Gap Analysis of eGovernment in Western Balkans (March 2006)

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METAMORPHOSIS
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Gap Analysis of eGovernment in Western Balkans (March 2006)

In order to analyze the current situation of eGovernment in Western Balkan Countries (WBC) the authors used eGovernment benchmarks, analyses of National Information Society (IS) Strategies and performed a study on implementation level of eGovernment.

The existing EU eGovernment benchmarks are measured by Capgemini with methodology to measure *online sophistication of basic public online services* and *percentage of fully available online services*.[1] By using these benchmarks the authors evaluated four WBC, comparing their progress in the area of eGovernment services with the EU countries. The authors also analyzed the respective National IS Strategies, especially those parts which cover realization of eGovernment concepts. This study analyzes the action plans level of implementation and also present several issues given by Stability Pact eSEE initiative.[2]

By analyzing current situation the authors identify real essential problems and provide guidelines for better implementation of eGovernment services.

Analysis of availability of eGovernment services

Benchmarking eGovernment services (October 2004)

This analysis is realized based on Capgemini's eGovernment Web-Based survey on electronic public services. Two benchmarks are evaluated:
1. the percentage of online sophistication of basic public services available on the Internet,
2. the percentage of public services fully available online.

Evaluation of these benchmarks enabled making a comparison between Western Balkan Countries and other countries measured on October 2004.

The following table presents the percentage of online sophistication of basic public services available on the Internet:

Country	Code	%	Country	Code	%	Country	Code	%
Sweden	S	89.00%	Netherlands	NL	70.00%	Czech R.	CK	57.00%
Austria	A	87.00%	Portugal	P	68.00%	Cyprus	CY	51.00%
UK	UK	84.00%	Belgium	B	67.00%	Hungary	HU	50.00%
Ireland	IRL	84.00%	Germany	D	66.00%	Slovakia	SK	40.00%
Finland	FIN	83.00%	Greece	EL	61.00%	Poland	PO	36.00%
Norway	NOR	82.00%	Switzerland	CH	60.00%	Latvia	LV	32.00%
Denmark	DK	81.00%	Luxembourg	L	53.00%	EU(25+)		65.00%
Island	ISL	76.00%	Estonia	EE	78.00%	EU(10n)		53.00%
France	F	74.00%	Slovenia	SI	68.00%	EU(15+)		72.00%
Spain	E	73.00%	Malta	MT	67.00%	WBC Average		12.83%
Italy	I	72.00%	Lithuania	LI	59.00%			

Table 1. Online sophistication of basic public services available on the internet in EU and the average for the examined Western Balkan Countries (WBC).

EU(15+) means full members of EU, EU(10n) means 10 New Member States (NMS) of EU and EU(25+) means overall average of both countries. WBC Average refers to the average value for 4 Western Balkan Countries: Macedonia, Bosnia, Serbia, and Montenegro.

The percentage of online sophistication of basic public services available on the Internet is presented on the following figure:
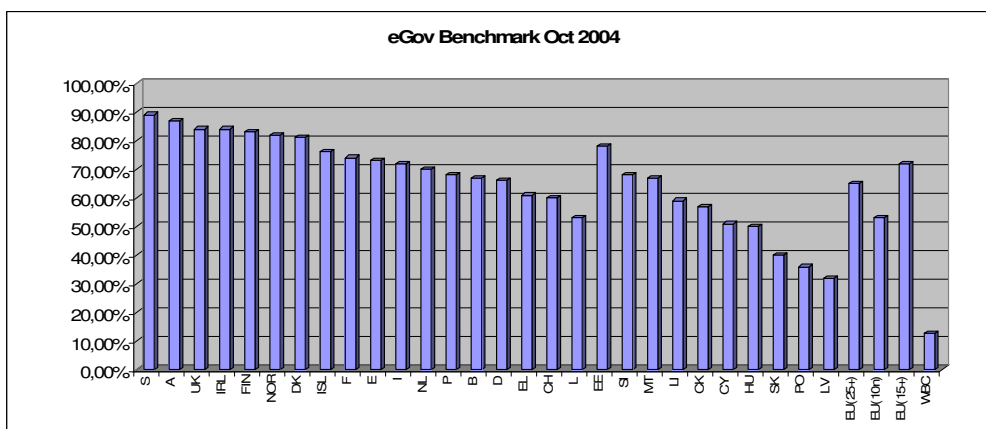
Figure 1. eGov Benchmarking results obtained by Capgemini, October 2004, compared to the WBC average of 12.83%.

Benchmarking eGovernment Services (March 2006)

The authors also performed measurements for Western Balkans Countries in March 2006.[3] Due to the lack of more accurate data for average values of EU(15+), EU(25+) and EU(10n) the growth rate defined in the period of 2001 until 2004 was used.

The average value of growth in 2002 was 14%, in 2003 was 7%, in 2004 was 6%. Predicted growth values for 2005 are 5% and 2% for another first six months until March 2006. These results are shown in the following table and figure:

	Oct 2004	March 2006
EU(15+)	72.00%	77.11%
EU(25+)	65.00%	69.62%
EU(10n)	53.00%	56.76%

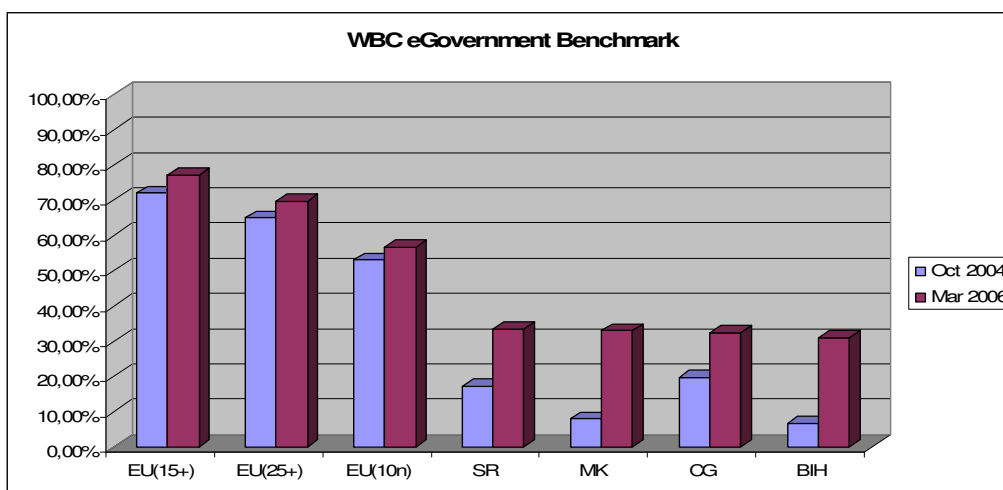|	Oct 2004	March 2006
SR	17.11%	33.55%
MK	7.89%	32.89%
CG	19.74%	32.24%
BIH	6.58%	30.92%
WBC	12.83%	32.40%

Figure 2. Western Balkan Countries eGovernment Benchmark results compared to the various EU averages. WBC examined include Serbia (SR), Macedonia (MK), Montenegro (CG), and Bosnia and Herzegovina (BIH).

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Conclusions about online sophistication of public services

According to the official EU published survey for online sophistication of basic public services available on the Internet (survey conducted by Capgemini) and the study of the WBC conducted by the authors, the following gaps have been identified:

- The average of 12.83% for sophistication online eGovernment services at WBC in October 2004 is very low in comparison to other EU countries. In comparison to the new EU member states 53% or EU25 65%, or EU10 72% these values are very low.
- Although this situation shows very bad performance, the situation is improving. Situation in March 2006 shows good improvement tendency with average value of 32.40%. However the situation in the EU countries is improving also, widening the gap between the WBC and the EU.
- According to the most recent measurements in WBC (March 2006 WBC eGovernment study), the situation of EU15 for online sophistication of basic public services in October 2001 was even better that it is in WBC in March 2006. Under the assumption that the growth rate detected in the EU would apply to them, one can conclude that Western Balkan Countries will reach the level of EU10 NMS (value of 53% measured in Oct 2004) in three years, or by 2009. This level in 2009 will be still far from requirements of i2010 initiative for eGovernment (including fully operational 20 benchmarking services)

Therefore the WBC need a coordinated action to increase the rates of growth, enabling these countries to increase availability and reach EU standards within the given time framework.

Conclusions about fully available online public services

According to the official EU published survey for the percentage of public services fully available online (survey conducted by Capgemini) and the authors' measurement for WBC the following gaps are identified:

- The situation of WBC in October 2004 is 0% in comparison to EU10 NMS (new Member States) with value of 29%, EU15+ with value of 46% or EU 25 average with value of 40% fully available online public services. In March 2006 this value is still 0%.
- Based on the current level of implementation of IS strategies and current state of development in WBC, the authors predict that the value of 0% for fully available online public services in WBC will remain in the next three years until 2009.
- Regarding the full availability of the 20 benchmarking services in WBC countries, both in 2004 and in 2006 with values of 0% for WBC one can predict that it will remain 0% until 2009, due to the following reasons:
  - Lack of legislation required for PKI, eCommerce, eBusiness and eGovernment
  - Lack of PKI infrastructure
  - No ID card implementation and usage
  - Lack of interoperable eGovernment platform
  - Lack of interoperable central registers (all registers included)
  - Low level of awareness for e-services, e-inclusion and e-democracy

Therefore the WBC need a coordinated action to make availability of fully available online public services within the given time framework.

Analysis of implementation of IS strategies

Institutional support and legislation required

According to the overview of the status eSEE Agenda commitments from Jan-Feb 2006[4] the current situation for cabinet or equivalent level bodies, legal framework on e-Signature, e-Commerce, Cyber-crime, Telecommunications and Personal Data Protection is given in the following table:

Institutional development	MK		BIH		SR		CG		HR	
Committee or Secretariat - IT department	2002	Y	-	N	-	-	2004	Y	-	-
Cabinet or equivalent level body	2006	S	-	N	2001	Y	-	N	2003	Y

Legislation	MK		BIH		SR		CG		HR	
IS strategy	2005	Y	2004	Y	2005	S	2004	Y	2002	Y
e-Signature	2005	S	-	N	2005	Y	2003	Y	2002	Y
e-Commerce	2006	S	-	N	2006	S	2004	Y	2002	Y
Cyber crime	2004	Y	-	N	2005	Y	2006	S	2001	Y
Telecommunication	2005	Y	2002	Y	2003	Y	2000	Y	2003	Y
Personal data protection	2005	Y	2001	Y	2006	S	2006	S	2003	Y

Apart from the above mentioned Western Balkans Countries, the tables on this page also contain information on Croatia (HR). The lack of appropriate institution or legislation is denoted with "N" (no), while full implementation is denoted with "Y" (yes). "S" denotes the situation when the government already started activities towards realization with deadline indicated in adequate national IS strategy.

Analysis of Information Systems in national WBC IS strategies

According to the status and usage report from Oct 2004 given by eSEEurope regional ICT sector,[5] the typical governmental information systems and eGovernance Systems are given in the following table:

	MK	BIH	SR	CG	HR
Electronic Citizen Registry	N	Y	N	N	Y
Public Expenditures (Treasury/Finance)	N	Y	N	Y	Y
Taxation Authorities	N	N	N	P	Y
Customs Administration	N	Y	N	P	Y
Network/communication infrastructure, dedicated to eGovernance systems	N	N	N	N	P
Judicial systems	N	N	N	Y	P
Electronic Registration of Companies	N	N	P	N	N

In the table "N" is used to express lack of infrastructure, "P" to denote partial solutions and "Y" for fully operational system. In some cases, this situation was improved by March 2006, but still lack full operability.

Methodology, standards, models and policies

National IS strategies cover several, but not all methodologies, standards, models and policies required for eGovernment services.

The authors conclude that most of them are not realized (marked with "N" in the table) or are partly implemented ("P" in the table). The following table provides complete overview of the situation.

	MK	BIH	SR	CG
eGovernment architecture	2007	2006	N	N
Document template and workflow	P	P	P	P
Tender document template and workflow	N	N	N	N
Open source in eGovernment	N	N	N	N
XML standards	N	N	N	N
Benchmarking	N	N	N	N
Data security	N	N	N	N
Standards for information systems protection ISO 17799	2008	2006	N	N
ISO 9001 standard for quality of the Government services	2008	N	N	N
Interoperability	N	2007	N	N

ICT infrastructure and registrars

The level of ICT infrastructure is quite different. It is interesting that lot of ministries and agencies have independent ICT solutions and Information Systems, but they are like isolated islands, since there is no interoperability between organizational institutions and also within the government.

	MK	BIH	SR	CG
Advanced computer networking (physical infrastructure)	2007	2006	N	N
Building a logical infrastructure among the state institutions	P	P	P	P
e-Signature	N	N	P	P
Record management	N	N	N	N
Equipping the municipalities with at least three computers and continuous Internet connection for public access	2006	2006	N	N
Broadband connectivity	P	N	N	N
Internet connectivity at schools	P	N	P	N
Internet at local government units	P	P	P	P

The following table illustrates the situation with implementation of fully operational registrars offering availability to be used in eGovernment environment:

	MK	BIH	SR	CG
Companies and associations	2007	2006	N	N
Persons	P	P	P	P
Addresses	2009	N	P	P
Personal properties	N	N	N	N
Citizenship	2008	2008	N	N
Cadastre	2008	2008	N	N
Agricultural	N	N	N	N
Tourism	N	N	N	N
Central registrar of all databases	N	N	N	N

The year in table designates the deadline in action plan specified within national IS strategy. Partial implementation is denoted by "P" and lack of realization is denoted by "N" (no).

The following table shows deadlines specified in action plans within national IS strategies to improve the level of IT skills for staff in public administration:

	MK	BIH	SR	CG
Employment and training of ICT-staff in the state administration	2007	2007	-	2004?
Training and certification for ICT literacy of the civil service	2007	2007	-	2004?
Measuring the level of ICT literacy	2007	2007	-	2004?

Serbia has not yet realized action plan for national IS strategy and Montenegro (CG) has specified deadline for 2004, but has not yet realized this activity.

Conclusions about IS strategies and policy implementation

This analysis shows that most of WBC countries have realised their national IST strategies and included eGovernment as part of it.

- WBC national IS strategies are realized mainly for period until 2006-2007 addressing national interests for increasing the level of ICT infrastructure defined in eEurope 2002 and eEurope 2005. They do not address regional aspects or interoperability issues with the EU standards.
- Most of the countries have adopted some laws (but not all) required for eGovernment, PKI, eCommerce, eBussiness infrastructure. The authors conclude that the complete legislation in these areas is missing.
  For example, Macedonia still lacks digital signature infrastructure due to lack of five legislative documents (regulations) based on the Digital Signature Law adopted in 2001. Among them is the final document which defines the procedure for establishment of a company which can act as Certificate Authority.
- There is lack of interdisciplinary approach and cross-organizational initiatives to allow management of eGovernment projects.
- The ICT infrastructure has isolated "island" structure, realized on heterogeneous platforms without possibility for interoperable functioning. Government IT solutions look like set of independent individual solutions, which are not compatible and can not directly interchange data and information.

Identification of main problems for eGovernment implementation

This analysis has identified the following problems for realization of eGovernment by implementation and integration of fully available online public services:

- Due to the missing legislation there is no company offering PKI infrastructure.
- Due to lack of regulated procedure for PKI infrastructure some banks and telecom operators have organised their own independent systems. This creates another problem because of incompatibility of these systems.
- Both PKI and ID card infrastructure is required to realise fully transactional eGovernment services. All WBC countries have not started projects for implementation of ID card and even this is not included in appropriate IS strategy action plans without any deadline for these tasks. The gap between EU and WBC is now increasing further since most of the EU countries have introduced ID cards.

This might be a challenge for WBC countries since the standard for interoperable ID cards in Europe is expected by 2008. Therefore this standard can be set along with deadline for implementing ID cards in WBC.

- A lot of business processes within the governmental institutions for citizen and business services need to be reorganised with aim to make them flexible to be realized with ICT tools.
- ICT literacy level needs to be increased in public administration in order to make offer of eGovernment services more efficient.
- The level of IT knowledge or IT skills for programmers and information officers needs to be increased to define eGovernment services better.
- Most of the ministries and agencies within the government have implemented their own solutions using different platforms and they act as isolated islands. In order to make One-Stop-Shop availability for eGovernment services common architecture and standard needs to be defined and implemented. Once again this is a challenge for WBC since EU is in process of developing common architecture and interoperable standard for eGovernment services. Integration of eGovernment solutions can be implemented by using appropriate service oriented architecture.
- Several registers are now realised by e-Services but a common infrastructure is still missing. This infrastructure requires integration of all register services by defining appropriate exchange formats and common architecture.
- There is increase in digital divide gap, content gap, gender gap, multicultural and multilingual gap in WBC according to the EU due to following facts:
  - Lack of available e-services,
  - Lack of ICT literacy,
  - Lack of possibilities for democracy and citizen inclusion with multicultural and multilingual aspects.

Therefore the Western Balkan Countries need a coordinated action for interoperable eGovernment platform, increasing awareness of eGovernment solutions, and new forms of inclusion of citizen and business to bridge the identified gaps and problems.

Notes and Works Cited

[1] Capgemini. (October 2004). Online Availability of Public Services: How is Europe Progressing? Web based survey on electronic Public services, Report of the fifth measurement, prepared for: European Commission Directorate General for Information Society and Media. URL: www.eu.int/information_society/soccul/egov/egov_benchmarking_2005.pdf.

[2] Stability Pact for South Eastern Europe, eSEE Working Group (www.stabilitypact.org/e-see).

[3] The measurements were taken using the existing sources, especially the research documents of the Metamorphosis Foundation, available online in the "Research" section of its website (www.metamorphosis.org.mk). Data were also obtained from direct interviews with Members of National Strategy Task Force, and from Macedonian government officials, especially members of the Committee for Information Technology (www.kit.gov.mk) and the Ministry of Transport and Communications (www.mtc.gov.mk). The authors also gathered information through involvement of the co-author with the One-Stop-Shop back office eGov project, and via direct analysis of the e-Services Portal of the Macedonian Government (www.uslugi.gov.mk).

Main source of data for Serbia and Montenegro and Bosnia and Herzegovina were eSEE documents, and these were supplemented by information based on unpublished research by Prof. Dr. Ivan Milintijevic, Faculty of Electronic Engineering, University of Nis (www.elfak.ni.ac.yu); as well as input from Belgrade Open School (www.bos.org.yu), and World University Service B&H from Sarajevo (www.sus.ba).

[4] The following documents used for this analysis were obtained from the eSEE Initiative website (www.eseeinitiative.org):
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[5] UNDP. (October 2004). eSEEeurope Regional Information and Communications Technologies Sector Status and Usage Report: Building an Information Society for All. UNDP Sarajevo report prepared for the Stability Pact for SEE and eSEEurope Initiative.