

INTERNATIONAL COMPETITIVENESS LISTS IN THE FIELD OF E-GOVERNMENT

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1	SUMMARY	2
2	INTRODUCTION	4
3	CURRENT STATE OF INFORMATION TECHNOLOGIES IN SERBIA	5
3.1	ACCESS TO THE INTERNET	5
3.2	POSSESSION OF A DEVICE	7
3.3	BROADBAND INTERNET CONNECTION	8
3.4	USE OF E-GOVERNMENT SERVICES	9
4	INTERNATIONAL COMPETITIVENESS LISTS	10
4.	EUROPEAN UNION <i>E-GOVERNMENT BENCHMARK</i>	13
4.2	USER CENTRICITY	15
4.2.1	Online availability of information and services	15
4.2.2	Usability of public services	16
4.2.3	Mobile friendliness	17
4.3	TRANSPARENCY	17
4.3.1	Transparency in the public administration activities	18
4.3.2	Transparency in the service provision	18
4.3.3	Transparency regarding the use of personal data	19
4.4	CROSS-BORDER SERVICES FOR CITIZENS AND COMMERCIAL ENTITIES	19
4.5	KEY PRE-REQUISITES	20
5	GLOBAL COMPETITIVENESS INDEX	25
5.1	ACQUISITION OF INFORMATION TECHNOLOGIES	25
5.2	DIGITAL SKILLS	28
5.3	E-PARTICIPATION	28
5.4	TRANSPARENCY OF BUDGET EXPENDITURES	29
6	<i>DOING BUSINESS</i> (WORLD BANK GROUP)	29
6.1	SERBIA'S RANKING ACCORDING TO THE <i>DOING BUSINESS</i> REPORT	30
6.2	DEVELOPMENT OF ELECTRONIC SYSTEMS FROM THE PERSPECTIVES OF BENEFICIARIES, CITIZENS AND COMMERCIAL ENTITIES	32
7	ASSESSMENT OF OPEN DATA READINESS – WORLD BANK AND UNDP	33
8	RECOMMENDATIONS	34

1 SUMMARY

This report includes an analysis of data from the Statistical Office of the Republic of Serbia, and two key indices measuring the competitiveness of the world's economies, namely the World Bank's Report on Ease of Doing Business (hereinafter: *Doing Business* Report) and the World Economic Forum's Global Competitiveness Index Report (hereafter: *The Global Competitiveness Index*). The report also includes three indices that rank countries by e-Government development: the European Commission's Annual Report on the State of e-Government known as the *e-Government Benchmark* (hereinafter: the *e-Government Benchmark*), the UN E-Government Development Index (hereinafter: the EGDI) and the UN E-Participation Index (hereinafter: the E-Participation Index).

The subject analysis also included the *Open Data Readiness Assessment* of UNDP and the World Bank (hereinafter: the Open Data Readiness Assessment) in order to assess Serbia's ranking in terms of data openness.

Key findings:

- Every fourth citizen of Serbia has never used the Internet¹;
- At the republic level, 7 out of 10 households have internet access²;
- Citizens over 55 years of age and people with lower education level than secondary school or without education are most at risk of digital isolation³;
- Fewer women (70%) have accessed the Internet than men (76.8%) in the last three months⁴;
- Every fifth citizen of Serbia has never used a computer⁵, and
- 93% of households have a mobile phone⁶.

According to most indicators of the analysed competitiveness lists, Serbia ranks significantly lower than the EU countries in the field of e-Government. From the perspective of citizens and commercial entities, improvements are needed in the development of electronic services, as well as greater transparency in the provision of services (monitoring the course of cases, setting legal deadlines and acting within them, the ability to monitor status, clear and predictable fees and charges), the development of new services for citizens with the possibility of electronic identification and services for foreigners. The National e-Government portal

¹ *Use of Information and Communication Technologies in the Republic of Serbia*, Statistical Office of the Republic of Serbia, Belgrade (2018).

² *Ibid.*

³ *Ibid.*

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

(hereinafter: the e-Government Portal) should be fully up-to-date and contain information on: all services provided electronically, links to portals, step-by-step instructions and clearly stated fees and charges for each service, and all services should be adapted to use from a mobile phone – the device through which the Internet is most commonly used. A significant shortcoming of Serbia is the absence of a national e-Gov mailbox, the introduction of which has been prescribed by the Law on Electronic Government⁷.

According to the *United Nations E-Government Survey 2018*⁸ on e-Government conducted by the United Nations annually, Serbia ranked 49th among 193 Member States in 2018, a good ranking but a drop of ten places compared to 2016. In the area of development of telecommunication infrastructure and human capital, Serbia has achieved an average result, but there it is still much to be enhanced. Compared to other countries in the world, Serbia has an underdeveloped distribution of information on the services provided and needs to develop more electronic services for citizens and commercial entities.

According to the *Global Competitiveness Index*⁹, Serbia is ranked 65th out of 140 countries, thus improving the overall score¹⁰. In terms of IT adoption and the transparency of budget expenditures, national, provincial and local budgets need to be machine-readable. In the area of digital skills, Serbia is ranked 73rd out of 140 countries with a score of 52.7. Bearing in mind that this ranking was based on a survey, it seems that a large number of citizens still believe that a high percentage of the population lacks basic digital skills, which data of the Statistical Office of the Republic of Serbia (hereinafter: the Statistical Office) suggests, i.e. that every fourth citizen has never used the Internet. According to the e-Participation Indicator, Serbia is ranked 47th, which is a drop compared to the last year's ranking in the United Nations Report on E-Participation Indicators. Improvement is possible by establishing an obligation to publish draft regulations and collect comments from citizens on the national portal, as well as collect information from citizens on the functionality of the services provided.

On the *Doing Business* list¹¹, Serbia ranked 48th in 2018. Although Serbia's overall score has improved, other countries have innovated faster, therefore Serbia has seen a decline compared to last year. The development of electronic services for commercial entities could be further enhanced, primarily: e-Real Estate Desk through which the registration and change in rights, encumbrances and information about real estate will be conducted electronically together with

⁷ *The Official Gazette of the Republic of Serbia*, No. 27/2018.

⁸ *United Nations E-Government Survey 2018: Gearing E-Government To Support Transformation Towards Sustainable And Resilient Societies*, 2018.

⁹ *The Global Competitiveness Report*. Cologny/Geneva: World Economic Forum, 2018.

¹⁰ Please note that the ranking is not comparable to previous years due to methodological changes.

¹¹ *Doing Business 2019: Training for Reform*, The World Bank Group, Washington.

the automation of calculation of incoming tax liabilities on this basis, electronic registration of multi-member companies with limited liability, e-Auction, e-Execution, enhancement of the volume of data contained in the Credit Bureau, e-Customs.

2 INTRODUCTION

The development of e-Government and e-Services have been defined as one of the most important manners in which countries communicate with citizens and commercial entities providing them with faster, more transparent services of better quality. Along the way, it will be necessary to **monitor Serbia's ranking on the competitiveness indices compared to other countries and regions of the world, in order to harness the knowledge of other countries, identify successful practices, and constantly monitor and apply innovative approaches in the development of e-Government.** A number of indices rely solely or, at least, partially on surveys completed by citizens and commercial entities, and analyse the provision of services from that perspective. Based on that, countries can understand the needs of their citizens and why the citizens of Denmark, Georgia, Northern Northern Macedonia¹², Bosnia and Herzegovina, Croatia, etc., are more or less satisfied with the provision of services so that they could apply best practices accordingly and avoid bad examples.

Several different indices directly or indirectly measure or rank the countries by the development of e-Government or specific sets of online services available to citizens and commercial entities. Indices that directly measure e-Government effectiveness are the aforementioned *e-Government Benchmark*, EGDI and the *E-Participation Index*. Complementary indices, i.e. indices that do not deal directly with e-Government but some of its segments or indirectly measure the level of development of some services for citizens and commercial entities are the Global Competitiveness Index developed by the World Economic Forum and World Bank Group's *Doing Business*, as well as the Open Data Readiness Assessment of the World Bank and UNDP. Increasing number of global lists in some of their segments include electronic communications and e-Government since the issue of good e-Government is actually a matter of good governance.

Each of these indices assesses to some extent the development of e-services, and the aim of this report is to:

- Provide an overview of the status of e-Government in the Republic of Serbia compared to other countries, and

¹² Translator's note: at the time this report was prepared, the country was known as the Former Yugoslav Republic of Macedonia (FYROM). By the time the report was translated, the country had changed its name to Northern Macedonia.

- Make recommendations for improving the development of e-Government in Serbia.

The first part of the report provides an overview of the status of information technologies and their use by individuals, households and businesses in Serbia based on an analysis of data from the Statistical Office. The second part deals with the ranking of Serbia on all mentioned indices with preliminary recommendations for improvement based on measured parameters. The recommendations should be considered in line with the country's strategy in the field of e-Government development.

3 CURRENT STATE OF INFORMATION TECHNOLOGIES IN SERBIA

The current state of the basic prerequisites for using e-Government services in Serbia can be measured against data on skills and capacities of the population to use them. To that end, the Statistical Office monitors a specific set of data that is useful for decision makers to understand the key capacity of the population to use the services. The parameters that can be observed based on the available data are: Internet access, possession of internet access devices, availability of broadband Internet connection and use of e-Government services.

3.1 ACCESS TO THE INTERNET

According to available data from the Statistical Office, every fourth inhabitant of Serbia has never used the Internet. Almost three quarters (73.4%) of the population has used the Internet in the last three months, whereas 24.2% of the population has never used the Internet¹³. There are 3,590,000 individuals using the Internet every day¹⁴.

When it comes to statistics at the level of the republic, 7 out of 10 households have an Internet connection. The largest number of households with Internet access is in Belgrade (82.2%), and fewer are in Central Serbia (69.3%) and Vojvodina (70.7%)¹⁵. As for the companies, 99% of them has the Internet connection¹⁶. Thus, the focus of the decision makers should be on the citizens, especially the citizens in central Serbia and Vojvodina.

Based on the data provided, it can be said that one quarter of the population of Serbia does not have basic digital skills (Internet access).

In order to understand which segment of the population is "digitally isolated", it is necessary to analyse data on the structure of the population accessing, or not accessing, the Internet.

¹³ *Supra* note 11.

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ *Ibid.*

When it comes to the frequency of Internet access by gender, fewer women (70%) have accessed the Internet than men (76.8%) in the last three months¹⁷. This gender difference does not indicate that women are a key segment of the population in digital isolation, but it needs to be taken into account.

Individuals – Internet users (in the last 3 months), by age groups in the Republic of Serbia ¹⁸	
Age groups	Internet users
16–24	98%
25–34	97.8%
35–44	90.6%
45–54	79.8%
55–64	51.2%
65–74	25%

When the age structure of residents accessing the Internet is analysed, there is evidence of a significant gap between citizens of different age categories.

It is encouraging that over 90% of the population under 44 years of age have actively been using the Internet, that is, they have used it in the previous 3 months¹⁹. Furthermore, four-fifths the population (79.8%) in the 45–54 age category use the Internet, while almost half of the 55–65 age category has not used the Internet in the last three months. In the 65–74 age group, only a quarter used the Internet. Based on these data, it can be argued that residents over 55 will, under difficult circumstances, access electronic services from home, or even be digitally isolated.

Looking at the educational data structure, it would appear that less than half of citizens with less than a secondary-level education or no education have not used the Internet in the last three months. In contrast, individuals with secondary (83%), college and faculty degrees (90.8%) are those who are more prone to using the Internet²⁰.

INDIVIDUALS – INTERNET USERS (IN THE LAST 3 MONTHS)²¹

¹⁸ Use of Information and Communication Technologies in the Republic of Serbia, The Statistical Office of the Republic of Serbia, Belgrade (2018).

²¹ *Ibid.*

Republic of Serbia	
Age groups	Internet users in the last three months (%)
Without education and level lower than secondary education level	46.9%
Secondary education	83.0%
College and university	90.8%

Based on these data, it may be said that citizens over 55 years of age and citizens of lower education than secondary school level or without education are most at risk of digital isolation. Accordingly, it is necessary to make a strategic decision on the best way to provide electronic services to this population group. Therefore, the recommendation should be directed towards providing systematic assistance to citizens in the form of service centres, the so-called *help desks*, and towards building capacity for elementary use of the Internet, in order to avoid "digital isolation" for certain groups of citizens.

3.2 POSSESSION OF A DEVICE

In addition to Internet access, an important indicator for policy makers is the information that citizens have on their Internet access devices.

Every fifth inhabitant of Serbia has never used a computer. Available data show that 70.7% of individuals has used a computer in the last three months, while 22.8% of individuals has never used a computer²²

POSSESSION OF A PERSONAL COMPUTER ²³				
Indicator	Republic of Serbia	Central Serbia	City of Belgrade	Vojvodina
Households	72.1%	69%	81.1%	69.3%

Nearly two-thirds of households in Serbia have a computer (72.1%), with Belgrade (81.1%)²⁴ leading the way. Central Serbia (69%) and Vojvodina (69.3%)²⁵ fall below the national

¹⁹ *Ibid.*

²⁰ *Ibid.*

²¹ *Ibid.*

²² *Ibid.*

²³ *Ibid.*

²⁴ *Ibid.*

²⁵ *Ibid.*

average. It is also important to note that by type of devices existing in the household, 47.6% of households has a laptop, while 93% has a mobile phone²⁶.

Bearing in mind that the largest number of households have a mobile phone, it is important to plan the development and adaptation of electronic services accordingly so that they can be used from a mobile phone device.

DEVICE TYPES IN HOUSEHOLDS ²⁷	
Indicator	Republic of Serbia
Mobile phone	93%
Personal computer (PC)	72.1%
Laptop	47.6%

It is noticeable that more men own a computer than women, 74.5% of men own a computer compared to 67% of women²⁸.

It cannot be determined which percentage of households does not have access to any of these three devices through which the Internet is most commonly accessed, and for this reason the Statistical Office should expand its collection and processing of statistical data. Also, there are no data on how many households use phones which are not Android or IOS or older generation phones.

3.3 BROADBAND INTERNET CONNECTION

72.5% of households has broadband internet connection that enables faster Internet access and content download, whereas in Belgrade this percentage reaches 82.1%, in Central Serbia 68.8%, while the percentage of households with broadband internet connection in Vojvodina is 70.3%²⁹.

Based on these data, it can be said that in order to use e-government services, it is necessary to invest in the development of broadband internet connection, primarily in Central Serbia and Vojvodina. Due to the lack of relevant data, it is not possible to determine in more detail in which sub-regions this is most necessary. The competent ministry needs to draw up a study on the percentage of broadband internet connection availability and to prioritise improvements accordingly.

²⁶ *Ibid.*

²⁷ *Ibid.*

²⁸ *Ibid.*

²⁹ *Ibid.*

HOUSEHOLDS ³⁰				
Indicator	Republic of Serbia	Central Serbia	City of Belgrade	Vojvodina
Households with a personal computer	71.1%	69%	81.1%	69.3%
Households with Internet connection	72.9%	69.3%	82.2%	70.7%
Households with a broadband Internet connection	72.5%	68.8%	82.1%	70.3%

3.4 USE OF E-GOVERNMENT SERVICES

Data on the use of e-Government services in Serbia are scarce and the only ones it can currently be relied on are data kept by the Statistical Office. According to 2017 data, 32% of the Internet population uses e-government services³¹. According to the SORS estimates, it amounts to approximately 1,270,000 persons in 2017. Considering the total population of Serbia and the number of users who have never used the Internet, it can be argued that this number is still very low compared to the total population. It is interesting to note that 31.3% of users uses the Internet for information from state authorities' websites, 20.2% for downloading forms, while 16.8% indicated that they used the Internet to send completed forms³². The most common reason for not submitting the completed forms was that there was no need for this³³.

Several conclusions can be drawn from the abovementioned information. Firstly, **few individuals use e-Government services compared to the number of Internet users**, and only one third of Internet users. Also, a third of users said that they had used the Internet to obtain information, which means that **a large number of citizens continue to obtain information about services offline**, that is, by personally going to the premises of the authority providing the service or by calling on the phone, which also represents a burden for government officers because they have to give information verbally. Furthermore, it is evident that **an insignificant**

³⁰ *Ibid.*

³¹ Use of Information and Communication Technologies in the Republic of Serbia, The Statistical Office of the Republic of Serbia, Belgrade (2017)

³² *Ibid.*

³³ *Ibid.*

number of users use the Internet for electronic services. Considering that the use of e-Government implies only completing forms and obtaining information, it can be said that it is **necessary to expand and update the methodology of statistical data collection so that it is evident whether they are also used for providing an electronic service.** Finally, the conclusion that is also being imposed is that it is necessary to enhance the structure of the obtained data on the services for which citizens and commercial entities most commonly use the Internet.

When it comes to companies, in 2016, 98.6% of them used electronic public administration services according to official SORS data³⁴. Although this percentage is very high, the data do not indicate whether this was related to only one service used by most companies (downloading forms, etc.) and it is not clear whether this applies to the complete provision of the service via the Internet. Several commercial services are provided exclusively electronically, such as submission of annual financial statements at the Register of Companies and submission of most electronic tax applications. Progress is also being made by introducing electronic registration of entrepreneurs and sole-member limited liability companies, which was introduced in 2018, but the whole range of services can be still expanded.

Future research should therefore examine in more detail the types of services for which e-Government is currently being used most, as well as whether using e-Government involves the provision of online services, information, downloading and completion of forms, provision of a complete online service, as well as for which services citizens most commonly use the Internet.

4 INTERNATIONAL COMPETITIVENESS LISTS

Different international lists evaluate the parameters that affect competitiveness, and increasing number of them include some parameters that are also relevant from the aspect of e-Government. This report will analyse Serbia's ranking *vis-à-vis* the:

1. E-Government Benchmark (European Commission);
2. E-Government Survey (United Nations);
3. Global Competitiveness Index (World Economic Forum);
4. *Doing Business* (World Bank Group).

³⁴ *Ibid.*

REPORT TITLE	SERBIA'S RANKING in 2018	KEY FACTORS / INDICATORS	STRONG POINTS / ENHANCED AREAS	AREAS TO BE ENHANCED
E- Government Benchmark		<ol style="list-style-type: none"> 1. User centricity and availability of online services; 2. Transparency of the operations of public administration, provision of services and treatment of data; 3. Cross-border services for citizens; 4. Cross-border services for commercial entities; 5. Key prerequisites. 	<p>There are more services for commercial entities than for citizens.</p> <p>The areas of life included in the analysis are:</p> <ul style="list-style-type: none"> • establishing of a business; • loss of a job and job hunting; • studying; • family life; • business transactions; • moving; • owning a car; • complaints procedures. <p>There are no procedures for which information is not available online.</p>	<p>It is necessary to meet the key prerequisites for developing online services first, and above all:</p> <ul style="list-style-type: none"> • electronic identification, • electronic document and electronic mailbox.
United Nations (UN) EGDI	48	<ol style="list-style-type: none"> 1. Components of online services, 	Human resources components, such as adult literacy,	Components of online services, such as

		<p>2. Telecommunication infrastructure components;</p> <p>3. Human resources components.</p>	<p>school enrolment gross rate, etc.</p> <p>Telecommunication infrastructure has been improved.</p>	comprehensive service delivery.
<p>World Economic Forum</p> <p>Global Competitiveness Index</p>	49	<p>Pillar</p> <ul style="list-style-type: none"> • Acquisition of information technologies <p>Indicator</p> <ul style="list-style-type: none"> • Digital skills <p>Indicator</p> <ul style="list-style-type: none"> • Budget expenditures <p>Indicator</p> <ul style="list-style-type: none"> • E-Participation (as a whole taken from the <i>UN e-Government Survey</i>) 	<p>Acquisition of information technologies</p>	<ul style="list-style-type: none"> • Machine-readable budgets (at the national, provincial and local levels) • Improvement of e-Participation
<p>World Bank</p> <p><i>Doing Business</i></p>	48	<p>Areas</p> <ul style="list-style-type: none"> • Starting a business; • issuing building permits; • obtaining electricity connection, • property registration, • obtaining a loan, • protection of minority shareholders, 	<ul style="list-style-type: none"> • Issuing building permits; • paying taxes; • Starting a business (registration of entrepreneurs online). 	<ol style="list-style-type: none"> 1. Property registration; 2. Execution of contracts; 3. Protection of minority shareholders; 4. Bankruptcy proceedings

		<ul style="list-style-type: none"> • tax payment, cross-border trade, • contract execution, insolvency settlement. 		5. Obtaining a power connection 6. Starting a business (online registration of LLC)
World Bank and the UNDP Open Data Readiness Assessment	Well	<ul style="list-style-type: none"> • Availability of key datasets; • inspection reports/decisions (health inspection, sanitary inspection, food safety inspection, etc.); • business/commercial register; • detailed state map/geological data; • cadastre (plot marking, land/real estate ownership); • building data (issued building permits/submitted applications, zoning) 	<ul style="list-style-type: none"> • Demand of the society and the need for open data; • citizen involvement and open data capacity; • national technological infrastructure and skills. 	1. Higher level of management 2. Legal and regulatory framework 3. Financing of open source programmes

4. EUROPEAN UNION *E-GOVERNMENT BENCHMARK*

The European Union publishes once a year an index that measures the level of e-Government development in the Member States and in the accession countries. Malta, Denmark, Sweden and Estonia are leaders in the digital services and services sector, as well as in creating a digital single

market, according to the 2016 EU Report on the state of e-Government in EU countries and the European continent countries³⁵.

This report uses the "*mystery shopper*" method to evaluate the availability of electronic services and information about them in case studies pertaining to "life events" in the lives of citizens, that is, the business operation of a company when it is required to communicate with public administration. This method measures user experience in providing services to citizens and commercial entities that is used in the further development of e-Government. Every even year, starting a business and the beginning of business operations are measured, and from the perspective of citizens, services related to the procedures before the competent authorities regarding the loss of jobs and search for new ones, education and services related to reporting family circumstances. Every odd year, the regular procedures of companies are evaluated from the perspective of commercial entities, while from the perspective of citizens, services related to the transfer of ownership of vehicles are evaluated, general administration pertaining to moving and starting the settlement procedure for claims of lesser value.

The indicators by which the European Union evaluates the development of these e-Government services refer to:

INDICATOR	Results for the RS in 2016 ³⁶ :	Results for EU28+ in 2016:
I User-centricity	RS: 58%	EU28+: 80%
Online availability of information and services	RS: 54%	EU 28+: 82%
Availability	RS: 75%	EU 28+: 89%
Mobile friendliness	RS: 46%	EU 28+: 54%
II Transparency	RS: 31%	EU 28+: 59%
Transparency in public administration operation	RS: 65%	EU 28+: 73%
Transparency in providing services	RS: 6%	EU 28+: 50%
Transparency regarding the use of personal data	RS: 21%	EU 28+: 53%

³⁵ The Report can be accessed through the following link: <https://ec.europa.eu/digital-single-market/en/news/new-study-egovernment-services-europe-improving-cross-border-availability-services>.

³⁶ *E-Government Benchmark Country factsheets*, 2017.

III Cross-border services for citizens	RS: 20%	EU 28+: 61%
Online availability	RS: 23%	EU 28+: 74 %
Usability	RS: 33%	EU 28+: 76%
E-ID – cross-border use	RS: 0%	EU 28+: 14%
E-Document / cross-border use	RS: 0%	EU 28+: 24%
IV Cross-border services for commercial entities	RS: 33%	EU 28+: 65%
Online availability	RS: 0%	EU 28+: 73%
Usability	RS: 33%	EU 28+: 79%
E-ID – cross-border use	RS: 0%	EU 28+: 29%
E-Document / cross-border use	RS: 0%	EU 28+: 43%
V Key prerequisites	RS: 18%	EU 28+: 58%
E-ID	RS: 25%	EU 28+: 52%
E-Document	RS: 50%	EU 28+: 61%
Basic databases	RS: 38%	EU 28+: 47%
Electronic mail	RS: 0%	EU 28+: 50%

4.2 USER CENTRICITY

The *User Centricity* indicator shows the extent to which a service or procedure can be performed online and/or information about it found. This indicator also concerns the online availability of information and services, customer support, and website adaptability to use from a mobile device.

4.2.1 Online availability of information and services

Online availability is an indicator that confirms whether services and information are available online. It ranges from **offline** (0%), to information available **only online** (50%), to **entirely online** (100%). The indicator covers **basic services** that include services and procedures necessary to perform certain administrative activities in a case study, such as registering or applying for health insurance, and **additional services** that include services and procedures that go beyond basic

requirements. The point is to observe service delivery as an event essential for living. For example, this would mean that the public administration does not develop an electronic residence change service, but rather develops a service that includes everything that a citizen should administratively fulfil when moving from one city to another.

This involves integrating the provision of services so that the activities of changing the place of residence, payment of taxes and contributions with the new address, transfer of the health insurance card to the local health centre according to the new place of residence, etc., could be unified and conducted at the same time.

According to this indicator, Serbia achieves 54% out of the total of 100%, which means that most of the case study services are unavailable online as a service. Most service-related information is available online, but it is not up-to-date or consolidated in one place. Serbia should make progress towards developing more online services for citizens and commercial entities. In this respect, Serbia is significantly behind the EU countries which on average reach 80%. **Serbia should focus on developing basic electronic services for citizens and commercial entities, primarily:**

1. Company registration and procedures that are common for starting a business;
2. Regular procedures important for the economy (payment of taxes, VAT refunds, payment of fees and payment of fees electronically);
3. Change from an 'employed' to an 'unemployed' status of a person, and job hunting;
4. Relocation: change of a place of residence, domicile, transfer of health record and location of payment of taxes, and
5. Online education.

The only two countries ranked lower than Serbia in this area are Croatia and Romania. The leading countries in online service delivery are Malta, Portugal, Denmark, Norway and Austria.

4.2.2 Usability of public services

The Usability Indicator is about whether support, assistance, or interactive communication functionalities are available online. In this category, Serbia reaches 75%, which is significantly lower than the average of the countries surveyed (89%).

In order to improve the usability and accessibility of its services, Serbia needs to systematically improve or introduce interactive communication with citizens and the commercial entities and provide them with real-time support. This means that citizens should find all the information in one place, in a clear, transparent way and in simple language written after analysing the most common questions, and that they are able to contact a support unit in real time to help them should they not obtain adequate answers.

The site or portal through which the information on the services or the services themselves are provided must contain:

1. Frequently asked questions and answers (FAQ);
2. Contact information for support and assistance in providing service or information;
3. Option to call or communicate in real-time via a *call centre* or *live chat*;
4. More available channels of communication (*e-mail, call centre, chat bot, etc.*);
5. *Feedback* – to provide a way to receive customer feedback about the service itself, service information, and the way public administration provides support. A *feedback* report with the strategy should be published every month;
6. Discussion or e-Participation forum, and
7. Information on appeal and complaint procedures and the ability to submit them online.

4.2.3 Mobile friendliness

This indicator shows whether a website provides a service through a *mobile-friendly* interface, that is, an interface adjusted to a mobile phone device. Serbia reaches 46% by this indicator, which is lower than the average of the countries measured by the report (54%). The digitisation of services and services in the early stages of development require portals to be *mobile-friendly*, especially given the fact that most users access the Internet through a mobile phone device (see Section 1 of the report).

4.3 TRANSPARENCY

Transparency is an indicator of different types of transparency of public administration, namely: transparency in the public administration activities, in the provision of services, and in the use of personal data of citizens.

TRANSPARENCY ³⁷		
	EU 28+ in 2016 (Achieved successfulness 0–100%)	Serbia in 2016 (Achieved successfulness 0–100%)
Total score	59%	31%
Transparency in the public administration activities	73%	65%

³⁷ *Ibid.*

Transparency in service provision	50%	6%
Transparency regarding the use of personal data	53%	21%

4.3.1 Transparency in the public administration activities

Transparency in public administration activities assesses the extent to which public administration publishes information about itself online, such as organisational structure, responsibilities and competencies, as well as information about its activities, such as the relevant laws under its purview and information about the decision-making process. Serbia scores 65% out of the 100 in this area. This is slightly lower than the average of the countries covered by the report, reaching 73%. There is much to be improved:

1. Ensure the latest (versions of the) regulations are available on the websites of state authorities and the e-Government Portal. It is necessary to have all regulations opened for public hearing published on the e-Government Portal;
2. Reports on the activities of the services;
3. Statistics on the service activities (promptness of services, number of requests, etc.).

4.3.2 Transparency in the service provision

This indicator assesses the extent to which public administration informs users, that is, citizens and the commercial entities, about the service they wish to be provided, from the submission of the application to the moment of service provision. Transparency in this regard implies that citizens and commercial entities can have **clear and accurate expectations regarding the timeframe** in which the service will be provided, the steps in the procedure and the manner of providing the service in order to plan their interaction with the public administration. The indicators monitored are as follows:

1. Information on the manner of delivery of the document, i.e. provision of the service;
2. Option to track course and status of cases;
3. Option to save the application in the draft form;
4. Information on timeframes for delivery or provision of the service;
5. Maximum time period for service provision and
6. Statistics on the effectiveness of the service.

Serbia ranks the worst in this category, accounting for 6% overall in this category compared to the average score of the countries covered by the report reaching 50%.

Although transparency in this regard is low at the level of other countries as well, Serbia has a lot to improve in this area. Existing and new services should be guided by the abovementioned principles when developing electronic services, and it is especially important that all this information be provided in one place, i.e. on the same portal through which the service is provided.

4.3.3 Transparency regarding the use of personal data

This indicator assesses the extent to which public administration proactively informs users of their personal data it keeps and stores, of how, when, by whom and for what purpose their personal data kept in state registers and databases have been accessed, as well as provides persons with the possibility to modify or submit an online request to modify incorrect information.

Serbia achieves 21% out of the total 100% in this area. The countries covered by the index score the average of 53%, which is two times better result compared to Serbia. Bearing in mind that Serbia has opted for compliance with the EU *acquis* (General Data Protection Regulation, hereinafter: the GDPR), it is expected that the legislation and practice in the field of personal data protection will be harmonised in this manner by adopting the provisions of the GDPR which came into force in May 2018 in the European Union. The GDPR segment that needs particular enhancement is the application of GDPR provisions pertaining to the acting of public administration.

4.4 CROSS-BORDER SERVICES FOR CITIZENS AND COMMERCIAL ENTITIES

These indicators measure the availability of online services in EU countries. Online availability implies the ability to use the service online in a Member State, while usability is an indicator related to customer support in the process. As far as citizens are concerned, electronic e-Government services are not fully accessible to citizens of Serbia, and vice versa. There is a positive shift in the introduction of the online residence registration service for foreigners in 2018, and the development of additional services for foreigners should be further elaborated in the process of accession to the European Union. An indicator related to commercial entities provides a similar result. With regard to the possibility of using the e-ID of a citizen of Serbia in an EU Member State, as well as electronic documents, they are completely inapplicable in the Member States both from the economic and the citizen's point of view.

CROSS-BORDER SERVICES FOR CITIZENS ³⁸			CROSS-BORDER SERVICES FOR COMMERCIAL ENTITIES ³⁹	
Criteria	EU28+ Average value 2016	Serbia	EU 28+ Average value 2016	Serbia
Total score	61%	20%	65%	33%
Online availability	74%	23%	73%	0%
Usability	76%	33%	79%	33%
Cross-border use of e-ID	14%	0%	29%	0%
Cross-border use of e-Documents	24%	0%	43%	0%

4.5 KEY PRE-REQUISITES

This indicator measures the availability of key pre-requisites for providing efficient electronic services. The basic parameters to be measured are:

- Whether it is possible to use electronic identification;
- Whether it is possible to use electronic documents;
- Whether the data contained in databases and registers are automatically entered by entering certain parameters or by using electronic identification, and
- Whether there is an e-mail through which all communication with the public administration can be conducted.

According to the European Union report, in the area of key pre-requisites, Serbia (18%) is significantly behind the average of the EU 28+ countries covered by the report (52%). Serbia's score in this area is diminished by the absence of a digital inbox, i.e. electronic mail for communication with public administration. As for other parameters, it is evident that the possibility of using electronic documents is at a high level (50%), while the possibility of electronic identification is lower (25%). Although the index estimates that Serbia's score is 38%

³⁸ *Ibid.*

³⁹ *Ibid.*

in terms of automatic data entry and exchange of information between registers, there is considerable need for improvement, primarily in the development of the Address Register.

KEY PRE-REQUISITES		
	EU 28 result + in 2016 ⁴⁰	Serbia's result in 2016 ⁴¹
Total score	52%	18%
Possibility of using electronic identification (e-ID)	52%	25%
Possibility of using electronic documents (e-Document)	61%	50%
Data contained in databases and registers are automatically being entered when submitting a request	47%	38%
Possibility to communicate via <i>e-Gov</i> mail	50%	0%

4.5.1. EGDI and *E-PARTICIPATION INDEX*

EGDI is an index that covers the scope and quality of online services, the status of telecommunication infrastructure, and existing human resources. It is a composite index based on a weighted average of three normalised indices:

- 1. Telecommunication Infrastructure Index** (hereinafter: the TII). The index is based on data provided by the International Telecommunication Union (hereinafter: the ITU).

This index measures:

- Number of Internet users per 100 inhabitants;
- Number of landline users per 100 inhabitants;
- Number of mobile phone users per 100 inhabitants;
- Number of users of wireless broadband infrastructure per 100 inhabitants, and
- Number of users of landline broadband infrastructure per 100 inhabitants.

⁴⁰ *E-Government Benchmark Insight Report*, 2017.

⁴¹ *Ibid.*

- 2. Human Capital Index** (hereinafter: the HCI) is based on the United Nations Educational Scientific and Cultural Organisation (hereinafter: UNESCO) data.

This index measures:

- Functional literacy of adults;
- The rate of enrolment of children in schools;
- The expected number of years of schooling, and
- Number median of years of schooling.

- 3. Online Services Index** (hereinafter: the OSI) is based on data collected from an independent survey conducted by the UNDESA (United Nations Department of Economic and Social Affairs), which assesses the national online presence of all 193 United Nations Member States. It assesses the development of e-Government at the national level and measures the extent to which information and communication technologies are used in countries for the provision of public services.

For this index, the following items are measured:

- Availability of information on providers, services or responsibilities;
- The existence of certain features on the website, and
- Ability to provide the service online (via the portal) or through a link to the portal.

The development of online services has the greatest impact on the overall score. According to the index, it can be estimated that there is continual progress in the development of e-Government and service provision. All 193 UN Member States have national portals and *back-end* systems for automating basic administrative procedures.

The three most commonly used online services were as follows:

- Utility payments (140 countries);
- Submission of a request for income tax returns (139 countries), and
- Starting a business (126 countries).

Despite the benefits and large investments made by many countries in the development of e-Government, the digital gap is evident. The greatest conflict with a tendency to worsen is between people who have Internet access and online services and those who do not.

On the top of the e-Government development list in 2018 there are Denmark (0.9150), Australia (0.9053) and the Republic of Korea (0.9010), the United Kingdom (0.8999) and Sweden with (0.8888). In the 2018 index, more countries entered the peak index value of the index ranging from 0.75 to 1.00 compared to 2016 when there were 29 countries in the category. This means that countries are constantly innovating. While the United States leads on its continent with a

global ranking of 11, Mauritius leads in Africa with a global ranking of 66, and the Republic of Korea leads in Asia ranking third. The 2018 index shows that, whereas European countries lead the global development of e-Government, the countries of the American and the Asian continents have almost equal status at the high and middle levels of e-Government with the exception of many African countries. Two-thirds of Asian countries (31 of 47) and nearly half of the countries of the American continents (15 of 35) have an EGDI ranking above the world average of 0.55, while Uruguay is the only Latin American country with a very high EGDI score, joining the other two forerunners in the North American region – US and Canada. Only 4 countries out of 54 in Africa have a global EGDI average of 0.55, while 14 countries have very low EGDI scores below 0.25.

Serbia ranks 49th by this index, having dropped 10 places since 2016. The reason for this is a decline in the online services sub-index with a score of 0.7361 in 2018, which was 0.8188 two years earlier. Compared to other countries, Serbia achieved a lower score in service provision than Hungary, Bulgaria, Slovakia, Italy and Denmark, and higher score than Croatia, Romania, Albania and Bosnia and Herzegovina.

<i>UN EGDI</i>				
Serbia	Place	Online services	Telecommunication infrastructure	Human resources
2018⁴²	49	0.7361	0.6208	0.7896
2016⁴³	39	0.8188	0.5434	0.7769
2014⁴⁴	69	0.3937	0.4681	0.7796

Serbia is continuously improving its telecommunication infrastructure, which is also reflected in the progress in the index. In this segment, Serbia achieved a score of 0.6208 in 2018, compared to 0.5434 two years earlier and only 0.4681 four years before. Compared to the countries in the region, Serbia is at the top of the list.

⁴² United Nations E-Government Survey 2018.

⁴³ United Nations E-Government Survey 2016.

⁴⁴ United Nations E-Government Survey 2014.

There is also a slight increase in the human resources index, where Serbia scores 0.7896 in 2018. However, for the sake of comparison, most countries in the region perform better than Serbia, Romania (0.7944), Slovakia (0.8923), Italy (0.8341) and Croatia (0.8196), while Bosnia and Herzegovina take slightly lower place on the list (0.7817). In order to improve this segment, priority should be given to the development of public policy in the field of education related to the number of years of schooling, functional literacy and the rate of enrolment of children in schools.

UN EGDI⁴⁵				
Country	Place	Online services	Telecommunication infrastructure	Human resources
Denmark	1	1.000	0.7978	0.9472
Italy	24	0.9514	0.6771	0.8341
Hungary	45	0.7265	0.7361	0.8364
Bulgaria	47	0.7639	0.5785	0.8106
Serbia	49	0.7361	0.6208	0.7896
Slovakia	49	0.7986	0.6232	0.8923
Croatia	55	0.6806	0.6051	0.8196
Romania	67	0.6597	0.5471	0.7944
Albania	74	0.7361	0.4318	0.7877
Bosnia and Herzegovina	105	0.4306	0.4385	0.7817

In the index of e-Participation that includes e-Information, e-Consultation and *E-Decision Making*, Serbia is ranked 48th.

⁴⁵ United Nations E-Government Survey 2018.

5 GLOBAL COMPETITIVENESS INDEX

The Global Competitiveness Index is published by the World Economic Forum and it measures the competitiveness of 140 countries (the number of countries varies slightly each year), based on indicators grouped into 12 "pillars":

- | | |
|---|-----------------------------|
| 1. Institutions; | 2. Infrastructure; |
| 3. Acquisition of information technologies; | 4. Macroeconomic stability; |
| 5. Healthcare; | 6. Citizens' skills; |
| 7. Resources market; | 8. Labour market; |
| 9. Financial system; | 10. Size of the market; |
| 11. Business operation dynamic; | 12. Innovation ability. |

According to the latest report of the World Economic Forum published in October 2018, Serbia is ranked 65th out of 140 countries in the world. Serbia has fallen back under one of the most important pillars, that is, in the field of institutions, where it dropped by 1.4 points. The greatest progress has been made in the area of macroeconomic stability (by 5 points), which covers the dynamic of public debt and inflation. The top ranked countries in the index are Switzerland, the USA, Singapore, the Netherlands, Germany, Hong Kong, Sweden, United Kingdom, Japan, and Finland.

This year's report has undergone major methodological changes and it is not possible to compare the rankings to those of last year. Part of the methodological changes refers to changes in indicators, while the rest refers to changes in the manner the indicators are grouped. The results can be compared by the scores achieved in a particular area. Each of these pillars has a set of sub-indicators. This report will focus only on indicators that are important from an e-Government perspective. These are all indicators under the pillar called "Acquisition of Information Technologies", the indicator "Transparency of Budget Expenditures" and "E-Participation" under the Institutions pillar, as well as the indicator "Digital Skills" under the Skills Pillar.

5.1 ACQUISITION OF INFORMATION TECHNOLOGIES

One area where the World Economic Forum measures the segment indirectly related to e-Government is the field of Acquisition of Information Technologies, which measures the acquisition and diffusion of information technologies in a country. The World Economic Forum

takes this pillar into account because information technologies reduce transaction costs, accelerate information exchange, and lead to efficiency improvement. Serbia has made very modest progress in this area, achieving a score of 56.9 in 2018, compared to 55.3 in 2017.

The field of Acquisition of Information Technologies includes 5 key indicators:

- Number of mobile phone subscribers;
- Number of mobile broadband Internet subscribers;
- Number of landline broadband Internet subscribers;
- Number of cable Internet subscribers;
- Number of Internet users.

ACQUISITION OF INFORMATION TECHNOLOGIES ⁴⁶							
Total score of Serbia in 2018 (0–100)	56.9		Total score of Serbia in 2017 (0–100)	55.3	Total ranking of Serbia in 2018	60	Leading country in this field South Korea
INDICATORS	SCORE 2018	PLACE in 2018	TREND	LEADING COUNTRY IN THIS FIELD	DESCRIPTION		
Number of mobile phone subscribers	100	55	No changes compared to 2017	68 world countries score 100 points	Number of mobile phone subscribers (population per cent). The indicator also includes the number of <i>post-paid</i> and active <i>prepaid</i> mobile phone users.		
Number of mobile broadband Internet subscribers	N/A	56	No changes compared 2017	United Arab Emirates (UAE)	This indicator includes standard and specific-purpose mobile broadband Internet subscriptions enabling access to Internet in public places.		

⁴⁶ The Global Competitiveness Report 2018, World Economic Forum.

Number of landline broadband Internet subscribers	42.4	47	Progress compared to 2017	Switzerland	This indicator measures the number of high-speed Internet subscriptions available in public places (<i>TCP / IP</i> connection), including cable model, <i>DSL</i> , cable and other cable broadband technologies such as <i>Ethernet</i> , <i>LAN</i> , etc.
Number of optical Internet subscribers	N/A	65	No changes compared to 2017	South Korea	
Number of Internet users	67.1	57	Progress compared to 2017	Iceland	Percentage of citizens who have used the Internet from any location in the country, for any purpose, and from any device and network in the past three months

Mild progress has been made in most areas applicable to Serbia. In fact, there is a slight increase in the percentage of Internet users and Internet connection. However, in these indicators Serbia lags significantly behind other countries, and it is necessary to pay more attention in the coming period to educating citizens and expanding Internet accessibility, as well as increasing the number of citizens who use the Internet every day.

The number of mobile phone users is traditionally very high in Serbia and Serbia scores 100 points under this indicator. Although it is not essential to take action in this field, this is more than useful information for decision makers in Serbia because the Internet is most commonly accessed via mobile phones (as discussed in Chapter 1). This means that decision makers could focus on expanding and educating users who have never used the Internet.

However, it is important to note that the data on the basis of which countries are ranked are taken from the International Telecommunication Union for 2016. Therefore, any improvements that occur in this field will be reflected two years later.

Serbia's ranking for the Acquisition of Information Technologies compared to the region is unenviable, since Bulgaria, Romania, Slovenia, Hungary, Croatia and Montenegro ranked higher than Serbia, whereas only Northern Macedonia, Albania, and Bosnia and Herzegovina ranked lower than Serbia.

SERBIA'S RANKING IN THE FIELD OF "ACQUISITION OF INFORMATION TECHNOLOGIES"⁴⁷ COMPARED TO THE REGION

⁴⁷ *Ibid.*

COUNTRIES	PLACE	SCORE
Bulgaria	30	69.6
Romania	36	67.1
Slovenia	43	65.6
Hungary	51	61.2
Croatia	53	60.2
Montenegro	58	57.1
Serbia	60	56.9
Northern Macedonia	70	54
Albania	74	52.3
Bosnia and Herzegovina	86	45.8

Certain indicators of other “pillars” measure particular segments that are important for the development of e-Government within the pillars of the Institutions and Skills.

5.2 DIGITAL SKILLS

Under the Skills pillar, **Digital Skills** are an important indicator for the development of e-Government. The value of this indicator is calculated on the basis of a survey conducted by the World Economic Forum and citizens' responses on the level of digital skills (using computers, basic programming, reading digital content, etc.). According to this indicator, Serbia ranks 73rd out of 140 countries with a score of 52.7. Considering that this indicator was based on a survey, it seems that a large number of citizens still believe that a high percentage of the population lacks basic digital skills. Bearing in mind that a quarter of citizens have never used the Internet, it is necessary to develop digital skills programmes.

5.3 E-PARTICIPATION

Within the first pillar of Institutions, the indicator of e-Participation is an important indicator for the development of e-Government. This indicator measures the use of public administration information technologies to effectively communicate information to citizens. The scale is 0–1 and the data is taken from the United Nations *E-Participation Index* which measures electronic

provision of information to citizens (*e-information sharing*), stakeholder interaction (e-Consultation) and e-participation in decision making (*e-decision making*). **According to this indicator, Serbia is ranked 47th, achieving a total score of 81.5, a drop from last year's ranking in this indicator in the United Nations report from where the indicator was taken.**

5.4 TRANSPARENCY OF BUDGET EXPENDITURES

Transparency of budget expenditures is an indicator that measures the extent to which the Government publishes budget and spending data. These data are taken from the World Bank and this report uses 2017 data. There was neither deterioration nor improvement under this indicator. Improving real-time monitoring of budget expenditures, on the internet portal of the competent ministry or the Government of the Republic of Serbia, with interactive content would enable taxpayers to monitor the way budget resources are spent in real time. The Government of the Republic of Serbia has published the latest budget (November 2018) in a machine-readable form, but it is necessary to have the budgets of local self-government units published in the same manner.

6 DOING BUSINESS (WORLD BANK GROUP)

The World Bank's *Doing Business* globally measures the regulatory framework for business, that is, the number of procedures that must be followed to obtain a particular service, the number of days to provide the service, the cost, and in some respects, the index tracks sets of qualitative indicators depending on the field. This index aims primarily at the experience of commercial entities in performing these procedures that are typical in business.

Areas measured by *Doing Business* are as follows: starting a business, obtaining building permits, obtaining connection to electricity, obtaining a loan, the efficiency of the contract execution process, the effectiveness of bankruptcy proceedings, protecting minority shareholders, cross-border trade, registering real estate during trading, paying taxes.

The index is based on the experience of commercial entities, so data on the duration, cost and number of procedures are collected by surveying businessmen in the countries through typical case studies. As a control mechanism, the index also monitors changes in the regulatory framework. One of the universal solutions that the index implicitly favours (which can be seen through the types of reforms it recognises as most effective, more on this will be presented in the text below) is the introduction of electronic services: to provide services to everyone in the same manner, to achieve transparency in service provision, as well as to reduce the number of procedures and time necessary to provide services.

6.1 SERBIA'S RANKING ACCORDING TO THE *DOING BUSINESS* REPORT

According to the latest report, Serbia ranks 48th in the *Doing Business* Index out of 190 countries in the world covered by the survey. This represents a decline compared to last year, when Serbia was ranked 43rd. Although there have been no substantial regressive reforms, other countries have innovated faster and adapted their business environment to the economy through regulatory changes and the introduction of electronic services. Serbia ranks better in the index than Croatia, which is in the 58th place, and Hungary, which ranks 53rd (both EU Member States), while Slovenia ranks higher (40th), and Georgia (6th).

<i>DOING BUSINESS</i>⁴⁸					
	Serbia	Croatia	Slovenia	Georgia	Hungary
TOTAL RANKING	48	58	40	6	53
Starting business	40	123	38	2	82
Obtaining a building permit	11	159	120	27	110
Connection to electricity	104	61	23	39	112
Registration of property	55	51	56	4	30
Obtaining a loan	60	85	112	12	32
Contract enforcement	65	25	110	8	22
Cross-border trade	23	1	1	43	1
Bankruptcy	49	59	9	60	65
Tax payment	79	89	41	16	86

Serbia has made progress so far owing to systems of electronic building permits and tax payments. In the case of building permits, by introducing an electronic system, Serbia was able to

⁴⁸ *Doing Business* 2019: *Training for Reform*. Washington: The World Bank Group.

reduce the number of procedures, significantly shorten their duration, and to move from the bottom of the list, with only countries with raging civil wars being ranked lower (186th place in the 2015 index) to the 11th place in the 2019 report. As for tax payments, most tax returns are done electronically, which has consequently led to a jump on the *Doing Business* list, in accordance with the World Bank's methodology.

Further progress in electronic services that would improve Serbia's international competitiveness ranking on the *Doing Business* list includes the introduction of electronic systems for the registration of multi-member limited liability companies (hereinafter: the LLCs), the enhancement of the existing system for obtaining building permits, the full implementation of e-Real Estate Desks, the electronic conduct of enforcement proceedings, e-Auction, e-Customs, enhancement of transparency and information provided by the credit bureau. The table below shows how electronic systems can contribute to improving the business environment by fields.

<i>DOING BUSINESS – SERBIA⁴⁹</i>			
FIELD	PLACE	ENHANCED	TO BE ENHANCED
Starting a business	40	e-System for Registration of Entrepreneurs and sole-member LLCs	e-System for Registration of Multi-member LLCs and a unified page on the e-Government Internet portal with all the steps Abolish the seal in practice
Obtaining a building permit	11	Introduced e-System for obtaining building permits (Central Register of Unified Procedures, hereinafter: CRUP), on the basis of which Serbia reached the 11 th place in 2018 compared to the fact it was ranked 186 th in 2018.	E-System Upgrade (CRUP) Electronic payment of fees and charges Link to the e-Desk for entering the pre-requisites of the building under construction and register property rights
Connection to the electricity distribution system	104	Connection for newly constructed buildings is conducted via the CRUP	Publish clear and accurate information about the connection process

⁴⁹ *Doing Business Report 2018*.

			Simplify the connectivity process from the perspective of commercial entities and citizens
Registration of property	55	e-Desk for property registration has been established	Link tax return filing (for property taxes, transfer of absolute rights) electronically and during solemnisation. A service that is to become an example of how electronic services are provided rather than digitising individual procedures.
Obtaining a loan	60	-	Provision of data from utility companies, mobile operators and the Tax Administration for better assessment of creditworthiness of citizens and commercial entities
Contract enforcement	65	-	E-Auction Conducting enforcement proceedings electronically
Protection of minority shareholders	83		Transparency and publication of relevant information
Cross-border trade	23		Introduce e-Customs
Bankruptcy	49	-	-
Tax payment	79	Electronic filing of tax returns for determining taxes	Electronic filing of property tax returns Electronic tax payment
Source: <i>Doing Business Report</i>, 2018			

6.2 DEVELOPMENT OF ELECTRONIC SYSTEMS FROM THE PERSPECTIVES OF BENEFICIARIES, CITIZENS AND COMMERCIAL ENTITIES

It can be observed in the index that some countries have electronic systems to perform certain procedures within the service, but that the service is not fully electronic. The best example of this is the “starting business” service in Croatia. While it is commendable that the official website of the Croatian Ministry of Entrepreneurship and Turnover has an accurate description of the steps

(available [here](#)) that need to be followed consecutively in order to get from the idea of establishing a company to actually being fully prepared to do business, the overall service is complicated as it requires going through as many as 11 individual procedures. Also, while some of these procedures can be conducted online, each of these steps is performed by a commercial entity through a separate procedure – either online or by personally going to the desk. In this case, commercial entities are provided with partial services. Consequently, the commercial service-users in Croatia report this to the World Bank through questionnaires and it is not surprising that Croatia is ranked 123rd out of the 190 countries in the *Doing Business* List in the field of business start-up. What public administration in Croatia can do to improve a business start-up service is to view it as a "life event", in particular, to understand what an entrepreneur has to go through in order to turn the idea of doing business into reality and to benefit from e-Government services for the exchange of information between state authorities so that the service (and not the procedure) for the businessman is performed faster, more predictably and more easily.

An example of good practice, a country that has understood the effective role of e-Government from a beneficiary perspective is New Zealand. Starting business in this country requires only one electronic application. State authorities exchange the necessary information so that a person can only be one electronic request and less than a day away from thinking about doing business to actually being prepared to do business.

In light of the above, it could be argued that the focus on the development of electronic systems does not suffice, since the manner in which they have been developed is also important and there is a constant need for measuring citizens' and commercial entities' satisfaction. As in the example of Croatia, electronic systems should not be developed as procedures, but as complete services.

7 ASSESSMENT OF OPEN DATA READINESS – WORLD BANK AND UNDP

The assessment of open data readiness in Serbia was carried out in 2016. Although not a global competitiveness index in essence, it provides an overview of the current state of Serbia in terms of opening of data. By merely looking at the key elements which influence the opening of data – from the regulatory framework, types of data available to public authorities, to the infrastructure elements and the demand of citizens, commercial entities and public administration authorities for them –, there is a noticeable improvement in the form of commissioning of the Open Data National Portal compared to 2016 (click [here](#)).

8 RECOMMENDATIONS

Based on the analysed parameters measured by the competitiveness lists, and in accordance with best comparative practices, a set of recommendations for improving e-Government in Serbia are hereby offered:

1. Priority should be given to developing those electronic services that focus on life events such as: real estate purchase, vehicle purchase, holiday, vehicle registration, child birth, relocation, and provide an electronic service that covers all activities related to that life event regardless of competence;
2. *Digital First*: Digitisation of key transactional services and increased use of ICT to improve public administration efficiency and provision of new digital services to citizens, commercial entities and public authorities;
3. Data as *Enabler*: In line with legal obligations and data protection guidelines, increased data sharing and innovative use of data in all public authorities should be provided to enable the delivery of integrated services, improve decision making and transparency;
4. The ICT strategy should be streamlined and monitored through public bodies in order to support specific goals and objectives at the overall government level, with the emphasis on a common goal.
5. Improvement of digital skills: the necessary ICT skills and resources should be made available to meet current and future ICT needs;
6. Involvement of the digitally isolated segment of the population, primarily aged 55+ and people with lower education level than secondary school level, in the provision of electronic services through the development of regional service centres and development of basic digital skills;
7. All information on the e-Government Portal should be updated so that it is completely accurate, clear and unambiguous. In addition, it is necessary to create a shortcut on the e-Government Portal to all services provided outside the Portal (e-Taxes, CRUP, electronic registration of entrepreneurs, etc.);
8. Designation of a control competent authority by law and imposition of a sanction on all state authorities that do not update the content on the e-Government Portal and other websites on which services are provided upon registration by citizens and commercial entities;
9. Development of e-Services from the perspective of citizens and commercial entities by focusing on the “life event” while enabling all procedures related to the event to be carried out in one place (e.g. when moving, persons need to change their residence at one place,

- transfer their health records to the new local health centre, change their information stated on the driver's licence and other documents);
10. When designing new electronic services, preliminary and automated entry of data from existing databases and registers should be envisaged;
 11. Development a greater number of electronic services for citizens and commercial entities: electronic registration to NES records, change of property ownership;
 12. Wider application of electronic identification and electronic documents should be enabled;
 13. Continued development and enhancement of telecommunications infrastructure;
 14. Publishing of an electronically accessible register in which it is mandatory for each electronic service to have the following components:
 1. Service execution time (average and maximum);
 2. Documents required for the delivery of the service;
 3. A correct list of applicable fees and charges to be paid; and
 4. Description of the service provision course step-by-step.
 15. Electronic payment is a necessary and integral component of providing electronic service, and card payment in all e-services should be fully established.