A Survey of Open Government Data in Russian Federation

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Abstract: Open data can increase transparency and accountability of a country government, leading to free information sharing and stimulation of new innovations. This paper analyses government open data policy as well as open data initiatives and trends in Russian Federation. The OECD analytical framework for national open government data portals and supporting initiatives is used as the bases for the study. The key issues of Russian open government data movement are summarized and aggregated. The paper argues the necessity of systematic development of the open data ecosystem, the leading role of the government in data release, a deeper business involvement, and a reduction of bureaucratic barriers.

1 INTRODUCTION

Open Government (OG) is a movement to make government activities more open and transparent, with open government data (OGD) as its essential part (Gigler, et al., 2011). There are many international initiatives around OGD at the moment, such as Open Government Partnership, Open Knowledge Foundation, and Open Data Institute. Many countries have introduced open data portals. A number of new information technologies have appeared to support the development of open data, portals, and applications, e.g. CKAN (http://ckan.org/) and Socrata (http://www.socrata.com/). All this has brought up new research topics and questions like access to data, accountability, coordination mechanisms for open data activities, data sharing, information and knowledge sharing (Zuiderwijk, et al., 2014).

Open data ratings like the Open Global Data Index (OGDI, 2015) and the Open Data Barometer (ODB, 2015) have been developed to provide a quick overview on open data across the globe. There are many research papers about national open data: the U.S. (Hendler, et al., 2012), the U.K. (Hall, et al., 2012), Canada (Roy, 2014), Brazil (Albano and Reinhard, 2014), Mexico (González, et el., 2014),

India (Agrawal, et al., 2013), Greece (Alexopoulos, et al., 2013), Latvia (Bojars and Liepins, 2014), Kenya (Mutuku and Colaco, 2012), etc. Such studies analyze different OGD trends, present innovations and successful experiences, and thereby provide a basis for knowledge and information sharing in the OGD community around the world.

OGD movement in Russian Federation (R.F.) started in 2012, when the first national OGD concept was developed. In 2013, the R.F. with other members of the G8 group approved Open Data Charter (G8, 2013) to facilitate progress in OGD and international collaboration. In 2006-2015 a number of laws and regulations were issued in the R.F. to support government information sharing. In 2014, the R.F. OGD Portal (http://data.gov.ru/) was launched, and at the moment more than 7500 datasets have been published there.

There are several documents and reports about open data in the R.F. (HSE, 2012), (Zhulin, et al., 2013), (Castro and Korte, 2015), (OGD Recommendations, 2014), (Russian OGD Plan, 2014), (Begtin, et al., 2015). Even though some of them have been translated into English, most of them are in Russian. Other limitations with the available information is that they focus on particular aspects of OGD in the R.F., often lack analytical

basis, are incomplete, and more generally we failed to find research publications about OGD in Russia.

To address these shortcomings, the current paper studies OGD in the R.F. using an analytical framework for national OGD portals and supporting initiatives from (Ubaldi, 2013).

2 BACKGROUND

2.1 Open Data Movements in Different Countries

The number of national OGD initiatives has increased steadily since 2009. Along with more economically developed countries such as the U.S., the U.K., and France, OGD is rapidly evolving in developing countries like Kenya and Ghana. One report groups countries into three categories with regard to open data development level (Capgemini, 2013): trendsetters (the U.S., the U.K., France, Canada, Australia), followers (Denmark, New Zealand, Singapore, Belgium, Italy, Spain, Moldova, Ghana, Kenya, Chile, Norway, Hong Kong), and beginners (Austria, Estonia, Saudi Arabia, the UAE, Morocco). As of 2015, according to the OGDI (OGDI, 2015), the top ten OGD countries are Taiwan, the U.K., Australia, Denmark, Colombia, Finland, Uruguay, the U.S., the Netherlands, and France. The Open Data Barometer (ODB, 2015) lists the following countries as leaders in 2015: the U.K., the U.S., Sweden, France, New Zealand, the Netherlands, Norway, Canada, Denmark, and Australia. The two sources thus agree that the U.S. and the U.K. are leading OGD countries.

2.2 OGD Ecosystem

OGD ecosystem (further – ecosystem) is a community of key actors of OGD initiatives on national/subnational levels (Ubaldi, 2013). Establishment of the right ecosystem means the involvement of various categories of actors and the provision of business support and stimulation of OGD usage. Constructing an ecosystem is necessary since otherwise OGD movement cannot be sustainable and socially beneficial (Janssen, et al., 2012).

3 RELATED WORKS

The Higher School of Economics (one of the leading Russian universities) surveyed in 2012 the largest Russian open data beneficiaries (business companies, mass media, non-government organizations (NGOs), experts and bloggers), and tried to determine which government data should be opened first, and how it can be used by businesses (HSE, 2012).

Another report describes the OGD situation in the R.F. in 2013 (Zhulin, et al., 2013). This report reviews the primary laws and regulations that apply to open data, looks upon government bodies' open data portals, and outlines public initiatives.

A third report focuses on the progress of the G8 countries towards the principles of the Open Data Charter (Castro and Korte, 2015). The progress was scored based on how well each principle of the Charter was met, the total maximum being 100 points. The R.F. took the last place (5 points). The five points were granted for licensing on the Data Portal of the R.F., which in fact is one of the weakest aspects of the Russian open data. On the other hand, the report points out that public access to government information is not backed by appropriate and sufficient legislation. Still the Federal Law No 112-FZ (adopted in June 2013) addresses this issue even though the terms of the law might be more consistent with the open data definition given in (Open Definition, 2016). Yet, the conclusions of the report are of great importance for the future progress of the open data movement in the R.F.

Finally, the Russian NGO Information Culture published a report in 2015 on the results of the government work towards opening key datasets in the R.F. as well as discusses the major projects in OGD (Begtin, et al., 2015). Also, it analyses the legal background of OGD regulation in the R.F.

To summarize, the reports considered above provide typically collections of facts than studies on the given topics. The lack of methodological support results in incomplete information and difficulties with conclusions and recommendations. We failed to find a paper that would treat the situation in the R.F. systematically. Besides, most of the reports discussed above are written in the Russian language.

4 METHODOLOGY

The study of OGD initiatives in different countries runs into a number of difficulties because of differences in government organization, legislation, information culture, business involvement in OGD consumption (Erickson, et al., 2013). One can see that papers on various national OGD use informal and narrative approaches (Hendler, et al., 2012), (Hall, et al., 2012), (Roy, 2014), or some particular

criteria: the country's geographic coverage by its open data (Agrawal, et al., 2013), the technologies used for portal development (Alexopoulos, et al., 2013), (Mutuku and Colaco, 2012), the assessment of metadata (Alexopoulos, et al., 2013), a number of datasets in different data categories (Agrawal, et al., 2013), (Bojars and Liepins, 2014), OGD formats analysis (Agrawal, et al., 2013), (Alexopoulos, et al., 2013). Actually, in every survey a special methodology is created. But due to a wide range of conditions and priorities in different countries these methodologies are hard to reuse.

We have chosen an analytical framework for national OGD portals and supporting initiatives suggested in (Ubaldi, 2013). In contrast methods mentioned above, it focuses on OGD in connection with different aspects of the government/society issues and creation value. Below each component of the framework is briefly described below.

Overarching issues:
- Overall vision: overall strategy and the priorities of national OGD initiatives.
- Governance/institutional framework: institutional supporting data development; accountability and responsibility frameworks.

Implementation:
- Legal framework and policy environment.
- Technical issues focus on technical matters: data quality, interoperability, workflow for data release and approval, dataset storage, data cataloguing and metadata.
- Economic and financial: business case model, financing mechanisms to sustain the OGD portal, ensuring value creation for the whole economy and society.
- Organizational issues focus on the measure taken to enable and foster the changes required in the public sector.
- Communication and interaction: establishment of an OGD ecosystem, including measures to increase public interest in OGD, to provide feedback, etc.

Impact:
- Measures and mechanisms to appraise the impact of OGD initiatives on economic, political and social value creation.

Our study uses the following reports and documents as information sources: the Bulletin of the Information and Analytical Center of the Russian Government (Open Data Bulletin, 2016), the Annual report of the Russian NGO Information Culture (Begtin, et al., 2015), government documents around open data (methodological recommendations for government bodies in data publishing (OGD Recommendations, 2014), the Plan of Open Data Russian Federation Development 2015-2016 (Russian OGD Plan, 2014), research reports of the Higher School of Economics (HSE, 2012), (Zhulin, et al., 2013), information from the Federal OGD Portal of the R.F., research reports of the Infometr project, and reviews of Russian Federation Open Data Council working sections.

5 RESULTS

A quick overview of the R.F. OGD ranking and OGD portals is in place before analysing the Russian OGD initiatives.

Table 1 shows how Open Global Data Index (OGDI, 2016) and Open Data Barometer (ODB, 2016) ranked the OGD in the R.F.

Table 1: OGD of R.F. in Open Global Data Index and Open Data Barometer.

Year	Place	Score
Open Global Data Index		
2015	61	30%
2014	45	43%
2013	32	43%
Open Data Barometer		
2015	26	48.25%
2013	20	44.79 %

In both R.F. place decreases from 2013 to 2015 that indicates higher OGD activity in the R.F. on 2013. In OGDI the score of the R.F. decreases from 2014 to 2015, but in ODB it slightly increases from 2013 to 2015. Difference results indicate various viewpoints under estimation of OGD, which used by OGDI and ODB. It should be noted that in 2014-2015 the R.F. spent most efforts to improve OGD quality and infrastructure rather than to increase quantitative metrics, and this is one of the reason decreasing Russian OGD indexes.

To consolidate OGD initiatives, the OGD portal of the R.F. (http://www.data.gov.ru) was launched in 2014. The structure of the portal follows the G8 Open Data Charter (G8, 2013). In total the portal contained about 7500 datasets in May 2016. On average, there were 8000 visits to the portal per month. Statistics of data publishing in 2014-2016 is shown on fig. 1.
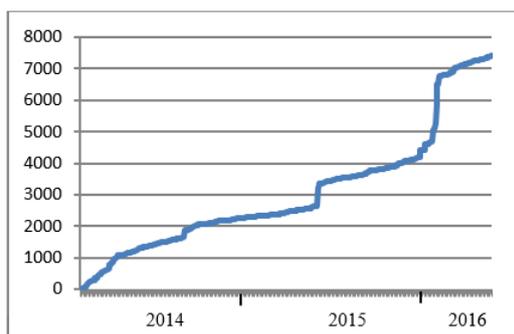
Figure 1: Changes in the number of datasets on the OGD portal of the R.F.

There are a number other open data portals in the R.F. Examples of these are the Federation Spending Portal (http://zakupki.gov.ru/, launched in 2011) and the Federation Budget Portal (http://budget.gov.ru/, launched in 2013). These portals contain data in machine-readable formats with tools for data visualization and browsing. In 2014, Russian OGD on Government Spending ranked third in the world (OGDI, 2015). The R.F. is divided into 85 regions, and every region has an administration (regional government). Every regional government has its own web-resources, including OGD: 13 regional governments have ODG portals, and 29 ones have pages with OGD. The leaders are the Tula Region, Moscow, St Petersburg and the Ulyanovsk Region. Federal bodies and municipalities have the most OGD pages. Synchronization of federal and other OGDs is carried out automatically: all data from the regional portals and OGD pages of the various government bodies are copied/updated to the OGD Portal of the R.F. on the regular bases. Corresponding service was launched in the beginning of 2016, which led to a dramatic increase of the datasets as shown on fig. 1.

5.1 Overall Vision of OGD in the R. F.

E-government and Open Government in the R.F. started with the administrative government reform in 2005. A number of government information systems to facilitate the information exchange for different government bodies and a network of e-government services portals were created in 2009 (Barabashev and Straussman, 2007), (Koznov, et al., 2011). In late 2011, the Open Government project was launched in the R.F. Among various activities it should be mentioned the launching portal of the R.F. (http://government.ru). The portal includes information about the federal government, all of the ministries, and regional governments. As a result,

according to the United Nation E-Government Survey 2012 (UN Report, 2014), the R.F. was one of the emerging leaders in e-government development in the world (7th place), advancing 32 positions from 2010 to 2012 in the world ranking of the United Nations (27th place in the general world ranking).

In the R.F. the OGD is a tool to implement the Open Government. This started in 2012 when the first official OGD concept was developed, and in 2013-2015 a number of laws and regulations were approved in the R.F. in order to support the OGD implementation. OGD development is also one of the main focus of ICT development in the R.F. according to the national ICT road map (ICT Road-Map, 2013).

The coordination of OGD initiatives between central and local level is implemented as three level schema: central level, regional level, and region authority level. On central level laws, regulations, frameworks, programs, and recommendations are developed. Building on this base regional governments create local legislation and programs. Various regional and municipal authorities follow these programs (regional authority level).

5.2 Governance/Institutional Framework

In 2014, a program for the openness of the government bodies was prepared by the Russian government. It is aimed not only at making the information about government bodies public and accessible, but also at raising the efficiency of communication between the government and the citizens in order to improve the quality of administration, as well as to create tools to measure the openness of government bodies.

In 2014, Russian Open Data Council developed the open data plan for the years 2015-2016 (Russian OGD Plan, 2014). The plan contains the list of expected actions with result assessment methods.

In 2014-2015, the «Methodological recommend-dations for publishing open data for government bodies» were developed to provide guidelines for government bodies in OGD activities (OGD Recommendations, 2014).

The following organizations are working to coordinate and develop OGD at the federal level: the Russian Open Data Council, the Ministry of Economic Development, Ministry of Telecommuni-cation, and the Government Analytical Center of the Russian Federation. The Open Data Council coordinates the development of OGD through

preparing government programs, proposals and recommendations, collecting and applying the best practices. The Ministry of Economic Development is responsible for developing the federal portal, providing operational and procedural support and synchronization of federal and regional initiatives. The Ministry of Telecommunications is responsible for coordination of OGD-development by government bodies including corresponding information systems, as well as the advancement for social e-services based on OGD. The Government Analytical Center of the Russian Federation monitors the OGD in the R.F (Open Data Bulletin, 2016).

5.3 Legal Framework and Policy Environment

The Federal Law 149 "On information, information technologies and information protection" (2006) and Federal Law 8 "On providing access to the information on the activities of governmental and municipal authorities" (2009) define the rights for information search, access, and transfer as well as the citizens' rights to access government information. The Russian Government Order No 953 adopted in 2009 determines and classifies the information that government bodies are to publish on the Internet, and prescribes update procedures for each information category. Presidential decree No 601 "On the general policy for improving government administration" issued on May 7, 2012 involves the figures for public enquiries handling and a roadmap for opening government information. The term "open data" was officially defined in Federal Law 112 (2013), which formed the legal basis for the government's work with open data. The Russian Government Resolution No 1187-r (July 2013) obliges Russian government authorities in federal, regional, and municipal levels to publish their data on the Internet and designates the types of information to be published in accordance with the Open Data Charter (G8, 2013). (Russian OGD Plan, 2014) states that by 2015 there will be a legal framework for open data, which, however, needs some revision and adaptation.

In 2014, some amendments to existing legislation were introduced (Federal law 35). They concern the use of open licenses in the R.F. which are similar to Creative Commons and GNU FDL. Licensing is a highly contentious issue for the country's OGD. In 2014, the OGDI indicated the lowest score in licensing for all OGD categories in the R.F. (OGDI, 2015). As of today, each dataset of the portal is supplied with a brief permission note granting the right to use it freely in any "appropriate, lawful purpose." The recommendations (OGD Recommendations, 2014) require that all data be published with a license based on free license. The text prescribes the content of the license, which conforms to (Open Definition, 2016). It is also said that the Creative Commons/Open Data Commons license could be used as a major guideline for licensing government data.

5.4 Technical Issues

The technical issues of data opening in the R.F. follow (OGD Recommendations, 2014). Implementation oversight is carried out by the Open Data Council.

The quality of the data is monitored primarily in terms of the published data updates. Hence, according to the Russian Centre for Information and Analysis, only 30.7% of OGD was up to date as of mid-2015, while the leaders in data publishing on average had less than a half of their data updated. Based on (Open Data Bulletin, 2016), only 26% of the datasets on the OGD Portal of the R.F. were up-to-date as of late 2015.

(OGD Recommendations, 2014) state, that the OGD published by the Russian government bodies are to have one of the following formats: CSV, XML, JSON, or RDF. Data on OGD Portal of the Russian Federation is presented on the following formats: CSV (63%); XML (36%); ZIP/GZ, JSON, XLSX/XLS and RDF (1%). The linking of data is very poor so far: the RDF-formal is used properly only by the Tula Region and the Ministry of Education portals.

Most of the Russian OGD-portals provide API (Application Programming Interface) for external programming data access. However, not all the data sets are accessible via APIs: according (Open Data Bulletin, 2016) only 62% of data sets on federal OGD portal are available this way).

Most of Russian portals have built-in search engines that use key words, topics, data formats, organization names, and types. Some portals provide dataset visualization tools, but those are mostly limited to charts and tables.

As for the workflow for data release and approval, there is no common procedure, and each government body follows its own workflow. Open Data Council regular updates of mandatory publication list and carries out the management of publishing most demanded data.

5.5 Economic and Financial Issues

Open data development in the R.F. is financed by the government only. The Federal Portal is funded by the Ministry of Economic Development, while federal bodies, regional governments, and munici-pallities fund development of their OGD themselves. Business companies are not engaged in OGD funding.

5.6 Organizational Issues

Let us now consider the measures undertaken in the R.F. to make changes in the public sector in relation with OGD.

Increasing the openness and accountability of government bodies is highly topical issue in the R.F. Thus, the Russian government openness program has been active since 2014. The program involves monitoring the openness of the government bodies by the non-government project Infometr based on a web-resource analyses. In December 2015, the Infometr project monitored the open data of the federal government bodies, checking them for compliance with the official requirements and plans. All the 77 federal government organizations were verified with a 55.1% average conformance with (OGD Recommendations, 2014).

Of the measures to shift the culture of the public sector towards OGD, the more noteworthy is the government program to promote open data awareness and popularity with officials (launched in 2015). The program intended to develop a number of education courses for civil servants. The Analytical Centre for the Government of the Russian Federation conducts educational webinars in OGD for the government staff. The Infometr project provides consulting in OGD to government organizations and staff. A number of educational events on OGD are conducted by the NGO Committee for Civil Initiative.

It is of great importance for the public sector that their services for citizens can be improved with OGD through constructing new e-services. OGD portal of the R.F. presents 210 open data based software applications on different sectors: Tourism (47), Government (46), Transport (30), Entertainment (24), Culture (13), etc.

5.7 Communication and Interaction

To increase the public interest in OGD, a variety of measures are undertaken as shown in Table 2. It can be clearly seen that the NGOs are very active in that.

Regional governments, such as St. Petersburg, Ulyanovsk and some others, also conduct open data Hackathons/Competitions. Non-government initiate-ves play an important role in Russia by facilitating and encouraging the public interest in OGD movement. The report (Begtin, et al., 2015) describes other non-government OGD activities

Russian open data portals have started to collect user feedback on OGD published. In 2016, Information and Analytical Centre of Russian Government used user feedback as one of the metric to estimate quality of the OGD of various government organizations. The practice of opening datasets on user demand is also in use. The OGD portal of the R.F. had 236 user requests in 2015, 70% were moderated, 24.6% were fulfilled (fully or in part). It must be said, though, that this is only the beginning.

Table 2: Open data events in Russia in 2011-2015.

Type	Hackathons/ Competitions	Conferences/ Seminars
NGO	10	11
Federal gov.	6	4
Reg. & municipal gov.	11	
Business	2	4
Universities		6
Mass Media	1	

5.8 Impact

Some members of the Open Data Council argue that the OGD initiative has already proved economically beneficial, although no precise figures have been presented so far. This part of the framework in the R.F. also calls for intensive development.

5.9 Challenges of OGD in the Russian Federation

The ODG movement as a cross-country initiative is facing challenges due to the large size of the Russian Federation (both territory and population). In addition, the OGD movement in the R.F. is quite recent: legislation concerning free access to government information was developed only in 2006-2015 (in Western countries similar acts and regulations started to be issued in the 1970s or even earlier); the federal OGD portal was launched in 2014 (both U.S. and U.K. – in 2010). It should also be noted that Russian civil society as such is truly young. Let us discuss the challenges in more detail

following the components of the OECD framework (Ubaldi, 2013).

Overall vision. One of the main OGD national priorities is the usage of OGD in new e-services development. But it requires more systematic support in the current situation, when new e-services are being developed either by government organizations themselves, or by big software companies like Yandex (www.yandex.ru). On the other hand, many Hackathons have been conducted, yet they produce only prototypes rather than mature e-services. There is not enough support of small innovation software companies focusing on e-services based on OGD.

Government/institutional framework. OGD concepts, planning and guidelines need to be more detailed. In particular, different kinds of organizations should be identified from the OGD point of view. In particular, municipal and federal organizations have various "weight" and audiences, therefore, their data have different life cycles.

Legal framework and policy environment. Along with considerable progress in this area, licensing remains a problem as is highlighted in (Begtin, et al., 2015). The existing permission notes (such as those on the OGD portal of the R.F.) do not qualify as licenses.

Technical issues. There are many problems with the quality and relevance of the published data. This is understood by the government and efforts are made to organize OGD monitoring (here we must note the Analytical Center of the Russian Government and the Infometr project). To overcome the existing problems, infrastructure measures are needed, which means, in particular, a closer collaboration with the bodies that perform the monitoring and the bodies that determine OGD polices.

Business and economic. It is necessary to provide detailed business, economic and financial models for OGD initiatives, and to stimulate business participation in the OGD movement. It will take the financial burden off the government in terms of developing OGD with the corresponding organizational and ICT infrastructure. The relations between the OGD movement and business in the R.F. are currently too weak to meet the needs of enterprises in real estate and insurance business, banking.

Organizational issues. Further efforts are required to shift the culture of the public sector towards OGD. Special measures are necessary to help public servants to find new opportunities in OGD. At the moment, they see OGD as a mandatory part of their work rather than a real working tool.

Communication and interaction. The most important issue is to implement the wide use of OGD. As (Hellberg and Hedström, 2015) shows, people generally seem to like the idea of open public data, but are not necessarily active in the data reuse process. This is equally true for the Russians, who need encouragement to use OGD.

Impact. Monitoring the activities around Russian OGD should be expanded from the data themselves to estimating the perspectives and assessing the results of OGD for the economy and society of the country.

6 CONCLUSIONS

In this paper, we tried to close the gap in systematic research of the OGD in the R.F. by conducting a study based on the OECD framework (Ubaldi, 2013). The OGD movement in the R.F. has made considerable progress: a number of OGD portals have been implemented, the federal OGD portal as a data aggregator has been developed, and underlying government ICT and organisational infrastructure has been created and is constantly improving. The volume of OGD is increasingly growing, while measures to improve its quality and relevance are being undertaken. A number of new e-services based on OGD are being developed. The challenges Russia faces today can be overcome in the future if the OGD movement is implemented more systematically and becomes more integrated into the society. Moreover, the efficiency of OGD movement in the R.F. is tightly connected with the country's general progress, including economy, open government initiatives, and civil society.

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