SocioBrains

ISSN 2367-5721 (online), JOURNAL HOMEPAGE: WWW.SOCIOBRAINS.COM
Publisher: SMART IDEAS – WISE DECISIONS, Ltd., Sofia, Bulgaria

ISSUE 74, OCTOBER 2020

E-GOVERNMENT AND DIGITAL PUBLIC SERVICES: THE MACEDONIAN CASE OF DIGITALIZATION

Abstract: The year 2020 due to the tremendous Covid-19 pandemic was significant in the global benchmarking of e-government, so the governments are reminded more than ever about the importance and relevance of digital government. Digital transformation is now a critical part of the national sustainable development of many countries. Therefore, this paper aims to indentify the correlation and main differences between e-Government and e - Governance, as well as to present case study trough available report analysis about the progress made in the Republic of North Macedonia. The paper includes case study based on exploring the trends and best practices in data science that are of relevance for e-Government development. Also, the paper is analyzing the limitations and challenges related to the application of electronic tools to governance, and aims to raise awareness and understanding of the important topic of digital services from government to the citizens.

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Keywords:
eGovernance; eGovernment; electronic tools; digitalization; information society;

1. Introduction

Effective eGovernment can provide a wide variety of benefits including more efficiency and savings for governments and businesses, increased transparency, and greater participation of citizens in political life. ICTs are already widely used by government bodies, as it happens in enterprises, but eGovernment involves much more than just the tools. It also involves rethinking organisations and processes, and changing behaviour so that public services are delivered more efficiently to people. If it is implemented well, eGovernment enables citizens, enterprises and organisations to carry out their business with government more easily, more quickly and at lower cost. Cross-border Digital Public Services allow achieving the digital single market: in the European Union's internal market, people are able to move freely – either for work or for private reasons – so they need to be able to deal easily with public services outside their home country. ICT systems are now at the heart of government processes, but efforts are still needed to ensure they continue to improve the delivery of government services[1].

1 European Commission, *eGovernment & Digital Public Services*, Available at: https://ec.europa.eu/digital-single-market/en/public-services-egovernment, [Accessed 25 Sept. 2020].

The terms, "e-government" and "digital government" are used interchangeably, as there is still no formal distinction made between the terms among academics, policymakers and practitioners. In many countries, the term e-government is embedded and institutionalized in national policies and strategies, though in some cases reference is made to digital government as the next phase of e-government[2].

Some of the new approaches Governments are taking in pursuit of digital government transformation include the delivery of e-government as a platform, the integration of online and offline multichannel delivery, the agile development of digital services (supported by whole-of-government and whole-of-society engagement and integration), the expansion of e-participation and partnerships, the adoption of data-centric approaches, the strengthening of digital capacities to deliver people-centric services, and the innovative use of new technologies such as artificial intelligence (AI) and blockchain, especially in the development of smart cities[3].

Participation is a key dimension of governance and one of the pillars of sustainable development. The 2030 Agenda for Sustainable Development highlights the importance of participatory processes. Through the Survey, e-participation is assessed on the basis of features of national e-government portals and other government websites which relate to the provision of information to citizens; consultation; and decision-making.

The concept of digital government represents a fundamental shift in the way governments around the world are embracing their mission. From setting measurable administrative goals to improving public service delivery, from making data-driven decisions to enacting evidence-based policies, from ensuring greater accountability and transparency within government to building greater public trust, governments are leveraging the power of information technologies in transformative ways[4].

Governments around the world are using digital technologies to innovatively transform the way they operate, share information, make decisions and deliver services, as well as to engage and partner with people to solve policy challenges of public concern. However, many countries still lack the capacity to effectively leverage digital technologies to provide accessible, reliable, fast, personalized, secure and inclusive services and empower people through open and participatory mechanisms. Developing multiple capacities for e-government development is essential, as digital government transformation involves far more than the integration of technology in governance. Fundamental changes in the mindsets of public servants and in the way public institutions collaborate are also critical. The 2020 Survey[5] indicates that the countries at the most advanced levels of e-government development have assigned priority to developing capacities and mindsets that fully support an integrated, whole-of-government approach to digital government transformation.

2. The difference between e Government and e Governance

By e-Government we mean the use of ICT in government operations, as a tool to increase the outreach of the government services to the general public. e-Governance, on the other hand, implies the use of ICT in transforming and supporting functions and structures of the system.

Picture.1 The difference between eGovernment and eGovernance

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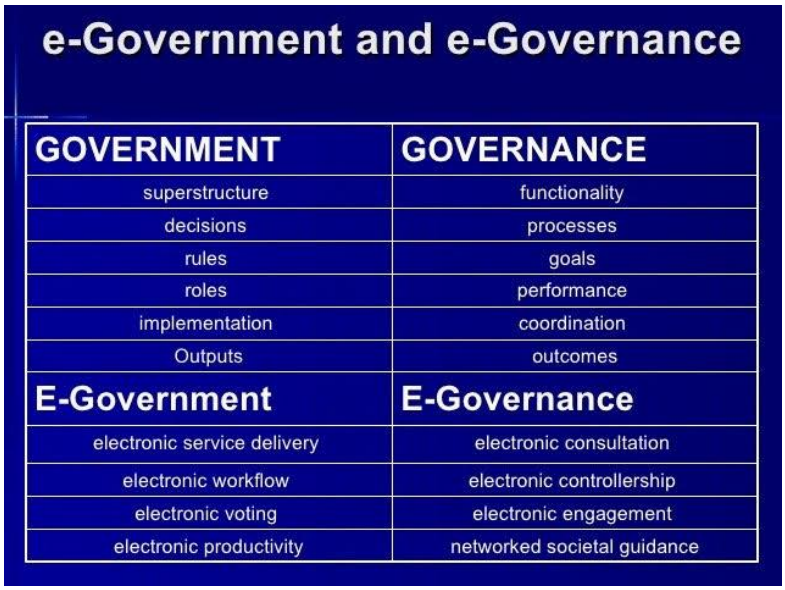
[2] United Nations Economic Commission for Africa. (2020), COVID-19: Data for a resilient Africa, Available at: https://www.uneca. org/stories/covid-19-data-resilient-africa, [Accessed 29 Apr. 2020].

[3] United Nations, (2020), *E-Government Survey 2020*, Available at: https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20(Full%20Report).pdf, [Accessed 20 Sept. 2020].

[4] World Bank, *Digital Government for Development*, Available at:, https://www.worldbank.org/en/topic/digitaldevelopment/brief/digital-government-for-development, [Accessed 20 Sept. 2020].

[5] *Ibid.*



Generally people use e-Government and e-Governance[6] as the synonyms of each other. But these words are different from each other. The picture no.1, not only tells about the definition of these two words but also benefits received from the implementation of these words.

By definition, e-Government refers to the implementation of information and communication technology (ICT) like internet, to improve government activities and process. e-Government aims of increasing transparency, efficiency and citizen involvement in the various government schemes, operations and process. Hence it speeds up the justice delivery system in the country.

On the other side, e -governance refers to the utilization of information and communication technology (ICT) for providing government services, disseminating information, communication operations with the general public.

In simple words, e-Governance enables public in availing services, operations, schemes with the help of information and communication technology (ICT).

Table.1. Benefits of e-Government

Benefits of e-Government are:
1. It ensures greater level of efficiency and effectiveness in government activities and operations.
2. Improves access of information to the common mass.
3. It ensures the transparency in the operation of government programmes.
4. It increases the reach of the government to the general public
5. It helps in improving the quality of public services
6. Increases communication between various government agencies.

Table.2. Benefits of e-Governance

Benefits of e-Governance are:
1. Revenue Growth
2. Enhances transparency, efficiency, accountability and citizen participation.
3. Cost Reduction
4. Guides the government to make improvement in the key areas.
5. Citizen empowerment through access to information.
6. Increases the reach of the government to the last beneficiary.

[6] Jargan Josh, *"What is the difference between e-Government & e-Governance?"* link: https://www.jagranjosh.com/general-knowledge/what-is-the-difference-between-egovernment-and-egovernance-1503018565-1, [Accessed 22 Sept. 2020].

The main differences between e-Government and e-Governance are:

1. By e-Government we mean the use of ICT in government operations, as a tool to increase the outreach of the government services. e-Governance, on the other hand, implies the use of ICT in transforming and supporting functions and structures of the system.

2. e-Government is a system while e-Governance is a function.

3. e-Government is a one-way communication protocol. On the contrary, e-Governance is a two-way communication protocol.

So from the above explanation we could understand that, the e-Government and e-Governance, are like two faces of the same coin.

3. Development of e Government worldwide

During the COVID-19 crisis, ICT has played a vital role in promoting the health and safety of people and in keeping economies and societies working. Digital government technologies, through information sharing and online services provision, have kept Governments and people connected during the outbreak. Digital technologies have also enabled Governments to make rapid policy decisions based on real-time data and analytics, to enhance the capacities of local authorities for better coordination, and to deploy evidence-based services to those who need them most. Throughout the pandemic, Governments have shared information through their national portals, mobile apps, and social media platforms. A review of the national portals of the 193 United Nations Member States indicates that Governments have exhibited high levels of transparency when reporting and sharing crisis-related information. Some Governments have demonstrated great agility in developing dedicated COVID-19 portals and government-supported apps to provide continually updated information and resources[7].

Since 2001, the United Nations Department of Economic and Social Affairs (UN DESA) has published the United Nations E-Government Survey. Over the past ten editions it has established itself as both a leading benchmarking reference on e-government and a policy tool for decision makers. The Survey is the only global report that assesses the e-government development status of all United Nations Member States. It serves as a benchmarking and development tool for countries to learn from each other, identify areas of strength and challenges in e-government and shape their policies and strategies in this area.

The 2020 UN Survey measures e-government effectiveness in the delivery of public services and identifies patterns in e-government development and performance as well as countries and areas where the potential of Information and Communications Technologies (ICT) and e-government has not yet been fully exploited and where capacity development support might be helpful.

The methodological framework for the collection and assessment of the Survey's data on e-government development is based on a holistic view of e-government that incorporates three important dimensions that allow people to benefit from online services and information: the adequacy of telecommunication infrastructure, the ability of human resources to promote and use ICTs, and the availability of online services and content.

Primary data collected for the 2020 Survey showed that many more countries and municipalities are pursuing digital government strategies, some of which are radically different from those guiding earlier e-government initiatives.

Although countries around the world are eager to move forward with e-government, many Governments continue to face challenges linked to multiple contextual factors such as resource

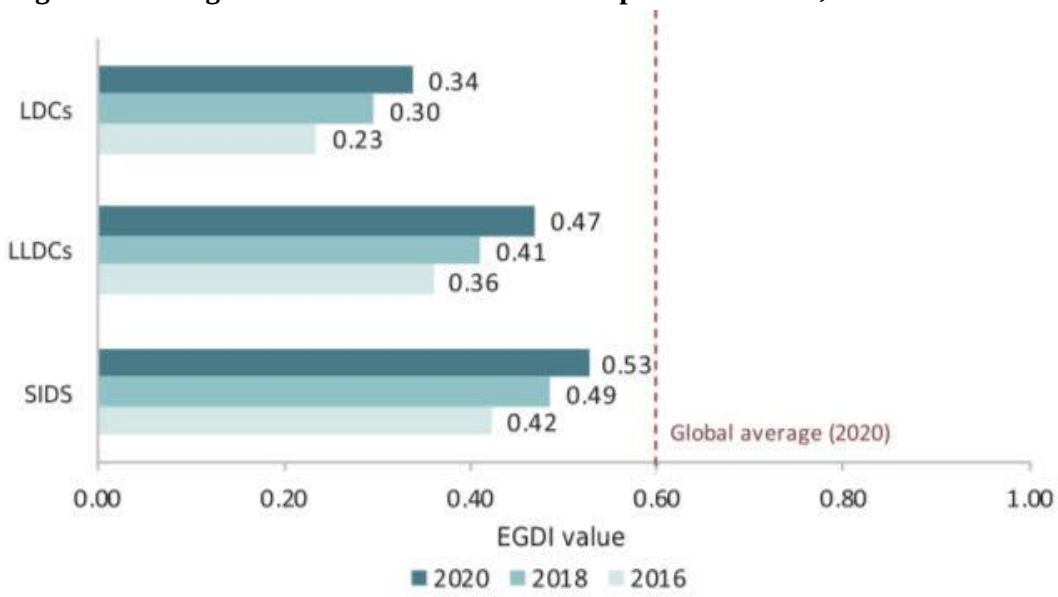
[7] United Nations, (2020), *E-Government Survey 2020*, link: https://publicadministration.un.org/egovkb/Portals/egovkb/Documents/un/2020-Survey/2020%20UN%20E-Government%20Survey%20(Full%20Report).pdf, [Accessed 20 Sept. 2020].

limitations, a lack of digital infrastructure, and insufficient capacities or capabilities, especially in developing countries and countries in special situations. Some countries face specific obstacles relating to issues such as digital inclusion, data privacy and cybersecurity. Since early 2020, the global COVID-19 pandemic has reinvigorated the role of e-government. The utilization of conventional digital government services is becoming more widespread as social distancing drives online interaction, but e-government platforms are also being used to manage the crisis through innovative ways.

Throughout this publication, "e-government" and "digital government" are used interchangeably, as there is still no formal distinction made between the terms among academics, policymakers and practitioners. In many countries, the term e-government is embedded and institutionalized in national policies and strategies, though in some cases reference is made to digital government as the next phase of e-government.

E-government development continues to advance, with the global average E-Government Development Index (EGDI) value increasing from 0.55 in 2018 to 0.60 in 2020. Progress is evident even in countries in special situations and among those with limited resources. The number of least developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing States (SIDS) with high and very high EGDI values (above 0.50) has increased by 29 per cent since the last edition of the Survey. The number of lower-middle income countries with high levels of e-development has increased by 57 per cent. The most significant improvement, however, was recorded in the lower-middle income countries group, which advanced by more than 15 per cent, with average EGDI scores growing from 0.43 in 2018 to 0.50 in 2020.

Figure.1. Average EGDI values for countries in special situations, 2020



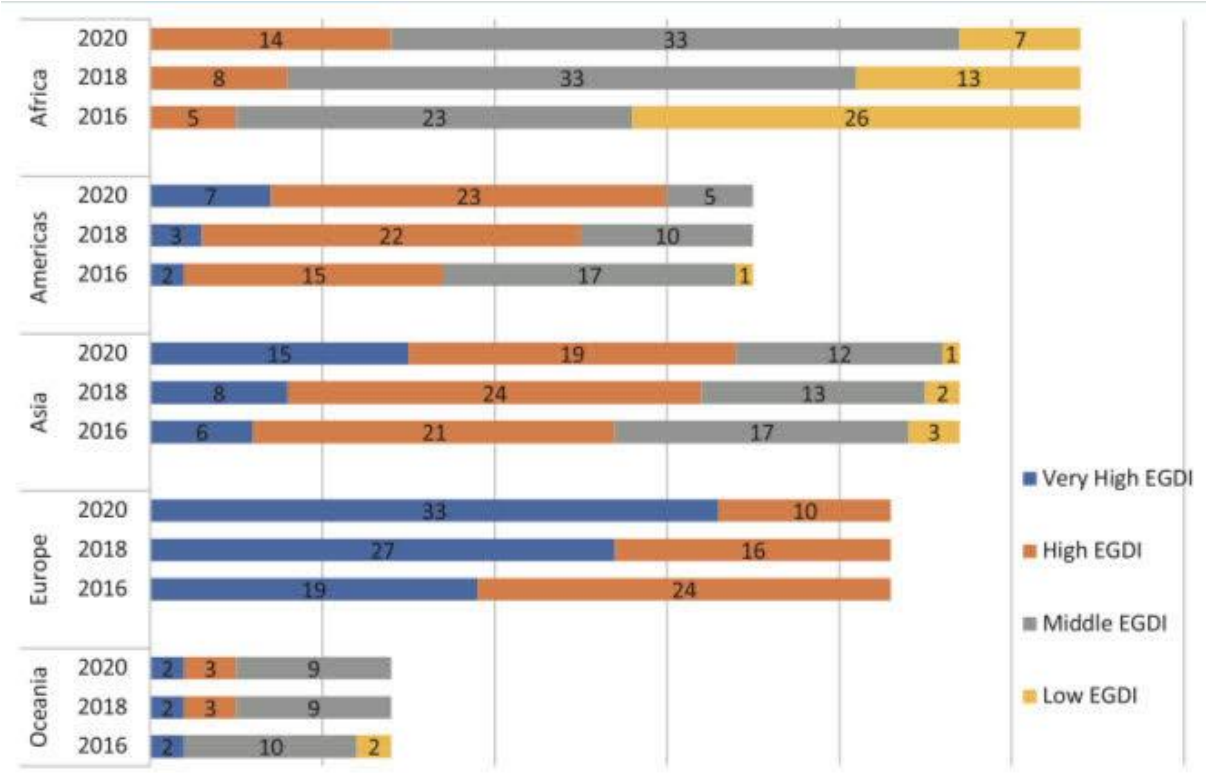
Source: *2016, 2018 and 2020 United Nations E-Government Surveys*

Close to 80 per cent of Member States offer specific digital services for youth, women, older people, persons with disabilities, migrants and/or those in poverty, contributing to efforts aimed at leaving no one behind. Similarly, in line with the SDG 16 principles of greater transparency and accountability, more Governments are using online platforms for public procurement and for the recruitment of civil servants. Since 2018, there has been a 30 per cent increase in the number of countries publishing government vacancies online, with 80 per cent of Member States now offering this feature. The top performers in e-government development (those in the highest rating class of the very high EGDI group) include Denmark, the Republic of Korea, Estonia, Finland, Australia, Sweden,

the United Kingdom of Great Britain and Northern Ireland, New Zealand, the United States of America, the Netherlands, Singapore, Iceland, Norway and Japan.

Regarding the regional trends, all regions are making progress in e-government development, as evidenced by their higher average EGDI values. Europe remains the leader, with the highest proportion of countries in the very high EGDI group (58 per cent), followed by Asia (26 per cent), the Americas (12 per cent), and Oceania (4 per cent).

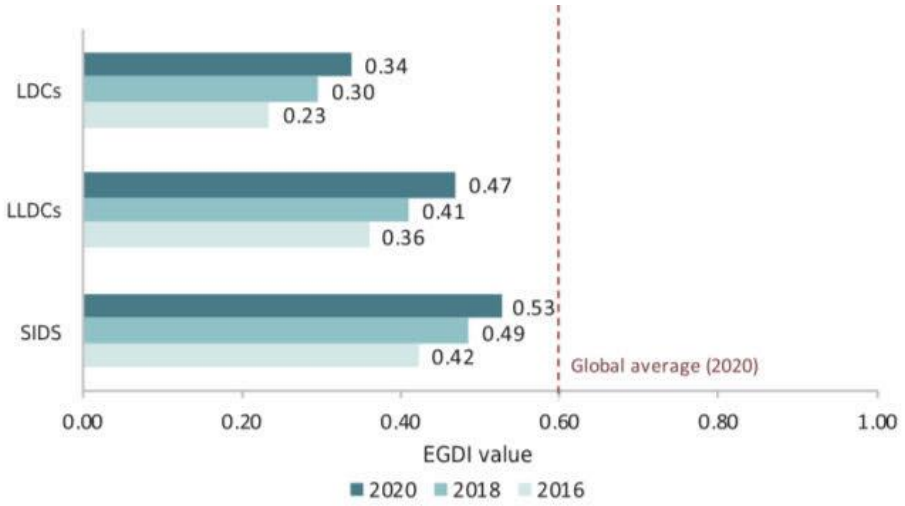
Figure.2. Regional distribution of countries by EGDI level, 2016, 2018 and 2020



Source: *2016, 2018 and 2020 United Nations E-Government Surveys*

Participation is a key dimension of governance and one of the pillars of sustainable development. The 2030 Agenda for Sustainable Development highlights the importance of participatory processes. Through the Survey, e-participation is assessed on the basis of features of national e-government portals and other government websites which relate to the provision of information to citizens; consultation; and decision-making. The publication of information is almost universal, with more than 170 countries publishing some kind of information in each of the six sectors considered (health, education, employment, social protection, environment, and justice.).

Figure.3. Percentage of countries with evidence of online consultations held in the past 12 months, by region, 2020



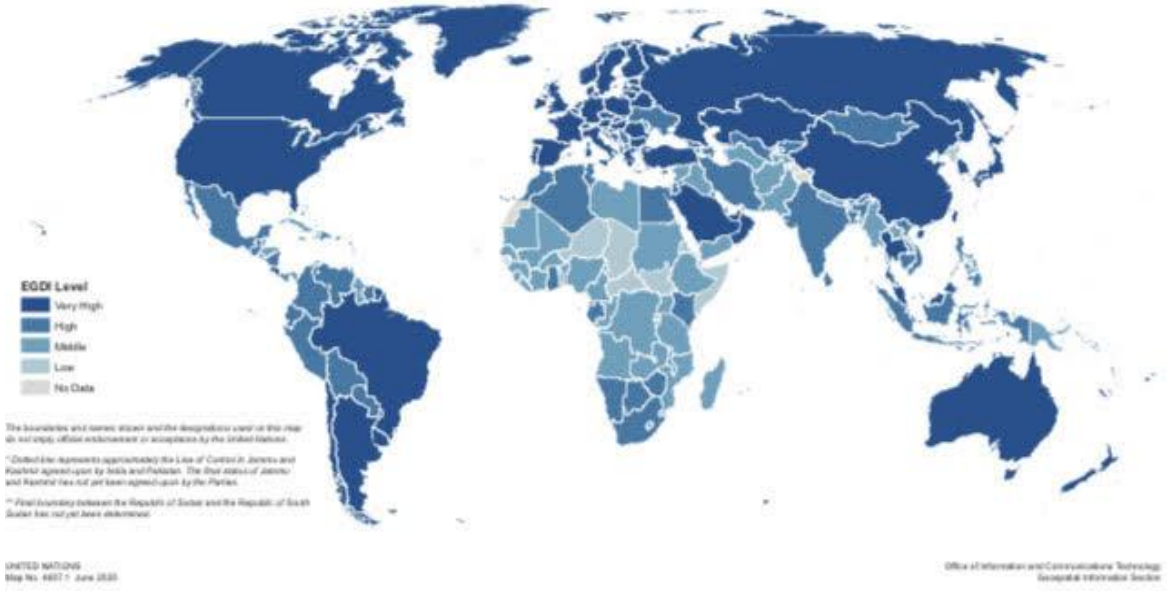
Source: *2020 United Nations E-Government Survey*

Note: *The figure reflects the proportion of countries in each region in which evidence was found of at least one e-consultation having been conducted in the past 12 months in the any of the following sectors: education, health, environment, social protection, labour or justice.*

According to the UN e-Government Survey 2020, failure of e-participation initiatives can often be traced to a lack of clear objectives, failure to analyse stakeholders' motivations to engage, lack of analysis of costs and benefits, and lack of evaluation. Two decades of experience with e-participation have shown the critical importance of linking e-participation initiatives with formal institutional processes, in order for peole to see that participation has an impact.

The 2020 Survey reflects further improvement in global trends in e-government development and the transitioning of many countries from lower to higher EGDI levels. In this edition, 57 countries have very high EGDI values ranging from 0.75 to 1.00, in comparison with 40 countries in 2018—a 43 per cent increase for this group. A total of 69 countries have high EGDI values of 0.50 to 0.75, and 59 countries are part of the middle EGDI group with values of between 0.25 and 0.50. Only eight countries have low EGDI values (0.00 to 0.25), which represents a 50 per cent reduction in the number of countries in this category in 2018[8].

Figure.4. Geographical distribution of the four EGDI groups, 2020

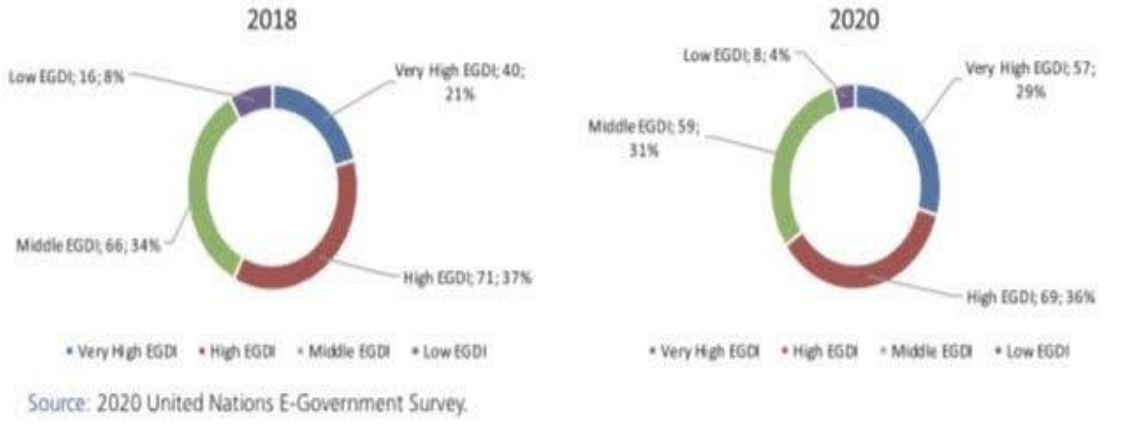


[8] UN DESA, *COVID-19 & Digital Government Compendium (2020)*, Available at https://bit.ly/EGOV_COVID19_APPS

Source: *2020 United Nations E-Government Survey*

Figure 5. shows the respective numbers and percentages of countries in different EGDI groups in 2018 and 2020 for comparative purposes. The results for 2020 indicate that Member States with high EGDI values make up the largest share (36 per cent), followed by those with middle EGDI values (31 per cent). The proportion of countries with very high EGDI values has grown from 21 per cent in 2018 to 29 per cent in 2020, while the share of countries with low EGDI scores has declined from 8 to 4 per cent during the same period.

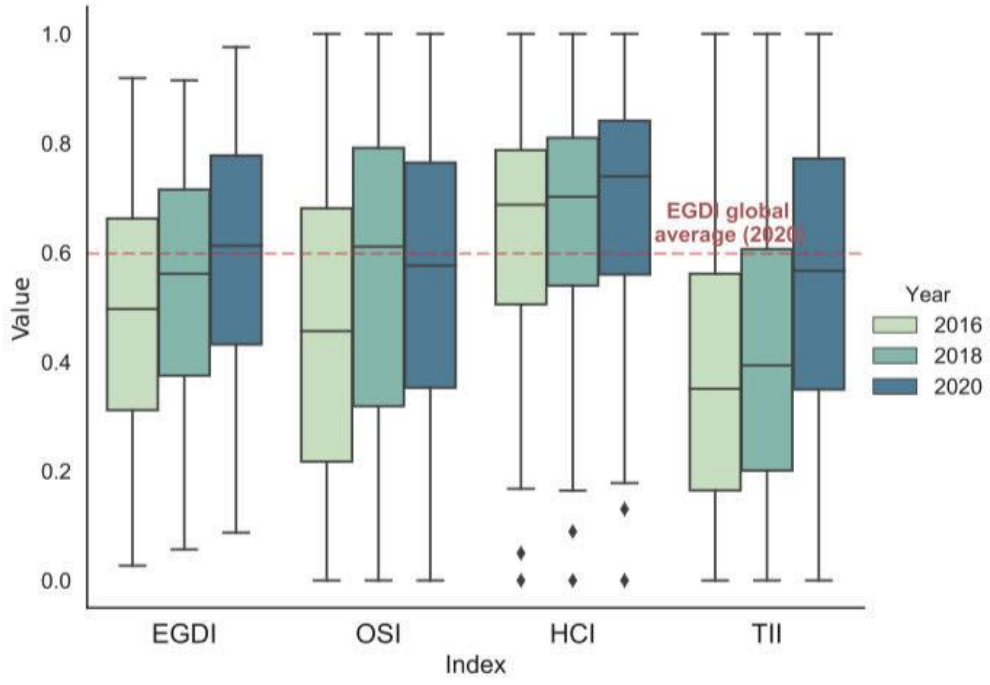
Figure.5. Number and proportion of countries within each EGDI grouping, 2018 and 2020



Source: *2020 United Nations E-Government Survey*

The global average EGDI value continues to rise, reaching 0.60 in 2020 in comparison with 0.55 in 2018 (see figure 1.3). Average HCI and OSI values are slightly higher than or comparable to 2018 averages, while those for the TII have improved significantly. It is important to note that while small changes in the HCI and OSI could be attributed (at least to some extent) to the updated survey methodology, the magnitude of the improvement in the TII subcomponents suggests an increase in infrastructure investments globally.

Figure.6. The average values for the EGDI and its component indices for 2016,2018 and 2020



Source: *2016, 2018 and 2020 United Nations E-Government Survey*

According to the UN e-Government Survey, 2020, in reviewing and analysing the 2020 Survey results, it is important to bear in mind that the EGDI is a normalized relative index, and slight differences in EGDI values between countries do not necessarily imply that a country with a lower EGDI score has underperformed during the specific two-year Survey period. Nor does a higher EGDI value signify better performance, especially among countries within the same rating class.

Table.3. Leading countries in e-government development in 2020

Country	Rating class	Region	OSI value	HCI value	TII value	EGDI value (2020)	EGDI value (2018)
Denmark	VH	Europe	0.9706	0.9588	0.9979	0.9758	0.9150
Republic of Korea	VH	Asia	1.0000	0.8997	0.9684	0.9560	0.9010
Estonia	VH	Europe	0.9941	0.9266	0.9212	0.9473	0.8486
Finland	VH	Europe	0.9706	0.9549	0.9101	0.9452	0.8815
Australia	VH	Oceania	0.9471	1.0000	0.8825	0.9432	0.9053
Sweden	VH	Europe	0.9000	0.9471	0.9625	0.9365	0.8882
United Kingdom of Great Britain and Northern Ireland	VH	Europe	0.9588	0.9292	0.9195	0.9358	0.8999
New Zealand	VH	Oceania	0.9294	0.9516	0.9207	0.9339	0.8806
United States of America	VH	Americas	0.9471	0.9239	0.9182	0.9297	0.8769
Netherlands	VH	Europe	0.9059	0.9349	0.9276	0.9228	0.8757
Singapore	VH	Asia	0.9647	0.8904	0.8899	0.9150	0.8812
Iceland	VH	Europe	0.7941	0.9525	0.9838	0.9101	0.8316
Norway	VH	Europe	0.8765	0.9392	0.9034	0.9064	0.8557
Japan	VH	Asia	0.9059	0.8684	0.9223	0.8989	0.8783

Source: *2020 United Nations E-Government Survey*

Table 3, shows that Republic of Korea is the global leader in online services provision (OSI) and is the top EGDI performer in Asia, followed by Singapore and Japan. Denmark has the highest EGDI value globally for the second consecutive Survey and is one of seven countries in Northern Europe and one of five countries in the European Union that are part of the highest (VH) rating class. The other European Union/Northern European countries in this category have registered improvements since the 2018 edition of the Survey. Estonia recorded the most significant EGDI increase, and Finland improved in all three subindices of the EGDI. Both Sweden and the United Kingdom achieved a higher overall EGDI value through substantial improvement in the technical infrastructure component (TII). The Netherlands is the final European Union member of the VH rating class. Iceland and Norway, both in Northern Europe and ranked twelfth and thirteenth overall, showed improvement in all three EGDI subindices. Australia and New Zealand, the leaders in Oceania, remain in the very high EGDI group (in line with the past two editions of the Survey) and are well placed within the highest (VH) rating class. None of the countries in Africa are included in the VH rating class.

The 14 countries in the highest (VH) rating class of the very high EGDI group are listed in table 1.3, which also provides the corresponding OSI, TII, HCI and overall EGDI values. The United States, with its VH rating class and improved EGDI value, continues to play a leading role in e-government development in the Americas and globally.

4. Digital Government Services for Citizens and Businesses in North Macedonia

In the last ten years, the development of information society in the country, compared to other countries in the region and particularly to countries of the European Union, stagnated considerably. This assessment is noted in a United Nations Study ("E-Government Survey 2014: E-government for the Future We Want"), published in June 2014. North Macedonia occupies the last place in all segments of the analysis - lowest index of e-government development of all countries in the region, smallest percentage in offering electronic services to citizens, lowest percentage of citizen participation in decision-making at both local and central level. Similar results can be seen in various EU, Organization for Economic Cooperation and Development (OECD) and World Bank research[9].

North Macedonia has invested heavily in communication and technology development in recent years, particularly in the area of e-Government. Its National Strategy for e-Government, 2010-2012, targeted the creation of a wide range of e-Services, largely to help meet EU requirements for online service delivery. Macedonia has successfully launched a variety of e-Services, including e-Tax for firms, export/import licensing, cargo transport licenses, electronic land registry, and e-Procurement. However, the move toward open government was hindered by a lack of citizen engagement and demand and by low awareness in e-Services, and subsequent investment in, by policymakers. Brazil and Moldova were chosen for the exchange based on their experience with the Open Government and Innovation Economy ecosystems and related reform agenda. Objectives for the exchange were to build awareness and capacity to implement e-Government, address deficiencies in policies and standards, teach officials how to engage with citizens online, and create a roadmap to implementation[10].

During 2018, a Roadmap was developed with directions to prepare a National LongTerm ICT Strategy, aligned with the Digital Agenda for Europe 2020. The roadmap was outlined in the PAR report of 2018. With the aim of harmonising and introducing all strategies from the ICT field under its umbrella, the e-Government Strategy and Implementation Action Plan, as well as the development of the Policy for the use of "Cloud" infrastructure, will be included in this long-term ICT strategy[11].

The NGO Metamorphosis, made measuring for the year 2017, and the Report was published in 2018 named "Roadmap on good governance for state institutions in the Republic of Macedonia", based on the regional index of openness of state institutions.

According to the Report "The Government demonstrated 76% completion of indicators, the ministries have an average score of 32%, whilst other state administration bodies fulfilled only 24% of relevant indicators of openness. Hence, the concept of openness must be systematically addressed[12]". In the Report is noted that "56% is the average percentage of fulllment of the index of transparency on the part of the Macedonian ministries, 90% of ministries publish the public procurement plans on their websites, 99% isthe score on openness of the Ministry of Finance because it publishes information related to openness of budgets and only 19% is the percentage of fulfillment of the indicators of interest within ministries" (Metamorphosis, 2018).

In 2018, the National Agency for Drugs and Medical Devices (MALMED) introduced two new system. The System for registration and management of medicines and the National Pharmacovigilance System[13] provide digital government health services.

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[9] Government of R E-Republic of North Macedonia, *Information Society*, link: https://vlada.mk/node/18266?ln=en-gb, [Accessed 18 Sept. 2020].

[10] South-South Facility, *Promoting e-Government in Macedonia*, link: https://www.southsouthfacility.org/results/promoting-open-government-macedonia, accessed: 20.09.2020

[11] European Commission, *Digital Government Factsheets – Republic of North Macedonia*, link: https://joinup.ec.europa.eu/sites/default/files/inline-files/Digital_Government_Factsheets_North_Macedonia_2019.pdf, [Accessed 20 Sept. 2020].

[12] Metamorphosis, *Roadmap on good governance for state institutions in the Republic of Macedonia*, link: https://metamorphosis.org.mk/wp-content/uploads/2018/12/Action_SEE_MK_roadmap_ENG_final_2018.pdf, [Accessed 23 Sept. 2020].

[13] National Pharmacovigilance System, Available at: https://farmakovigilanca.malmed.gov.mk/vigilanca/pages/login/login.xhtml, [Accessed 19 Sept. 2020].

Regarding digital public services for businesses, an electronic system, EXIM[14], used by 16 institutions with competences in foreign trade operations, was implemented. EXIM is a single window system for import, export and transit licenses and tariff quotas. Also, another electronic system, MAKCIS, used for processing of the customs declarations, was implemented in North Macedonia.

A new portal for personal income taxes was introduced supporting changes to the Law on Personal Income Tax. Starting from January 1, 2018, a new procedure for calculating and paying personal income tax liabilities was introduced[15].

As it is officially stated by the Macedonian Government, in support of the development of this sector, that the Government will provide full protection of intellectual and industrial property in the field of information technology and develop a long-term national strategy for development of information society (which will predict the development of electronic commerce). The Government will support the establishment of research units in the business sector in view of efficient transfer to modern technologies.

In North Macedonia, another governmental goal is *to pursue a policy of reducing the profit tax for Informatics and Information Technology to 5%*. Also, the Government will *financially assist the marketing of services and solutions developed by Macedonian ICT companies on world markets*, as well as *the retraining/service training of highly educated technical engineers* (technologists, architects, mechanical and civil engineers) into IT engineers, in order to harness their IT knowledge and reduce unemployment of technical staff[16].

The Government of the Republic of North Macedonia will *provide tax incentives for IT companies exporting software and services*. This will allow increased foreign exchange earnings, building new outsourcing IT companies and opportunities for new jobs. The Government of North Macedonia will fully implement the three main electronic registers: the Register of Citizens, the address register and the register of spatial data. These records are the basis for all electronic government services provided to citizens and businesses through systems used in public administration (registers, single electoral list, etc.) as well as the basis for all necessary actions for organizing population census in Macedonia. The Government of North Macedonia declares to develop to the fullest e-government and government services to citizens and businesses, to speed up procedures in the administration and reduce costs. By applying the most modern ICT strategies and measures, we will improve transparency of government institutions through full application of the concept of open government (Open Government). In this way, it is expected to reduce the possibility for discretionary decisions, discrimination on any grounds, but also strengthen the fight against crime and corruption.

4.1. Digital Government

According to the European Commission Progress Report for North Macedonia[17], the legislation prohibiting internet service providers from controlling internet traffic continued to be applied. Online media remains unregulated. Disinformation, hate speech, disrespect of professional standards and violations of intellectual property rights are frequent in online media. The authorities need to take

[14] The Single Window for export/import licenses and tariff quotas system, *EXIM*, link: http://exim.gov.mk/EILWeb/startPage.jsf, [Accessed 17 Sept. 2020].

[15] European Commission, *Digital Government Factsheets – Republic of North Macedonia*, link: https://joinup.ec.europa.eu/sites/default/files/inline-files/Digital_Government_Factsheets_North_Macedonia_2019.pdf, [Accessed 22 Sept. 2020].

[16] Government of Republic of North Macedonia, *Information Society*, link: https://vlada.mk/node/18266?ln=en-gb, [Accessed 20 Sept. 2020].

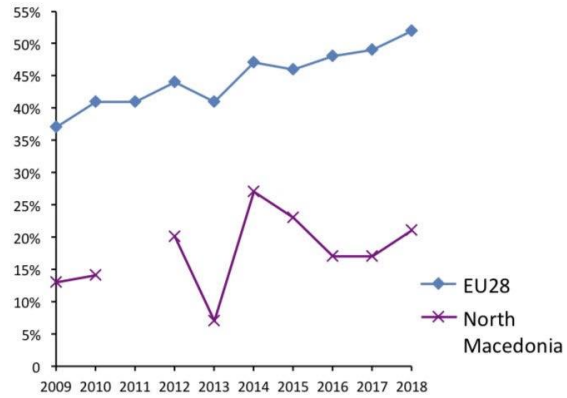
[17] European Commission, (2020), *COMMISSION STAFF WORKING DOCUMENT North Macedonia 2019 Report*, Accompanying the documentCommunication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 2019 Communication on EU Enlargement Policy, {COM(2019) 260 final}, Accessed link: https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/20190529-north-macedonia-report.pdf, [Accessed 26 Sept. 2020].

measures to effectively combat disinformation. Self-regulatory principles and ownership transparency are needed to increase the respect for ethics and professionalism in online media.

Also, the digitalisation of the economy is progressing, but remains low compared with the EU. The percentage of households with internet access at home has increased by 21pps between 2012 and Q1 2018 (79.3%) and mobile broadband penetration is expanding further. However, fixed broadband penetration is still restricted, which negatively affects business competitiveness. Online sales are also developing sluggishly.

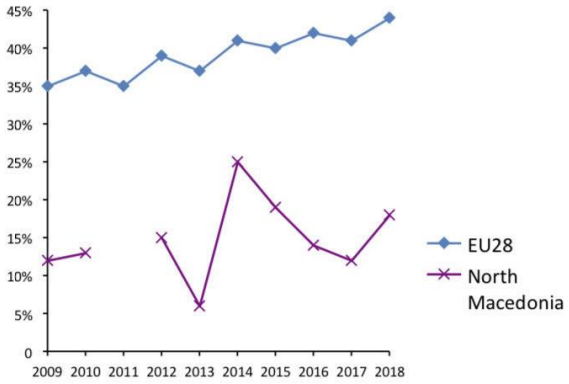
According to the publication "Digital Government Factsheet 2019 Republic of North Macedonia" by European Commission published in 2019, there are several indicators about the development of digital government. This section of the factsheet is meant to present the country performance on the main eGovernment indicators according to the latest eGovernment Benchmark report, which monitors the development of eGovernment in Europe.

Figure.7. Percentage of individuals using the internet for interacting with public authorities in North Macedonia



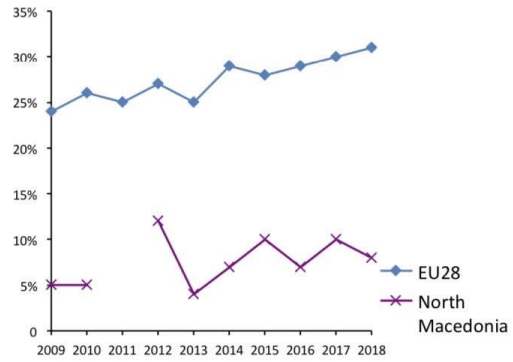
Source: Eurostat[18]

Figure.8. Percentage of individuals using the Internet for obtaining information from public authorities in North Macedonia



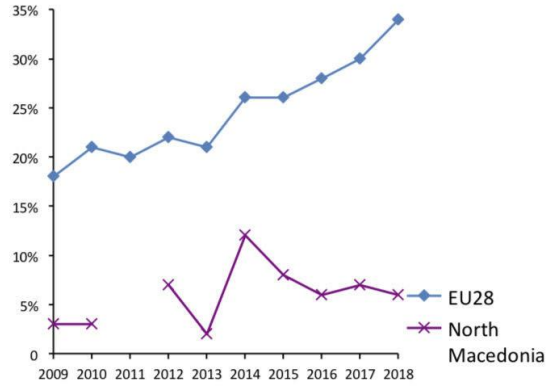
Source: Eurostat[19]

Figure.9. Percentage of individuals using the Internet for downloading official forms from public authorities in North Macedonia



Source: Eurostat[20]

Figure.9. Percentage of individuals using the Internet for sending filled forms to public authorities in North Macedonia



Source: Eurostat[21]

In February 2018, the Strategy for Public Administration Reform 2018-2022 and respective Action Plan were adopted in North Macedonia. This strategy also addressed eProcurement and interconnectivity of base registries with some measures. The Strategy and Action Plan for Open Data 2018-2020[22] were adopted in July 2018. The National Cyber Security Strategy and Action Plan 2018-2020 were adopted by the Government, in August and December 2018 accordingly. Digital Government Legislation The Law for Procurement was changed and adopted in May 2018, with the date of enforcement set on 1 September 2018. The National ICT Council was established in February 2018.

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[19] *Ibid.*

[20] *Ibid.*

[21] *Ibid.*

[22] Ministry of Information Society and Administration, *Public Administration Reform Strategy* 2018-202, Link: https://mioa.gov.mk/?q=mk/node/1587, [Accessed 25 Sept. 2020].

According to the Factsheet made by European Commission in 2019, the responsibilities, members and authority of the Council were later extended to National ICT and Cyber Security Council:

- A new Open Data portal was launched in December 2018.
- A new portal of the Customs Administration was also launched in 2018.
- New data exchanges between institutions were established with the development of 40 new web services to serve the needs of institutions that handle justice and home affairs.
- A Memorandum of Understanding with the European Union on quality and safety requirements for connection to the TESTA-ng network for data exchange between Member States and candidate countries.
- A new modern tool was implemented. The New Computerised Transit System (NCTS) uses advanced technologies and electronic data processing.
- In 2018, existing modules in the National eHealth System (Moj Termin/My Term) were upgraded and improved.
- Two new disease registries were introduced: the register of rare diseases and the register of diabetes.

Regarding the security aspects, the Strategy for Cyber Security[23] was first adopted in August 2018; its Action Plan was developed at a later date.

This strategic document fostered the development of safe, secure, reliable and resilient digital environment, supported by high-quality capacities, based on cooperation and trust in the field of cyber security. The document was organised in seven parts.

The *first section* introduced the topic, focusing on increased dependency on cyberspace services, the increased use of Information and Communication Technologies (ICT) and the negative influence of severe cyber threats on the functioning of the public and private sectors. In the *second section*, the Strategy examined the major cyber trends, challenges and threats key in relation to the cyber space of North Macedonia.

Section *three* laid down the cyber security principles that support the Strategy:

- Effective and efficient cyber security capacities;
- Protection and prevention;
- Security for economic development;
- Trust and availability;
- Legal security.

Harmonisation of legislation in the area of personal data protection has been one of the government's priority activities since 2002. A new Law on Personal Data Protection[24] (Official Gazette no. 7/2005, 103/2008, 124/2008, 124/2010, 135/2011, 43/2014, 153/2015, 99/2016 and 64/2018), amended to include EC recommendations, was drafted in 2004, adopted on 25 January, 2005, and modified to comply fully with the European Directive 95/46/EC in 2008. The law represents a lex generalis in the area of data protection in the country. According to the law, personal data shall be fairly and lawfully processed; collected for specified, explicit and legitimate purposes; processed in a manner which is consistent and proportionate with these purposes; accurate and complete; kept for no longer than the necessary timeframe for fulfilling the above mentioned purposes.

In 2018, the National Agency for Drugs and Medical Devices (MALMED)[25] introduced two new system. The System for registration and management of medicines and the National

[23] Ministry of Information Society and Administration, *Republic of North Macedonia: National Cyber Security Strategy and Action Plan 2018 – 2022,* Available at: https://mioa.gov.mk/?q=en/node/2379, [Accessed 25 Sept. 2020].

[24] Official Gazette, *Law on Personal Data Protection,* Available at: https://dzlp.mk/sites/default/files/u4/zakon_za_zashtita_na_lichnite_podatoci.pdfm, [Accessed 25 Sept. 2020].

[25] National Agency for Drugs and Medical Devices, *MALMED,* Available at: https://malmed.gov.mk/, [Accessed 24 Sept. 2020].

Pharmacovigilance System provide digital government health services. Regarding digital public services for businesses, an electronic system, EXIM, used by 16 institutions with competences in foreign trade operations, was implemented. EXIM is a single window system for import, export and transit licenses and tariff quotas. Also, another electronic system, MAKCIS, used for processing of the customs declarations, was implemented in North Macedonia. A new portal for personal income taxes was introduced supporting changes to the Law on Personal Income Tax. Starting from January 1, 2018, a new procedure for calculating and paying personal income tax liabilities was introduced.

The Factsheet presents data about the reform in public administration in the context of the Strategy and Action Plan for Public Administration Reform (PAR) 2018-2022 adopted in February 2018.

The Strategy means reform in the following priority areas:

1. Policy creation and coordination;
2. Public service and human resources management;
3. Responsibility, accountability and transparency; and
4. Public services and ICT support to the administration.

According to the Factsheet:2019[26], consequently, the PAR Strategy 2018-2022 has four general objectives:

1: Effective, efficient and inclusive policies;

2: Professional, professional and departed administration;

3: Responsible, accountable and transparent operation of the institutions; and

4: Providing services in a fast, simple and easily accessible way.

In order to achieve the defined goal in the priority area of delivering services and ICT support to the administration, measures and activities will be undertaken which lead to investments in the development of the digital environment. The quality and availability of public services will be increased to give access to, and the ability to use, e-services. Measures and activities include the development of strategies, programmes and methodologies; conducting analyses and projects based on the findings and recommendations from the analyses; research on introducing innovative solutions; simplifications and facilitation of processes; and more. One of the most important features is the active involvement of users in the process of defining and designing the services, which will be developed according to their needs.

Public Administration Reform (PAR) is a continuous process of reorganisation of public sector institutions and improvement of their administrative capacity. It is one of the key priorities in the Accession Partnership, and an important precondition in the process of European integration of the Republic of North Macedonia. Initiatives for the modernisation and promotion of the administration remain ongoing.

The Factsheet[27] highlighted that “the quality and availability of public services will be increased to give access to, and the ability to use, e-services. Measures and activities include the development of strategies, programmes and methodologies; conducting analyses and projects based on the findings and recommendations from the analyses; research on introducing innovative solutions; simplifications and facilitation of processes; and more. One of the most important features is the active involvement of users in the process of defining and designing the services, which will be developed according to their needs.

[26] European Commission, *Digital Government Factsheets – Republic of North Macedonia*, link: https://joinup.ec.europa.eu/sites/default/files/inline-files/Digital_Government_Factsheets_North_Macedonia_2019.pdf, [Accessed 25 Sept. 2020].

[27] European Commission, *Digital Government Factsheets – Republic of North Macedonia*, link: https://joinup.ec.europa.eu/sites/default/files/inline-files/Digital_Government_Factsheets_North_Macedonia_2019.pdf, [Accessed 22 Sept. 2020].

5. Conclusion

During the COVID-19 crisis, ICT has played a vital role in promoting the health and safety of people and in keeping economies and societies working. Digital government technologies, through information sharing and online services provision, have kept Governments and people connected during the outbreak. Digital technologies have also enabled Governments to make rapid policy decisions based on real-time data and analytics, to enhance the capacities of local authorities for better coordination, and to deploy evidence-based services to those who need them most. Throughout the pandemic, Governments have shared information through their national portals, mobile apps, and social media platforms. A review of the national portals of the 193 United Nations Member States indicates that Governments have exhibited high levels of transparency when reporting and sharing crisis-related information. Some Governments have demonstrated great agility in developing dedicated COVID-19 portals and government-supported apps to provide continually updated information and resources.

As 2020 UN Government Survey highlighted, the digital government has played a central role in addressing the crisis, becoming an essential element of communication, leadership and collaboration between policymakers and society during the COVID-19 pandemic:

-Governments need to give careful consideration to the unintended consequences of technology use and take active steps to protect sensitive data and people's privacy and security.

-The pandemic has shown how critical ICT can be when appropriately leveraged for good governance, especially in difficult times. Governments need to accelerate efforts to embrace technology, even when the crisis is over.

-Digital government is not an end; it is a mean for improving public service delivery, increasing people's engagement, enhancing transparency, accountability and inclusion, and ultimately making life better for all. As United Nations Secretary-General António Guterres recently noted, the post-COVID-19 world will be different and much more digital than before[28].

E-government has an increasingly important role to play in supporting countries as they endeavour to activate the Decade of Action and accelerate the achievement of the Sustainable Development Goals. Governments will need to engage with stakeholders, including technology leaders and small and medium-sized enterprises, through effective partnerships. The way forward is a new "digital normal" in responding to global challenges and pursuing sustainable development.

In case with the development of digital government in the Republic of North Macedonia, the paper gives an overview on the Strategy and Action Plan for Public Administration Reform (PAR) 2018-2022 and other legislative changes. Due to the small size of the country, there are ongoing efforts to centralise eGovernment activities, information systems and other resources, in order to improve results and use resources more efficiently. Currently, certain eGovernment activities are owned by the central Government, and for some processes only the local Government is in charge.

The Programme of the Government of the Republic of North Macedonia is broad and covers a variety of different domains. There is a specific assessment for the IT sector and a plan to help public administrations transition towards new technologies. According to the goals publicly declared the goal of the Government will be the development of the IT sector as well as the simplification and acceleration of communication between citizens and public administrations. The government will give priority to the creation of electronic registers as the basis for all electronic government services provided to citizens and businesses

[28] United Nations Economic Commission for Latin America and the Caribbean. (2020). *Las oportunidades de la digitalización en América Latina frente al Covid-19.* Available at: https://repositorio.cepal.org/bitstream/handle/11362/45360/1/OportDigitalizaCovid-19_ es.pdf, [Accessed 24 April 2020].

We may conclude that digital government transformation on the Republic of North Macedonia should aim at promoting digital inclusion and ensuring that all people, including vulnerable groups, can access new technologies to improve their wellbeing.

Digital government transformation is fundamentally about governance transformation and cultural change in support of a country's overall national development vision and strategy and the achievement of the Sustainable Development Goals.

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