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# INTERNATIONAL EXPERIENCE OF THE E-GOVERNMENT SYSTEM DEVELOPMENT[1]

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This paper reveals the essence of the concept of "e-government" and provides an overview of the main trends, spheres and areas of implementation of the public administration principles based on new technologies. The article briefly describes the situation in the sphere of e-government development. Most of the research work is devoted to studying the experience of the Visegrad Group countries (like Czech Republic and Hungary), as well as Georgia and Belarus. As part of the analysis this article highlights the main achievements, which the Czech Republic, Hungary and Georgia reached in the study area and identifies main problems (obstacles) for e-government development in the countries. The final part of the research work describes the e-government system creation in Belarus. Main tendencies as well as problems which describe the situation in the sphere are analysed in the paper. The work also provides recommendations to accelerate the implementation of e-government framework in the nearest future for Belarus.

***Key words:*** e-government; public administration; information and communication technology; electronic document management; electronic signature.

# МЕЖДУНАРОДНАЯ ПРАКТИКА ПОСТРОЕНИЯ СИСТЕМЫ ЭЛЕКТРОННОГО ПРАВИТЕЛЬСТВА

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Раскрывается сущность понятия «электронное правительство», рассмотрены основные направления и сферы внедрения принципов государственного администрирования на основе новых технологий. Показана ситуация в сфере развития электронного правительства. В рамках изучения зарубежного опыта применения информационно-коммуникационных технологий в сфере государственного управления освещаются основные достижения Чешской Республики, Венгрии и Грузии в изучаемой области, выявляются основные проблемы (препятствия) для развития электронного правительства в данных государствах. Описано создание системы электронного правительства в Беларуси. Акцент сделан на основных тенденциях и проблемах в данной сфере. Предложены рекомендации по ускорению внедрения основ электронного правительства в ближайшем будущем для Беларуси.

***Ключевые слова:*** электронное правительство; государственное администрирование; информационно-коммуникационные технологии; электронный документооборот; электронная подпись.

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## E-government – essence and main components

The rapid development of information technology, computerization and the introduction of electronic document management in everyday life create objective prerequisites for changing the public administration principles. In this regard, a number of countries introduced the concept of electronic government (e-government). At present, experts differ on a clear definition of the term. Thus, under the OECD, e-government is the use of various types of information technologies to improve the governance quality. Under the United Nations' definition, e-government involves the use of information and communication technologies (ICT) (such as the Internet, mobile devices, hardware and software) by government agencies.

On the other hand, by some experts, the term of "electronic government" is temporary and will disappear as soon as the public administration will be carried out all over the place in an electronic format. The e-government main tasks include improvement of public bodies' efficiency through increasing transparency, accessibility and speed of state procedures implementation. The implementation of new technologies in public administration, on the one hand, reduces costs, but on the other hand, makes it easier to obtain these services, while minimizing direct contact of the population with state bodies. It should also be noted that the implementation of information technologies in the public administration is one of the essential factors for attracting foreign direct investment.

The project is generally aimed at the transfer of all standard public services into the Internet space, providing free access to information about the public bodies' activities for all privies, reducing paperwork, etc. In addition to the development of the appropriate software, the ICT implementation in the public bodies' activities requires training of professionals, reform of the interaction structure within public bodies, introduction of a communication system between the government and citizens, as well as between the government and business[1] [1; 2].

To determine the country's progress in terms of e-government building, the United Nations calculates a special index (The UN Global e-Government Development Index). The study covers about 200 countries. At the same time, the most developed states in the field of e-government are at the head of the list. The total index value is determined by three criteria: a coverage degree and Internet services quality, an ICT infrastructure development level, as well as human capital.

The fig. 1 shows that Georgia and Belarus are at approximately the same place in the ranking. The Georgia's problem is still rather low degree of the population Internet coverage, which significantly limits the electronic administration ubiquity. At the same time, Belarus is characterized by an underdeveloped system between public authorities and citizens by means of ICT.

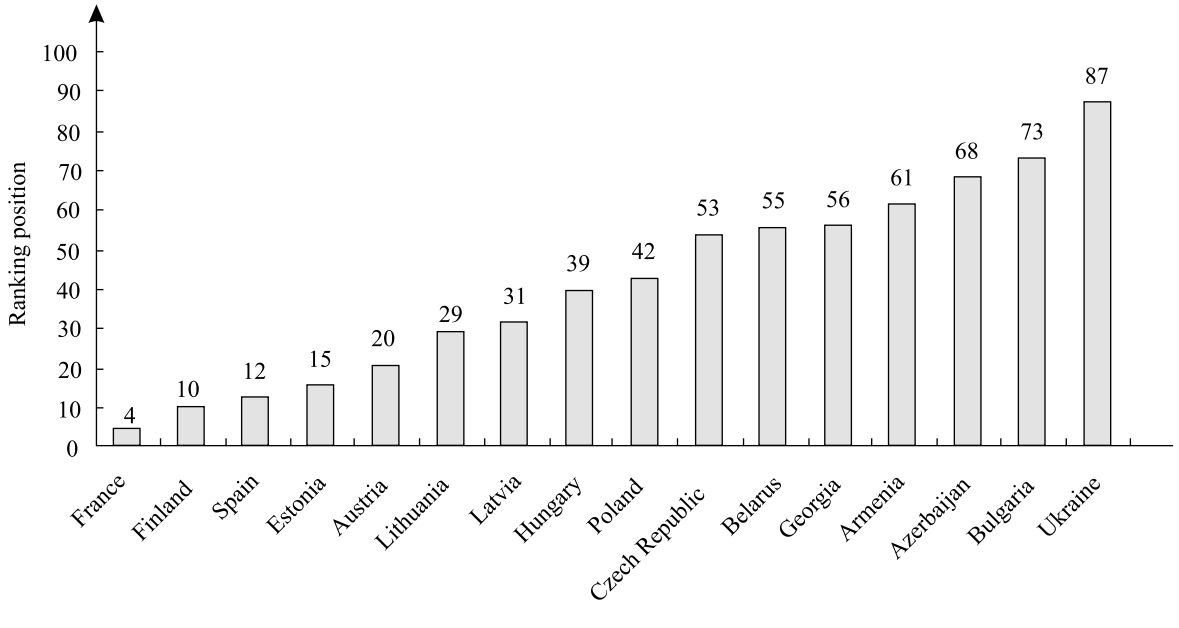


*Fig. 1.* Countries ranking by e-government development index
(the UN Global E-Government Development Index) [3]

[1]United Nations Public Administration Network [Electronic resource]. URL: http://www.unpan.org (date of access: 22.05.2016).

## E-government system in Georgia

If we turn to the experience of Georgia, the e-government system reforms began in the country only in 2004. Prior to that, the state system was quite corrupt. It did not take into account the needs of the population, and most of the document workflow was carried out on paper. In addition, civil servants were not interested in the qualitative performance of their work and the interaction and communication between departments was very slow.

In June 2004, the National Agency for Public Registers (NARP) was established. The Agency's objectives include registration of business and real estate, provision of necessary information and all kinds of documents in electronic form. As a result, it became much easier and more convenient to execute documents. Officially and at an additional cost, you can execute documents in a shorter period (e. g., to execute documents on the purchase of real estate within one working day). Subsequently, the Data Exchange Agency (DEA) and the Houses of Justice were established.

The DEA's purpose is the development of the e-government system, the creation of an advanced electronic network between ministries and agencies, as well as the formation of the ICT requirements and standards, the development of uniform electronic document workflow rules. The Data Exchange Agency is an intermediary between citizens, business, ministries and agencies through remote access.

The Houses of Justice have been established primarily for the population's convenience. These institutions have been introduced to facilitate the transition from the traditional public administration to the developed e-government system. The fact that now at least 55 % of Georgia citizens have access to the Internet. At the same time, not all Internet users are able to receive government services through remote access. In this regard, the Houses of Justice were built in the regions, where all citizens can make the necessary operations in the shortest time with the help of highly skilled professionals. The range of services is very wide and includes services such as the legal entity registration, vehicle registration, fine payment, real estate transaction registration, etc. [4].

To obtain a particular service, a citizen needs only to bring an application and all the documents required and make payment. The applicant may trace the stage of its documents execution through the Internet. With the growing number of the Internet users in Georgia, it is expected to increase the share of public services provided by remote access (via personal computers). However, before the project implementation it is necessary to raise the public awareness of the rendered electronic services and improve the level of training in the field of remote transactions.

An important step towards Georgia's e-government was the introduction of ID-card system. Now such cards provided on a voluntary basis. At the same time, the ID-cards are free of charge for low-income citizens. Each card has all the necessary information about its owner. The availability of the card and the PC allows performing all the state registration procedures, paying fines and taxes, as well as obtaining the necessary information through remote access. Every citizen shall have access to all personal information. At the same time, local authorities and official agencies may receive access to the limited data about the citizens, depending on their competence.

It should be noted that NARP, as well as the DEA and the Houses of Justice is a private agency, but under the control of the Ministry of Justice of Georgia. These organizations operate at the expense of income from services rendered that is a clear example of successful public-private partnership. To facilitate the state registration procedures, NARP representatives provide services in the major banks in Georgia and the Houses of Justice.

If listing the main implemented projects and innovations in the area of Georgia e-government, it is possible to identify the following: the introduction of electronic document management, provision of notary services via the Internet, issue of personal ID-cards and storage of personal information in an electronic database, electronic enrollment for examinations and holding examinations through remote access, automatization of the system of interaction with citizens [5].

A public procurement system was considered another quite problematic area of public administration to the middle of the 2000s. To participate in a tender, a potential supplier had to provide a number of documents and information on public procurement could be obtained only from newspapers. The predominance of paper workflow as well as the low level of transparency and awareness created a favourable environment for the development of corruption. Restructuring and automatization of the system in 2010 changed the situation radically.

Currently, public procurement is carried out through electronic tendering. The system is completely transparent and open. Trades are held in electronic form via the Internet. Foreign suppliers may also participate in tenders for public procurement on a par with the country's residents. Everyone can receive information about

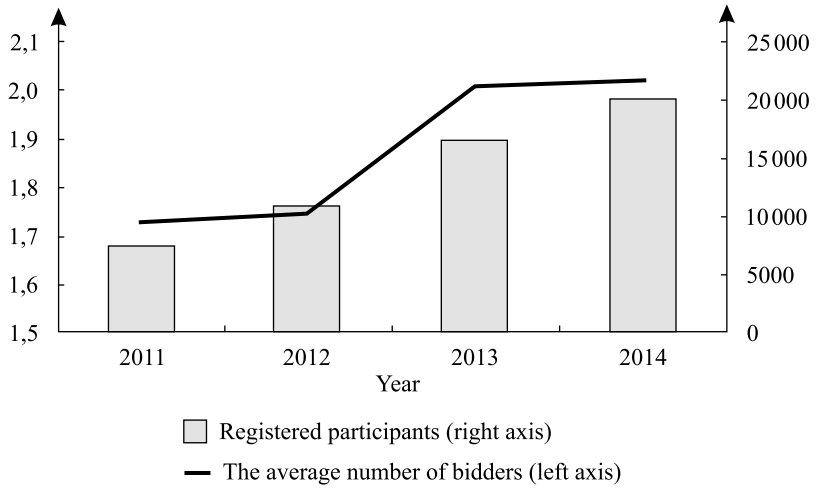


*Fig. 2.* Number of participants in tenders for public procurement, persons (source: the data from [6])

an upcoming tender and ask questions. The decisive factor in determining the provider is the price. All other terms and conditions have the same share in decision-making (fig. 2).

On the site of the Public Procurement Agency, you can explore all the documentation relating to the tender, view the information about payments made through the electronic treasury system, find notices about future tenders, etc. To eliminate corruption schemes, none of the Agency's staff is not aware of the suppliers who participate in the auction. Only numbers of participants and their proposals for the sale are visible during the tender. Information about the company that won the tender becomes available to the public after the successful conclusion of the transaction.

If one of the bidders disagrees with the decisions of the tender commission or the customer, it may file at any time a complaint to the electronic Dispute Resolution Council.

The Agency posts information on the companies that are in the "white" and "black" list to improve the public procurement efficiency. The "black" list, in general, includes companies that won, but refused to perform the contract for some reason or failed to perform the contract conditions in good faith. Such firms fall into the "black" list for one year. The "white" list includes firms that have participated already in more than one tender, have good turnovers and their managers do not have criminal records for economic crimes [7].

From the above it can be noted that for a relatively short period, Georgia managed to adopt and adapt international best practices in the establishment of E-government system. In addition, there have been developed and implemented unique technologies in this field. At the same time, the process of adaptation of new technologies in public administration is not yet finished. There are a number of areas, which are underdeveloped. For example, a low level of Internet users is a major obstacle to the full automation of government services.

## The experience of the e-government system formation in the Czech Republic and Hungary

In the European Union, there is a special program "e-Europe", which aims to create an advanced e-government system in all European countries. The program defines the main directions of development that will rebuild the public administration in accordance with the criteria of the information society.

In accordance with the approved criteria, it is necessary to create special centers, where it will be possible to get the maximum amount of public services via remote access. Another important point is the provision of social services to citizens through online registration. However, this requires a complete adaptation of the population to cooperation with public authorities in a new electronic format. Above all, it is important to take into account the level of ability to use the Internet. For example, if the number of Internet users in the Czech Republic and Hungary is more than 70 % of the total population, the figure in Poland is much lower. On the other hand, the problem is the lack of qualification of the civil servants. In this regard, the European states are aiming at re-training specialists taking into account changes in their operating principles in terms of automation and informatization of the administration processes. In this context, there is also the adaptation of new laws that protect rights and govern the process of obtaining public services in a new format for the public and businesses. Finally, an essential task within the automation of public administration is also a synchronization of information systems and databases of all ministries and departments to create a unified e-government platform.

In European countries, the degree of implementation of the e-government principles is based on an indicators system. These figures represent a list of public services that the people and businesses can obtain online. This includes the execution of various types of certificates, documents and manuals by citizens (obtaining a passport, vehicle registration, execution of the childcare allowance), filing applications (applications to the police or applications to universities), customs and tax declarations by legal entities, business registration, automation of the public procurement system, etc. [8].

**Hungary's experience.** In Hungary, Control Authority Documentation system was implemented. It is a service for the implementation of public services in the field of construction. Filing applications, plans and creation of documents shall be performed in electronic format. On request, printed and certified copies of documents can be executed. At the same time, all information on completed transactions shall be stored on a central server to which the users can connect via the Internet. Citizenship and migration data have been also automated. The migration statistics system allows obtaining the necessary information (about migrants, persons entitled to a residence permit, etc.) and carrying out inquiries on the specified criteria.

A new system of compensation was established in the field of agriculture. It works within the framework of assistance to farmers from the Losses Compensation Fund and the Risk Insurance System and suggests the possibility of farmers' addressing for assistance to the state in an electronic format. The introduction of information technologies in the system of interaction between the state and farmers was required to cut costs and reduce the administrative burden on the farmers themselves. In addition, electronic databases make it possible to audit and monitor payments to public bodies more effectively.

The introduction of electronic document management is an important step in the process of establishing e-government. Creating and sending documents on digital media can reduce the time, the number of staff and material costs, which would be inevitable in the normal delivery. Electronic databases allow you quick generating of the necessary documents from the existing stored information.

For the implementation of electronic document management, a hybrid delivery and conversion system was created. This system generates various types of documents in electronic form. Created documents can be certified (verified) and sent through the means of digital information exchange, or printed by the user and sent to the addressee by regular mail [9].

In order to verify official documents in electronic form, an electronic (digital) signature shall be used, which is a special numerical code. This electronic signature for different types of documents are different, even if the same person signs them. In addition to these areas, information technologies began to be applied in Hungary in areas such as medicine, education, and transport. As a result, the following services obtained quite a lot of popularity:

- electronic auctions;
- electronic petitions for granting agricultural subsidies;
- provision agricultural data;
- electronic customs administration;
- electronic pension administration [10].

Thus, Hungary is actively participating in the pan-European process of the e-government system development. The implementation of electronic technologies affected a number of economic areas. Transfer of public administration in electronic format is an irreversible process despite it may take quite long time.

**The Czech Republic's experience.** The e-government system is also gradually being introduced in the Czech Republic. The reference model of e-government in the country is not unique and was built based on existing approaches of the leading countries in this field. The Czech model is based on eight basic principles, among them are security, transparency, collaboration, sustainability, technological neutrality and etc.

For implementation the e-government project, a card methodology has been introduced, which includes evaluation of the information technologies implementation in a particular area of the state administration based on fulfillment of all basic principles. Based on the current results, it can be noted that the adaptation of the e-government system is facing a number of difficulties. First, this is due to the lack of an all-embracing policy on introduction of information technologies, which does not allow following the basic principles in full. Another problem is the evaluation of the effectiveness of a project. Often it is very difficult to analyse and control the implementation of information technologies in one or another sphere of public administration. The mistake is the fact that developers often focus on technical support and pay little attention to the motivation and adaptation of employees to work on the new rules. Costs may increase in case of electronic services introduction. Finally, in the Czech Republic a number of public services are still performed in the traditional way without digitization, which is often explained by the lack of public officials' interest and a lack of awareness of the population.

Despite all of these difficulties, there are a number of areas that show the progress made by the country in the field of e-government [11].

In accordance with the law on Electronic Transactions and Authorized Document Conversion, paper documents and electronic documents have equal legal force. The adoption of this law allowed applying to state agencies using electronic applications and documents. An information data box system was introduced in the Czech Republic. These data boxes are required to have by all government agencies and entities. The communication of the population and legal entities with public authorities is performed with these information tools. Using these boxes, it is possible to receive answers to your questions, send or request various types of documents.

For simplification the work between citizens and ministries special places for communication were created – Czech points (universal access points). These institutions are the analogue of the House of Justice in Georgia. Czech points' offices are located at post offices, in the city administration, in a number of notaries, as well as in the offices of the Chamber of Commerce and Industry and local government. In the Czech point's office, it is possible to request various kinds of certificates, statements, obtain the necessary information from the various ministries and departments [12; 13].

An important innovation within the e-government project is to establish a Core Registers System, which combine databases of various government agencies into a single network. This system is intended both to make it easier to obtain the necessary information within the ministries and departments, and to reduce the need to duplicate the submission of documents by citizens to state bodies.

Another focus in the field of e-government system of the Czech Republic was the creation of an electronic library of the developed legislation (eKlep). The fact is that publishing draft laws on the Internet is required in the Czech Republic. In this regard, a single information portal has been created, which contains the draft legislative acts and comments to them. This electronic source allows reviewing draft laws, comments and responses to these comments. However, only part of the information is available to everyone. Only certain persons of ministries and departments have the right to review the rest of the data. In addition, eKlep includes documents of the Government's meetings. These documents form a special database – eVlada. Access to such material may be granted only directly to the employees of the government apparatus.

Thus, it may be noted that the Czech Republic is characterized with a process of gradual implementation of e-government principles in various areas of public administration. At the same time, an integral concept of the use of information technologies in public administration has not yet formed. In addition, the investigation on the suspicion of the presence of corruption schemes were carried out in relation to some projects. Despite all the difficulties, global development trends will stimulate the emergence of the e-government system of the Czech Republic in the medium term [9].

## E-government development in the Republic of Belarus

Building an e-government system is one of the public policy objectives of the Republic of Belarus. In this direction, a series of legislative acts were adopted, a special technical changes for the transfer of certain state services in an electronic format were created. Among the main regulations adopted in this area, the Informatization Development Strategy of the Republic of Belarus for 2016–2022 can be highlighted. This document reflects the current state of E-government development and the main tasks to be implemented during the period. The strategy notes that a universal automated information system (UAIS) has been established in Belarus, an interdepartmental electronic document management system and Mailgov secure e-mail system for public authorities and organizations operate[1].

In Belarus, all ministries and departments have their own online portals where it is possible to review the relevant information in a particular field or legislative acts. In addition, Belarus has a unified National Legal Internet Portal of the Republic of Belarus. With UAIS resources and the electronic services national center, the public and businesses are able to obtain a range of services in an electronic format. In the field of education, all schools have access to the Internet, and a network of electronic libraries is under development. A number of information Internet resources operate in the social and labour sphere. The practice of the electronic digital signature is gradually introduced. When it is available, an electronic document is legally binding. In this case, there is no need to duplicate paper documents. The positive moment for Belarus is also quite a high rating that the country takes in the UN Global E-Government Development Index[2] [14; 15].

In the future, it is assumed that 75 % of all government services will be delivered in electronic form, and 95 % of document management between departments and agencies should be performed by means of

[1]Национальный центр электронных услуг. URL: http://nces.by (date of access: 22.05.2016).
[2]Портал об электронном правительстве и госуслугах онлайн в Беларуси. URL: http://e-gov.by (date of access: 20.05.2016).

information technology. Within the State Program of Digital Economy and Information Society Development for 2016–2020, it is planned to introduce electronic identification of legal entities and individuals. In particular, it is planned to switch to electronic passports of citizens. The widespread introduction of electronic prescriptions in the medical institutions of the country will also be continued. The project on the introduction of personal electronic cards for the population is also under consideration. They will help not only receive and pay for public services via remote access, but also make various kinds of payments for banking, social and insurance services, buying tickets or products in online shops [14; 16; 17].

All of the above activities and projects indicate a gradual introduction of the e-government principles in the country. However, this process develops not as fast as in some other post-Soviet countries (such as Estonia and Georgia).

It should be noted that public services in electronic format generally have an informative character. Other services that can be accessed using ICT are quite limited and often difficult for understanding. The introduction of high-quality electronic services is impossible without research of the needs of citizens. An effective e-government system needs to focus on the end-user requests.

Another obstacle to the development of information public services in the country is the lack of awareness and preparedness of the population. The percentage of users of Internet resources is also important. In Belarus, as in other countries, it is required to raise the level of literacy in the field of the information technology use. In addition, it is required more widely simply to tell the public about the possibility of making public services in an electronic format and to create additional incentives for their use.

As part of building a full-fledged e-government system, establishing an electronic resource that brings together the databases of ministries and departments into the network should be also considered, as well as the introduction of ID-cards of the citizens. This will significantly reduce paper documents and simplify a number of administrative procedures. Currently, the Unified Electronic Services Portal operates in the country, through which it would be possible to receive services of various ministries and departments. However, its options are very limited. This complicates the process of interaction between government agencies, businesses and individuals through information technology [18].

Finally, pressing problems in building e-government in any country, and Belarus is not an exception in this case, are the preparation of an appropriate legislative framework and the development of modern software. The above activities cannot be implemented without the involvement of highly qualified specialists and informational technologies. The financing of these costs requires considerable investment in terms of the budget. It is therefore proposed greater involvement of private capital in a number of projects for the implementation of e-government.

## References

1. Almarabeh T., Abu Ali A. A General Framework for E-Government: Definition – Maturity Challenges, Opportunities, and Succes. *Eur. J. Sci. Res*. 2010. Vol. 39, No. 1. P. 29–42.

2. Khristov P. [E-government in the BSEC countries]. Document GA46/EC45/REP/15/r. 26 Novemb. 2015. URL: http://studydoc.ru/doc/3991887/dok.-ga46-ec45-rep-15-r-sorok-shestoe-plenarnoe-zasedanie- (date of access: 15.04.2016) (in Russ.).

3. United Nations E-Government Survey 2014. E-government for the future we want. URL: https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2014-Survey/E-Gov_Complete_Survey-2014.pdf (date of access: 21.05.2016).

4. Krasny A. [Georgia E-Government]. URL: https://www2.deloitte.com/content/dam/Deloitte/ua/Documents/public-sector/e-government/Electronic%20government%20of%20Georgia.pdf (date of access: 15.05.2016) (in Russ.).

5. Goderdzishvili N. [Georgia's successful path in building e-government]. URL: http://www.beroc.by/webroot/delivery/files/9.pdf (date of access: 10.05.2016) (in Russ.).

6. Demetrashvili K. Georgian Successful Reforms in Public Procurement. URL: http://www.beroc.by/webroot/delivery/files/presentation__7.pdf (date of access: 04.05.2016).

7. [The Head of Georgia Competition and Public Procurement Agency: "All and everything about public procurement should be available!"]. URL: http://gazeta.zn.ua/internal/glava-agentstva-konkurencii-i-goszakupok-gruzii-absolyutno-vse-chto-kasaetsya-goszakupok-dolzhno-byt-otkryto.html (date of access: 17.05.2016) (in Russ.).

8. Chugunov A. V. [E-government: the effectiveness of the policy of information and communication technologies implementation in public administration]. URL: http://www.ict.edu.ru/ft/005716/68362e2-st18.pdf (date of access: 14.05.2016) (in Russ.).

9. Innovation in public administration an operating e-state: 13 outstandingly useful public IT solutions in Hungary. URL: http://nhit.hu/dokumentum/81/IVSZNHIT_innovationinpublicadministrationanoperatingestate.pdf (date of access: 14.05.2016).

10. Szittner K. Experience of digitization process in Hungarian Public Administration. URL: http://www.beroc.by/webroot/delivery/files/presentation__5.pdf (date of access: 01.05.2016).

11. Valenta L. The Development of eGovernment in the Czech Republic: Lessons, Challenges and Future Prospects. URL: http://www.beroc.by/webroot/delivery/files/presentation__13.pdf (date of access: 05.05.2016).

12. Hladik J., Kopecký V. [Public Administration Reform in the Visegrad countries: lessons for Belarus and Ukraine, the Czech Republic]. URL: http://sympa-by.eu/sites/default/files/library/amo-public_administration_rus.pdf (date of access: 24.05.2016) (in Russ.).

13. [The Czech Republic E-government]. Czech POINT. URL: http://www.cz-invest.ru/novosti/1051.html (date of access: 20.05.2016) (in Russ.).

14. The strategy of informatization development in the Republic of Belarus for 2016–2022 as of 11.03.2015 No. 26]. URL: http://e-gov.by/zakony-i-dokumenty/strategiya-razvitiya-informatizacii-v-respublike-belarus-na-2016-2022-gody (date of access: 25.05.2016).

15. [E-government and digital economy will be the priorities of the informatization development strategy in Belarus for years 2016–2022]. URL: http://www.belta.by/printv/society/view/elektronnoe-pravitelstvo-i-tsifrovaja-ekonomika-stanut-prioritetami-strategii-razvitija-168897-2015 (date of access: 14.05.2016).

16. [BISRS to be introduced in 2019]. URL: http://electroname.com/story/11721 (date of access: 15.05.2016) (in Russ.).

17. [E-government: it is established for the people in Georgia and for officials in Belarus]. URL: http://zautra.by/art.php?sn_nid=13044 (date of access: 01.05.2016) (in Russ.).

18. Naumov A. [Georgia e-experience for Belarus]. URL: http://e-gov.by/best-practices/elektronnyj-opyt-gruzii-dlya-belarusi (date of access: 10.05.2016) (in Russ.).

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