Public Transactional e-Services through Government Web Sites in Kyrgyzstan

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Abstract: E-government has been developing across the world during last ten-fifteen years remarkably fast. The most developed countries have already demonstrated significant progress in e-government development. Developing countries are also making efforts to overcome various obstacles in their e-government journey. Many research papers and survey reports have been published in this domain. However, there is a lack of research on e-government development in Central Asia, particularly on e-government progress and issues in Kyrgyzstan. The objective of this research is to examine how e-government helps to enhance government processes in Kyrgyzstan with a major focus on improving public service delivery. This paper investigates the official web sites of the Kyrgyz Government ministries and agencies and the extent to which they provide online transactional services to the public and other organizations and analyzes their efforts in engaging citizens in the processes of governance.

Keywords: Kyrgyzstan, government web site, online service, transactional online service, public sector

1   Introduction

The concept of e-government is comparatively recently. However, e-government in developed countries has passed through several stages of maturity during a short period of time. There are many studies in literature on different models of e-government development (Layne and Lee, 2001); UN E-Government Survey, 2012; UN E-Government Survey, 2010) and methods of evaluating e-government progress worldwide, across regions and within a single country (e.g. Kunstelj and Vintar, 2004). However, there is still a lack of sufficient information on the situation of e-government development in post-Soviet Central Asian countries and particularly in Kyrgyzstan. There is no clear understanding on the current situation of e-government development in that country due to the lack of deep research on e-government in the Kyrgyz Republic during recentyears. Therefore, this study seeks to fill this gap by exploring progress in moving towards enhancing governance process, democratic decision making, e-democracy and e-participation enabled by information-communication technologies (ICTs) in Kyrgyzstan. The results of this study can help local government officials to see the current weaknesses and understand the future directions to improve public e-services and encourage citizens' participation in decision making process. It is also important to analyze the situation in Kyrgyzstan in order to understand the problems of e-government and e-democracy development in the Central Asian post-Soviet countries, because these issues are almost in all countries in the region.

This paper investigates the official web sites of the Kyrgyz Government ministries and agencies, extent to which they provide online transactional services to the public and other organizations and it analyzes the ministries' efforts in engaging citizens in government processes. In section 2 we derive a definition of E-government. Section 3 describes a number of approaches for e-government assessment and different maturity models. Section 4 describes the background of e-government development in Kyrgyzstan and positions of the country in global e-government surveys. Section 5 presents the methodology used to investigate the Kyrgyz government web sites. Section 6 contains the investigation results and describes the transactional e-services provided by Kyrgyz state web sites. In section 7 we discuss the key findings and outcomes of the investigation. Section 8 concludes the study and contains some recommendations to the public administrators.

2   What is E-government?

Alfred Tat-Kei Ho and other researchers argue that before the Internet emerged in the late 1980s, governments were already actively pursuing information technology to improve operating efficiency and to enhance internal communication (Kraemer and King, 1977; (King, 1982); Norris and Kraemer, 1996; Brown, 1999). However, the focus of e-government in this era was primarily internal and managerial (Tat-Kei Ho, 2002). After the emergence of the Internet and the World Wide Web, the focus of information technology usage in governance shifted to its external relationship with citizens (Scavo and Shi, 1999; Seneviratne, 1999).

At the same time "E-government has been conceptualized as the intensive or generalized use of information technologies in government for the provision of public services, the improvement of managerial effectiveness and the promotion of democratic values and mechanisms" (Gil-Garcıa and Pardo, 2005).

West (2004) defines e-government as the delivery of government information and services online through the Internet or other digital means

Zhiyuan Fang in his paper defines E-government "*as a way for governments to use the most innovative information and communication technologies, particularly web-based Internet applications, to provide citizens and businesses with more convenient access to government information and services, to improve the quality of the services and to provide greater opportunities to participate in democratic institutions and processes. This includes transactions between government and business, government and citizen, government and employee, and among different units and levels of government*" (Fang, 2002). According to other e-government may include opportunities for online political participation (Mossberger, Tolbert and Stansbury, 2003) and it can improve communication between citizens and government through e-mail, enabling more direct participation in government decision making (Thomas and Streib, 2003).

According to Moon (2002) e-government includes four major internal and external aspects: (1) the establishment of a secure government intranet and central database for more efficient and cooperative interaction among governmental agencies; (2) Web-based service delivery; (3) the application of e-commerce for more efficient government transaction activities, such as procurement and contract; and (4) digital democracy for more transparent accountability of government .

Pardo (2000) outlines the following functions of E-government: (1) Citizen access to government information; (2) Facilitating general compliance; (3) Citizen access to personal benefits; (4) Procurement including bidding, purchasing, and payment; (5) Government-to-government information and service integration; and (6) Citizen participation. Citizen participation means online democracy and includes access to elected officials, discussion forums, "town meetings," voter registration and ultimately online voting. These services are intended to serve the community at large.

Based on the above mentioned definitions and opinion of different researchers, we conclude that E-government is the usage of the information and communication technologies by public bodies for the purpose of: (1) improving internal operating efficiency; (2) efficient and cooperative interaction among governmental agencies; (3) providing citizens and businesses with more convenient access to government information and services; (4) creating a platform for enabling more direct participation of constituents in government decision making. We also conclude that e-participation and e-democracy are the parts of e-Government in an advanced stage of development.

3   Approaches for E-Government Assessment and Maturity Models

3.1   Global E-Government Surveys

There have been several studies to evaluate the development of e-government in the world. One of them is the series of Global E-Government surveys conducted by United Nations Department of Economic and Social Affairs in 2003, 2004, 2005, 2008, 2010 and 2012. The United Nations e-government development index (EGDI) was used to assess the e-government development and rank 193 UN Member States. Mathematically, the EDGI is a weighted average of three normalized scores on the most important dimensions of e-government, namely: scope and quality of online services, development status of telecommunication infrastructure, and inherent human capital. Each of these sets of indexes is itself a composite measure that can be extracted and analyzed independently (UN E-Government Survey, 2012).

To arrive at a set of online service index values, the researchers assessed each country's national website, including the national central portal, e-services portal and e-participation portal, as well as the websites of the related ministries of education, labor, social services, health, finance and environment, as applicable (UN E-Government Survey, 2012).

Another series of studies was conducted by West in 2006, 2007 and 2008 (in which he evaluated the state of digital government through the surveys of government websites for the 198 nations around the world. Among the sites analyzed are those of executive offices (such as a president, prime minister, ruler, party leader or royalty), legislative offices (such as Congress, Parliament or People's Assemblies), judicial offices (such as major national courts), Cabinet offices and major agencies serving crucial functions of government, such as health, human services, taxation, education, interior, economic development, administration, natural resources, foreign affairs, foreign investment, transportation, military, tourism and business regulation (West, 2008).

West's study differs from others with its particular attention to fully online transactional services. Up to 28 of 100 total points given to the web site are for the online services (one point for one service, two points for two services, three points for three services and on up to 28 points for 28 or more services). Another 72 points are given for the following features: publications, databases, audio clips, video clips, foreign language access, for not having ads, for not having premium fees and user fees, disability access, having privacy policies, security policies, allowing digital signatures on transactions, an option to pay via credit cards, email contact information, areas to post comments, option for email updates, option for website personalization and PDA accessibility. Totals for each website within a country were averaged across all of that nation's websites to produce a zero to 100 overall rating for that nation (West, 2008).

3.2 Maturity Models

West (2004) outlines four general stages of e-government development that distinguish where different government agencies are on the road to transformation: (1) the billboard stage; (2) the partial-service-delivery stage; (3) the portal stage, with fully executable and integrated service delivery; and (4) interactive democracy with public outreach and accountability enhancing features).

- 1. *The billboard stage* – officials treat government Web sites much the same as highway billboards, that is, static mechanisms to display information. They post reports and publications and offer data bases for viewing by visitors. There is little opportunity for citizen interaction or two-way communication between citizens and officials. Citizens can read government reports, see the text of proposed legislation, and find out who works in specific offices, but they cannot manipulate information or interact with it in any way other than viewing. The public generally is limited to seeing information in the form put together by officials

- 2. *The partial-service-delivery stage* – gives way to one emphasizing partial service delivery. Citizens can order and execute a handful of services online and start to manipulate informational databases. They can search Web sites for material they want to see, as opposed to the information officials want to present to them. This helps them access materials in the form they prefer. However, online service possibilities are sporadic and limited to a very few areas. Posting of privacy and security statements are not very abundant, and there isn't much accessibility for non-English speakers and the disabled

- 3. *The portal stage, with fully executable and integrated service delivery* – this stage is a one-stop government portal with fully executable and integrated online services. This phase offers considerable convenience to visitors. The entire city or state has one place where all other agencies can be accessed, which improves citizen ability to find information. Agency sites are integrated with one another, and a range of fully executable services are available to citizens and businesses. Officials show they pay attention to the public's privacy and security concerns by posting policies online. Translation options are available for those who do not speak English or those who are visually or hearing impaired.

- 4. *Interactive democracy* – this stage is interactive democracy with public outreach and a range of accountability measures. Here, government Web sites move beyond a service-delivery model to system wide political transformation. In addition to having integrated and fully executable online services, government sites offer options for Web site personalization (such as customizing for someone's own particular interests) and push technology (such as providing e-mails or electronic subscriptions that provide automatic updates on issues or areas people care about). These kinds of features help citizens customize information delivery and take advantage of the interactive and two-way communications strengths of the Internet. Through these and other kinds of advanced features, visitors can personalize Web sites, provide feedback, make comments, and avail themselves of a host of sophisticated features designed to boost democratic responsiveness and leadership accountability

According to the model suggested by UN E-Government Survey (2012) there are four stages of e-government development: emerging information services, enhanced information services, transactional services and connected services.

- 1. *Emerging information services* – Governments provide information on public policy, laws, regulations and relevant documentation using web sites. Information flows only from government to citizens.

- 2. *Enhanced information services* - Government websites deliver enhanced one-way or simple two-way e-communication between government and citizen, such as downloadable forms for government services and applications. The sites have audio and video capabilities and are multi-lingual, in comparison with others.

- 3. *Transactional services* – distinguishes from the earlier stages with the ability of two-way communication between government and citizens. Government websites process non-financial transactions, e.g. e-voting, downloading and uploading forms, filing taxes online or applying for certificates, licenses and permits. They also handle financial transactions, i.e. where money is transferred on a secure network to government (UN E-Government Survey, 2012).

- 4. *Connected services* – the most sophisticated stage of e-government is where e-services and e-solutions cut across the departments and ministries in a seamless manner. Governments use the web technologies to obtain the citizens opinions, to engage citizens to discussions and use the received knowledge for decision making. The citizens are more involved in government activities. Governments use the citizen-centric approach (UN E-Government Survey, 2012).

There is another 4 stage model suggested by Layne and Lee, (2001). These stages are cataloguing, transaction, vertical integration and horizontal integration.

- 1. *Cataloguing* – at this stage the initial efforts of state governments are focused on establishing an on-line presence for the government. It is called "cataloguing," because efforts are focused on cataloguing government information and presenting it on the web.

- 2. *Transaction* – this stage differs from the previous with the ability of two-way communication. At this stage citizens can submit application forms online, send requests and participate in discussions through online forums.

- 3. *Vertical integration* – at this stage the local systems linked to higher level systems. There are significant changes in the government processes. Many state agencies interact more closely with their federal and local counterparts than other agencies in the same level of government.

- 4. *Horizontal integration* – at this stage the databases across different functional areas communicate with each other and share information, so that information obtained by one agency will propagate throughout all government functions. Horizontal integration refers to system integration across different functions in that a transaction in one agency can lead to automatic checks against data in other functional agencies. (Layne and Lee, 2001)

Moon (2002) analyzed several studies on E-government maturity models and as a result proposed 5 stages of E-government development which reflect the degree of technical sophistication and interaction with users: (1) simple information dissemination (one-way communication); (2) two-way communication (request and response); (3) service and financial transactions; (4) integration (horizontal and vertical integration); and (5) political participation.

Stage 1 is the most basic form of e-government and uses IT for disseminating information, simply by posting information or data on the Web sites for constituents to view.

Stage 2 is two- way communication characterized as an interactive mode between government and constituents. In this stage, the government incorporates email systems as well as information and data-transfer technologies into its Web sites.

In stage 3, the government allows online service and financial transactions by completely replacing public servants with "web- based self-services" (Hiller and Belanger, 2001). This "transaction-based e-government" can be partially achieved by "putting live database links to on-line interfaces" (Layne and Lee, 2001). Through

this online service and financial transaction, for example, constituents can renew licenses, pay fines, and apply for financial aid (Hiller and Belanger, 2001).

In Stage 4, the government attempts to integrate various government services vertically (intergovernmental integration) and horizontally (intragovernmental integration) for the enhancement of efficiency, user friendliness, and effectiveness. This stage is a highly challenging task for governments because it requires a tremendous amount of time and resources to integrate online and back-office systems (Hiller and Belanger, 2001).

Stage 5 involves the promotion of Web-based political participation, in which government Web sites include online voting, online public forums, and online opinion surveys for more direct and wider interaction with the public. While the previous four stages are related to Web- based public services in the administrative arena, the fifth stage highlights Web-based political activities by citizens (Moon, 2002).

As Moon noted, the stages of e-government development are just a conceptual tool to examine the evolution of e-government. The adoption of e-government practices may not follow a simple linear progression. Many studies of technological innovation also indicate the diffusion and adoption of technology may even follow a curvilinear path. For example, a government may initiate stage 5 of e-government (political participation) without full practice of stage 4 (integration). It is also possible that government can pursue various components of e-government simultaneously (Moon, 2002). This is especially true of developing countries which are usually trying to use the best practices of the developed countries in their efforts of E-government development. In this case developing countries can avoid some mistakes and from the beginning can start to use the ideas, technologies and elements referred to the latest stages of E-government development.

Summarizing the definition of E-government and the previously described approaches to differentiate its stages of development we conclude that there are at least four stages:

- 1. *Initial stage*, characterized by using of information technologies to improve internal operating efficiency and simple information dissemination through the web technologies;

- 2. *Advanced information services*. This stage distinguishes from the previous one by giving access to the specialized databases, the web sites are multilingual and have audio and video capabilities, citizens can download forms for government services and applications;

- 3. *Transactional services*. In this stage government agencies become vertically and horizontally integrated and can cooperate on different levels and institutions to provide citizens with transactional services in seamless manner. Two-way communication between government and citizens is enabled so that constituents can fill in the forms and apply for licenses, send requests, make filing taxes and pay them online etc;

- 4. *E-democracy and E-participation*. This stage characterized by engaging citizens to the political participation and government decision making. Governments use the web technologies to obtain citizens' opinions and use received knowledge for effective decision making. In this case government Web sites include online voting, online public forums and online opinion surveys for more direct and wider interaction with public.

4   Background - E-Government Development in Kyrgyzstan

4.1   About Kyrgyzstan

Kyrgyzstan is landlocked and mountainous post-Soviet country located in Central Asia and borders with Kazakhstan to the North, Uzbekistan to the West, Tajikistan to the South-West and China to the East.

Table 1. Population of Kyrgyzstan (2011 estimate)

Estimated population of Kyrgyzstan	5.4 million in 2011
The nation's largest ethnic groups: • Kyrgyz • Uzbeks - living in the South • Russians - concentrated in the North	71.7% 14.4% 7.2%

(Kyrgyzstan Statistics, 2012).

Table 2. Education (2009 estimate)

People older than 15 years	3,738,224
Have higher education degree	12.4%
Graduated a college of continuing education	10.6%
Have secondary school level of education	58%

(Kyrgyzstan Statistics, 2012).

Table 3. Telecommunication sector of Kyrgyzstan

Main telephone lines in use	502,200 (2009)
Total number of mobile cellular telephone subscribers	5.275 million (2009)
Nnumber of Internet hosts available within the country	116,586 (2010)
Total number of internet users	2.195 million (2009)

(The World Factbook, 2012).

Kyrgyzstan is officially a democratic parliamentary republic. However the level of corruption in Kyrgyzstan is very high. According to 2011 survey, Kyrgyzstan was ranked 164 among 183 countries (Corruption Perceptions Index, 2011). Consequently, Kyrgyzstan's government is actively trying to reduce the corruption level, including the activities using the web technologies to try to do this.

4.2 Enabling Framework for E-Government in Kyrgyzstan

There have been approved several important documents to enable e-government development in Kyrgyz Republic. These documents are listed in the Table 4.

Table 4. The Concept, Program and Strategy for E-Government development in Kyrgyzstan

#	Document title	Objective	Document type	Approved date and number
•	The "Concept of Creation and Development of Information Network of the Kyrgyz Republic"	To enable access to the information for the citizens	Concept	September 23, 1994 #722
•	The "Program of Information and Communication Technologies Development in the Kyrgyz Republic"	To prepare the main mechanism of integration and coordination of the different ICT programs, subprograms and projects, and development of the integrated information environment of the Kyrgyz Republic.	Program	November 8, 2001. Government decree #697

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•	"Information and Communication Technologies for the Kyrgyz Republic Development"	It defines the main objectives, common principles and state policy of ICT development in Kyrgyzstan. The most important priority of the strategy is using ICT for the effective and transparent governance (e-government).	National Strategy	March 10, 2002 Presidential decree #54.
•	The "Action Plan on Implementation of the Program of ICT Development in the Kyrgyz Republic"		Action Plan	April 2002.
•	The National Action Plan on Implementation of the ICT Strategy		Action Plan	September 6, 2003.

There have also been adopted several laws to enable e-government development in Kyrgyzstan. Some of them are listed in the Table 5.

Table 5. Legal Framework for E-Government in Kyrgyzstan

#	Document title	Objective	Approved date and number
•	The law on "Guarantees and Free Access to Information"	To provide citizens the rights to search, obtain, analyze and disseminate information.	December 5, 1997. #89
•	The law on "ICT Dissemination and Usage (Informatization)"	To create enabling environment to satisfy informational needs of the citizens and development of the modern information infrastructure of the Kyrgyz Republic integrated to the international networks and systems.	October 8, 1999. #107
•	The law on "Electronic payments"	Legal regulation of electronic payments	November 6, 1999. #121.
•	The law on "Electronic signature"	To regulate the permitted types and usage of digital signature in the Kyrgyz Republic	July 7, 2004. #92

There also exists an Information and Communication Technologies Council under the Government of the Kyrgyz Republic. It was initially created as the Information and Communication Technologies Council under the President of the Kyrgyz Republic.

The national portal of the Kyrgyz Republic government – www.gov.kg – was established in 2003 and now it is used as a gateway to the government information and web sites of the ministries, stage agencies and other governmental organizations.

Even though approved important documents have been developed aimed at fostering e-government development initiatives, the impact of them has been subtle. There are several possible reasons for this:

▪ (1) Political instability – there were 2 political unrest in last 10 years (2005 and 2010) following with changing the presidents and key government officials of the country;

▪ (2) Lack of sufficient financial support – the approved strategies and plans were not enough supported financially because of high state budget deficit;

▪ (3) Corruption and cultural resistance – though government officials agree with the benefits of e-government, they did not have enough incentives that could foster them to make e-government development efforts, because of low salary, professional competence and high level of corruption.

4.3   Kyrgyzstan in Global E-Government Surveys

According to the results of the United Nations Global E-Government Survey 2012, the rank of the Kyrgyz Republic is 99 compared with a rank of 91 in 2010. The highest ranked country in Central Asia is Kazakhstan with its rank of 38. However, in 2010 Kyrgyzstan received the highest indexes in the region among national portals, which included transactional aspects and was strong on citizen engagement (UN E-Government Survey, 2010).

It should be noted that only the national central portal, e-services portal, e-participation portal and only six ministries' web sites were assessed to achieve the values of the online service index of the United Nations Global E-Government Surveys (UN E-Government Survey, 2012). Many online services of the remaining ministries, agencies and other governmental organizations were not considered. In addition to this, the results of the study do not show what specific services are provided by the state web sites, except for some striking examples.

According to another study conducted by West, Kyrgyzstan was ranked 77th in 2008 against 132 in 2007, while Kazakhstan, leading country in the region, was ranked 54th in 2008 against 57 in 2007 (West, 2008). However, this study also does not show the particular services provided by the government web sites, except for some distinguished cases.

4.4   Assessment of the Government Web Sites of the Kyrgyz Republic

The analytical report "Assessment of the Government Web Sites of the Kyrgyz Republic," presented by the Public Fund "Civil Initiative of the Internet Politics" of Kyrgyzstan in 2011, provides more information on government web sites of the country. In this study 85 state web sites were assessed. All of these web sites were ranked according to the points received for given criteria ("Assessment of the Government Web Sites of Kyrgyz Republic", Analitical report, 2011). However, this study did not pay particular attention to the transactional online services.

5   Methodology

5.1   Method

For assessing E-government development in Kyrgyzstan from the perspective of online service delivery, we surveyed the official governmental portal and the web-sites of key ministries and government agencies. First, the initial list of the web sites was obtained from the national portal www.gov.kg. Links from the governmental organizations' web sites were also used. In total, 48 government web sites were identified for the study in 2012. However, in 2013, only 38 of the previously identified 48 web sites were accessed, either because of the sites close or because they became unavailable during the year. Second, we examined the features of every web-site based on the set of selected criteria. Some additional information was obtained by telephone using the contacts provided on the organization's web site.

The survey and analysis was undertaken between March and June 2012 and in May 2013.

5.2   Evaluation Criteria

Based on the "Common Requirements for Creating and Maintaining Web Sites of State Organizations of the Kyrgyz Republic" (approved by government decree on December 14, 2007 #594) and review of the methodologies used in UN E-Government Survey (2012), West (2008) and, and Assessment of the Government Web Sites of Kyrgyz Republic", Analitical report (2011) the following criteria were selected to assess the web sites:

- *Multilingual interface.* There are two languages in use in Kyrgyzstan: official – Russian and state – Kyrgyz. Nevertheless, the web sites also contain a lot of information of a foreign nature. Consequently, the availability of Kyrgyz, Russian and English interfaces of the web sites have been considered;

- *The feedback page*, which can be used by citizens to send their questions, requests and complaints allowing information to flow from citizens to the government;

- *Published answers to the citizens questions.* Publishing answers to the citizens' questions on the web site allows organizing the knowledge base that can be used in the future by other citizens with the same questions;

- *Facility of subscribing to the news.* This facility helps effectively disseminate the information to the concerned citizens. Twitter, RSS or any other method can be used for this purpose;

- *Online polls and voting,* which can be used by government officials to obtain citizens' opinion and facilitate decision making;

- *Downloadable application forms;*

- *Availability to complete form or send it online;*

- *Availability of online discussion forum, blog or wiki.* Many governments worldwide use this facility to engage the citizens to discuss the key issues online for effective decision making based on the citizens' knowledge and preferences;

- *Online access to the databases*;

- *Frequently Asked Questions (FAQ).* FAQ is an effective tool and a kind of knowledge base used for customer relationship management. It saves the time of the organization allowing it to answer recurrent questions just once;

- *Availability of the web site visitors' counter.* The web site visitors' statistics gives important information on the citizens' preferences. It can help see the demand for the information and online services on the web site, and learn which information was the most interesting for citizens. It also can show the web site's publicity campaign results;

- *Presence of an opportunity to share the web site's content in social networks (Facebook, Twitter, Mail.ru, Odnoklassniki.ru etc.).* The ability to share the web site's content allows more effective dissemination of information and involving sitizens to discuss it;

- *Availability to comment the web site's content;*

- *Provision of paid online services;*

- *Facebook page of the organization.* If an organization has its own Facebook page, there is no necessity for online discussion forum or blog creation. Due to the high popularity of the social networks it can be used as a more effective tool for the citizens' involvement.

Each of the above mentioned criteria has been aimed to determine certain elements of the appropriate E-government development stages suggested by the authors in the section 3.2.

Table 6. Mapping the selected criteria to the E-government development stages

Criteria	Stage 1.	Stage 2.	Stage 3.	Stage 4.
Multilingual interface	X	X		
The feedback page			X	X
Published answers to the citizens questions		X	X	
Facility of subscribing to the news		X		
Online polls and voting				X
Downloadable application forms		X		
Availability to complete form or send it online			X	
Availability of online discussion forum, blog or wiki			X	X
Online access to the databases		X		
Frequently Asked Questions (FAQ)	X	X		
Availability of the web site visitors' counter	X	X		
Presence of an opportunity to share the web site's content in social networks				X
Availability to comment the web site's content				X
Provision of paid online services			X	
Facebook page of the organization				X

It should be noted that it is hard to determine cooperation among the government agencies and their internal efficiency using these criteria.

6   Results

Our study has found that today almost all Kyrgyz ministries, agencies and other governmental organizations have their own web sites. The simple web sites of the governmental organizations appeared in early 2000 and have been used mostly for providing information about government' structure, their functions, activities and news. Later, the Kyrgyz state web sites became more sophisticated and contain much more information on laws, regulations, policies and providing possibility for citizens to request information. It became possible to download forms and to have access to some databases and archives. Many of them are multilingual (Kyrgyz, Russian and English) and up to date.

As a result of the study it was found out that the most widespread online service is the availability to send a feedback. Thus, 38 state web sites (79%) had feedback pages in 2012 and 29 (76%) in 2013. However, the answers to the questions published only on 12 (25%) of the assessed web sites in 2012 and 11 (29%) in 2013.

The least popular service was the provision of paid services. Only one web site provides paid services to the citizens and business, the same in 2012 and 2013.

The ability to complete a form or send it online is also one of the least popular services. Only 5 web sites in 2012 and 4 in 2013 provide this kind of service.

Table 7. The Features of the government web sites in Kyrgyzstan

№№	Features	Amount of the web sites	
		2012 Number (% of 48)	2013 Number (% of 38)
1.	The feedback page	38 (79%)	29 (76%)
2.	Published answers to the citizens questions	12 (25%)	11 (29%)
3.	Facility of subscribing to the news	11 (23%)	11 (29%)
4.	Online polls and voting	10 (21%)	10 (26%)
5.	Downloadable application forms	18 (38%)	12 (32%)
6.	Availability to complete form or send it online	5 (10%)	4 (11%)
7.	Availability of online discussion forum, blog or wiki	7 (15%)	7 (18%)
8.	Online access to the databases	38 (79%)	26 (68%)
9.	Frequently Asked Questions	13 (27%)	9 (24%)
10.	Availability of the web site visitors' counter	13 (27%)	17 (45%)
11.	Presence of an opportunity to share the web site's content in social networks	7 (15%)	8 (21%)
12.	Availability to comment the web site's content	6 (13%)	3 (8%)
13.	Provision of paid online services	1 (2%)	1 (3%)
14.	Facebook page of the organization	4 (8%)	6 (16%)

The study also showed that almost all web sites are given entirely in Russian, while only 10 (21%) web sites had the full Kyrgyz version in 2012 and even less has this in 2013. There was not any web site with fully translated English version in 2012 and only 3 in 2013.

Table 8. Multilingual interface of the Kyrgyzstan state web sites

	Kyrgyz		Russian		English	
	2012 Number (% of 48)	2013 Number (% of 38)	2012 Number (% of 48)	2013 Number (% of 38)	2012 Number (% of 48)	2013 Number (% of 38)
Absent	23 (48%)	18 (47%)	0 (0%)	0 (0%)	39 (81%)	28 (74%)
Partly	15 (31%)	14 (37%)	1 (2%)	1 (3%)	9 (19%)	7 (18%)
Full	10 (21%)	6 (16%)	47 (98%)	37 (97%)	0 (0%)	3 (8%)

As the study results show, last year there were minimum changes in the governmental online services and by many criteria the situation became even worse.

The following services were distinguished among the others as the most interesting online transactional services of the governmental organizations:

- The availability to apply the tax reports online to the State Tax Inspection of the Kyrgyz Republic. Any organization firstly needs to obtain an electronic digital signature to use it to sign the tax reports and send them online. The taxes themselves can be paid by bank transfer. This service is free of charge, except for obtaining the electronic digital signature.

- The opportunity to obtain full information on real estate provided by the State Register Service of the Kyrgyz Republic. Citizens and business organizations can sign an agreement and register in the system. Registered users can have access to the full information on any real estate object in Kyrgyzstan, such as current owner, the previous owners list, technical characteristics, whether or not the property is under arrest etc. This service is not free. There is a registration fee. Users must also pay for every request to the system. All payments can be made using bank transfer or the payment terminals. At the moment this service is mostly used by banks and solicitors.

- On the Social Services Web Portal (http://socuslugi.kg), provided by the Social Fund of the Kyrgyz Republic, the citizens could apply for the personal identification number (PIN), which is widely used by many governmental organizations. As this service was working in testing mode, unfortunately the web site was unavailable in 2013.

- On the Online Services Web Portal of the State Register Service of the Kyrgyz Republic (http://www.spravka.infocom.kg/) some of the many forms can be applied online. However, citizens should visit the office in order to obtain the result of the request.

- Using the portal http://zakupki.okmot.kg/etender/main.action, everyone can participate in open tenders for government procurement of the goods and services.

- The government tries to fight against corruption using the web sites. There have been developed 3 different state web sites for citizens' complaints about corruption (http://anticorr.mvd.kg, http://www.aks.kg, http://anticorr.gov.kg) in 2012. There are also special sections on many state web sites of analogous purpose. There are advertising panels on the streets of the Bishkek, the capital city of the Kyrgyz Republic calling on citizens to report corruption using one of the above mentioned web sites. Unfortunately, two of them became unavailable in 2013.

Despite the great number of existing governmental web sites, they were not actively used by citizens, and the online service of sending feedback was not included to the list above.

7 Discussion

In this section we discuss the key finding of our study. Relying on the survey results we argue that:

- *Maturity* - At the moment the Kyrgyz Republic is in the second stage of e-government development (according to the model suggested by the authors in section 3.2). Although there are some features of the next stages, nevertheless they are not actively used;

- *Interactions* - Many governmental organizations bring draft laws and draft projects to the public discussion. However, in many cases they ask citizens to send their opinions by e-mail, instead of using online discussion forums, blogs or wikis;

- *Transactions* - Although there are some transactional online services, their total number is low;

- *Citizen-Centric Focus* - The absence of the visitors counter shows that many governmental organizations do not analyze the attendance statistics of their web site. Thus, they do not know whether or not the information on the web site is interesting for the citizens. It is also not possible to see the web site's promotion campaign results;

- *Citizens Engagement* - Very low usage of the state web sites shows the weak efforts of the governmental organizations to try to engage citizens and get them to visit the web site. The lack of comments and discussions by citizens on the present online discussion forums and blogs can be considered as further evidence of this fact;

- *Language* - The vast majority of the web sites are designed for Russian-speaking audience. It should be noted that most of the population of the Kyrgyz Republic lives in the villages and speaks only Kyrgyz. Thus, the majority of citizens cannot use the most of the state web sites;

- *Sustainability* - Many projects on development of the governmental organizations' web site or portal was funded by external grants and other assistance, but were suspended as soon as funding was terminated.

The most important finding of this study is absence of strong progress in e-government development in Kyrgyzstan during the last year. We propose the following conjectures about the causes of this situation:

Lack of cooperation between the government bodies. Because of the absence of central regulating organization that could coordinate the e-government development among different ministries and government agencies, most of the ministries and agencies are making their own e-government development efforts without cooperation with others. This makes it almost impossible to realize horizontal integration between governmental bodies. As West notes, the fact that governments are divided into competing agencies and jurisdictions limits policy makers' ability to get bureaucrats to work together in order to promote technological innovation. Budget considerations restrict the ability of government offices to place services online and to use technology for democratic outreach (West, 2004). According to Jaeger and Thompson (2003) the biggest concerns for e-government managers in U.S. were not technical issues, but policy issues, including coordination and collaboration between agency leaders, agency-centric thinking rather than focusing on the overall goals and functions of e-government, and communication to better understand and foster inter-relationships between e-government projects .

Lack of sufficient incentives for civil servants and corruption. Even though the government officials agree with the benefits of developing e-government for the Kyrgyz Republic, they do not have enough incentives to work hard in this area of activity. E-government initiatives can even cut additional income from corruption for some civil servants, because the resulting benefits of e-government can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions (Fang, 2002).

Educating citizens about the value of e-government. It is important to raise awareness of citizens about the benefits of using e-government. Unless citizens know what is available from the e-government, they will not likely seek to use the e-government, defeating the purpose of the development of e-government information and services (Jaeger and Thompson, 2003).

8 Conclusion

It can be concluded that government of the Kyrgyz Republic is trying to develop the e-government initiatives in the country. The state organizations provide some online transactional services and are trying to use the web technologies to involve citizens to discuss the important issues on a state level. However, generally these activities can be characterized as of weak nature. The governmental web sites' attendance is low and there is low citizens' activity of using online discussion forums and blogs.

The following are some recommendations to improve this situation:

- 1. A public organization should be established to coordinate the efforts of ministries and governmental agencies of e-government development and to implement the vertical and horizontal integration of public bodies for providing high quality online services to citizens;

- 2. More active engagement of citizens to visit government web sites and participate in online discussions needs to be encouraged. Government should work on raising awareness of the citizens about the value of e-government. The government officials also need to analyze the web sites' attendance to learn the citizens' preferences;

- 3. It is also very important to improve the Kyrgyz and English versions of the web sites;

- 4. Online polls and voting, discussion forums, blogs and social networks should be used widely to learn and obtain the citizens' opinion and take advantage of the received knowledge for effective decision making and to move towards the citizen-centric approach;

- 5. There should be elaborated incentives and the ways of fostering civil servants to redouble their e-government development efforts.

- The experience of developed countries and good practices from other developing countries can be used by the government officials as a guideline on the way of determining future directions.

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Appendix

Table A.1. The list of the assessed web sites in 2012

#	Web site title	URL
1.	**Kyrgyzstan's Government Official Web site – national portal**	www.gov.kg
2.	**The web site of the President of the KR**	http://www.president.kg
3.	**The web site of the Parliament of the KR**	http://www.kenesh.kg
4.	State Information Resources web site	http://www.okmot.kg
5.	The state procurement web portal	http://zakupki.okmot.kg/etender/main.action
6.	Ministry of Foreign Affairs of the Kyrgyz Republic	http://www.mfa.kg
7.	KyrgyzDipService – the State Enterprise of Diplomatic Service	http://www.kds.kg/en
8.	Ministry of Defense of the Kyrgyz Republic	http://www.mil.kg
9.	Ministry of Internal Affairs	http://www.mvd.kg
10.	Anti-corrupt department under the Ministry of Internal Affairs	http://anticorr.mvd.kg
11.	Ministry of Justice	http://minjust.gov.kg/
12.	Ministry of the Finance (Treasury Department)	http://minfin.kg/
13.	Ministry of Economics and Antimonopoly Politics	http://www.mert.kg/index.php http://blog.mineconom.kg/
14.	Ministry of Agriculture and Melioration	http://www.agroprod.kg/
15.	Ministry of Transport and Communication	http://mtc.gov.kg/
16.	Ministry of Emergency Situations	http://mes.kg/
17.	Ministry of Industry, Energy and Fuel Resources	http://energo.gov.kg/ru/
18.	Ministry of Education and Science	http://edu.gov.kg/
19.	Ministry of Public Health	http://www.med.kg/
20.	Compulsory Medical Insurance Fund	http://www.foms.kg/
21.	State Sanitary and Epidemiologic Inspectorate	http://www.dgsen.kg/
22.	Ministry of the Social Development	http://www.mlsp.kg
23.	The Social Fund of the Kyrgyz Republic	http://www.sf.kg/
24.	The Social Services Web Portal	http://socuslugi.kg
25.	Ministry of Young People, Labor and Employment	http://jashtar.kg/
26.	The State Committee of National Security	http://www.gknb.kg/
27.	Anticorruption Service under the State Committee of National Security	http://www.aks.kg/
28.	The State Agency on Environment Protection and Forestry under the Government of the Kyrgyz Republic	http://www.nature.kg/
29.	The State Agency of Communication	http://www.nas.kg/
30.	The State Agency of Physical Training and Sport under the Government of the Kyrgyz Republic	http://www.fks.kg/
31.	The State Agency of Architecture and Construction under the Government of the Kyrgyz Republic (Construction and Regional Development Agency)	http://www.gosstroy.gov.kg
32.	The State Agency of Geology and Mineral Resources under the Government of the Kyrgyz Republic	http://www.geo.gov.kg/ http://geology.kg/
33.	The State Tax Inspection of the Kyrgyz Republic	http://www.sti.gov.kg
34.	Information Portal of the State Customs Service	http://www.customs.kg
35.	The State Customs Service (official web site)	http://www.customs.gov.kg
36.	The State Inspection on Financial Market Regulation	http://fsa.kg
37.	The State Register Service	http://www.srs.kg/
38.	The Web Service Portal of the State Register Service	http://spravka.infocom.kg
39.	The Department of Cadaster and Real Estate Ownership Register	http://www.gosreg.kg
40.	Infocom	http://infocom.kg
41.	The State Archive of the Kyrgyz Republic	http://www.archive.kg
42.	The Anti-corruption web site of the Kyrgyz Republic Government	http://anticorr.gov.kg

43.	The State Service of Struggle against Economical Offence	http://www.finpol.kg
44.	The State Intellectual Property Service	http://patent.kg
45.	The State Service on Control of Drugs under the Government of the Kyrgyz Republic	http://www.gskn.kg
46.	The Fund of the State Material Reserves under the Government of the Kyrgyz Republic	http://gosmatreserv.gov.kg
47.	The State Property Management Fund under the Government of the Kyrgyz Republic	http://spf.gov.kg
48.	The Fund of the Nationalized Property Management	http://fni.kg