Introduction. The article gives an assessment of the e-government development in Russia from 2008 to 2018. E-government contributes to the development of the state’s information infrastructure, improves the efficiency of public service delivery to the society and attracts the public to participate in the process of developing and adopting government decisions. The article presents a comparative analysis of the development of the electronic government of Russia with other countries. The key issues of improving e-government in Russia are identified on the basis of the UN e-government development index. This indicator allows assessing whether the state is ready to provide electronic public services to citizens and what are its opportunities for using information and communication technologies in providing these services.

Materials and methods. Electronic government has become the subject of a wide range of disciplines, including political communication and sociology. Currently, scientists are paying increasing attention to the intersection of technological factors, equipment and culture in the adoption and use of information and communication technologies (ICT), e-government research has begun to demonstrate some diversification. Russian scientists mostly focus on the statistic data of implementation of e-government and consequences for governance and society. This investigation is based on following methods: 1) content-analysis of official documents of the Russian Federation concerning e-government; 2) declarations and interviews of official authorities; 3) monitoring of mass media; 3) international and national statistics data analysis.

Study results. Russia has relatively good indicators of e-government development in the world (according to UN e-Government Development Index), and the introduction of e-government is quite fast. But, in comparison with the leading countries, Russia still lags far behind in many respects because of: huge territory; low level of distribution of electronic services; low activity of mobile communication; weak dynamics of the increase in the number of Internet users; lack of the necessary law regulatory framework; low computer literacy of many government officials.
Introduction

In the modern information world, the practice of introducing e-government is widely used by public authorities in the implementation of their functions. E-government contributes to the development of the state’s information infrastructure, improves the efficiency of public service in the solving of social problems and attracts the public to participate in the process of developing and adopting governmental decisions. These aspects explain the necessity of the study the problem of the implementation and use of e-government in different countries.

E-government is a set of public administration tasks related to information and communication technologies (ICT). It uses such technologies to serve the population, business entities and government agencies. The idea of e-government suggests introducing a wide range of information tools and opportunities in the practice of public administration. Since the mid-1990s, the concept of e-government has often been seen as the equivalent of a better government that will contribute to economic growth, human development and society, and knowledge in general. Since the beginning of the XXI century, the number of e-government websites of local and national administrations has increased.

E-government is a form of organizing the activities of public authorities, which optimizes the process of providing services, political participation of citizens and management through information and communication technologies (ICT). It uses such technologies to serve the population, business entities and government agencies. The idea of e-government suggests introducing a wide range of information tools and opportunities in the practice of public administration. Since the mid-1990s, the concept of e-government has often been seen as the equivalent of a better government that will contribute to economic growth, human development and society, and knowledge in general. Since the beginning of the XXI century, the number of e-government websites of local and national administrations has increased.

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This paper is devoted to determination the problem of introducing e-government in Russia. The purpose of the study is to identify the problems of the Russian e-government based on the analysis of the UN index statistics and the national official statistic data.

The phenomenon of e-government is the subject of many discussions and disputes, and there is no generally accepted definition of e-government. Electronic government is studied by a wide range of disciplines, including political communication and sociology. Currently, scientists are paying increasing attention to the intersection of technological factors, equipment and culture in the adoption and use of ICT, e-government research has begun to demonstrate some diversification.

E-government is also known by different terms such as Electronic Government, Electronic Governance, Digital Government, Online Government, e-Gov etc. [10. P. 1]. According to the World Bank, E-government is defined as the government owned or operated systems of information and communication technologies that transform relations with citizens, the private sector and/or other government structures in the aim to promote citizens’ empowerment, improve service delivery, strengthen accountability, increase governmental transparency, or improve efficiency [12].

To understand this phenomenon better, R. Heeks used content analysis of 84 papers in egovernmentspecific research outlets (two journals and one conference series). His analytical focus was in five main aspects: perspectives on the impacts of e-government, research philosophy, use of theory, methodology and method, and practical recommendations. Based on normative evaluation he identified some positive features, such as recognition of contextual factors beyond technology, and a diversity of referent domains and ideas. He concluded that, though, researches of e-government drew mainly from a weak or confused positivism and were dominated by overoptimistic, and theoretical work that had done little to accumulate either knowledge or practical guidance for e-government. Worse, there was a lack of clarity and lack of rigor about research methods alongside poor treatment of generalization [11].

M. Alshehri and S. Drew reviewed the updated and available literature about e-government implementation stages, its challenges and benefits. Depending on literature, they reviewed several relevant issues regarding e-government such as the definition of e-government and e-readiness, implementation stages, advantages and challenges of e-government implementation. They decided that, the implementation of e-government is not an easy job it faces many challenges and barriers, such as: privacy, security, organizational barriers, social barriers, lack of qualified personnel and training, financial barriers, cultural barriers [9].

The problems of e-government are global in nature, as evidenced from different analytical materials and researches of the wide experts and scientific circles. For example D.F. Norris studied the influence of education as the social barrier for adoption the e-government, he described the most pressing issues arising in the implementation of e-government [13].

Russian scientists mostly focus on the statistic data of implementation of e-government and consequences for governance and society. E.A. Sysoeva touches the problem of improving
the system of public administration by implementing the concept of e-government [8].

E.G. Dyakova analyzes the regulatory and legal framework for the e-government transition in Russia in two main areas: the preparation, adoption and adjustment of federal laws governing e-services and the preparation, adoption and adjustment of state strategic planning documents. She also notes that the introduction and development of e-government is carried out through selective adaptation of the world’s “accumulated experience” by a specific country in accordance with its established management traditions. Thus, electronic government can be viewed as a “soft power” through the prism of international and national statistics data analysis.

This investigation is based on following methods: 1) content-analysis of official documents of the Russian Federation concerning e-government; 2) declarations and interviews of official authorities; 3) monitoring of mass media; 3) international and national statistics data analysis.

Study

Implementation of e-Government in Russia

In general, there are four areas of the development of electronic government [1]:

1) Electronic services (e-services). This term refers to the provision in electronic form of government information, programs, strategies and services. They are available 24 hours a day and seven days a week. It also includes the provision of electronic services, e-administration and improvements such as a universal service bureau and access to a variety of “one-stop-shop” services.

2) Electronic management (e-management). It concerns internal information systems supporting the administrative functions of government institutions, including data and information management, electronic records and information flows between departments. Electronic governance requires a new organizational culture, as well as the focus of staff on performance indicators, customer service and the participation of interested people. The solution of the problems of electronic control lies in the plane of adaptation and integration of processes occurring in internal divisions not working directly with the public.

3) Electronic democracy (e-democracy). This, first of all, the manifestation of e-government that is hardest to cause and deter. Electronic democracy is the use of information and communication technologies as a tool to establish the agenda and priorities of public policy, to develop policy measures and to participate in their implementation in an advisory form (for example, through electronic consultations or e-voting). This applies to activities that increase the level of public participation, including virtual city meetings, open meetings, the collection of feedback, opinion polls and community forums.

4) E-commerce (e-commerce). This is the concept of that part of the government’s interaction with the outside world, which directly affects business. E-commerce involves the exchange of money for government goods or services over the Internet.

Since 2011 till 2014, there was the State Program “Information Society” operating in Russia. This State Program was approved by the decree of the Government of October 20, 2010 No. 1815-p1. It started all the major work on the creation and development of e-government in our country. Thanks to this project, a number of works were carried out to create a unified digital government infrastructure in the field of information technology and telecommunications. The Government of the Russian Federation implemented the “Information Society (2011-2020)” program in a number of areas. One of the painful problems, in addition to the development of e-government, was the overcoming so called “digital inequality” of the Russian regions and improving communication technologies availability. The basic principle which the Program encompassed was that all work was carried out within the framework of the Program should be customers-oriented.

Today, the infrastructure of the Russian e-government is difficult to imagine without its key elements [4]:

1) a single portal of state and municipal services;
2) the national platform for distributed data processing;
3) a unified system of electronic interaction between departments;
4) identification and authentication systems in the infrastructure, which ensures the interaction of information systems necessary for the provision of electronic state and municipal services;
5) information system of the head certification center, which issues keys of electronic digital signature.

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A key part of the project “Electronic Government” was the Single Portal of State and Municipal Services. This is a federal state information system that provides [2]:

1) access of individuals and legal entities to information on state and municipal services;
2) provision in electronic form of state and municipal services, in accordance with the lists approved by the Government of the Russian Federation and the highest executive bodies of state power of the subject of the Russian Federation;
3) registration of citizens’ appeals related to the functioning of the Single Portal of State Services (gosuslugi.ru), including the possibility for applicants to leave feedback on the quality of the provision of state or municipal services in electronic form.

According to the Ministry of Digital Development, Communications and Mass Media of the Russian Federation, the number of registered participants on the portal has already exceeded 40 million people. In 2016 gosuslugi.ru had almost 18 million new users. The monthly increase in users was from 800 thousand to 2.4 million people. In addition, in 2016, users visited the Single Portal of State Services 33.5 million times a month and ordered 380 million services with the common worth of 7.9 billion rubles, which is almost three times higher than in 2015.

According to the Single Portal of State Services, since 2016, 51.3% of the population of Russia enjoyed the electronic state services mainly through the portal gosuslugi.ru. The list of leading requests headed the payment of judicial and tax debts, requests for fines from the State Traffic Safety Inspectorate, filing applications for a driver’s license or passport, registration of vehicles and records for visiting a doctor. The most popular public service was checking fines of the State Traffic Safety Inspectorate (39% of the total number of requests), the next most popular was checking tax debt (21%), third place - issuing a new passport (14%) (Single Portal of State Services, 2018).

In parallel with the Portal of the State Services, the Multifunctional Centers (MFC) network is actively developing. As of the beginning of 2016, 2,700 MFC and about 10,000 territorially isolated units in small settlements were opened, which ensured the coverage of the MFC system by 94.2% of the country’s population.

Judging by the results of the Single Portal for State Services performance the number of users has increased manifold (at the moment more than 40 million Russians are registered on gosuslugi.ru). As it was reported in “Rossiyskaya Gazeta”, some discounts are planned for certain services received on the portal, since one third of the executive bodies will acquire the right to reduce the amount of such payments (duties) up to 30 percent for the citizens who submitted the applications in an electronic form [7].

It should be noted, that such large cities as Moscow and St. Petersburg, have already had their own portals for providing the state services in an electronic form for a long time, but in the list of the most developed cities in the sphere of using the state services in an electronic form, they ranked only 13th and 26th respectively. The portal is, particularly, in great demand in Primorsky Krai (15.1% of the population) which is connected with the accelerated pace of the state services transfer into an electronic version and the region’s authorities pay special attention to it [14. P. 41].

Russia in the UN E-Government Development Index

Various ratings are used to assess the development of e-government, which allows us to compare the performance of any countries around the world in order to stimulate the further development of these indicators. The most famous rating is the United Nations Electronic Government Development Index. This indicator allows assessing the extent to which the state is ready to provide electronic public services to citizens and what are its opportunities for using information and communication technologies (hereinafter ICT) in the provision of these services [4. P. 172]. That is, the United Nations Development Index assesses the success of each country’s e-government implementation in the world space compared to each other.

The UN e-government development index consists of 3 sub-indices:

1) The sub-index of the development of online public services (0.33);
2) Sub-index of telecommunication infrastructure (TII) (0.33);
3) The sub-index of human capital development (0.33).

Thus, the United Nations Development Index is an average weighted of 3 sub-indices of e-government.

The sub-index of the development of online public services is the sum of the indicators of the emerging information services, extended information services, operational services and connected services. Further, from the received amount for a particular country, the lowest value

of the sum of any monitored country is subtracted and is divided into a range of values for all countries [6, P. 36].

The sub-index of the telecommunications infrastructure of TII consists of 5 indicators. The calculation of indicators is based on the data of the International Telecommunication Union [6]:

1) Index of personal computers;
2) Index of Internet users;
3) Telephone line index;
4) Index of mobile subscribers;
5) High speed connection index.

The sub-index of the development of human capital is calculated on the basis of the following indicators:

1) \( \frac{2}{3} \) of adult literacy index;
2) \( \frac{1}{2} \) of the full education index.

The calculation of indicators is based on UN data on education, science and culture [6].

The UN e-government development index is calculated by the United Nations Department for Economic and Social Affairs. Analyzing the rating, we can trace how the e-government is developing in the world and, in particular, in Russia.

According to Table 1, in 2016 the highest index of the development of e-government belongs to the UK and is 0.9193 points. Compared to 2008, the UK index increased by 16%. The highest index of e-government development index in 2010-2014 belongs to South Korea, which allows to conclude that this country has the best developed e-government system in the world. At the same time, we can observe a decline in the e-government development index for 8 years from 2008 to 2016 in countries such as the USA (by 3%), Denmark (by 7%), Norway (by 9%) and Sweden (by 5%), even though Sweden had the largest index of development in 2008. As for Russia, from 2008 to 2016, the index of e-government development increased 1.5 times, but in 2014 and 2016 there was a decrease in the indicator by several points. Also within 8 years, Russia has narrowed the gap with the highest e-government development rates of foreign countries from 1.78 points to 1.27 points, that is, almost 1.5 times.

Despite progress during 2008-2016, the development of e-government in Russia lags far behind foreign countries. Thus, the largest indicator of the Russian e-government index (0.7345 points) in 2016 did not exceed the lowest indicator among foreign countries (0.7744 points). Thus, the problem of the development of e-government in Russia today remains relevant. The development of online public services and the telecommunications infrastructure of TII in Russia increased by 2-2.5 times. However, the human capital development index fell 1.5 times. The greatest development was achieved in the field of transactional and initial information services - the indicators for these parameters increased by 10 times. But despite the rapid development, the share of transactional services is still low. In 2016, special attention was paid to expanded information services. It is also worth noting that every year people increasingly prefer the Internet, rather than telephone communication, although the share of users of cellular phones is still great⁵.

**Table 1**

<table>
<thead>
<tr>
<th>Country</th>
<th>The value of the Index in 2008</th>
<th>the value of the Index in 2010</th>
<th>the value of the Index in 2012</th>
<th>the value of the Index in 2014</th>
<th>the value of the Index in 2016, items</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Republic of Korea</td>
<td>0.8317</td>
<td>0.8785</td>
<td>0.9283</td>
<td>0.9462</td>
<td>0.8915</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.8631</td>
<td>0.8097</td>
<td>0.9125</td>
<td>0.8897</td>
<td>0.8659</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0.7872</td>
<td>0.8147</td>
<td>0.8960</td>
<td>0.8695</td>
<td>0.9193</td>
</tr>
<tr>
<td>USA</td>
<td>0.8644</td>
<td>0.8510</td>
<td>0.8687</td>
<td>0.8748</td>
<td>0.8420</td>
</tr>
<tr>
<td>Australia</td>
<td>0.8108</td>
<td>0.7863</td>
<td>0.8390</td>
<td>0.9103</td>
<td>0.9143</td>
</tr>
<tr>
<td>Denmark</td>
<td>0.9134</td>
<td>0.7872</td>
<td>0.8889</td>
<td>0.8162</td>
<td>0.851</td>
</tr>
<tr>
<td>France</td>
<td>0.8038</td>
<td>0.7510</td>
<td>0.8635</td>
<td>0.8938</td>
<td>0.8456</td>
</tr>
<tr>
<td>Sweden</td>
<td>0.9157</td>
<td>0.7474</td>
<td>0.8599</td>
<td>0.8225</td>
<td>0.8704</td>
</tr>
<tr>
<td>Canada</td>
<td>0.8172</td>
<td>0.8448</td>
<td>0.8430</td>
<td>0.8418</td>
<td>0.8285</td>
</tr>
<tr>
<td>Norway</td>
<td>0.8921</td>
<td>0.8020</td>
<td>0.8593</td>
<td>0.8357</td>
<td>0.8117</td>
</tr>
<tr>
<td>Russia</td>
<td>0.5120</td>
<td>0.5136</td>
<td>0.7345</td>
<td>0.7296</td>
<td>0.7215</td>
</tr>
</tbody>
</table>


Table 2
E-Government Development Index - Top 10 Countries and Russia in 2018

<table>
<thead>
<tr>
<th>Rating</th>
<th>Country</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Denmark</td>
<td>0.9150</td>
</tr>
<tr>
<td>2</td>
<td>Australia</td>
<td>0.9053</td>
</tr>
<tr>
<td>3</td>
<td>Republic of Korea</td>
<td>0.9010</td>
</tr>
<tr>
<td>4</td>
<td>United Kingdom</td>
<td>0.8999</td>
</tr>
<tr>
<td>5</td>
<td>Sweden</td>
<td>0.8882</td>
</tr>
<tr>
<td>6</td>
<td>Finland</td>
<td>0.8815</td>
</tr>
<tr>
<td>7</td>
<td>Singapore</td>
<td>0.8812</td>
</tr>
<tr>
<td>8</td>
<td>New Zealand</td>
<td>0.8806</td>
</tr>
<tr>
<td>9</td>
<td>France</td>
<td>0.8790</td>
</tr>
<tr>
<td>10</td>
<td>Japan</td>
<td>0.8783</td>
</tr>
<tr>
<td>32</td>
<td>Russian Federation</td>
<td>0.7969</td>
</tr>
</tbody>
</table>

According to UN e-Government Survey (2018), the Russian Federation is rated to the 32nd place of 193 countries with the e-Government Development index 0.7969 (very high EGDI). As for the components of this Index we have Online Service Component 0.9167, Telecommunication Infrastructure Component (TII) 0.6219 and Human Capital Component 0.8522. E-participation Index of the Russian Federation is estimated as 0.9213 that puts Russian on the 23rd place among 193 countries. Very interesting components are included in the Telecommunication Index (TII) that shows real readiness of population and infrastructure to the e-government development. Based on the UN estimation Russia has 22.42 fixed telephone subscriptions per 100 inhabitants, 159.15 mobile cellular telephone subscriptions per 100 inhabitants and percentage of individuals using the Internet – 73.09 %. Human Capital Index (HCI) also has its components: Adult Literacy in Russia – 99.7%; Gross Enrollment Ratio – 95.15; Expected Year of Schooling – 15.38; Mean Year of Schooling – 12

So we can summarize that e-government Development Index of Russia is steadily growing.

There are certain shortcomings that hamper the development of Russian e-government. These factors include [5]:

1) the authorities seek to improve only those indicators that help reduce the gap in the ranking with the leading countries, rather than conduct qualitative diagnostics and improve the indicators that really need it;
2) the lack of a leader and persons responsible for the competent implementation and control of this idea, the weak competence of many government officials in matters relating to this topic, their low computer literacy, a lack of desire to improve the effectiveness of e-government;
3) high expenditures of municipalities on the ICT infrastructure and its slow development;
4) the need to improve the regulatory framework on this issue;
5) the low level of popularization of digital services in the country and the rare use of electronic signatures to obtain such services;
6) insufficiently active introduction of mobile communication at a low price;
7) the weak dynamics of increasing the number of Internet users and the non-dynamic implementation of fiber-optic Internet access;
8) lack of necessary support for community initiatives, as well as small and large businesses.

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

The low level of competence of municipal employees is another reason for the inhibition of the development of electronic relations between the authorities and the population. Municipal authorities do not always know how to work with information technology and the Internet, their prompt response to requests, search and processing of required information depends on their technological competences. While the literacy and information culture of officials themselves does not contribute to the effective work of government bodies, especially at the level of local self-government.

Based on all of the above, we can summarize that Russia has relatively good indicators of e-government development in the world, and the introduction of e-government is quite fast. But, in comparison with the leading countries, Russia still lags far behind in many respects. This is due to the following reasons:

1) Huge territory of the Russian Federation, as the small size of the country (with the

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exception of the United States and Canada) contributes to a faster and more effective implementation and development of e-government;
2) Low level of distribution of electronic services;
3) Low activity of mobile communication;
4) Relatively weak dynamics of the increase in the number of Internet users;
5) Lack of the necessary law regulatory framework;
6) Low computer literacy of many government officials, a lack of desire to improve the effectiveness of e-government.

After eliminating these shortcomings, further progress in the introduction and development of e-government in Russia can increase several fold. To do this, it is necessary to pay more attention to the development of information and communication technologies in Russia, in particular in the area of IT staff development; to increase the technological literacy of the population, teaching the basics of information and communication technologies in schools, in secondary professional and higher educational institutions, as well as at work in the field.

Particular attention should be paid to the development of a clear regulatory framework with specific rights and duties of citizens in the use of electronic government that provides and guarantees the security of personal data. It is also worth paying attention to the successful world practices of introducing and developing e-government and letting them through the prism of topical Russian management traditions, as political regimes and administrative traditions can be highly differentiated and require adaptation to Russian reality.

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РАЗВИТИЕ ЭЛЕКТРОННОГО ПРАВИТЕЛЬСТВА В РОССИИ: ПРОБЛЕМЫ И ПЕРСПЕКТИВЫ

Введение. В статье дается оценка развития электронного правительства в России с 2008 по 2018 год. Электронное правительство способствует формированию информационной инфраструктуры государства, повышает эффективность предоставления услуг населению и привлекает общественность к участию в процессе разработки и принятия решений правительства. В данной работе представлен сравнительный анализ развития электронного правительства России с другими странами. Основные проблемы совершенствования электронного правительства в России определены на основе Индекса развития электронного правительства ООН. Этот показатель позволяет оценить, готово ли государство предоставлять электронные услуги гражданам и каковы возможности использования информационных и коммуникационных технологий для предоставления таких услуг.

Материалы и методы. Электронное правительство является предметом изучения широкого круга дисциплин, в том числе политической коммуникации и социологии. В настоящее время ученые уделяют большое внимание изучению технологических факторов, оборудования и культуры в области внедрения и использования информационно-коммуникационных технологий (ИКТ); исследования электронного правительства стали более диверсифицированы. Российские ученые преимущественно сосредоточены на статистических данных по внедрению электронного правительства и изучении последствий для государственного управления и общества. Данное исследование основано на следующих методах: 1) контент-анализ официальных документов Российской Федерации по внедрению электронного правительства; 2) заявления и интервью официальных лиц; 3) мониторинг средств массовой информации; 3) анализ международных и национальных статистических данных.

Результаты исследования. У России относительно хорошие показатели развития электронного правительства в мире (согласно Индексу развития электронного правительства ООН), электронное правительство внедряется довольно быстро. Но, по сравнению с ведущими странами, Россия по-прежнему сильно отстает от лидеров по следующим причинам: огромная территория; низкий уровень распространения электронных услуг; низкая активность мобильной связи; слабая динамика увеличения числа пользователей Интернета; отсутствие необходимой нормативно-правовой базы; низкая компьютерная грамотность многих государственных чиновников.

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Ключевые слова: электронное правительство, индекс развития электронного правительства ООН, информационные технологии, статистика, проблемы реализации

Keywords: e-government, UN e-government development index, information technologies, statistics, problems of implementation
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