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International assessment of E-government in the Republic of Kazakhstan

Abstract. *In several developed countries, the «e-government» is one of the main elements of the formation of modern society and open public administration. «E-government» allows citizens to quickly get answers to socially important questions without interacting directly with civil servants, removes all sorts of administrative barriers when receiving public services, and facilitates access to official information. Currently, we can say that Kazakhstan is actively implementing «e-government» and the country is one of the leaders in Asia in this direction. Our country demonstrates significant progress in the development of «e-government» and its implementation in the daily life of the country and society. The article considers the process of formation of e-government in the Republic of Kazakhstan in theoretical and practical aspects. It presents the comparative analysis and key moments for the improvement of the results of the development of e-government in our country based on international assessments of the UN e-Government Development Index.*
Keywords: *E-government, the UN e-Government Development Index, information and communication technologies, the interaction of government and citizens, subindex, statistical data.*

Introduction

The article covers the important issue of the efficiency of interaction of the state with citizens and enterprises. The application of information and communication technologies, the incredible popularity of the Internand et, and the increasing demand for electronic document management are the main trends of the modern world. However, the lack of information, lack of reliability and free access to it, and failure to prompt access are serious issues that often occur in society. The emergence of such problems had an impact on the governments of many countries to take active steps to improve interaction with citizens and led to the formation of a special concept called «Electronic Government", which is already widely used in a number of countries, including Kazakhstan. The aim of this work is to determine the condition of e-government in Kazakhstan, identify factors affecting its development, and analyze it in the e-government development index (EGDI). In addition to analyze the changes in the values of the main indicators of EGDI

in recent years in order to identify the main conditions necessary for achieving progress in this field [1].

The development of e-government in Kazakhstan. E-government is the organization of internal and external relations of government organizations through the use of the capabilities of the Internet and information and communication technologies (ICT) to optimize the services provided, increase public involvement in public administration and improve internal business processes. E-government, as its formation concept, is currently in the process of development, due to the realities of modern life and, in particular, the rapid development of the information and communication area.

The main objectives of this system include:

-    the generation of new forms of interaction with public authorities;

-    adaptation and improvement of the mechanism for providing government services to citizens and business entities;

-    support of citizens self-service and the expansion of their capabilities;

-    assistance in improving social technological awareness and increasing their qualifications;

-    increasing the involvement of all voters in the processes of leadership and governance of the country;

-    weakening the influence of geographic location [2].

The main purpose of such government is to provide citizens with a full range of public services, while reducing maximally the interaction with government bodies and the time consumed. This means that, by creating e-government, the interaction with the state becomes easier, faster and more efficient, and the responsibility of the authorities towards people will increase, which will lead to democracy improvement. However, it is worth noting that e-government is neither addition nor identical similitude of government in its traditional sense. It only defines a new tool of interconnection of society and government structures, which is based on the active use of information and communication technologies.

Methodology

Most methods of assessing the advantages of «e-government» focus on the internal benefits received within a given country, and do not consider the impact on the growth of competitiveness. When these methods analyze the relationship between e-government and the growth of competitiveness, they are usually limited to assessing the role of information technologies in reducing «bureaucracy» and the amount of costs for regulating business. In order to fully cover all aspects, experts first of all studied the areas of government activity in which it can influence the growth of competitiveness.

Discussion

The idea of creating an electronic government in Kazakhstan on March 19, 2004 was announced in the annual President`s Message of the Republic of Kazakhstan. On November 10, 2004, the «E-Government Formation Program in the Republic of Kazakhstan for 2005-2007» was accepted [3].

Four global stages of the formation and development of e-government were carried out during 14 years after implementation. Each of these stages helped Kazakhstanis in their interaction with the state. The first stage is informational, at this stage the e-government was launched. The portal contained information on the necessary documents, the size of the state duty, the contact details of the state bodies and the structure. That is, the portal was only filled with information which might be useful to citizens.

At the second stage portal users could receive inquiries from various institutions, send inquiries to state bodies, that is, interactive services allowed to save time for collecting a package of documents and references. Also such basic components of «e-government» as the portal and gateway of «e-government», «payment gateway» for interaction with the banking system, the national identification system, the unified transport environment of state bodies, the creation and development of interdepartmental

Table 1

E-Government Development Index, 2003-2020

A country	2003 Rank	2004 Rank	2005 Rank	2008 Rank	2012 Rank	2014 Rank	2016 Rank	2018 Rank	2020 Rank
Republic of Korea	14th place 0,7440	5th place 0,8575	5th place 0,8727	6th place 0,8317	1st place 0,8785	1st place 0,9283	1st place 0,9462	3rd place 0,8915	3rd place 0,9010
Netherlands	11th place 0,7460	11th place 0,8026	12th place 0,8021	5th place 0,8631	5th place 0,8097	2nd place 0,9125	5th place 0,8897	7th place 0,8659	13rd place 0,8757
Great Britain	6th place 0,8140	3rd place 0,8852	4th place 0,8777	10th place 0,7872	4th place 0,8147	0,8960 3rd place	0,8695 8th place	0,9193 1st place	0,8999 4th place
Denmark	4th place 0,8200	2nd place 0,9047	2nd place 0,9058	2nd place 0,9134	7th place 0,7872	4th place 0,8889	16th place 0,8162	9th place 0,8510	1st place 0,9150
USA	1st place 0,9270	1st place 0,9132	1st place 0,9062	4th place 0,8644	2nd place 0,8510	5th place 0,8687	7th place 0,8748	12th place 0,8420	11th place 0,8769
France	19th place 0,6900	24th place 0,6687	23rd place 0,6925	9th place 0,8038	10th place 0,7510	6th place 0,8635	4th place 0,8938	10th place 0,8456	9th place 0,8790
Sweden	2nd place 0,8400	4th place 0,8741	3rd place 0,8983	1st place 0,9157	12th place 0,7474	7th place 0,8599	14th place 0,8225	6th place 0,8704	5th place 0,8882
Norway	7th place 0,7780	10th place 0,8178	10th place 0,8228	3rd place 0,8921	6th place 0,8020	8th place 0,8593	13th place 0,8357	18th place 0,8117	14th place 0,8557
Finland	10th place 0,7610	9th place 0,8239	9th place 0,8231	15th place 0,7488	19th place 0,6967	9th place 0,8850	10th place 0,8449	5th place 0,8817	6th place 0,8815
Singapore	12th place 0,7460	8th place 0,8340	7th place 0,8503	23rd place 0,7009	11th place 0,7476	10th place 0,8474	3rd place 0,9076	4th place 0,8828	7th place 0,8812
Canada	6th place 0,8060	7th place 0,8369	8th place 0,8425	7th place 0,8172	3rd place 0,8448	11th place 0,8430	11th place 0,8418	14th place 0,8285	23rd place 0,8258
Kazakhstan				81rd place	46th place	38th place 0,6844	28th place 0,7283	33th place 0,725	39th place 0,7597
Note - compiled by the authors									

and typical systems of central and local executive organs were available.

The third, transactional stage allowed citizens to pay state fees, fines and utility payments without leaving home online. Also, at this stage, the transparency and openness of tenders increased, as competitions were held online, thereby increasing the confidence of entrepreneurs [4].

Today, e-government in Kazakhstan is at a transformational stage, where the main goal is efficiency and openness in servicing citizens, by integrating interactive and transactional services into complex services.

Special ratings are applied to assess and compare the development of e-government in different countries of the world. They also play the role of a booster: in order to improve their ratings, the evaluated ones seek to improve their own performance. The main tool for making such comparisons is the UN E-Government Development Index. This complex indicator assesses the readiness of the state and its ability to use information and communication technologies to provide public services to citizens. However, it cannot be used for an absolutely accurate assessment of the level of development of digital government. Rather, this indicator measures the achievements of various countries in the implementation of such a government in comparison with each other. Such an index was published in 2003 for the first time. It is calculated once every two years. The UN Department of Economic and Social Development is engaged in counting. After analyzing the rating, you can see the dynamics of the development of e-government in the world and, in particular, in Kazakhstan, in the 1st table [5].

Such calculations cover more than 190 countries of the world. Regular leaders in the ranking include the USA (first place in the indexes of 2003, 2004 and 2005, high positions in the
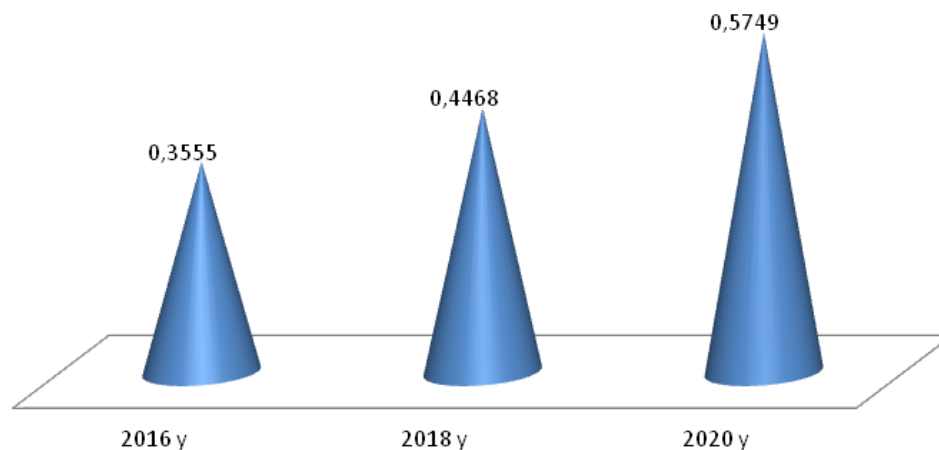
Figure 1- Indicator Change dynamics of the Republic of Kazakhstan on the index of online services in the rating of e-government development, 2016-2020

Note - compiled by the authors

following ratings), Denmark (fourth place in 2003 and a stable second place in the next three index publications), Sweden (high positions till 2008). However, now the Republic of Korea, Australia, Great Britain are at the leading positions.

The e-government development index is an indicator based on three important components:
a) The development of online services;
b) Telecommunications infrastructure;
c) Human capital [6].

The sub-index of online services reflects the assessment of the national websites of each country in the national language, including national portals, electronic services portals and electronic participation portals, as well as websites of relevant ministries responsible for education, labor relations, social security, health, finance and the environment. The listed Internet resources are conducted by researchers, qualified volunteers and graduate students in the field of public administration from various universities and are evaluated on the questionnaire, each question of which involves two possible answers. The questionnaire consists of special thematic lists of questions, systematized into four models that correspond to the four stages of e-government development: initial information services, advanced information services, transaction services, network services. Monitoring of websites for the 2020 report was held from May to July 2019. According to the UN report for

2019, the value of the online services sub-index increased from 0.7480 to 0.7681. The highest rates are in the United Kingdom (1), Australia (0.9783), and Singapore (0.9710). Among the CIS countries, Kazakhstan has the highest index value. It is followed by Russia (0.7319), Uzbekistan (0.6884), Azerbaijan (0.6812).

The subindex of the telecommunications infrastructure is the arithmetic average of five indicators: the number of Internet users per 100 inhabitants, the number of fixed telephony subscribers per 100 inhabitants, the number of mobile subscribers per 100 inhabitants, the number of wireless broadband subscribers per 100 inhabitants and the number of fixed broadband subscribers communication per 100 inhabitants. The main source of this data is the International Telecommunication Union. According to the subindex of the telecommunications infrastructure, the value decreased from 0.5749 to 0.5668. Monaco (1), South Korea (0.8530) and Singapore (0.8414) have the highest rates. In the CIS region, Belarus (0.6304) and Russia (0.6091) have higher indicators than Kazakhstan.

The human capital subindex is a weighted average of four indicators: the cumulative proportion of students, the expected duration of education, adult literacy, the average duration of education. The main source of this data is UNESCO. According to the human capital sub-index, the value decreased from 0.8619 to 0.8401.
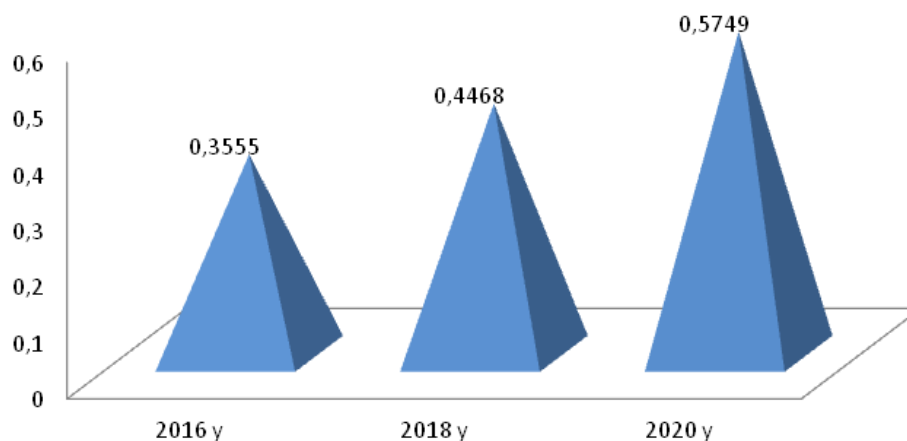
Figure 2 – Indicator Change dynamics of the Republic of Kazakhstan on the index of
telecommunications infrastructure in the rating of e-government development, 2016-2020
Note - compiled by the authors

Australia (1), Belgium (0.9712), and Denmark (0.9530) have the highest rates. In the CIS region, the indicators are higher than in Kazakhstan, Belarus has (0.8716). This is followed by Ukraine (0.8390) and Russia (0.8234).

An additional indicator presented in the UN report for assessing the use of online services is the e-participation index (EVI). The EVI is pushing the boundaries of the Survey, paying particular attention to the use of online services to facilitate informing citizens by the authorities («electronic informing»), interaction with interested parties («electronic consulting»)

and involvement in decision-making processes («electronic decision-making»). The indicator reveals the interaction between the citizen and the government in the process of developing public policies and making decisions on them. In terms of e-participation index, Kazakhstan moved from 22nd to 67th. The leaders are the UK, Australia and Japan. In the CIS region, the indicators are higher than in Kazakhstan, are Russia (32nd place), Ukraine (32nd place), Azerbaijan (47th place), Uzbekistan (47th place), and Moldova (50th place). Kyrgyzstan is also located in the same position with Kazakhstan (67th place).
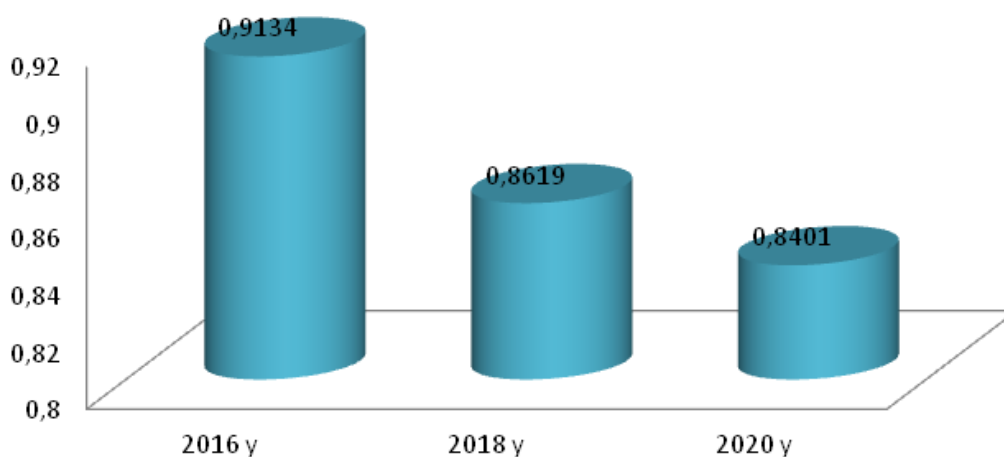

Figure 3 - Indicator Change dynamics of the Republic of Kazakhstan on the human capital index in
the e-government development rating, 2016-2020
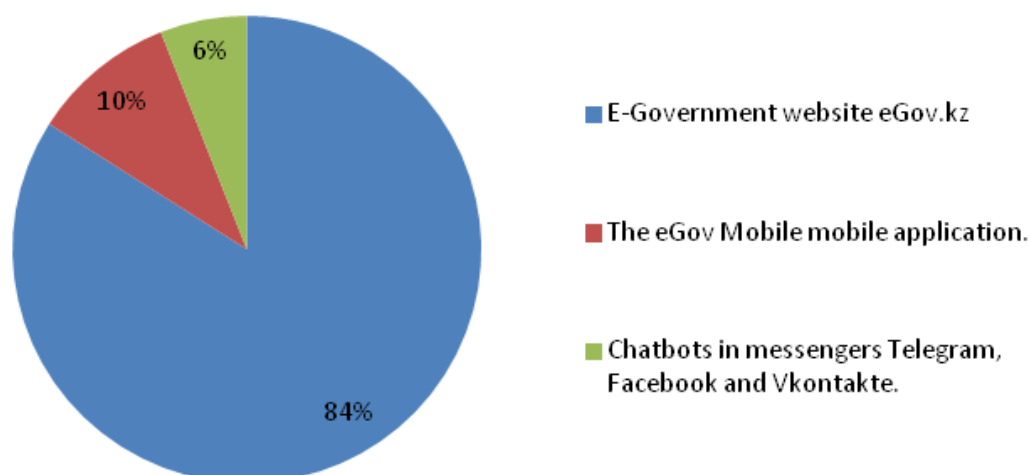Note - compiled by the authors

Figure 4 - Statistics of electronic public services in Kazakhstan during the state of emergency
Note - compiled by the authors

Results

The coronavirus pandemic in Kazakhstan has prompted a massive transition to the digital environment. The situation with forced digitalization has become a good lesson and has revealed shortcomings in the work of providing public services online.

The pandemic has prompted a massive transition to the digital environment. This was the period of time when the electronic government was forced to become truly electronic. One of the positive aspects is that due to forced digitalization, digital literacy among the population has increased. This trend will continue, and in the future the authorities plan to transfer all public services to a digital platform. But for this, it is necessary to do a lot of work to improve the quality of public services provided in electronic format. Firstly, it is necessary to integrate state bodies, secondly, it is necessary to increase the productivity and bandwidth of state servers, thirdly, it is advisable to reduce unnecessary bureaucratic references, make the process of obtaining electronic public services as simple and convenient as possible, and finally, it is important to conduct information work with citizens to increase their awareness of the functions and methods of obtaining electronic public services [7].

Conclusion

In conclusion, it is worth mentioning that in Kazakhstan, the ICT sector is given serious attention in the current state programs such as «Strategy Kazakhstan- 2050» and «Information Kazakhstan – 2020», one of the goals of which is to stimulate the development of the country through the use of advanced information technologies. In recent years, almost all the indicators considered in this report have shown a positive trend, demonstrating a sufficient steady development of ICT at the regional and international levels, which is confirmed by the assessments of international organizations.

However, if we compare the condition of digital government in our country with similar governments of other countries, we can notice a serious gap with the leaders on the main indicators and identify certain shortcomings that hamper the development of Russian e-government.

These include the following factors:

- the authorities seek to improve only those indicators that help reduce the gap in the ranking with leading countries, and not to carry out qualitative diagnostics and improve the indicators that really require it;

- the absence of the head and those responsible for the competent implementation and control of this idea, the weak competence of many civil

servants in matters relating to this topic, their low computer literacy, insufficient wish to improve the efficiency of e-government;

- high costs of municipalities for ICT infrastructure and its slow development;

- the requirement to improve the regulatory framework on this issue;

- the low level of popularization of digital services in the country and the rare use of electronic signatures to obtain such services;

- insufficiently active introduction of mobile communication at a low price;

- weak dynamics of increasing the number of Internet users and the non-dynamic introduction of fiber-optic access to the Internet;

- lack of necessary support for community initiatives, as well as small and large businesses.

Thus, it can be concluded that the further progress of our country in the field of e-government is possible provided that the existing issues are solved, the financial readiness of the authorities to implement the project, the legality of electronic services

The achievement of settled goals for the development of the ICT sector of Kazakhstan requires an integrated approach involving all elements of the ICT sector system, which includes: infrastructure development through accessibility to the Internet throughout the Republic, improving business conditions through additional tax preferences, creating demand through promoting domestic ICT products and services in the domestic and foreign markets, ensuring access to finance through the development and promotion of venture financing, and eveloping human capital with a focus on digital literacy, starting from school to training at the workplace.

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Қазақстан Республикасындағы электрондық үкіметті халықаралық бағалау

Аннотация. Бірқатар дамыған елдерде электрондық үкімет қазіргі заманғы қоғам мен ашық мемлекеттік басқаруды қалыптастырудың негізгі элементтерінің бірі болып табылады. «Электрондық үкімет»

азаматтарға мемлекеттік қызметшілермен тікелей өзара іс-қимылсыз әлеуметтік маңызы бар сұрақтарға тез жауап алуға мүмкіндік береді, мемлекеттік қызметтерді алу кезінде барлық әкімшілік кедергілерді жояды, сондай-ақ ресми ақпаратқа қолжетімділікті жеңілдетеді. Қазіргі уақытта Қазақстан «Электрон- дық үкіметті» белсенді түрде енгізуде және бұл ел Азиядағы осы бағыттағы көшбасшылардың бірі болып табылады деп айтуға болады. Біздің еліміз «электрондық үкіметті» дамытуда және оны ел мен қоғамның күнделікті өміріне енгізуде елеулі үдерісті көрсетіп отыр. Мақалада электрондық үкіметтің Қазақстан Республикасында теориялық және практикалық аспектілерде қалыптасу процесі қарастырылады. БҰҰ электрондық үкіметін дамыту индексінің халықаралық бағалары негізінде біздің елде электрондық үкіметті дамыту нәтижелерін жетілдірудің салыстырмалы талдауы мен түйінді сәттері ұсынылған.

Түйін сөздер: Электрондық Үкімет, БҰҰ электрондық үкіметінің даму индексі, ақпараттық-комму- никациялық технологиялар, мемлекет пен азаматтардың өзара іс-қимылы, субиндекс, статистикалық мәліметтер.

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Международная оценка электронного правительства в Республике Казахстан

Аннотация. В ряде развитых стран одним из основных элементов формирования современного об- щества и открытого государственного управления является электронное правительство». «Электронное правительство» позволяет гражданам быстро получать ответы на социально значимые вопросы без не- посредственного взаимодействия с государственными служащими, устраняет всевозможные админи- стративные барьеры при получении государственных услуг, а также облегчает доступ к официальной информации. В настоящее время можно сказать, что Казахстан активно внедряет «электронное прави- тельство» и страна является одним из лидеров в Азии в этом направлении. Наша страна демонстриру- ет значительный прогресс в развитии «электронного правительства» и его внедрении в повседневную жизнь страны и общества. В статье рассматривается процесс становления электронного правительства в Республике Казахстан в теоретическом и практическом аспектах. Представлен сравнительный анализ и ключевые моменты совершенствования результатов развития электронного правительства в нашей стра- не на основе международных оценок индекса развития электронного правительства ООН.

Ключевые слова: Электронное правительство, Индекс развития электронного правительства ООН, информационно - коммуникационные технологии, взаимодействие государства и граждан, субиндекс, статистические данные.

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