

E-Government in Russia: Meeting Growing Demand in the Era of Budget Constraints

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Abstract. Rapid improvements in access to ICT in Russia result in increased demand for e-government services. The citizens using electronic means to apply for and receive the results of public services demonstrate higher satisfaction with quality of public service delivery, compared to those who use traditional in-person application procedures. However, both statistical and sociological data analyzed in the article suggest that the share of public services actually delivered in electronic form is still low (about 3.2% of Russian citizens managed to receive the administrative public services in electronic form in 2015). To reduce the gap in e-services development with OECD countries in the current budget constraints, there is a need to reallocate ICT resources along the key priority public functions and services and to turn e-government tools from being a cost item to becoming a factor of budget savings. To achieve such results, it is expedient to introduce the practice of measuring and monitoring service delivery transaction costs and to use cost-effectiveness as one of the key factor guiding the decision-making process on ICT investments.

Keywords: Public services · Municipal services · e-government · e-services · Transaction cost · Optimization · Efficiency · Public expenditures

1 Introduction

After demonstrating some spectacular results in building information society and e-government in the early 2010s, Russia is facing difficulties in further improvement of the country's position in international ICT ratings. While the overall ranking in Network Readiness Index has improved (in 2015, Russia ranked the 41st compared to the 50th position in 2014 and the 80th position in 2010) [31], the progress seems to be more on the infrastructure side, while the environment and impact issues are lagging behind. Based on the 2015 ITU assessment [12], Russia ranks the 45th in ICT Development Index (with the best recent result being the 38th rank in 2013). Despite the overall position on E-government development index has remained stable in 2012–2014 (with Russia ranking the 27th) [29], it would be difficult to sustain this achievement for a long time without significant development and expansion of e-government services in Russia.

These recent evaluations suggest that Russia is unlikely to meet the ambitious targets set out in the *Information Society Development Strategy* which supposed that Russia would rank among the best 20 economies in the world in terms of the information society development by 2015 [24]. Moreover, sustaining the current level of e-government development as the country's competitive advantage calls for a new strategic approach oriented at reducing the existing gaps in ICT use indices in Russia as compared to the most ICT-advanced economies [5].

Designing such strategic vision should both take into account the international trends and the country's context. The recent recommendation on developing digital government strategies issued by the OECD Council [19] emphasizes the need to integrate digital government initiatives into public administration reforms and create the conditions for adopting cost-effective solutions driven more by the demand for services and e-participation on the part of the citizens rather than by the government itself.

2 Objective, Scope, and Methodology of the Paper

2.1 Literature Review

International academic and practitioner literature demonstrates a consensus that the demand for e-government should assume a central role in developing and implementing digital strategies (see for example [19, 22, 23]). Quite a number of studies have been recently conducted to evaluate the factors affecting the e-services uptake both in developed and developing economies, see [3, 10, 30]; however, the emphasis is still being placed on evaluating and therefore addressing more the supply side rather than the demand side both in Russia [26] and in other countries [25].

Though implementing e-government is often seen as a means for bringing cost-effective solutions to the public administration [6, 13, 14], at the initial stage of implementation the costs may significantly outweigh the benefits [7]. While a number of methods have been recently proposed in academic literature for conducting cost-benefit analysis of ICT investments [21] and e-services in particular (see [4, 15]), finding a practical approach to improving cost-efficiency and cost-effectiveness in implementing e-government strategies is still an important issue both in Russia and abroad.

Therefore, to contribute to the new e-government strategy, there is a need to assess both the demand for and supply of e-services in Russia, with special attention to the current resource constraints and the ways to overcome them.

2.2 Objective and Scope

The objective of this paper is to assess both the demand for and supply of e-services in Russia, and to develop proposals on improving public service delivery in the context of the current fiscal constraints.

The key hypothesis of the paper is that the allocation of the federal budget ICT resources for e-government (including e-services delivery) is not optimal and does not take into account the demand for e-services in Russia.

The paper is limited to the federal public services and, therefore, funding of ICT investments from the federal budget only. This limitation is justified both by the lack of consolidated data on sub-national public services and the funding allocated to such services, and by the fact that the federal level services account for about two thirds of all administrative public services rendered in Russia.

The research is built on a broad range of data sources, including official statistics, outcomes of sociological surveys, and the data on federal budget execution. Where possible, we used international statistics and publications of international organizations for comparison purposes.

3 Retaining the Positions: Key Challenges

3.1 The Demand Side: Public E-Services

For the past five years, citizen preparedness for electronic interaction with the public sector as well as the demand for such interaction has grown significantly. More than two thirds of Russian households are now connected to Internet (compared to 41.3% in 2010), while the total number of Internet users has reached 77 million. Over 80% of Russian businesses in 2014 had broadband connection to Internet (in 2010–56.7%). For the past five years, the share of households using Internet for booking goods and services and for searching information of public authorities has doubled. Better access to ICT creates higher demand for e-services: by the end of 2015, some 22.5 million citizens were registered at the Single Public Services Portal (SPSP, www.gosuslugi.ru). Given the total number for the Internet users, the prospective demand for e-services is about three times higher.

This conclusion is also supported by the outcomes of sociological surveys. For example, the results of a series of surveys conducted by the Russian Academy of the National Economy and Public Administration (RANEPA) in 2011–2015 aimed at measuring citizen perceptions of public service delivery demonstrate that the extent of public awareness about the SPSP has increased in 2011–2015 from 20.7% of respondents [21] to 68.9%¹. The share of the respondents who use this resource has grown by 1.3 times for the past year and reached 17.2%.

There is significant variation in the SPSP use depending on disability: only some 4.7% of the respondents with disability used the portal resources, while the usage level among the respondents without disability was much higher (18.0%). This variation is partially explained by the lower extent of awareness about the SPSP among the disabled. However, such trend signals possible digital exclusion of the persons with disability from e-government processes. This is an important issue as for this group personal

¹ The survey was conducted in October 2015 in 77 Russian regions. The total sample comprised 10,000 adult citizens who had applied for administrative public services in 2015; the statistical error is 1.3% Survey methodology and is available in [32]. It should be noted that the subject of the surveys included only administrative public services rendered by public authorities (such as registering state property or a business, filing tax returns, etc.), while education, health services and the like were not included into the survey.

interaction with public authorities may require more efforts than for the citizens without disability.

Most of the respondents (68.4%) used the SPSP for information purposes, and not for application or receipt of the service result (Fig. 1). Only 18.5% of the respondents who used the SPSP (or 3.2% of the total sample) actually obtained the service result electronically through the portal.

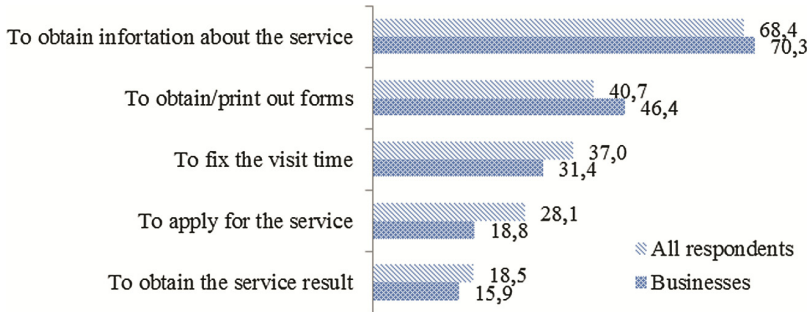


Fig. 1. Use of the SPSP in 2015 by objective (% of the respondents who used the portal)

While the frequency in SPSP use among businesses is higher than among the citizens applying for administrative public services for their own needs (30.2% vs. 16.1% of respondents in respective groups), the share of businesses obtaining the service results from the portal is lower than average (Fig. 1). Thus, Russia is significantly lagging behind the OECD countries in terms of e-services utilization where, on average, 48.6% of individuals and 83% of businesses used Internet to interact with public authorities, 32.8% of individuals and 77.9% of businesses sent filled forms to public authorities via Internet in 2014 [18].

Noteworthy, the respondents using the SPSP demonstrate higher satisfaction with the quality of service delivery. 87.7% of the respondents who used the SPSP at least for information purposes rate the quality of the public service delivery as ‘good’ or ‘very good’ compared to 83.8% on average. The satisfaction rate among the respondents who obtained the result of the public service electronically reached 92.8%.

Thus, the empirical data suggests that the demand for public services provided electronically is growing, and e-services have positive impact on citizen perceptions of public service delivery. To meet this demand, the spectrum of public services rendered electronically should be significantly broadened (together with possible utilization of other means, such as self-service kiosks [1]). So far, the menu of the e-services available does not match the public expectations.

3.2 The Supply Side: Fiscal Constraints

On the supply side, the fiscal constraints for the Russian federal budget are currently stricter than in 2008 when the *Information Society Development Strategy* was approved or in 2011, when the implementation of the state program *Information Society in the*

Russian Federation (2011–2020) started. While by OECD standards, the ICT-related expenditures of the Russian central government are not very high (84.6 bln. RUR or about 0.6% of total federal budget spending in 2015, which is comparable to such countries as Portugal and Belgium but is significantly below the budget in Australia, Canada, the US, and New Zealand) [17], there is a room for improvement both in terms of selecting the spending priorities and coordination.

The nominal amount of ICT expenditures from the federal budget remained roughly stable in 2012–2015 after the significant increase in 2012 (Fig. 2).

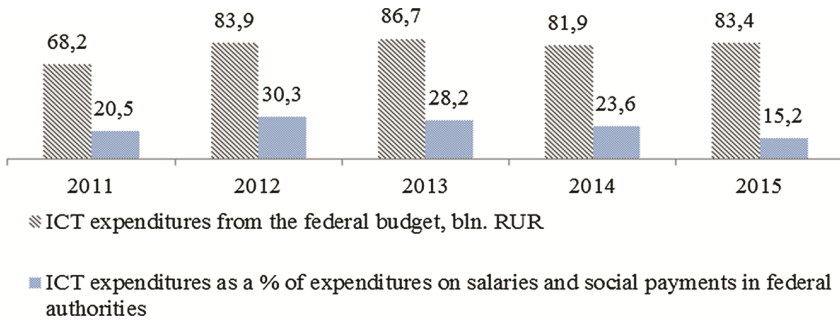


Fig. 2. ICT Expenditures from the Federal Budget in Russia in 2011–2015 Source: author calculations based on Federal Treasury data

However, given more than twofold devaluation of the national currency in 2014–2015 and significant share of imports on the Russian IT market, in real terms the ICT expenditures from the federal budget have decreased.

The structure of these expenditures has also changed. In 2014, the key components of the federal ICT expenditures included hardware and operational software (27.9%), access to external resources (26.5%), and ICT operations and maintenance (22.4%). As compared to the allocation of the federal budget ICT expenditures in 2011, there is an overall trend of decreased investment in hardware, software design, and infrastructure.

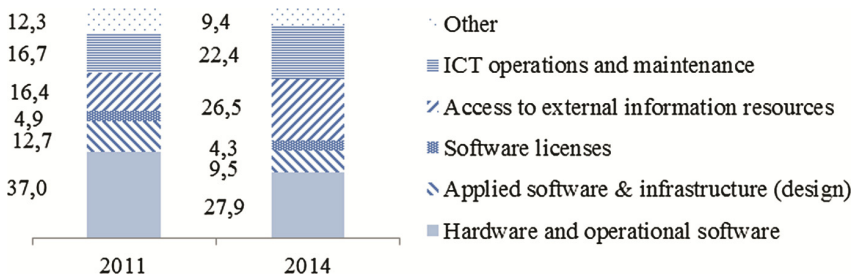


Fig. 3. Structure of federal budget ICT expenditures, % of total (Note: expenditures on ICT security are not accounted for separately and form a part of costs related to ICT infrastructure investment, hardware and software development as well as software licenses). Source: author calculations based on Federal Treasury data (www.roskazna.ru).

At the same time, the expenditures on connection services (access to external information resources), operations, and maintenance have been growing (Fig. 3).

Such changes in the cost structure imply that the scope of new ICT investment, including designing new IT systems for delivering e-services and introducing e-service delivery options in the new fields (i.e. for the new services), has been shrinking. The government has less and less room for maneuver in terms of funding new initiatives as it has to support and maintain the solutions introduced for the past years. Therefore, there is a clear need to centralize and concentrate these scarce resources on the highest priority areas.

The situation is further complicated by the large extent of decentralization of the federal ICT expenditures in Russia. In 2015, only 6.1% of the total ICT budget was allocated to the Ministry of Communications, which is in charge of developing and supporting e-government infrastructure, including the SPSP. The ICT budgets of some other federal authorities (such as treasury, tax, migration authorities) were significantly higher than this centralized ICT budget.

The federal ICT expenditures are unevenly distributed among federal authorities both in terms of functions they perform and in terms of their staff number. There is no correlation between the ICT spending and the number of public services provided or the applications for public services received in electronic format (Table 1).

Table 1. ICT budgets and number of transactions in selected federal authorities (Sources: author calculations based on the data published by Federal Treasury, Rosstat).

Federal executive body	ICT expenditures, mln. RUR		Number of services requested (2013)	Applications filed electronically, % of total (2013)	ICT expenditures in 2015 per 1 e- application, RUR
	2014	2015			
Federal registration service	3129.8	3283.9	44332032	10.2	726.6
Federal tax service	10677.6	8548.0	213028018	84.3	47.6
Federal migration service	4048.9	5895.9	73184627	2.5	3199.3
Ministry of interior	10838.1	7306.2	63510720	11.2	1030.4

Thus, the ICT budgets of the five federal executive bodies performing over 70% of total business inspections in 2015 accounted only for some 14.6% of the total ICT expenditures. The ICT budgets of the four federal executive bodies engaged in delivering more than 50% of administrative public services and receiving over 60% of all requests for e-services accounted for only 30% of the total federal budget ICT spending.

The ICT budgets do not correlate with the number of staff in these bodies, either. ICT expenditures per staff member in these federal bodies vary from 30.9 to 104 thousand RUR. Such variations may impact the capacity of the federal authorities both to deliver e-services and to engage in other e-participation formats.

Overall, the priority areas for e-government spending (general e-government infrastructure, supporting the core control and public service delivery functions, including revenue administration) account for about 56.6% of total ICT expenditures. The rest of the ICT expenditures potentially represent a source for possible savings and resource mobilization.

4 Developing E-Government Under Fiscal Constraints

The federal budget ICT spending analysis suggests the need for concentration of the federal budget resources both in terms of supporting priority e-government instruments (including the SPSP) and developing e-services and e-interaction applications in the areas which involve most individuals and businesses and, hence, could generate significant impact in terms of the future savings. Some centralization of ICT costs could also help to prevent development of parallel IT systems with similar (or partially similar) functionality and unclear impact for the public at large.

However, in our opinion, pure concentration and partial reallocation of the existing resources can be a short-term solution. In the medium term, more sustainable approaches which could turn the current ICT expenditures into the future budget savings are required. Achieving this objective would allow for funding e-government development from the savings generated in terms of operational costs, including payroll. Such approach has been implemented in the UK, where transition of all government e-services entailing at least 10,000 transactions per year to electronic format with at least 82% of transactions processed digitally is expected to yield annual savings estimated between 1.7 and 1.8 billion pounds [27]. Similar effects were calculated in New Zealand where the transaction cost of a telephone application to tax authorities was estimated 1.5 times lower than an in-person transaction [16].

Achieving systemic economies of scale from implementation of e-services calls for addressing a number of challenges both of administrative and technological nature. On the administrative side, there is a need for measuring and monitoring transaction costs, broadening the scope of public services which are presented in e-format, and reducing labor costs for processing e-services within the public administration. On the technology side, it is expedient to ensure ICT security, support new formats of public service delivery, such as broadening mobile formats and adopting e-services to the needs of persons with disabilities. While fully appreciating the need for these technological advancements for improving the e-service uptake, in this paper we will focus more on the administrative factors potentially generating budget savings.

Firstly, there is a need for measuring and monitoring public service transaction costs which should be factored in public authorities' performance framework. This is a challenge both in Russia and in the OECD countries where a recent open data survey revealed

only one country where such measurement is mandatory (Mexico) and 11 countries where estimation of transaction costs is taking place from time to time [20].

One of the best examples of such practices is publishing the data on transaction costs on the UK public service performance portal [28]. As of March 2016, the dashboards presented on the portal contained performance data (such as the number of transactions, transaction costs, digital take-up, and client satisfaction) for more than 800 public services.

The data available to-date does not allow to measure unit costs per service, transaction, or function in Russia. Some expert evaluations suggest that transition to e-services only by 3 federal executive authorities could generate annual savings of at least 3.5 bln. RUR mostly in terms on savings on payroll and office support costs [2]. From our viewpoint, though measuring transaction costs does incur some methodological problems, this approach helps to keep the focus on using ICT as an important instrument for raising government efficiency. This would form the basis for creating saving targets for implementation of IT systems (in terms of reducing transaction costs, number of staff, etc.) and integrating these targets into the overall performance frameworks used for the budget planning.

Secondly, reducing transaction costs calls for full service digitalization. Partial transition to e-service delivery (when only some administrative procedures, such as fixing the appointment time, are performed electronically) does not result in significant economies of scale as it does not reduce the number of in-person applications for public services. Therefore, it is preferable that the most in-demand services are provided without personal application at any stage. Such formats are already successfully implemented by the Federal Tax Service where a taxpayer may apply and receive settlement of accounts without a personal visit to the inspectorate. In 2014, some 79.6% taxpayers had access to this e-service [9]. The recent EU benchmarking data shows that over 50% of public services in the EU are either fully automated or fully available online, while less than 20% of public services are available only offline. A large menu of the e-services available has a positive impact on the share of citizens preferring e- and m-services which has reached 48% [8].

Special attention should be paid to the needs of vulnerable social groups, including the persons with disabilities. In Russia, the accessibility of e-services to the persons with disabilities is not a subject of the regular monitoring [11], despite the recently approved requirements to web accessibility. Providing e-services to the persons with disability would, inter alia, promote cost savings, especially in the public bodies engaged with processing of welfare payments and providing other social services.

Thirdly, there is a need to automate the processes of data exchange among various government information systems, as the current practice of manual interagency data requests is costly. Automating these requests using the personal identification data collected at the time of registration on the SPSP is another option for reducing the e-services transaction costs.

Reducing transaction costs entails a risk of opposition from federal authorities interested in keeping the current staff levels. Addressing this risk calls for stronger coordination of ICT policy implementation and budget planning processes.

5 Conclusions

Russia is facing a challenge of meeting the growing demand for e-services (and e-government at large) with decreasing resources available. To meet this challenge there is a need to go beyond across-the-board budget cuts. The existing data confirms that the current allocation of the federal ICT budget funds is not proportionate to the number of e-services rendered or the number of e-service application received.

Improving cost-effectiveness in public service delivery should become an important and measurable target for the ICT investment, integrated in the overall performance framework. To implement this approach, we propose to introduce the practice for measuring transaction costs.

In the short term, there is a need to concentrate the existing resources on transforming the most in-demand services into electronic format, so as to achieve savings from the decreased transaction costs. Linking ICT development with the potential demand (both for e-services and also for some control functions) is critical for implementing cost-effective solutions. Actual cost reduction (as well as citizen satisfaction) should become an important performance indicator for these ICT investments. In the medium term, mobilizing the savings from the reduced transaction costs would serve as a sustainable source for further digital government developing, expanding the menu of e-services, and automating G2C, G2B, and G2G interactions.

References

1. Aleksandrov, O.V., Dobrolyubova, E.I.: Public service delivery through automated self-service kiosks: international experience and prospects for implementation in Russia. In: Proceedings of the 2nd International Conference on Electronic Governance and Open Society: Challenges in Eurasia (EGOSE 2015), pp. 205–210. ACM, New York (2015). doi:[10.1145/2846012.2846048](https://doi.org/10.1145/2846012.2846048)
2. Aleksandrov, O.V., Dobrolyubova, E.I., Klochkova, E.N., Yuzhakov, V.N.: Optimizacija bjudzhetnyh rashodov v sfere gosudarstvennogo upravlenija. [Optimization of budget expenditures in public administration]. MESI, Moscow (2014). (in Russian)
3. Alshawi, S., Alalwany, H.: E-government evaluation: citizen's perspective in developing countries. *Inform. Technol. Dev.* **15**(3), 193–208 (2009)
4. Andersen, K.V., Medaglia, R.: E-government front-end services: administrative and citizen cost-benefits. In: Wimmer, M.A., Scholl, H.J., Ferro, E. (eds.) EGOV 2008. LNCS, vol. 5184, pp. 148–159. Springer, Heidelberg (2008). doi:[10.1007/978-3-540-85204-9_13](https://doi.org/10.1007/978-3-540-85204-9_13)
5. Bershadsckaya, L., Chugunov, A., Trutnev, D.: Information society development in Russia: measuring progress and gaps. In: Proceedings of the 2014 Conference on Electronic Governance and Open Society: Challenges in Eurasia, EGOSE 2014, pp. 7–13. ACM, New York (2014)
6. Butler, T., Hackney, R.: Breaking the iron law: implementing cost effective, green ICT in the UK public sector. In: Proceedings of the 20th European Conference on Information Systems, ECIS 2012, Barcelona (2012)
7. Elsas, A.: Economic benchmarking of E-government. In: *Managing Information in the Digital Economy: Issues and Solutions*, pp. 405–407. IBIMA, Bonn (2006)

8. European Commission. Digital Market. Digital Economy and Society. <https://ec.europa.eu/digital-single-market/en/download-scoreboard-reports>
9. Federal Tax Service. Statistics and Analytics. https://www.nalog.ru/rn77/related_activities/statistics_and_analytics/effectiveness/#t8. (in Russian)
10. Gatautis, R., Vitkauskaitė, E.: E-government services: creating value through services' quality. In: Yannacopoulos, D., Manolitzas, P., Matsatsinis, N., Grigoroudis, E. (eds.) *Evaluating Websites and Web Services: Interdisciplinary Perspectives on User Satisfaction*, Information Science Reference, Hershey, pp. 42–59 (2014). doi: [10.4018/978-1-4666-5129-6.ch003](https://doi.org/10.4018/978-1-4666-5129-6.ch003)
11. Improving Public Administration. Administrative Reform Portal. <http://www.itu.int/wsis/docs/genesva/official/dop.html> (in Russian)
12. International Telecommunications Union. <http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2015/MISR2015-w5.pdf>
13. Jayashree, S., Marthandan, G.: Government to E-government to E-society. *J. Appl. Sci.* **10**(19), 2205–2210 (2010)
14. Milakovich, M.E.: *Digital Governance: New Technologies for Improving Public Service and Participation*. Routledge, New York (2012). doi:[10.4324/9780203815991](https://doi.org/10.4324/9780203815991)
15. Muñoz, L.A., Sánchez, R.G.: Implementation of e-government and reforms in public administrations in crisis periods: a scientometrics approach. In: *Public Affairs and Administration: Concepts, Methodologies, Tools, and Applications*, pp. 2028–2045. IRMA (2015)
16. New Zealand Controller and Auditor General. Inland Revenue Department: Making it easy to comply. <http://www.oag.govt.nz/2011/making-it-easy-to-comply/docs/ird-making-it-easy-to-comply.pdf/view>
17. OECD. *Government at a Glance 2013*. OECD Publishing, Paris (2013). doi:http://dx.doi.org/10.1787/gov_glance-2013-en
18. OECD. *Government at a Glance 2015*. OECD Publishing, Paris (2015). doi:http://dx.doi.org/10.1787/gov_glance-2015-en
19. OECD. *Recommendation of the Council on Digital Government Strategies*. Adopted by the OECD Council on 15 July 2014. <http://www.oecd.org/gov/digital-government/Recommendation-digital-government-strategies.pdf>
20. OECD Survey on Digital Government Performance 2014. <http://qdd.oecd.org/subject.aspx?Subject=6C3F11AF-875E-4469-9C9E-AF93EE384796>
21. Palka, W., Yigitel, G., Jurisch, M.C., Wolf, P., Krcmar, H.: Basic approaches for the evaluation of IT-investments in E-government: a literature review. In: Wimmer, M., Janssen, M., Macintosh, A., Scholl, H., Tambouris, E. (eds.) *Lecture Notes in Informatics (LNI), Proceedings - Series of the Gesellschaft Fur Informatik (GI)*, P-221, pp. 27–34. Gesellschaft für Informatik, Bonn (2013)
22. Persaud, A., Persaud, P.: Rethinking E-government adoption: a user-centered model. In: *Public Affairs and Administration: Concepts, Methodologies, Tools, and Applications*, Chap. 2, pp. 657–676. IRMA (2015)
23. Qian, H.: Global perspectives on E-governance: from government-driven to citizen-centric public service delivery. In: *ACM International Conference Proceeding Series*, October 2010, pp. 1–8. ACM, New York (2010)
24. Sadovnikova, N.A., Klochkova, E.N., Dobrolyubova, E.I., Alexandrov, O.V.: Basic trends of information society development in Russia compared to world's leading countries. *Int. Rev. Manag. Mark.* **5**, 18–29 (2015)

25. Singh, S.: E-government considerations: a focus on South Africa. In: Public Affairs and Administration: Concepts, Methodologies, Tools, and Applications, Chap. 1, pp. 329–366. IRMA (2015)
26. Styrin, E., Dmitrieva, N.: Information services quality measurement: Russian federal authorities example. In: Proceedings of the 2nd International Conference “Electronic Governance and Open Society: Challenges in Eurasia” (EGOSE 2015), pp. 228–231. ACM, New York (2015)
27. UK Government. Digital Efficiency report, 6 November 2012. <https://www.gov.uk/government/publications/digital-efficiency-report/digital-efficiency-report#savings-from-digitising-transactional-services>
28. UK Government Performance. <https://www.gov.uk/performance>
29. United Nations. United Nations E-Government Survey (2014). https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2014-Survey/E-Gov_Complete_Survey-2014.pdf
30. Wang, H.-J., Lo, J.: Determinants of citizens’ intent to use government websites in Taiwan. *Inf. Dev.* **29**(2), 123–137 (2013). doi:10.1177/0266666912453835
31. World Economic Forum. Global Technology Information report 2015 (2015). <http://reports.weforum.org/global-information-technology-report-2015/>
32. Yuzhakov, V.N., Dobrolyubova, E.I., Pokida, A.N., Zybunovskaya, N.V.: Udovletvorennost grazhdan kachestvom predostavleniya administrativnykh gosudarstvennykh i municipalnykh uslug [Citizen Satisfaction with Quality of Administrative Public and Municipal Services]. Delo Publishing, Moscow (2015). (in Russian)