show what have been achieved in 2007.

According to the ‘2006-2007 Global Report on Information Technology’, published by the *World Economic Forum*, Croatia still falls behind when the usage of IT in public state administration processes and services is concerned. In Croatia, the *National Competitiveness Council* has therefore emphasised the importance of development of eGovernment in general, at both the national and local level, as one of the major recommendations for increasing its ICT competitiveness, which primarily refers to developing the systems of e-Procurement, e-Health and e-City. Other important recommendations include the necessity of enabling broadband Internet access to all citizens and promoting e-business among business entities [12].

In the next period Croatia should recognize which EU solutions to adapt and which issues to develop by its own means and efforts. One of the priorities introduced in both *The i2010 Initiative* [8] and the *Operational Plan for the Implementation of the e-Croatia 2007 Programme for year 2007* [14] is the innovation and investment in ICT research. Croatian scientists are already participating in the development of the *European Research Area* (ERA), by joining a whole range of FP5, FP6 and FP7 projects. The knowledge and experience arisen from conducting research projects should be aimed on creating and upgrading the curricula in academic institutions. Considering eGovernment issues, academic institutions in Croatia have already introduced the training of civil servants (through training courses). The next step forward should be the establishment of a postgraduate specialized study in eGovernment, based on examples of the best EU practices, to provide knowledge for a successful eGovernment projects delivery and eGovernment systems management.

At this stage the cooperation with other countries to have arisen from disintegration of the post-communist Yugoslavia is vital, both when providing examples of best practice in solving state administration problems and, above all, when ensuring technological interoperability essential for establishing a quality relationship with future EU member countries coming from the region, are concerned.

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