

Scanning of services based on E-Governance Macedonia 2020

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Abstract—This article presents the activities and the mechanisms of scanning the effectiveness of e-Government services in Republic of North Macedonia. The goal is to compare the results with other European Union members and Western Balkan's countries. The used methodology for scanning the effectiveness of e-Government services is adopted by the European Union, but since North Macedonia is not a member of the Union, the scanning was not conducted within their earlier measurement reports. These results will help the e-Government institutions in North Macedonia to set priorities and improve their services. Finally, the Government can sooner implement the proposed development standards and integrate in the European e-Government services framework, since the benchmark score is below EU average.

Index Terms—e-government, e-governance, administration, e-services, benchmark

I. INTRODUCTION

E-government is generic term for web-based services of the local, public and federal government institutions [1]. Based on our analysis we can conclude that Republic of North Macedonia joined the trends of using the information and communication.

The scanning of performances, the influence and transparency in the government in the context of e-government comes from the citizens who want to have better services from the public institutions, more effective process when request services, or even making decisions within the processes. The scanning of e-government in Republic of North Macedonia is based on three priorities from the Benchmark in EU for 2020 (a) modernizing public administration using digital keys; (b) enabling citizens and businesses with cross-border interoperability, and (c) facilitating digital interaction between administrations and high quality public service businesses based on the following categories: business services, citizen services and government services[2][3].

This process points out if the goals overlap the implementation of Information and communications Technology in the government of Republic of North Macedonia. Following this importance, the scanning should result increment of the effectivity in the internal organization in the institutions, identifications of the level of implementation of e-services and citizen satisfaction with the services.

The main goal of this document is to gather information of the actual state of the presence of information technology in various fields that are important for the citizens of Republic of North Macedonia.

The paper follows the next structure. Section II presents the used methods and Section III the results from the 2019 benchmarking. The obtained results are discussed in Section IV and conclusions presented in Section V.

II. METHODS

The methods are specified in the 2019 eGovernment Benchmark Insight Report and Background Report [3]. The scanning data are collected from public available data and in the first phase, the requests have been sent to 10 municipalities, 3 ministries for measuring of ICT in the internal organization of the institutions. The findings from the collected data are analyzed in Section III.

III. RESULTS

A. Our results

All institutions reported that they have internet connection, they are interconnected to departments parts of the institutions and from data security level all of them have installed Antivirus software, which we consider that the level of data security is low. The data that we received based on online portals in the second phase are the data that give us clarity how the process of release of one service is conducted . For instance:

- business services like company registration or removing data from the Central Register can be handled very easy online through the web site [4].
- The annual tax return allows all citizens to send all the documents like tax reports, requests, analysis, balance sheets etc., nonstop from everywhere with the digital certificate.
- The request for environmental permit is not well digitalized and designed, on their website there is only data and steps how they one can conduct a request on the counters [5].
- E-banking also did positive impact to companies like paying current receipts or invoices online and with mobile apps.
- The citizen services have also increased their online presence. The birth certificate is one of the services that can be completed online.
- Through their web portal [6] , the citizens can apply for birth certificate, to pay administrative taxes and other

Results summary									
Country	Benchmark	Biennial average (2017 + 2018)	Average (2018)	Average (2017)	Average (2016)	Business Start-up (2018)	Family (2018)	Losing and Finding a Job (2018)	Studying (2018)
MK	OVERALL AVERAGE	37.3	36.9	.	.	51.8	36.6	33.5	25.5
MK	USER CENTRIC GOVERNMENT	61.0	61.1	.	.	73.3	65.5	55.9	49.5
MK	TRANSPARENT GOVERNMENT	42.8	42.9	.	.	55.4	44.3	44.7	27.1
MK	CROSS-BORDER MOBILITY	40.5	40.5	.	.	55.5	.	.	25.5
MK	KEY ENABLERS	5.8	5.8	.	.	23.2	0.0	0.0	0.0

Fig. 1. Average values of EU Benchmark for North Macedonia

payments online. After this they can choose from which unit, they want to pick up their certificate.

- The services for unemployed people are not fully online. If they want to register to the employment agency, they can only read the terms and conditions that this agency offers through their website.
- In some universities it is possible college enrollment and total evidence of the semester online [7].

Public procurement takes a lot of time of handling in the total documentations. E-procurement is the portal through which companies can follow the public tenders, to apply online and to follow the total procedure through the portal. [8] The custom declarations and custom documentations can also be handled online. [9] The usage of the Information and communication Technology in the public administration is global trend in the theory and practice known as process of e-government development.[10] Based on the EU Benchmarking in Republic of North Macedonia is measured with these indicators: User centric government, Transparent government, Citizen Mobility, Business Mobility, and Key Enablers.

B. 2019 Benchmarking results

According to the EU, benchmarking North Macedonia is measured by these indicators: USER CENTRIC GOVERNMENT (User - Online availability, User – Usability, User - Mobile Friendliness), TRANSPARENT GOVERNMENT (Service delivery, Public organizations, Personal data), CITIZEN MOBILITY (Online availability, Usability, eID Cross Borders, eDocuments Cross Borders), BUSINESS MOBILITY (Online availability, Usability, eID Cross Borders, eDocuments Cross Borders), KEY ENABLERS (eID, eDocuments, Authentic sources, Digital Post). Evaluating each indicator in a scalar way yields the following results.

Figure 1 shows that North Macedonia achieves poor performance in all indicators. The weakest indicator is the digital certificates (signatures, authentication), which is in the first steps of implementation in our country.

The table shows that interoperability across borders is slightly more developed but still below the average of other countries in the region. For interoperability North Macedonia has a national framework for all public services offered to citizens, the business sector and government authorities. Services to citizens is more developed where North Macedonia has an average of 61.0, but compared to other U countries, North Macedonia is below the average of those countries, which means services cannot yet be fully implemented electronically. All services are not yet electronically automated,

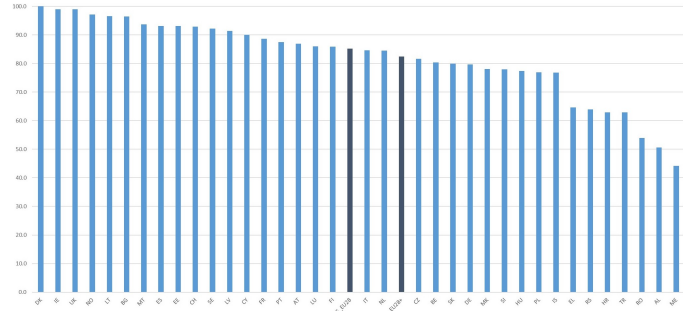


Fig. 2. Rank of business e-Gov services in 2019, (MKD close to the average)

and we should contact the institution for more details or to complete the full procedure. The only full service available electronically is tax reporting by the Public Revenue Office-PRO.

Compared to other EU countries and EU candidate countries, North Macedonia is ranked (Figure 2) according to the following indicators: Online availability, Usability, eID Cross Borders, eDocuments Cross Borders [11].

Figure ?? describes all electronic services offered at the state level broken down by categories of business, family, work and study. Different services are grouped that are related to that category

The way in which the procedure for completing and closing a service is performed, the measurement is based on whether the service is fully electronic or not. According to the measurements and research of all electronic services it is concluded that North Macedonia has not implemented fully online electronic services that covers only certain service. According to this North Macedonia is ranked as second last compared to all European countries (Figure 4.

The next indicator that is important for the initial phase of e-services is pre-filled forms or partially filled forms as a facilitating step for citizens to obtain e-services. Related to this indicator North Macedonia had a positive increasing on implementing, but development and expansion did not go as planned, and by the end of 2019 North Macedonia is at the bottom of the list compared to other European countries (Figure ??).

IV. DISCUSSION

By the end of the decade, the Government of the Republic of North Macedonia is committed to establish an environment that will take advantage of the ICT industry and create an advanced information society.

Country	Life Event	Label service	URL	Service Provider	Automated	Applicable	Geo level
MK	Business	10.1 Register your company	Not applicable	.	.	Not Applicable	.
MK	Business	10.2 Register employee before	https://e-rabota.avrm.gov.mk/Default.aspx	Employment Service Agency	Not Automated	Applicable	National
MK	Business	10.3 Tax related obligations	www.ujp.gov.mk	Public Revenue Office	Not Automated	Applicable	Regional
MK	Business	10.4 Obligations related to social	http://www.piom.com.mk/	Pension and Disability Insurance	Not Automated	Applicable	Local
MK	Business	10.5 Obligations regarding regist	www.stat.gov.mk	State Statistical Office	Not Automated	Applicable	Regional
MK	Business	10.6 Obligations related to work	http://www.mtsp.gov.mk/content/pdf/trud_2017/pravilnici/%D0%97%D0%B0	Ministry of Labour and Social Pol	Not Automated	Applicable	National
MK	Business	10.6 Obligations related to work	http://www.mtsp.gov.mk/zekoni.nsp	Ministry of Labour and Social Pol	Not Automated	Applicable	National
MK	Business	10.7 Obligations related to tra	Not applicable	.	.	Not Applicable	.
MK	Business	11.1 Find out if you need to re	http://www.economy.gov.mk/	Ministry of Economy	Not Automated	Applicable	Local
MK	Business	11.1 Find out if you need to re	http://www.moep.gov.mk/?page_id=901	Ministry of Environment and Phys	Not Automated	Applicable	Local
MK	Business	11.1 Find out if you need to re	http://www.mzsv.gov.mk/?q=node/1127	Ministry of Agriculture, Forestry	Not Automated	Applicable	Local
MK	Business	11.2 Submit an application for	http://www.economy.gov.mk/	Ministry of Economy	Not Automated	Applicable	Local
MK	Business	11.2 Submit an application for	http://www.moep.gov.mk/?page_id=901	Ministry of Environment and Phys	Not Automated	Applicable	Local
MK	Business	11.2 Submit an application for	http://www.mzsv.gov.mk/?q=node/1127	Ministry of Agriculture, Forestry	Not Automated	Applicable	Local
MK	Business	1.1 Obtaining information abou	http://rabotaimoznosti.mk/samovrabotuvanje/?lang=mk	Ministry of Labour and Social Pol	Not Automated	Applicable	National
MK	Business	1.1 Obtaining information abou	http://www.avrm.gov.mk/	Ministry of Labour and Social Pol	Not Automated	Applicable	National
MK	Business	1.1 Obtaining information abou	http://www.economy.gov.mk/	Ministry of Economy	Not Automated	Applicable	National
MK	Business	1.2 Setting up a business plan	http://rabotaimoznosti.mk/samovrabotuvanje/?page_id=148&lang=mk	Ministry of Labour and Social Pol	Not Automated	Applicable	National
MK	Business	1.2 Setting up a business plan	http://www.avrm.gov.mk/	Ministry of Labour and Social Pol	Not Automated	Applicable	National
MK	Business	1.2 Setting up a business plan	http://www.economy.gov.mk/	Ministry of Economy	Not Automated	Applicable	National
MK	Business	1.3 Explore financial possibili	http://www.economy.gov.mk/	Ministry of Economy	Not Automated	Applicable	National
MK	Business	2.1 Confirm general manager	Not applicable	.	.	Not Applicable	.
MK	Business	2.2 Confirm activity-specific g	Not applicable	.	.	Not Applicable	.
MK	Business	3.1 Obtain certificate of no out	http://www.ujp.gov.mk/m/plakjanje/category/615	Public Revenue Office	Not Automated	Applicable	National
MK	Business	3.2 Obtain character referenc	http://sud.mk/wps/portal/osbitola/sud/!ut/p/z1/04_Sj9CPykssy0xPLMnMz0vMA	Primary Court Bitola	Not Automated	Applicable	Local
MK	Business	3.2 Obtain character referenc	http://sud.mk/wps/portal/oskumanovo/sud/!ut/p/z1/04_Sj9CPykssy0xPLMnMz0vMA	Primary Court Kumanovo	Not Automated	Applicable	Local
MK	Business	3.2 Obtain character referenc	http://sud.mk/wps/portal/osprilep/sud/!ut/p/z1/hZDBCslwEES_SHY0scZjCpRQ	Primary Court Prilep	Not Automated	Applicable	Local
MK	Business	3.2 Obtain character referenc	http://sud.mk/wps/portal/oskopje1/sud/za-sudot/opsti-podatoci/!ut/p/z1/JZB	Primary Court Skopje 1	Not Automated	Applicable	Local
MK	Business	3.3 Obtain certificate of no out	www.fzo.com.mk	Health Insurance Fund	Not Automated	Applicable	Local
MK	Business	3.3 Obtain certificate of no out	www.piom.org.mk	Pension and Disability Insurance	Not Automated	Applicable	Local
MK	Business	3.4 Obtain certificate from bar	http://www.crm.com.mk/DS/	Central Register	Not Automated	Applicable	National
MK	Business	4.1 Fill in standard form for re	http://www.crm.com.mk/DS/	Central Register	Not Automated	Applicable	National
MK	Business	4.2 Register company name	http://www.crm.com.mk/DS/	Central Register	Not Automated	Applicable	National
MK	Business	4.3 Register domicile of busin	http://e-submit.crm.com.mk/eFiling/informativni-sodrzini/podnesete-prijava-v	Central Register	Not Automated	Applicable	National
MK	Business	4.4 Formal validation of signat	Not applicable	.	.	Not Applicable	.
MK	Business	5.1 Register with Commercial	Not applicable	.	.	Not Applicable	.
MK	Business	5.2 Register with central / regi	Not applicable	.	.	Not Applicable	.
MK	Business	5.3 Register with Trade Regist	http://e-submit.crm.com.mk/eFiling/redefault.aspx	Central Register	Not Automated	Applicable	National
MK	Business	6.1 Register with Trade Assoc	http://chamber.mk/en/	Macedonian Chambers of Comm	Not Automated	Applicable	National
MK	Business	7.1 Obtain tax identification c	www.ujp.gov.mk	Public Revenue Office	Automated	Applicable	Regional
MK	Business	7.2 Obtain VAT collector num	www.ujp.gov.mk	Public Revenue Office	Not Automated	Applicable	Regional
MK	Business	8.1 Register with Social Secur	http://www.avrm.gov.mk/	Employment Service Agency of t	Not Automated	Applicable	Local
MK	Business	8.2 Register with mandatory p	http://www.piom.com.mk/	Pension and Disability Insurance	Not Automated	Applicable	Local
MK	Business	8.3 Register with compulsory	http://www.fzo.org.mk/default-mk.asp	Health Insurance Fund	Not Automated	Applicable	Local
MK	Business	8.4 Register with mandatory c	Not applicable	.	.	Not Applicable	.
MK	Business	9.1 Publish registration in Offi	Not applicable	.	.	Not Applicable	.

Fig. 3. E-Business services in North Macedonia according to EU 2020 e-Government benchmark

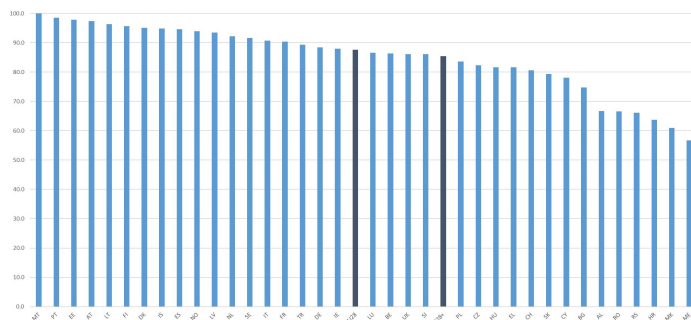


Fig. 4. Rank of completely online services (MKD is second last)

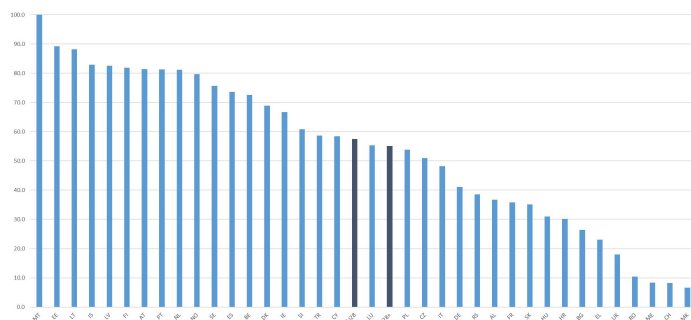


Fig. 5. Rank of pre-filled online forms (MKD is last)

In regards of the progress of e-Government sophistication of public services, North Macedonia is surrounded by good practices in developed countries, as well as in fellow neigh-

bors' governments. These practices provide a guide to how public services can strive towards growth in the near future, because growth in Macedonia's e-government sophistication has been detected since 2001 in research papers, but not so significant as other e-government's efforts [2] [12][13].

The first measurement in a 2004 study has reported that the average online sophistication in North Macedonia is 9 percents, in March 2006 the average increased to 32.75 percents, and in March 2007 it was 50 percents. The 2018 average score is 77 percents by 2010 benchmarks, so a significant increase is detected in all public services [2].

The National Short-term ICT Strategy covers the period up to 2017 [14] and is the first step towards creating a long-term strategy. This should provide a good basis for a general National ICT Strategy (by 2020), which will help the Republic of North Macedonia to advance the development of the information society and create an advanced skills ICT society.

Based on the above we can conclude that North Macedonia has made progress in introducing ICT in the business sector (Figure 6) and leads in the implementation of e-government services for the business sector in relation to Western Balkan countries.

When it comes to fully online (electronic) services there is no progress like other countries in the region. Processes of e-services have started but are still in the development phase and the process of introducing fully electronic services has been slowed down (Figure 7).

Pre-filled e-forms is the first step of e-government as an

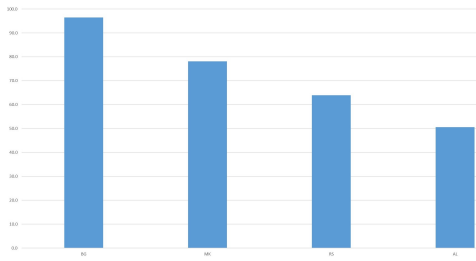


Fig. 6. Rank of pre-filled online forms for business sector in WB countries

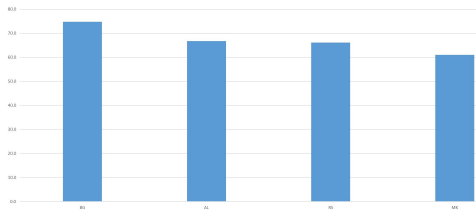


Fig. 7. Rank of fully online services in WB countries

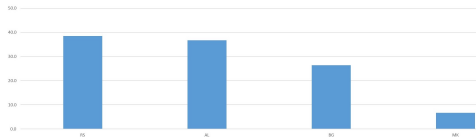


Fig. 8. Implementation of e-services in WB countries

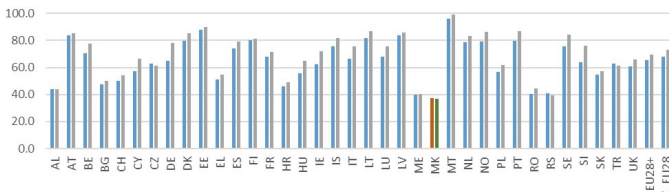


Fig. 9. Comparison of EU 2020 e-Government Benchmark for 2018

incentive for using these e-services. Although North Macedonia was a leader in the introduction of ICT in the region of high-speed broadband Internet, which was expected implementing electronically of almost all services, there were many contentious issues in the implementation and realization of the processes which indicated pausing or delaying of those processes. This makes North Macedonia the last in the region regarding the implementation of e-services. Figure 8 shows that even at the first most important step, introducing electronic forms for offered services, North Macedonia ranks behind its neighbors like Albania, Serbia and Bulgaria.

North Macedonia is below the average of other European countries (Figure 9). Although measures have been taken in recent years to develop ICT at the state level and to develop e-government as a separate segment, the graph shows us that we are still at an early stage and should work more seriously by applying the good practices of other countries that have already passed this process.

V. CONCLUSION

Based on the research, we can conclude that e-government remains a key issue for government institutions both at the central and local levels as using e-government services is proven to reduce costs for citizens, improve administrative efficiency and increases transparency of government institutions.

At the same time, we are taking into a consideration the benefits that citizens have using the Internet. The government must regulate these aspects so they would be more accessible, more user -friendly to citizens, business sector, the non-governmental sector and the public sector.

As we expect the increase of computer literacy at young population group in the future and becoming familiar with the techniques and methods of using contemporary ICT, we hope that the implementation of the e-government concept will evolve with a fast-growing dynamic.

Considering that introduction of IT society in North Macedonia directly depends on the level of development of communication infrastructure and technologies and the level of usage of services, two strategies presents strong initiator of balanced economic process which leads to establishment of IT society in Republic of North Macedonia.

According to the analysis of the indicators and results presented, we can say the denial of all these processes are related to digital division among the citizens of North Macedonia as a factor that contributes in it. In order to eliminate this factor, we think that free short training should be organized and provided on how to implement an e-service with the citizens through a mobile team and target the settlements away from the capital.

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