

Survey of eGovernment Services in Serbia

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Serbia recognized the importance of the information society early in the 1989, when regulatory activities and organizational preparations in this area started. Despite of its early start, Serbia is now behind the European countries regarding the eGovernment services. The factors such as political situations, lack of capital, absence of appropriate legislation, etc. slowed Serbia in its development of the eGovernment services. This document describes the history of eGovernment in Serbia, gives overview of current state of eGovernment services, and presents strategy and actions plans for future development of interoperable eGovernment services.

Povzetek: Podan je pregled e-uprave v Srbiji.

1 Introduction

In this paper we tried to follow the structure of typical eGovernment report for EU countries done by EU IDABC eGovernment Observatory, but with little modifications.

Sections from 2 to 5 are common: we started with description of history of eGovernment services in Serbia, then with existing national strategy, legislative framework, and key organizations responsible for area of eGovernment development.

Sections 6 and 7 contain information about current implementation state. Infrastructure necessary for efficient eGovernment services is described in section 6, and in Section 7 is given rank of sophistication of standard online services for citizens and companies in Serbia.

There are initiatives (e-SEE Agenda) and EU projects (We-Go) that try to improve sophistication level and expertise of eGovernment services in region of Western Balkan countries. Therefore, for enabling better regional development we give a stress on description of current state in the governmental institutions responsible for services that tend to be cross-border transactional. Section 8 contains such information based on public available data.

2 History of eGovernment services in Serbia

Recognizing the importance and necessity of information society development, institutions of the Republic of Serbia, a bit earlier than other countries in the region, have started regulatory activities in this area [5] [6]. Since October 1989, in Serbia regulatory activities were started and organizational preparations on institutionalization and building of information system of governmental institutions. On the other hand, since 1996, realization of important projects was started in Serbia. However, great number of realized projects was not put in exploitation.

Here is the chronological survey of acts and projects in recent period.

Adopted acts:

- October 1989: Executive Council of Serbia Parliament adopted The Guidelines for building and adoption of the governmental institutions information system projects
- July 1990: Executive Council of Serbia Parliament adopted The Legal act on securing and protecting of governmental institutions information systems
- June 1992: Institute "Mihajlo Pupin, Belgrade, made the document: Conception of governmental institutions information system development. In 1995. this study document was adopted as an expertise base for creation of the

Law on Information system of Republic of Serbia

- March 1996: The National Assembly of the Republic of Serbia adopted the Law on Information System of the Republic of Serbia
- February 1997: Government of the Republic of Serbia, adopted the legal act on program of development of Information System of the Republic of Serbia, in order to enforce Law on Information System of the Republic of Serbia
- November 1997: Federal Government adopted the document: Strategy for further development of information technology in Federal Republic of Yugoslavia
- May 1998: Government of the Republic of Serbia adopted the Legal act on program of development of Information System of the Republic of Serbia
- May 1998: The Law on Personal Data Protection was adopted in 1998 on a Federal level
- April 2000: Government of the Republic of Serbia adopted The Legal Act on program of development and operability of information system of the Republic of Serbia in 2000.
- October 2001: Government of the Republic of Serbia adopted The Program of information system development of the Republic of Serbia
- October 2002: Minister for science, technology and development has signed Agenda for information society development in the South East Europe

Projects:

- July 1996: The Project of database for standards from information technology area was adopted. Database is implemented in Office for common operations of governmental institutions
- January 1997: The Project of database about codes and classifications in governmental institutions was adopted. Database was implemented in National Agency for Statistics.
- May 1997: The Project of transitional solution of common database of information system of the Republic of Serbia was adopted. According to the project, the common database contains data from Registry of citizens, Registry of legal entities, and Registry of land units, as well as classifications and codes for data usage. Conceptually, the Common Database represents core that connect and concatenate data from information subsystems databases.
- 1997: The Project of data dictionary of the information system of the Republic of Serbia was adopted. Among of three planned segments of the project, one was realized: Description of the organizational structure of the institutions, which was implemented in six institutions
- January 1998: The Project of common computer – telecommunication network of governmental

institutions was adopted. In chime of the project, the main communication node of the network was equipped.

- February 1998: The Project analysis on reasonableness of software tools usage in information system of the Republic of Serbia was adopted.
- 1998/99: The Project - General Program system for administrative business was adopted. As well: Prototype of the general program system for automation of administrative business in governmental institutions and Prototype of program system for automation of administrative business of General Government Secretariat was done
- 2000/01: The Project of information system about personal status of citizens was adopted – Program system for computer data processing about personal status of citizens, which evolve three functional unit/subsystems: “Master register”, “Electorate” and “Citizens”
- 2001: The Project of unique Register of streets and home numbers in the Republic of Serbia (Address Register) and Program system for maintaining of Registry were adopted.

Significant results in realization of important eGovernment projects were visible from 2002, when technological prerequisites were satisfied for intensive and efficient development.

3 Strategy for eGovernment development in Serbia

As a member of Initiative for Electronic South Eastern Europe (eSEE) which functions inside of the Stability Pact for South Eastern Europe, Serbia has signed international agreement “Agenda e-SEE for information society development” (Agenda e-SEE) on October 29th 2002., as a basic document for development of information society in this region. This agreement is in accordance with action plans e-Europe 2002 and 2005 and plan e-Europe+ for countries candidates and stands as confirmation of readiness of South Eastern European countries to work on development of information society in accordance with IT development processes in Europe [8].

The Minister of Telecommunication and Information Society Mrs. Aleksandra Smiljanic has ratified the new e-SEE Agenda+ on October 29th 2007. This new agenda represents the regional plan for activities in purpose of information society development for period from 2007 to 2011.

As defined in Agenda e-SEE, countries of South Eastern Europe will undertake concrete actions considering local constrained factors in the following areas:

- Adoption of work policies and strategy for information society

- Adoption and enforcement of legal infrastructure for information society in accordance with *acquis communautaire* established in EU countries
- Establishing regional collaboration and state mechanism for conduction and promotion of the information society development

In the Republic of Serbia, basic goals and directions of government strategy in the area of information society development and development of eGovernment is defined in the document “Strategy of Public Administration Reform in the Republic of Serbia” (November 2004) and this strategy represents framework for the Strategy for Information Society Development.

In this strategy is emphasized that as one of concepts and measure of reform success is inclusion of new information and communication technologies in public administration work.

By late 2004, local UNDP office has initiated work on National strategy for information society development.

Finally, Strategy for Information Society Development was adopted in October 2006 [4]. In this strategy, priorities and goals for information society development are set up, necessary institutional and legislation framework for such development is defined, strategy for establishing efficient national communication and information infrastructure is proposed, and besides special stress on eGovernment field, necessary steps and desired goals are stated in the area of e-Education, e-Health, e-Business, and e-Banking. In the special section development of business sector is described, which gives services and offers products from domain of ICT. Also, a number of measures are accepted for the sake of monitoring the successfulness of achieved goals of the strategy, as well as assessment of overall information society development. At the end of the strategy a one-year Action plan is given, with desired goals in certain segments, necessary activities, and deadlines for their accomplishment.

Special section in the SISD is related to eGovernment field. The main goals of eGovernment development are:

- Modernization of the public administration
- Development of the national economy
- More in-depth engagement and involvement of citizens in democratic processes

The concept of eGovernment anticipates interactive electronic services customized to the needs of citizens and businesses. Such services are integrated on all levels of public sector.

In order to realize such concept of eGovernment, the following principles of implementations are proposed in the strategy:

- Access for everybody (public services have to be available to all citizens)
- Security and protection of privacy

- Open system (eGovernment services should use solutions based on open standards and open formats)
- Coherency and functional integrity (eGovernment is coherent system, where integrity and common functionality of various heterogenic parts are reached through standardization and coordinated development)
- Autonomy in development (Every governmental institution or public organization should autonomy develop and manage their own subsystem according to previously agreed eGovernment standards and national plan of development)
- Flexible and modern ICT solutions
- Reliance on national ICT sector and academic/research community

It is stated that is necessary to develop the following key components of eGovernment:

- Electronic public services (Development of portal of all eGovernment services, services for citizens G2C, services for businesses G2B, services for administration G2G, internal electronic services among governmental institutions necessary for all other services)
- Telecommunication infrastructure
- E-Payment
- Security
- Standards
- Legislative infrastructure
- Institutional infrastructure

It is intended that evaluation of eGovernment strategy achievements, should be performed by using group of indicators.

The following key factors were identified for accomplishment of eGovernment vision:

- Political willingness
- Leadership and strategic planning
- Human resources
- Financing
- Resistance to the changes
- Participation of citizens and businesses

In the strategy is stressed the necessity of strategic partnership among key players: government, local governments, civil society, businesses, academic/scientific community, and ICT sector.

As a key area of activity, there are stated actions which should be started and which could be organized based on three main area of activity:

- Planning and organizing development of eGovernment
 - Establishing of institutional framework through creation of organizational structure with clear separation of responsibilities for functions of creating policy/strategy, coordination, development, support,

- revision/quality control, security/data protection
 - Based on this strategy, the long-term plan of development for the next 5 years should be created
 - Development of eGovernment standards
- Creation of suitable environment for development of eGovernment through:
 - Developing of necessary legislative framework
 - Building of ICT infrastructure
 - Building of security infrastructure – defining and building of PKI
 - Defining and regulating area of e-Payment
 - Improving ICT skills of governmental staff, as well as for experts
 - Promoting of eGovernment
- Development of public services and eGovernment contents
 - Re-engineering and standardization of administrative procedures
 - Development of common services of public data and infrastructural components (services of access to data registries and other available public databases, using defined standards for interoperability)
 - Development of public services government-citizens (G2C) and government-businesses (G2B) (Priority for development has 20 standard basic services)

In the final part of the strategy, there is Action plan for one-year period, which is related to three main areas of activity of eGovernment, i.e. planning and organizing development of eGovernment, creating environment for development of eGovernment, and developing eGovernment services. In that Action plan, there are suggested activities that should be performed, in order to achieve desired goals, and also deadlines for finishing of those activities.

Concrete actions aligned with the Action plan are started in the mid 2006, when Sector plan for investment in eGovernment area as a part of National Investment Plan is accepted. The total amount of investment is 34mil. €, and it is dedicated for funding projects for national computer network, electronic public procurements, improving of local government IS capabilities, and fiscal decentralization.

Currently in Serbia, there is no any special document regarding either strategy for eGovernment, or action plans for eGovernment development.

At this moment (late 2007) it is not fully clear what steps will be taken by the new government in Serbia. Basically, the plan is to form an IT council consisted of IT experts from various ministries. After establishing of current state, the new action plans will be proposed.

4 Legislation Framework

In the Republic of Serbia, regulations related to development of information society can be categorized in two groups: regulations adopted by the year 2001, and regulations adopted in the period 2003.-2005 [6] [5].

Regulations adopted by the year 2001:

1. Law on the Information System of the Republic of Serbia (“Official Journal of Republic of Serbia”, Nr. 12/96)
2. Law on Personal Data Protection (“Official Journal of Federal Republic of Yugoslavia”, Nr. 24/98, 26/98)
3. Regulation on the Program of Development of IS of the Republic of Serbia in 1997. (“Official Journal of Republic of Serbia”, Nr. 3/97)
4. Regulation on the Program of Development and Operability of IS of the Republic of Serbia in 1998. (“Official Journal of Republic of Serbia”, Nr. 17/98)
5. Regulation on the Program of Development and Operability of IS of the Republic of Serbia in 2000. (“Official Journal of Republic of Serbia”, Nr. 10/00)
6. Regulation on the Program of Development and Operability of IS of the Republic of Serbia in 2001. (“Official Journal of Republic of Serbia”, Nr. 58/01)
7. Regulation on Security and Protection of IS of Governmental Institutions (“Official Journal of Republic of Serbia”, Nr. 41/90)
8. Manual for Development and Adoption of projects of Information Systems of Governmental Institutions (“Official Journal of Republic of Serbia”, Nr. 49/89)

Regulations adopted in the period 2003-2005:

1. Law on Electronic Signature (“Official Journal of Republic of Serbia”, Nr. 135/04)
2. Sub-law acts for fulfillment of the Law on Digital Signature (“Official Journal of Republic of Serbia”, Nr. 48/05):
 - a. Regulation on record keeping of certification bodies
 - b. Regulation on register of certification bodies for issuing qualified electronic certificates in the Republic of Serbia
 - c. Regulation on technical and technological steps for creating qualified electronic signature and criteria that needs to be fulfilled by the means for creating qualified digital signatures
 - d. Regulation on conditions for issuing qualified electronic signatures.
3. Law on Free Access to Public Information (“Official Journal of Republic of Serbia”, Nr. 120/04)
4. Law on Business Entities Registration (“Official Journal of Republic of Serbia”, Nr. 55/04)

5. Penal Law (“Official Journal of Republic of Serbia”, Nr. 85/05)
6. Law on Organization and Jurisdiction of Government Authorities in the Suppression of High Technology Crime (“Official Journal of Republic of Serbia”, Nr. 61/05)
7. European Convention on Cyber Crime (2001. Budapest). Serbia signed this convention in April 2005, but it still awaits ratification.
8. Law on Telecommunications (“Official Journal of Republic of Serbia”, Nr. 44/03)

In the Republic of Serbia, preparations for development of the Information System of the governmental institutions began in 1989, earlier than in the surrounding countries. By adopting of the Law on Information System of the Republic of Serbia (1996) and the regulations for its fulfillment, legislation framework was created for realization of the significant infrastructural projects on the national level (common computer communication network of the governmental bodies, register of citizens...). However, organizational, technological, human resources and material preconditions for fulfillment of the law were not met on the republic level.

Besides technological, legal regulations adopted in the 90’s, today are surpassed from the aspect of actual social requirements for the implementation of the concept of eGovernment and the needs for alignment with the EU and international legislation.

Regulations of the importance for eGovernment were adopted in Serbia in years 2004/2005, later than in the surrounding countries. This especially applies on the Law on Electronic Signature, by which electronic signature is legally made equivalent with the ordinary signature; on the Law on Free Access to Public Information by which paper and digital documents are made equivalent from the aspect of availability, and which offers email communication between citizens and public authorities; on the Law on Business Entity Registration, based on which unique, centralized, public, electronic database on business entities, available over the Internet, was developed in the January 2005. Cyber crime and criminal acts against intellectual property are sanctioned by the penal law, and by special law, specialized governmental bodies were formed for fighting the high-tech crime.

In order to create better legislation framework for more dynamic development of the information society and the eGovernment, it is necessary to adopt new laws from the related areas. This means adoption of:

- Law on eGovernment,
- Law on e-Procurement,
- Law on eCommerce,

as well as other laws necessary for normal process of EU integration and modern world trends. Also, it is necessary to align certain normative acts with the EU directives:

Adoption of amendments and modifications of the Law on Telecommunications from the 2003, by which

area of electronic communications should be totally aligned with the so called Second Legislation Framework for Electronic Communications of EU from the year 2002.

- Law on Personal Data Protection, which should guarantee privacy of users of electronic communications, privacy of personal data of employees, privacy of personal data of citizens in the electronic registers of private and public institutions. Also, by this law an independent body for supervision of appliance of this law should be established.
- Ratification of already signed EU conventions such as European Convention on Cyber Crime (Budapest 2001.). This convention was signed by the Republic of Serbia, but it is still not ratified.

Considering the legislation framework, we can say that there is no significant lack in regard to the countries in the region. But, the primary task in the future is finishing of adoption of all necessary sub-acts of Law on Electronic Signature, as a main prerequisite for enabling high-level of electronic public services sophistication. It is announced by the new government that this activity will be finished in 2008.

However, it should be pointed that the bigger problem is the appliance of the existing laws and regulations, as well as finishing of started projects, or putting in the operational state finished projects.

5 Key organization in the development and application of eGovernment in Serbia

In the Republic of Serbia, operations of government administration and tasks in the area of information society development are under jurisdiction of Ministry of Telecommunications and Information Society (jurisdiction taken over from the Ministry of Science and Environment Protection in former government), National Information Technology and Internet Agency, and Office for Common Operations of Government Institutions. Although it is not identical activity as eGovernment, here will be given separation of responsibilities among institutions for information society development, since there is no special structural responsibility regarding eGovernment activities [4] [5].

Responsibilities are divided such that:

1. Ministry of Telecommunication and Information Society performs tasks of government which is related to:

- Creation of policy and strategy for building information society
- Preparation of laws, other legal acts, standards, and measurement in area of electronic business

- Application of information technology and Internet
- Providing information services

2. National Information Technology and Internet Agency (formed in 2003.) performs common and expertise tasks of government related to:

- Improvement, development, and functioning of information systems of government institutions, local government, and public services
- Data protection
- Development and adaptation standards for involving information technologies in government institutions
- Other tasks regulated by law
- There are some tendencies that role of this institution will change in the future.

3. Office for Common Operations of Governmental Institutions, performs tasks of automatic data processing which evolve:

- Creation and involvement of projects for automation of administrative and other operational tasks which are performed in Office and other government institutions
- Design and organization of document and other data bases in charge of government
- Other information technology tasks related for assurance of functioning and development of information systems

Unfortunately, until now, any wider consultancy mechanisms in order to create forum of stakeholders for discussion of applicability of national strategy for information society, were not developed by the government. There is a noticeable lacking of single institution which should have all necessary permissions for controlling efforts for building information society as well as for eGovernment. Though it is formed with that goal, National Information Technology and Internet Agency did not achieve any significant results, foremost because of lacking funds and conflict of jurisdictions with other ministries.

By looking at the organization of development and functioning of eGovernment, following conclusions can be stated:

Central Government Related Tasks:

- **Policy/Strategy** - In The Republic of Serbia, basic goals and directions of government policy/strategy in the area of information society development and eGovernment development are defined in the document “Strategy for reform of public administration in Serbia”, and that strategy is a framework for Strategy for information society development. As described above, currently in Serbia there is no institution on the national level which holds jurisdiction over creating policy/strategy of eGovernment

development. National Information Technology and Internet Agency is responsible for improvement, development and assuring functionality of government institutions information systems, local government, and public service offices, which is not the same as eGovernment

- **Coordination** - Currently in Serbia, unlike the other surrounding countries, there is no any multiresor body on national level which is authorized to coordinate and lead the development of the eGovernment in national boundaries. This absence is recognized in the strategy, but there haven't been any steps in this direction yet.
- **Implementation** - For implementation and technical support to the implementation of projects with common importance (network of government institutions, Internet domain of government institutions) as well as giving ICT support to various administration offices is responsibility of Office for Common Operations of Government Institutions, Department for Information Technology, Telecommunication, and Internet. Support to implementation of some projects is provided by IT companies based on outsourcing agreement. Ministry of Science and Environmental Protection is responsible to ensure support of implementation Law on Electronic Signature and it is responsible for establishing security infrastructure of electronic signature.
- **Support** – Responsibility of National Information Technology and Internet Agency and Office for Common Operations of Government Institutions
- **Revision/Assurance** - According to the strategy, State revision institution, as a stand alone and independent institution, liable to National Assembly of Republic Serbia, will perform the revision of government operations, including responsible institutions for ICT.
- **Protection** – Responsibility of Ministry of Telecommunication and Information Society
- **Other** - Currently in Serbia, there are no any authorized institutions-bodies for some specific segments (for example Security and Protection...). Inside of Serbian Chamber of Business and Belgrade Chamber of Business, there is Alliance for Information Activity, which deals with monitoring of activities in ICT area in a business manner. As a part of Standing Conference of Towns and Municipalities there is a council for information technology activities, which is responsible for tracking of state from this field in local governments. Also, there is Information Society of Serbia, as non-profit non-governmental organization. IT council inside of National Investment Plan is authorized

for approving projects related to ICT funded by NIP.

In Serbia, similarly like in other states in region, beside institutions on national level, which have responsibilities for development of common components of eGovernment, other ministries and offices are responsible for development and implementation of their own information systems. For that purpose, the most institutions have special units (sectors, departments, groups) for performing these tasks.

Local Governments Related Tasks:

- **Policy/Strategy** – Responsibility of National Information Technology and Internet Agency
- **Coordination** - Responsibility of National Information Technology and Internet Agency
- **Implementation** - Responsibility of National Information Technology and Internet Agency and Office for Common Operations of Government Institutions
- **Support** - Responsibility of National Information Technology and Internet Agency and Office for Common Operations of Government Institutions
- **Revision/Assurance** – There is no institution or organization assigned for performing these tasks
- **Protection** – Responsibility of Ministry of Telecommunication and Information Society

- To implement one access point for using existing and future electronic government services
- To join access to twenty basic services by European standards, dedicated to citizens, companies, and public administration

During creation of the central portal for eGovernment, it has used such concepts like user friendly, simple access, with services in front plan. The Portal is made in Serbian and English language, with planned extension on languages of minorities and other world languages. The following standards are respected during implementation:

- Portal is suited to the users needs
- Simplicity and accuracy of presented information
- Service-oriented

Target groups of these portals are citizens, companies, governmental institutions, non-governmental institutions, foreigners who work or are in visit in Serbia.

In future, several activities on eGovernment portal are planned:

- Updating portal content
 - In phase 1: by Agency, with verification from appropriate institutions
 - In phase 2: Directly by institutions responsible for this particular service (after training working on CMS)
- Adding new services

6 Infrastructure for eGovernment

Following issues are considered as a measure of sophistication of infrastructure for eGovernment services:

- Central Portal of eGovernment services
- Computer network of eGovernment
- Infrastructure for e-Identification
- Infrastructure for e-Procurement
- Infrastructure for knowledge management

Detailed description of state for each issue is given below.

6.1 Central portal of eGovernment services

At the beginning of 2007 the central portal of eGovernment services in Serbia was created, on the address www.eUprava.gov.yu [9]. The portal is created by National Internet and Information Technology Agency. Thereby is achieved one of the goals presented in Action plan for eGovernment in National Strategy for Information Society.

Portal is created with several goals:

6.2 Computer network of eGovernment

Currently, the national computer network of governmental institutions is implemented just in one part. The project e-Serbia funded by National Investment Plan (NIP) should build unique computer network of governmental institutions in Serbia, and institutions of special importance. The project started during 2006, and it is planned to last for 24 months.

6.3 eIdentification

The Law on Electronic Signature, as the first prerequisite for e-Identification, was adopted in late 2004. After that, during 2005 set of associated sub-acts were adopted, which regulated area of work for certification bodies for issuing digital signatures. But not all necessary sub-acts are adopted yet. Because of problem in enforcement of these acts, and also due to absence of other laws (Law on Personal Data Protection), there is no yet national certification body in Serbia.

However, from 16.11.2004 Post Serbia Certification Authority is issuing (selling) digital certificates to interested users outside of Post Company, no matter if they are individuals or legal entities. At this moment, Post Company of Serbia, actually Post Serbia Certification Authority is the first and the only public certificate body in the Republic of Serbia [7].

Inside Ministry of Interior, the project of Electronic Personal Cards (and also e-Passport project), run in cooperation with the Agency for Printing Banknotes, is in the final phase.

By Law on Personal Cards (2006), citizens are allowed to choose between standard and electronic personal cards. The project eCards has started in 2001 and is delayed mostly because of technical problems, as well as for dissatisfaction of other requirements (infrastructural, legal, absence of certificate bodies...) for full application of such project.

The type of data that could be stored on eCard is strictly regulated by the law. On the other hand, before beginning of using eCards, it is necessary to adopt the new Law on Data Protection, which should be adjusted with EU recommendations.

Together with the eCards project, the ePassport project is running.

But, as noted in section of Legislative Framework, the main barrier for development of efficient eIdentification infrastructure is lack of all necessary sub-acts of Law on Electronic Signature.

6.4 eProcurement

The main barrier to the implementation of electronic public procurements is of legal nature, i.e. it is necessary to adapt (or to supplement) Law on Public Procurements (adopted in 2002. with changes in 2004) with appropriate normative and organizational solutions for full online utilization.

Inside of National Investment Plan the e-Procurements project was approved, and should be run during 2007. It is the common project of Ministry of Finance and National Internet and Information Technology Agency, with participation of Public Procurement Office, and Ministry of Telecommunication and Information Society.

The goals that software system e-Procurements should satisfy are (similarly like in other countries where this system is already implemented):

- Increasing of effectiveness, efficiency and transparency in process of public procurements
- Decreasing corruption in governmental institutions
- Shorter time with lower expenses of procurement process better concurrency, with lower prices and faster economical development procurement process could be monitored from any physical place, in any time

In conduction of public procurement through the internet portal, terms of adapted Law on Public Procurements will be respected and will enable that every operation that was made from the computer of responsible person accomplish safely. It is expected that project e-Procurements facilitate faster assurance faithful certificate body of governmental institutions, local governments, and public administration for their need of electronic business.

Web address of Public Procurement Office is <http://www.ujn.sr.gov.yu>.

6.5 Infrastructure for Knowledge Management

At this moment, there is no infrastructure for Knowledge Management in Serbia on governmental level.

7 State of basic eGovernment services in Serbia

7.1 Introduction

In the following analysis, there are used indicators defined by EU Commission (benchmarks) for a measurement of sophistication of electronic public services in Serbia. Here will be covered just the area of eGovernment, actually the basic 20 services of eGovernment: 12 services for citizens, and 8 services for companies [2].

Public services for citizens involve:

1. *Income Tax Declaration*
2. *Job Searches by labour Offices*
3. *Social Security Contributions*
4. *Personal Documents (passports and driving license)*
5. *Car Registration*
6. *Application for Building Permission*
7. *Declaration to the Police*
8. *Public Libraries*
9. *Certificates (birth, marriage) Request and Delivery*
10. *Enrolment in Higher Education*
11. *Announcement of moving (change of address)*
12. *Health-related services (e.g. appointments for hospitals)*

Public services for companies involve:

1. *Social contributions for employees*
2. *Corporation Tax: declaration, notification*
3. *VAT: declaration, notification*
4. *Registration of a new company*
5. *Submission of data to statistical offices*
6. *Customs declaration*
7. *Environment-related permits*
8. *Public procurement*

As a measuring indicator of public services, the same four-stage framework defined in [1] is used:

- Stage 1- Information: The information necessary to start the procedure to obtain this public service is available on-line.
- Stage 2- One-way Interaction: The publicly accessible website offers the possibility to obtain in a non-electronic way (by downloading forms) the paper form to start the procedure to obtain this service. An electronic form to order a

non-electronic form is also considered as stage 2.

- Stage 3- Two-way Interaction: The publicly accessible website offers the possibility of an electronic intake with an official electronic form to start the procedure to obtain this service. This implies that there must be a form of authentication of the person (physical or juridical) requesting the services in order to reach stage 3.
- Stage 4- Full electronic case handling: The publicly accessible website offers the possibility to completely treat the public service via the website, including decision and delivery. No other formal procedure is necessary for the applicant via "paperwork".

Stage 0 has been used for ranking either total absence of any publicly accessible website managed by the service provider, or the case when the public service provider has a publicly accessible website, but this one does not offer any relevant information, interaction, two-way interaction or transaction possibilities at all concerning the analysed service.

7.2 Public Services for citizens

Below is given description of each 12 services for citizens, with ranked stage of sophistication [5].

7.2.1 Income taxes

Responsibility: **Tax Administration, Ministry of Finance**

Web site: <http://www.poreskauprava.sr.gov.yu>

Sophistication: **50%**

Description of service: Regulations, guidelines and electronic forms are available for downloading

7.2.2 Job search

Responsibility: **National Employment Service**

Web site: <http://www.rztr.co.yu>

Sophistication: **75%**

Description of service: There are job searching facilities, submitting application in the database of employees, submitting application in the database of employers

7.2.3 Social security benefits

a. Unemployment Benefits

Responsibility: **National Employment Service**

Web site: <http://www.rztr.co.yu>,

http://www.euprava.gov.yu/servisi/2_4_10/3_4_10_1/

Sophistication: **25%**

Description of service: There is online available information about rights on allowance for unemployed

b. Family allowances

Responsibility: **Ministry for Work and Social Policy, Local Governments**

Web site: **Sites of municipalities,**

<http://www.minrzs.sr.gov.yu>,

http://www.euprava.gov.yu/servisi/2_4_10/3_4_10_3/

Sophistication: **25%**

Description of service: Local governments are responsible for this service. On their sites are located information about necessary documents and procedures.

c. Medical Costs

Responsibility: **Ministry of Health, National Agency for Health Insurance**

Web site: <http://www.rzzo.sr.gov.yu>,

http://www.euprava.gov.yu/servisi/2_4_10/3_4_10_2/

Sophistication: **25%**

Description of service: Online information about reimbursement of medical costs

d. Student grants

Responsibility: **Ministry for Education and Sport**

Web site: <http://www.minrzs.sr.gov.yu>

Sophistication: **25%**

Description of service: Information about applications for student grants

7.2.4 Personal documents

a. Passports

Responsibility: **Ministry of Interior**

Web site: <http://www.mup.sr.gov.yu>

Sophistication: **33%**

Description of service: Information about necessary documents, charges

b. Driver's license

Responsibility: **Ministry of Interior**

Web site: <http://www.mup.sr.gov.yu>

Sophistication: **33%**

Description of service: Information about necessary documents, charges

7.2.5 Car registration

Responsibility: **Ministry of Interior**

Web site: <http://www.mup.sr.gov.yu>

Sophistication: **25%**

Description of service: Information about necessary documents, charges

7.2.6 Building permission

Responsibility: **Ministry of Capital Investments, Local government offices responsible for urbanism, building of premises, and residential relations**

Web site: <http://www.mki.sr.gov.yu>,

http://www.euprava.gov.yu/servisi/2_4_7

Sophistication: **25%**

Description of service: Information about regulations, procedures, and necessary documents

7.2.7 Declaration to the police

Responsibility: **Ministry of Interior**

Web site: <http://www.mup.sr.gov.yu/>,
http://www.euprava.gov.yu/servisi/2_4_9

Sophistication: 33%

Description of service: There is online information about starting procedure of declaration to the police.

7.2.8 Public Libraries

Responsibility: **Ministry of Culture, Public Libraries**

Web site: <http://vbs.nbs.bg.ac.yu/cobiss/>,

<http://www.biblioteke.org.yu>

Sophistication: 75%

Description of service: In the virtual library network of Serbia, it is possible to get information about manuals, catalogs, reading rooms, book borrowing, citation, working rules, charges, making a reservation for a book is possible only in a few libraries

7.2.9 Certificates

Responsibility: **Local Governments, Ministry for Public Administration and Local Governments**

Web site: **Sites of municipalities,**

<http://www.mpalsg.sr.gov.yu>,

http://www.euprava.gov.yu/servisi/2_4_1

Sophistication: 66%

Description of service: There is possibility to download form for starting non-electronic procedure. In some municipalities, there is possibility for online submitting requests for getting birth, marriage, or voting right certificate. Implementation of the service varies on concrete municipality.

7.2.10 Enrolment in higher education

Responsibility: **Ministry for Education and Sport (Department for High and Higher Education), Universities**

Web site: **Sites of Universities,**

<http://www.mps.sr.gov.yu>

Sophistication: 25%

Description of service: On the sites of some faculties, one can get information about enrolment conditions, educational program

7.2.11 Announcement of moving

Responsibility: **Ministry of Interior**

Web site: <http://www.mup.sr.gov.yu>,

http://www.euprava.gov.yu/servisi/2_4_2

Sophistication: 33%

Description of service: Information of necessary documents, charges

7.2.12 Health related services

Responsibility: **Ministry of Health, Hospitals, Clinics, Health consulting-rooms**

Web site: <http://www.zdravlje.sr.gov.yu>,

http://www.euprava.gov.yu/servisi/2_4_5

Sophistication: 25%

Description of service: On the sites of some health institutions (especially private ones), there is a possibility for making appointments

7.2.13 Conclusion

The following table illustrates online sophistication for citizen services in Serbia comparing with EU average sophistication. It is clear that Serbia is far away from EU average. The full enforcement of Law on Electronic Signature could significantly improve this result without bigger technological change in short period.

Serbia 2007	EU(18) 2006	EU(10) 2006	EU(28)
40.83%	71.00%	62.00%	68.00%

Table 1 - Citizen Online Sophistication: Serbia 2007 and EU 2006

7.3 Public services for businesses

7.3.1 Social contributions

Responsibility: **National Fund for Pension and Invalidity Insurance of Employees, Tax Administration of the Ministry of Finance**

Web site: http://www.euprava.gov.yu/servisi/2_5_4

<http://www.rzzo.sr.gov.yu/>,

<http://www.poreskauprava.sr.gov.yu/>

Sophistication: 50%

Description of service: Online information about necessary procedures, forms could be downloaded

7.3.2 Corporate tax

Responsibility: **Tax Administration, Ministry of Finance**

Web site: <http://www.poreskauprava.sr.gov.yu>,

http://www.euprava.gov.yu/servisi/2_5_3

Sophistication: 50%

Description of service: Electronic forms could be downloaded from the site. There is a special treatment for big tax tributary

7.3.3 VAT

Responsibility: **Tax Administration, Ministry of Finance**

Web site: <http://www.poreskauprava.sr.gov.yu/>

http://www.euprava.gov.yu/servisi/2_5_5

Sophistication: 50%

Description of service: Electronic forms are available for download. Various information about VAT and procedures for charging VAT are available.

7.3.4 Company registration

Responsibility: **Serbian Business Register Agency**

Web site: www.apr.sr.gov.yu

Sophistication: 50%

Description of service: Download of electronic forms necessary for company registration, and forms for modification of existing information in the registry. There is an opportunity for searching of business registry and also other registries in responsibility of this agency.

7.3.5 Statistical data

Responsibility: **Statistical Office of the Republic of Serbia**

Web site: <http://www.statserb.sr.gov.yu>,
http://www.euprava.gov.yu/servisi/2_5_2

Sophistication: 66%

Description of service: One can download various forms from the area of living environment, population, architecture

7.3.6 Customs declarations

Responsibility: **Custom Administration**

Web site: <http://www.fcs.yu>

Sophistication: 75%

Description of service: Ability for electronically submitting declarations (after downloading client application), information about regulations, manuals, and electronic forms are available online, interactive completing of JCI

7.3.7 Environment-related permits

Responsibility: **Ministry of Environmental Protection**

Web site: <http://www.ekoserb.sr.gov.yu>

Sophistication: 25%

Description of service: On the site there are available regulations, manuals, and reports which could be downloaded. There are no forms for download.

7.3.8 Public procurement

Responsibility: **Public Procurement Office**

Web site: <http://www.ujn.sr.gov.yu>

Sophistication: 75%

Description of service: Advertising of public procurement, defining criteria for the best possible offer, gathering offers, making decisions about requests with additional explanations, opening and ranking of the most acceptable offers; negotiating, and monitoring the process through to completion, and statistical reports. Electronic identification of participants, uploading and downloading of electronic documentation and reports, submitting and answering the questions, offer ranking, publishing final results etc.

7.3.9 Conclusion

Overall online sophistication for business services in Serbia and in EU countries is given in table below. It is clear that all EU countries gave a stress on this kind of services, but Serbia has to improve a lot.

Serbia 2007	EU(18) 2006	EU(10) 2006	EU(28) 2006
55.13%	88.00%	81.00%	85.00%

Table 2 - Companies Online Sophistication: Serbia 2007 and EU 2006

7.4 Cluster Online sophistication

7.4.1 Income-Generating Cluster

This cluster involves the following services: taxes, social contributions, VAT, and customs.

In this cluster, that addressed services for businesses we see that average level for EU countries is very high, but in Serbia is just above 50%. Improving sophistication of these services will definitely enable better environment for business in Serbia.

Serbia 2007	EU 2006
55.00%	94.00%

Table 3 – Income-Generating Cluster Sophistication: Serbia 2007 and EU 2006

7.4.2 Registration Cluster

This cluster involves the following services: car registration, company, birth & marriage, moving, and statistical data.

Serbia 2007	EU 2006
48.00%	72.00%

Table 4 – Registration Cluster Sophistication: Serbia 2007 and EU 2006

7.4.3 Returns Cluster

This cluster involves the following services: health, libraries, procurement, policing, job search, and benefits.

Serbia 2007	EU 2006
51.33%	71.00%

Table 5 – Returns Cluster Sophistication: Serbia 2007 and EU 2006

7.4.4 Permits and Licenses Cluster

This cluster involves the following services: building, passport, education, and environment.

This result show that in Serbia is very low level of sophistication for online services regarding getting some permits or licenses, and these services should be improved.

Serbia 2007	EU 2006
27.00%	61.00%

Table 6 – Permits and Licenses Cluster Sophistication: Serbia 2007 and EU 2006

8 Services important for transactional cross border application domain

8.1 Introduction

It is noticed that in Western Balkan Countries there is a low level of awareness of interoperability issues and cooperation potentials. In order to enable public administration in Western Balkan Countries (WBC) to reach higher productivity and equity by establishing of an eGovernment Interoperability Framework with focus on transactional cross border services, here will be given description of current state in governmental institution responsible for such services, important for transactional cross border application domain.

The list of these important cross-border services include eCustoms - New Computerized Transit System (NCTS), eFinance - VAT Information Exchange System (VIES), eJustice cross border cases - Automation of Court Procedures (ACP), European Companies Register (ECR) and European Land Information System (EULIS), eAdministration - Electronic Filing System (implementation of paperless government) and eTrade Facilitation for European Waste transport (EUDIN).

Please, keep in mind that this description is based on publicly available information about these services.

8.2 eJustice

The National Judicial Reform Strategy in Serbia has been adopted in April 2006 [10]. This Strategy sets forth the challenges facing Serbia's judiciary within the framework of four key principles and corresponding goals. An effective justice system is based on four key principles: independence, transparency, accountability, and efficiency, which provide the framework for the design, development and organization of all judicial institutions. A separate Implementation Plan outlines the specific steps needed to achieve these goals.

The Development and Implementation of the Judicial Information System of Serbia (JISS) [11] is under jurisdiction of the Ministry of Justice according to law. JISS includes 7 Information Systems (IS): IS of the Ministry of Justice as a central point of JISS, IS of courts of general jurisdiction, IS of Commercial courts, IS of Misdemeanor courts, IS of the Administration court, IS of Public Prosecution Offices, and IS of Prisons.

Recently, several projects have been done, or are still in implementation, related to court modernization. Some of those projects are funded by EU, some with other donors, and some are funded locally [12] [13] [14]:

- Several pilot projects are implemented recently: involving of CMS in the First Public Prosecution Office in Belgrade, Special Court in Belgrade is a project funded by USAID and managed by NCSC, Municipal court in Zajecar is the project funded and managed by the German IRZ foundation, District Public Prosecution Office in Belgrade, example of

involving of CMS in the biggest PO in the Serbian Judiciary.

- In cooperation with European Agency for Reconstruction (EAR), the second phase of the project "Supporting Judicial Reform in Serbia" was finalized. The project encompasses 5 judicial institutions including district and municipal courts, district and several municipal public prosecution offices. Work on improving information infrastructure has been completed. Also, with the help of EAR, SENA business software has been prepared for usage in courts of general jurisdiction. The software is based on Microsoft platform, and it offers possibility for electronic management of court records, tracking status of cases, automatic collection and processing of statistical data, as well as preparation of data for annual reports on judges' efficiency. It was expected that SENA should be installed in some courts by the beginning of March 2007.
- Commercial Court Administration Strengthening Activity (CCASA) is a three-year, \$12.8 million project began in March 2004, funded by the United States Agency for International Development (USAID). Up to date, all commercial courts (The Higher Commercial Court and 18 Commercial courts) are connected in a computer network (VPN). CAS - Court Automation System in three modules was introduced. Web-based statistics gathering software known as Case Data Collection Instrument (CDCI) is implemented in the entire Serbian Commercial Court system. In year 2006, all cases (over 117.000) were entered using CDCI; Currently, statistical reporting is available for more than 183.229 cases
- Information on commercial courts, including court statistics, court schedules and data on bankruptcy cases available to the public on the web portal: www.trgovinski.sud.srbija.yu;
- Support for the project "Court administration modernization based on IT CMS – CASE MANAGEMENT SYSTEM" was finalized in cooperation with German IRZ foundation (<http://www.irz.de>). The result was start of a pilot project – Registry Office in the form of service units for the operation of the business software in Belgrade District Court and 8 municipal courts.
- "Database of legal regulations and court practice" project was finished in cooperation and with the donation of European Agency for Reconstruction – EAR. Since July 2006, electronic database is fully functional and can be used over the network of governmental institutions.
- Ministry of Justice in cooperation and with the donation from the Kingdom of Norway is working on a project "Justice Network - forensic

scientists and interpreters”. The goal of this project is to, in shortest time possible, make publicly available basic information on courts in the Republic of Serbia.

- The project “Supporting Crime Services in Serbia and Montenegro” was finalized in February 2007, and it encompasses all public prosecution offices in the Belgrade area, which are connected in a common computer network with the center in the Palace of Justice in Belgrade.
- Software for submitting complaints of the parties was installed in the Section for Court Supervision in the Ministry of Justice. The software is used for submitting all complaints towards Ministry of Justice; it has searching and analysis capabilities. Till now, total of 11 647 cases were processed using this application.
- Development of the Information System of the Ministry of Justice, is funded and managed by the Microsoft Office in Belgrade

Ongoing modernization of the information technologies (planned for period 2007-2011 according to the implementation plan of the national strategy) will enable monitoring of courts’ and judges’ efficiency, monitoring their workload, access to electronic database of legal regulations and court practice, efficient way of collecting all statistical data, and interactivity with the public.

Here are some plans or ideas for the next period:

- The project named “ePravda” (eJustice) is submitted to the government for funding. This project is planned to last for three years and to solve many lacks that are present today.
- UNDP support the Misdemeanor courts and support for the Judicial Training Centre. Inside the working group for the realization of the donating project UNDP „Improving Penalty System and Misdemeanor Courts in the Republic of Serbia“, expert team was formed with the assignment to make the evaluation of existing software solutions for monitoring the work of misdemeanor institutions.
- Complete analysis of the current state of IT infrastructure, and preparations for the plan for the realization of the project “IT modernization of the court institutions” from the National Investment Plan were performed. Realization of this project is planned for the year 2007.
- It is expected improvement of IS of Prisons and The Administration court
- Also, there is a plan for sharing of business and technical data in the Judicial Information System of Serbia.

Generally, in the Serbian Justice system there are some particular solutions that are very modern, as a result of international donations. However, overall

impression is that system is not fully integrated, not standardized, and therefore not ready for delivering various (especially complex) services. Also, communication with other governmental institutions is very poor. Practically, Justice Information System stands as an isolated system. There is a lot of room for interoperability here. It seems that the proposed project ePravda (eJustice) will tend to solve many of these problems.

8.3 eFinance

Ministry of Finance is responsible for some services important for cross-border applications. Here will be given a description about related institutions inside of Ministry of Finance.

8.3.1 eTreasury

Currently, there are a lot of activities related to information system which is in function of controlling public finance. The name of the main project is Integrated Information System of the Treasury (FMIS) [15]. The project is divided in four phases and is planned to finish by the end of 2008.

The key goals of this project are:

- Implementation of integrated IT solution in charge of Treasury, relying on the most modern technologies, in concordance with relevant international standards, due to optimal and effective controlling of Consolidated Account of Treasury. Also, it should be continued development and modernization of accounting, executing and control of budget, as well as establishing of sophisticated function of financial planning and anticipation.
- Constitution of electronic service access, in online regime, to the all Direct Budget Users (DBU), and Indirect Budget Users (IBU) for completing process of budget execution in which it will be no more communication with papers, whereby it will significantly be improved control and transparency (visibility) of the whole process.
- Implementation of the system for controlling debt and liquidity in order to make feasibility of Serbia for effective and optimal debt management through integrated IT solution, according to the best world practices and standards.

Implementation of these goals requires creation of new business processes for DBUs and IBUs, replacement of temporary treasury solution, creation of the new tools for queries and reports (execution of the budget, accounting), and training of DBUs human resources and change management.

8.3.2 eTaxes

In the area of eTaxes there is a final phase of the big project funded by National Investment Plan. It is the project Fiscal Decentralization in Serbia (FIDES). The key players in the project are Ministry of Finance (Tax Administration) and National Information Technology and Internet Agency. However, Ministry of Public Administration and Local Government also participate in the project, as well as Ministry of Science and Environment Protection.

Strategic goals of this project are related to:

- Efficient work of local governments
- Exchange data with other information systems in order to achieve unique relevance of citizen and assets data
- Continuity and higher efficiency in the business of validation and charging of profit

Operational goal of the project is creation of the system for support to the fiscal decentralization of tax system on the level of local governments with direct exchange of data with central tax administration and Ministry of Finance.

Future local tax administration will determine, control and charge tax on assets of individuals and legal entities, tax on transfer of absolute rights, tax on inheritance and gifts, tax on income of individuals' real estate, local communal tax, imbursement for using and arrangement of plot of ground, imbursement for protection and improvement of living environment, residence tax, voluntary tax, and other public income regulated by law.

The final goal of this project is financial decentralization and enabling local governments to more independently decide about its local economical development.

However, there are several continual goals that are planned to be achieved during implementation of this project:

- Development of local governments with optimal and consistent tools for enforcement of own local competency in order to do faster implementation of relevant EU recommendations and standards in domain of local governments
- Efficient administration and charging of local tax income wherewith will improve local budgets and decrease demand on central government budget
- Building of national PKI in governmental institutions and local governments as a basic requirement for secure finalization of this project
- Building of national system for relations with clients – Calling / SMS / E-mail Center. For each of the previously quoted functions, it will be introduced two-way communication with clients via phone, SMS, e-mail and optionally by fax.

It is expected that this project will be finished during 2007. Current sophistication of online tax services is 50% (both for citizens and for companies) and it is expected that results of this project will improve quality of service in this area.

8.3.3 eCustoms

Serbian Customs Information System is established in 1974, but in this form works since 1995. SCA IS is a complex and integrated system and supports all basic customs procedures [16].

Structure of the Serbian Custom Administration is as follows: approximately 2500 Serbian Customs officers are located at the Headquarters in Belgrade, 13 customs houses and over 140 customs posts/units/points use the IS in line with their legal powers, upon which over 100.000 computer transactions per day are performed on local servers in Customs Offices and on the central server in the Customs Headquarters.

Hardware platform for Serbian Custom Administration Information System consists of central server (IBM Z800), and local servers (IBM AS/400 – i-Series) connected in a star network. The system is functional 24hours/day, 365days/year.

Custom officers in Customs Houses and their organizational units process all the basic customs documentation on local servers (Single Administrative Document (SAD), TIR Carnet, ATA Carnet, Summary Declaration). After finishing the processing, data is sent to the central server in different intervals (each 2 to 1 minutes a day, depending on the nature of data). Local servers are also used as application servers, because in case of loosing connection with central server they can continue to work independently, because all the needed consultant data and programs are on local servers.

SCA IS consists of a few subsystems which are divided into approx. 100 modules which incorporate a few hundred options that use around 2500 applications:

- General subsystem, which involves user management, reference data management, network configuration, data replication service management, backup management.
- Regulations subsystem: legislation data base, tariff management, customs valuation.
- Transit subsystem: declaration management, confirmation that goods reached destination, processing and management (comparing data, processing unfinished transit operations, etc.), examination report management, road tax administration.
- Clearance subsystem: declaration management, examining and releasing of goods, sampling and laboratory analyses, payment management, calculation of interest, bank guarantee management, and automatic management of customs officers selected for goods inspection.
- Administrative and offence procedures including requests and permissions for customs procedures with economic impact

- Human resource management: organization and systematization, staff evidence etc.
- Statistics subsystem: passengers' data, vehicles data, offences, etc.
- Customs Passenger Declaration: processing the declaration, calculating and charging customs duties for goods that passengers carry with them
- Risk Analysis subsystem: risk analysis system management
- Direct Traders Input – DTI subsystem

Future development of SCA IS is defined in the SCA IS Development Strategy document. SCA IS Development Strategy consists of several parts related to:

- IT Infrastructure
- Implementation of the new functionality
- Upgrade of the existing SCA IS to the new technologies based on open platforms
- Implementation of EU system
- Implementation of support system
- Single Electronic Window, as a crucial goal of SCA IS functionality

One section of SCA IS Development Strategy addresses following issues related to strategic business requests:

- Single Electronic Window
- Transit
- Clearance Procedures
- Enforcement and Compliance Functions
- Road Taxes
- Mission Support Procedures.

Recommendation no. 33 UN/CEFACT, describes Single Electronic Window (SEW) as a facilitation measure for parties involved in trade and transport which enables submission of standardized information and documentation, at a single place, in order to fulfill all requested conditions related to import, export and transit. Also, this concept enables efficient cooperation between different governmental agencies.

Currently, there is a process of SEW implementation that consists of several activities:

- Ensuring close cooperation between governmental agencies, changing the technology of
- Carrying out customs procedures, standardization of data and documents used in the SEW, and IT support to the new form of cross government agencies cooperation and cooperation with the trade community.

The next section in the strategy related to business strategic requests is the Transit section. SCA IS will support all changes in transit procedures during the process of adjusting to the transit procedures that are being used in the customs administrations of the developed countries. System will also support the EU

NCTS (New Computerized Transit System) which should be implemented just before Serbia enters EU.

The strategy in section related to Clearance Procedures says that SCS IS will support all changes of clearance procedures in process of adjusting to the procedures that are used in customs administrations of developed countries. System will also incorporate TARIC (integrated EU tariff), which will be the referent database for implementing all customs procedures and automation in calculating taxes that are being charged in customs procedures.

Regarding Enforcement and Compliance Functions, IT support will be provided for intelligence analytics, offence case tracking, disciplinary measures and appeals, risk analysis and audit control. Up to date, it is realized support for offence case tracking, audit control (CAFAO donation), and intelligence analytics (CAFAO donation – insufficient). There is no support yet for intelligence analytics (System for business informing), risk analysis (long term work), and disciplinary measures and appeals.

According to the strategy, SCA IS will support all changes in calculation and collection of Road Taxes. Currently, IT connectivity is agreed between TERTERM system that is used by Public Company Roads of Serbia (and it was developed by Mihailo Pupin Institute) and SCA IS on all border crossing points.

At the end, the strategy addressed issues of Mission Support Procedures. There is a plan for providing support for human recourses management, document data flow management, management and governance support system, data warehousing, analytics and reporting, the SCA Intranet and the SCA Web site.

8.3.4 eFinance conclusion

We may notice that in the public finance there are a lot of activities in the IT area. But, sophistication of their online services is very low comparing with EU average results.

Through participation in various EU projects, Ministry of Finance created its own strategy for IT development, good practice from EU countries is accepted, also an interoperability issues are known and in some areas are followed in order to be connected with relevant EU organizations. But, until now, there is no significant work done in communication with other governmental institutions in Serbia in order to offer high sophistication level of online services.

8.4 Companies Registers

For the purpose of reform of public administration, one of important reform laws was adopted in May 2004, Law on registration of business entities. Based on this law, Serbian Business Registers Agency (SBRA) was formed, as the unique institution responsible for maintaining business registries, and its work is regulated in detail by special Law on Agency for business registries [17].

Start of agency is dating back in 2004 when basic team was formed. Already in September 2004 the project Reform of Business Subjects (project REPS) was started

in collaboration with World Bank. But official start of agency is 4.1.2005 when maintenance of Registry of Business Entities and Registry of Financial Leasing has started.

In August 2005 maintenance of Registry of Pledge Rights has started, and from January 2006 Registry of Businesses, and Submitting Financial Reports of Business Entities (from January 1st 2006). It is expected that during next years this list will be extended with new registries, whereby in shortest time it is expected to activate the Registries of Foreign Investments, and Registry of Factoring.

Besides Serbian government providing of financial facilities especially in preparation phase, was highly supported by: Swedish Government, USAID, and Microsoft. The procurement procedure was according to the World Bank International Competitive Bidding (ICB) rules. It was „Turn-Key ICT Project“, which involved delivery of complete solution for SBRA, including hardware, software and all necessary services. In preparation of tender documentation, important role was played by IT consultants from Ireland.

During project development, a good model from EU was selected, whose experiences were used. That was an Irish model, and a very successful example of knowledge transfer from Companies Registration Office (CRO) Ireland, Dublin.

Modern information system in the SBRA, throughout its internal part, user/partner connections, and Internet site, enables:

- Economy and data availability through the unique centralized database for every of needed registries
- Simplification and speeding up of registration process
- Decreasing of registration and business costs
- Harmonization with EU standards and directives
- Education of users and improvement of inter-communication
- Electronic data exchange with public and private sector

Before reform, the registration system was intended for: registration of company was performed in one of 17 commercial courts, and registration of businesses in one of 161 municipalities. Automation of the process in the courts was on low level, mostly on the level of very primitive information system, without inter-connection. Automation of the process in the municipalities varied, ranging from solid application down to totally manual processes, without any standardization.

During development of Registry of Business Entities in SBRA (the project REPS), the modern concepts were used:

- Electronic register
 - Centralized, unique database of business entities
 - Usage of the most modern technologies (multi-tier Web applications, RDBMS – MS SQL server, LAN/WAN (Intranet))

- Full data availability (24/7) – Using of Internet for searching purposes
- Implementation of data exchange and business collaboration with other institutions
- Example of eGovernment services(G2C, G2B, G2G), done by all standards
- Ability for registration through Internet
 - Ability of downloading of all forms via Internet, and filling of Web forms
 - As soon as it is possible, it will be enabled an offer of full electronic registration with use of electronic signature
- Respect of international standards
 - Concept and legislation framework are aligned with “EU Best Practices”
 - The modern standards of project management and software engineering methodologies (Agile Methods) were used
 - Data formats and communication formats are such that can enable international collaboration

Essential functions of software for Registration of Business Entities are:

- Electronic submission of requests
- Receiving electronic slips
- Scanned documents will be available in electronic way and opened for searching
- Possibility for making payments electronically (EUR, Dinars)
- There are various opportunities for connection based on industrial standards (Web Services based on XML)

Implemented solutions are enabling data exchange with other institutions and offices. The final goal is realization of “one stop shop” services for citizens, throughout several phases.

Presently, there is collaboration of SBRA with the following institutions:

- National Agency for Statistics (from 2004).
 - Exchange of data set related to companies and businesses / Statistical analysis
- National Bank of Serbia
 - Exchange of data set related to companies and businesses / Data on banking accounts
- National fund for pension and invalid insurance
 - Forms of businesses application (electronic), Confirmation of application (paper)
- Ministry of Finance, Tax Administration
 - Data set of companies and businesses / Data of Tax IDs
- Leasing companies
 - Data of leasing contracts / Reports from Registries of financial leasing

Collaboration or extension of collaboration is planned with local governments (municipalities), National agency for health insurance, National agency for employment (sending data of businesses), Custom Administration, and with other agencies and ministries.

Collaboration with private sector is planned also: electronic delivery of data for legal entities and citizens, collaboration with banks (intensive collaboration already exists in some domain), collaboration with Chamber of Business, Alliance of Banks (negotiations are active), commercial registries, enterprise clients (Telecom Company, Post Company, etc.).

It is planned to achieve full electronic registration – for partners and end-users. At the moment the full realization depends on enforcement of Law on Electronic Signature.

The Serbian Business Registers Agency has recently joined the European Business Register (EBR) group. The work for the technical integration to the network will start soon. It is hoped that company information from Serbia will be available by the end of 2007.

In future, there are lots of planned activities that should be done in the SBRA.

Here are given planned activities for the year 2007:

- Finalization of the project “One Stop Shop for registration in SBRA”
- Participation in the BRITE project
- Continuity of quality improvement, standardization of data in the registries, initiative for changing necessary regulations
- Finishing of businesses databases
- Further opening to the public, through complete offer of deliverable electronic slips (complex reports from database)
- Participation on European Commerce Registers Forum (ECRF) in Riga, Latvia; Active international and especially regional collaboration, in the field of registration and more
- Realization of electronic requests (depending on availability of qualified electronic signatures)

Our impression is that SBRA is currently the leading institution in the country by achieved technological progress and potentials for further development.

8.5 eAdministration

Present situation at Public Administration and Local Government in Serbia is such that implemented information solutions and services are varying from municipality to municipality in sense of functionality, contemporaneity of used technologies and equipment.

In the most number of municipalities, there are information systems that partly implement most important business operations and which are relatively modern and non-integrated.

Used equipment is only partly modern. There are no examples of interoperability or any other attempts of process standardization, automation, etc.

Variety in efficiencies of implemented solutions used by organs of local governments, directly reflect on variety in development of basic eGovernment services such as Application for Building Permission and Certificates (birth, marriage) Request and Delivery that belong to domain of local government responsibilities.

In order to organize this domain, Local eGovernment project has been prepared and it will be financed from resources of National Investment Plan. Preliminary plan was to start project development in the mid 2007, but there is a possibility of prolonging this term.

The basic idea of this project was improvement of efficiency and standardization of providing eGovernment services across entire Serbia, with minimum expense and elimination of multiple data sources, all strictly according to relevant laws.

Also, very important idea and purpose of this project is establishing technical environment with capability of providing reliable and safe communication between local Governments and using systems for temporary transfer of responsibility, based on mutual authentication, using national PKI infrastructure.

The project was proposed on behalf of National Internet and Information Technology Agency, and other project participants are Ministry for Public Administration and Local Governments, and Ministry for Telecommunication and Information Society.

Main functionalities of the project will be: issuing birth, marriage, death and citizenship certificates, Registry Office (Business Process Management / Document & Workflow Management), parliament affairs with support for councilor public relations, support for assets(Property)-Legal's affairs, inspection affairs, urban planning and construction (with legalization), protection for persons with special needs (children, mothers-pregnant women, invalids, family allowances, etc.), human resources management, system for managing local government regulative, Internet/Intranet portal as system for communication with clients, providing preconditions for implementation of election register, payment portal.

The most important goals of the project are: focusing on treating users of Government Administration as clients, improvement of efficiency and transparency, standardization and minimization of provided service expenses. These goals are to be implemented throughout providing services based on concept „to all citizens in all municipalities“

One of the continual goals of the project is development of national system for relations with clients (citizens and enterprises) - Call/SMS/E-mail Center. For each of the specified functions this implementation brings improvements through two-way communication with clients using phone, SMS, E-mail and optionally fax. Special phone numbers will be available for providing such services.

9 Conclusion

If we have to define what the main barrier in Serbia is for providing high level online services, we would like to say that it is interoperability on national level, besides all legislation problems. Actually, there is a lack of all aspects of interoperability: organizational, semantic, and technological. It is strange that for country that it is not in EU, some institutions are better connected with relevant EU institutions, than with local governmental institutions.

We hope that the new team in Ministry of Telecommunication and Information Society will significantly improve general state of eGovernment services in Serbia.

References

- [1] Capgemini (2005) Online availability of public services: How is Europe progressing, European Commission Directorate General for Information Society and Media
- [2] Capgemini (2006) Online availability of public services: How is Europe progressing, Web Based Survey on Electronic Public Services, *Report of the 6th Measurement, i2010* Information Space Innovation & Investment in R&D Inclusion
- [3] Ministry of Public Administration and Local Self-Governments of the Republic of Serbia (2004), Strategy for reform of public administration in Serbia
- [4] National Agency for Information Technology and Internet (2006), Strategy for development of information society in Serbia
- [5] National Agency for Information Technology and Internet (2006), Long-term plan for e-Government development in Serbia, Draft 2
- [6] National Information Technology and Internet Agency (2006), Analysis of legislative framework for e-Government in Serbia
- [7] D. Spasic (2006), Digital certificate as digital identity of Internet users, Serbian Post Company
- [8] S. Marinkovic (2005), Section proposal related to Information Society for National Strategy of Serbia for accession to EU, Center for Internet development in Serbia
- [9] National Information Technology and Internet Agency (2006), Internet portal of e-Government in Serbia
- [10] The Ministry of Justice, The Republic of Serbia (2006), National Strategy for Judicial Reform
- [11] B. Perovic etc. (2007), Ministry of Justice, Judicial Information System of Serbia
- [12] The Ministry of Justice, The Republic of Serbia (2006), Annual Report for 2006
- [13] The Ministry of Justice, The Republic of Serbia (2006), The Development Plan of Ministry of Justice for 2007-2001
- [14] USAID (2007), Commercial Court Administration Strengthening Activity (CCASA) – Report
- [15] The Ministry of Finance, The Republic of Serbia (2006), Information system in function of controlling public finance
- [16] The Ministry of Finance, Custom Administration, Republic of Serbia (2006), The Modernization of the Serbian Customs Information Systems
- [17] B. Dobrosavljevic, The Role of Information Technologies in E-Government - Serbian Business Registers Agency Experience, *YU Info 2007*