

ON E-GOVERNANCE DEVELOPMENT OPPORTUNITIES IN THE REPUBLIC OF MOLDOVA

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Abstract

The process of e-Governance building in the Republic of Moldova, amplified with the adoption of the e-Transformation governmental program, highlighted the issues that require a proper approach to local conditions and specificities.

A specific feature of Moldovan society is that the country's population is mostly rural. In rural areas, the sensitivity to new services and the affordability of ICT tools are lower. Another feature is that the administrative structure at the local level is very fragmented; the administrations manage small budgets that cannot cover the needs of implementing e-Governance solutions.

In general, the capacity to finance ICT projects in the public sector is below the need. At the same time, some trends and indicators regarding the level of e-Governance development in the Republic of Moldova: literacy level, ICT skills, access to the Internet, use of mobile telephony, use of electronic services, etc. shows that there is significant potential to explore new opportunities, in particular, based on innovation and involvement of different social partners to support efforts to build e-Governance.

The article addresses the issue of identifying new opportunities for e-Governance solutions in the context of economic and social disparities present in the Republic of Moldova. The opportunities are based on more active involvement of social stakeholders, the use of more affordable new technologies, and the adoption of policies aimed at optimizing the use of available resources.

1. Introduction

E-Governance is today perhaps the most popular topic and an unprecedented challenge to public administration reform in a broad context of building the information society. The e-Governance model - a citizen-centered public service system that replaces the traditional service service with a new one based on the Internet and information technology, provides a modern approach to public services that ensure transparent and unified communication between government institutions to enhance the potential public services and governance in general. E-Governance initiatives are evolving to keep pace with the ever-changing dynamics of increasingly advanced technology solutions and respond to the increasing demand of citizens for higher quality public services.

Originally developed in countries with strong economic and technological potential, concepts and models of e-Governance, taken over by countries in transition, did not lead to expected results [7]. The explanation is that the processes in a country's public administration are part of a system that is too complex in terms of economic, social, cultural, etc. which is the country's specificity - an

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unrepeatable one that must be carefully considered when it comes to identifying e-Governance solutions.

The e-Governance concept evolves continuously as more and more information and experience accumulates in its development. The aim is to bring added value to public services. To this end, government is gradually giving up its traditional, simplistic and mechanistic way of delivering services and becomes a flexible platform, oriented to citizen and its interests, which offer services of great complexity and value [4]. Such a transformation does not lack the public administration of institutional powers and abilities, becoming more proactive, with more possibilities to focus on the efficient management of public activities and relations with citizens, many activities being taken up by social actors outside the public administration who apply specialized infrastructures and expertise.

E-Governance initiatives in Moldova added value to the governmental act [5], but they also highlighted some of the issues whose solving is a key issue for the further development of the e-Governance system. In the authors' opinion, they specifically refer to the following aspects:

- Identifying a conceptual model of e-Governance adequate to the conditions and realities of the Republic of Moldova;
- building public data infrastructures to ensure a common and coherent information space to support the homogeneous development of e-services at all levels of government;
- A broad involvement of several social actors in intensifying efforts to develop e-Governance in the Republic of Moldova.

2. Background

Moldova has made some successes in e-Governance: a high level of EGDI (E-Government Development Index), in particular, of online services (Table 1), on a high-performance telecom infrastructure (Figure 1), capable of ensuring the provision of electronic public services across the country.

Rank	Country	e-Government Development Index	Online Service Index	Telecomm Infrastructure	Human Capital
35	Russian Fed.	0,7215	0,7319	0,6091	0,8234
36	Poland	0,7211	0,7029	0,5857	0,8747
46	Hungary	0,6745	0,6304	0,5615	0,8317
49	Belarus	0,6625	0,4855	0,6304	0,8716
50	Czech Republic	0,6454	0,4783	0,5952	0,8627
52	Bulgaria	0,6376	0,5652	0,5602	0,7875
62	Ukraine	0,6076	0,5870	0,3968	0,8390
65	R. of Moldova	0,5994	0,5942	0,4850	0,7191
67	Slovakia	0,5915	0,4420	0,5504	0,7822
75	Romania	0,5611	0,4565	0,4533	0,7736
	<i>Eastern Europe</i>	<i>0,6422</i>	<i>0,5674</i>	<i>0,5428</i>	<i>0,8166</i>
	<i>Europe</i>	<i>0,7241</i>	<i>0,6926</i>	<i>0,6438</i>	<i>0,6897</i>

Table 1: E-Government Development Index in Eastern Europe countries, 2016 [12]

More and more electronic public services for citizens and businesses have been developed and are being used: information services, transactional services - electronic payments, etc., all of which have created prerequisites for a deeper and multilateral approach to e-Governance. The Strategic Programme for Technologic Modernization of Governance (e-Transformation) [14], adopted in 2011, boosted the development of e-Governance and created premises for profound transformations and modernization of public services.

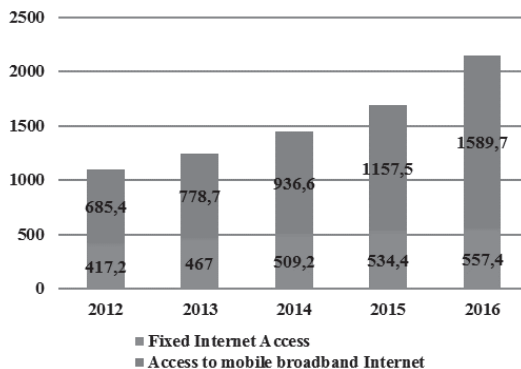


Figure 1: Broadband Internet access, thousands of users. The National Regulatory Agency for Source: Electronic Communications and Information Technology (ANRCETI), <http://en.anrceti.md>
 Note: Moldova population: 3,551 thousand .Source: www.statistica.md

Moldova is a developing country, and a characteristic for such countries [8] it is that IT public budgets are neither stable nor appropriate to needs, and usually public sector IT projects are funded by donors. In many cases, their implementation is not preceded by studies of the real situation in the country, project sustainability is not ensured - once external funding ceases, projects are no longer supported, and there is often no policy coordination in IT projects. It happens that different projects deal with the computerization of the same processes. Efforts focus mainly on computerization of traditional processes, not on transforming business processes and streamlining governance services.

As confirmation in our case, the most important project in the area of eGovernance over the last 7 years - the e-Government Transformation Program in Moldova has been supported by the World Bank's International Development Association (IDA) in the amount of 20 million USD. However, budget allocations for IT in the public sector are well below the level needed. In 2016, expenditures for computerization of public administration, defense and compulsory insurance amounted 260 million lei or about 15 million USD, which represents 0.22% of the GDP of the country - 6.75 billion USD.

Also, a recent report by the Court of Auditors [9] on the implementation of the e-Transformation of Governance Project reveals a number of shortcomings including:

- Lack of effective tools for coordinating activities,
- Ambiguities and inconsistencies in the functioning of the implementing bodies;
- Sporadic and uncoordinated use of electronic services;
- Exhaustive evaluation of necessary resources;

- Non-transparency and inefficiency in the digitization of services;
- Digitizing front-office processes, while back-office processes are still out of digitization;
- Incapacity of public entities to ensure the sustainability of e-services implemented.

The approaches to implementation of e-Governance solutions so far have been made mainly at the central level of public administration [5], [9]. At the same time, most of the public services remained outside digitization, because at local level there is neither the economic potential nor the necessary expertise.

There is a large discrepancy between the level of ICT use in the capital, Chisinau municipality, compared to the rest of the country (Figure 2, Figure 3). Basically, the bulk of investments in computer-related activities across the country are carried out in Chisinau. This is happening on the background of a rural majority of the country's population - 57%.

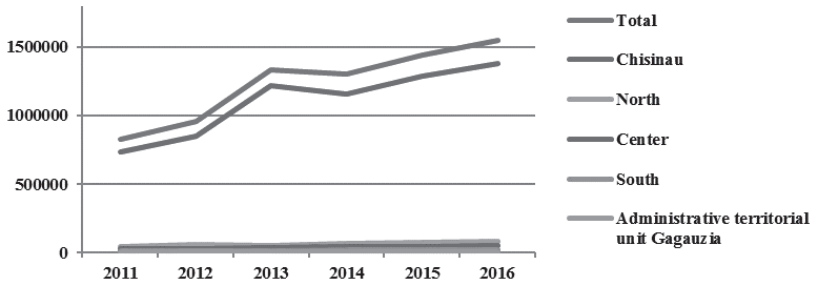


Figure 2: Expenditure of legal entities for information technology, thousands lei, Source: NBS www.statistica.md

The income of the majority of the population is modest (Figure 3) and therefore ICT accessibility is low, making it difficult to uptake e-Governance services and hence increases the risk that investment in e-Governance projects will be below expectations in efficiency and effectiveness. The difference between Chisinau and the rest of the country amplifies this phenomenon and puts very difficult additional tasks ahead of e-Governance.

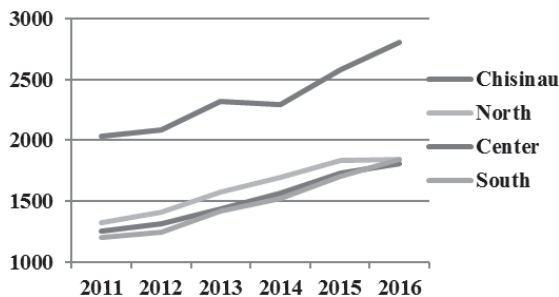


Figure 3: Monthly average earnings per person, lei, Source: NBS www.statistica.md.

Electronic services in Moldova's e-Governance system are, in fact, services provided by agencies and departments that are in line with the traditional mode of delivery [5], [9]. Their level of interoperability is low, being largely services that represent service requests:

- Request for the release of the criminal record to individuals;
- Free access to data from the real estate register;
- Request for the issue, extension and reperfusion of activity licenses;
- Verification of the personal identification code;
- Request to issue the duplicate birth certificate, etc. (servicii.gov.md).



Figure 4: Access to the Government portal, % of population, Source: eGov Center, www.egov.md.

A service is usually provided through the site of the institution responsible for this service (Figure 4, Figure 5), but not in a common framework where several services from different agencies interact. For example, it can be applied online to obtain a criminal record, but the applicant will take the document from the issuing agency and will personally present it to the institution that requested it.

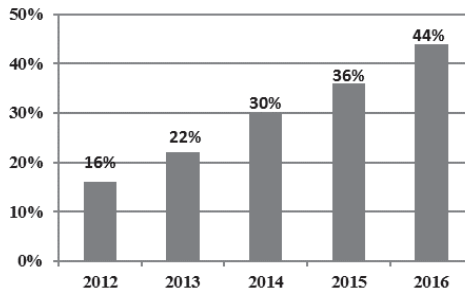


Figure 5: Accessing government agencies sites,% of population, Source: eGov Center. www.egov.md.

The degree of maturity of service models is still low. There are some interactive services as well as transactional services initiatives. We need to mention here the governmental electronic signature service - Msign, the national service for authentication and access to electronic public services - Mpass, Public e-Reporting Service - e-Reporting, MPay - electronic payment of public services. The service integration phase is to be carried out at further stages by implementing advanced interoperability models.

Local authorities, especially those in rural areas, face major difficulties in implementing e-Governance. For the most part, they lack the capacity to deploy independent, high-complexity and high-performance electronic services [1], [2], [8]. It is known, however, that citizens and business most often interact with local government [1], [2], [13]. Therefore, identifying solutions for e-Governance at local level is a matter of the greatest importance, and, in order for these administrations to be able to implement and operate efficiently e-Governance services, there must be ensured interoperability on multiple levels between services, data, processes in the central administration, and all local governments so that synergy results in efficiency.

3. The need for an appropriate reference model of e-Governance

E-Governance is today a vital condition for public administrations to be able to deliver efficient and cost-effective services in response to the growing demands of citizens and businesses on their promptness, complexity and quality. E-Governance has the role of bringing substantial added value to public services.

Efforts that have been made in field of computerization of public sector activities and ICT-based modernization have resulted in the informational solutions that have been implemented in the public sector largely based on old, bureaucratic, strongly segmented governance. This mode does not serve government because it does not improve communication between different government entities. It does not fully serve the needs of citizens and business, but rather, it can lead to a low level of absorption and use of the means of information technology, and inefficiency in the spending of public money [2].

The computerization of public services and internal public administration activities mainly referred to the technical aspects and did not generate essential changes in business processes and workflows, or structural changes in the activity of governmental institutions. The analysis of the e-Governance implementation activities [9] reveals weaknesses of the institutional framework that have influenced the achievement of the stated objectives, ambiguities and inconsistencies in the management's assurance. Also, mechanisms for monitoring and measuring the achievement of project objectives have not been implemented to the necessary extent.

To avoid this dispersion and to make efforts to develop e-Governance in Moldova more efficient, it is imperative to adopt a reference model of e-Governance, feasible and appropriate to local social and economic conditions and to ensure the sustainability of the process to full maturity.

A basic principle of the e-Governance reference model should be to ensure the interoperability of governance components throughout the public administration information space and, above all, semantic interoperability as a decisive factor in ensuring the consistency of public information. The reference model for the e-Governance system in Moldova must present a logical structure that defines the stages and levels of maturity in the evolution of the system as well as a methodology to measure and monitor the development process of the system.

4. Common data infrastructure

A major challenge of national policy on modernizing public services within the e-Governance system is access to information and data. Solutions in this sense will have to respond to the need to save time, money and other resources necessary for efficient use of data, and these solutions will need to ensure interoperability of data in order to provide services.

The volume and diversity of public data is steadily increasing. Heterogeneous data sets must be able to be accessed and used in highly complex integrated services. This requires identifying models and mechanisms to ensure the coherence and interoperability of data in a single information space in the public sector in strict accordance with European principles, recommendations and practices [3] eliminating redundancy, ensuring availability, openness, transparency in maximum safety.

E-Governance initiatives aim at an increased level of communication in a wide variety of situations in the areas of public administration. In order to ensure the integration of government services at government level (whole government approach), good coordination between users and information providers is required so that information and knowledge from different sectors of government can be used in a common context. Developing e-Governance policies requires an integrated and comprehensive approach that takes into account the specificities of each public domain of activity.

The availability, quality, organization, accessibility and sharing of government information needed to achieve the objectives set in e-Governance initiatives requires the adoption of measures on the sharing, access and use of interoperable government data and services. They should aim at setting up a government-wide information infrastructure to support policies and activities on public services. Such infrastructure will use information infrastructures within different public authorities with common rules, actions and measures at national level in a unitary context of the whole government.

The Common Data Infrastructure will allow for the creation of opportunities for the development of e-services across the entire public information area for all stakeholders.

5. Wide involvement of social stakeholders in building e-Governance

The real conditions of developing and implementing e-Governance solutions in Moldova present a multitude of impediments and risks. The government's ability to ensure process feasibility is significantly limited. The process can not continue indefinitely, being financed almost entirely by outside financiers. There is a need for social cohesion around a common cause of e-Governance of a large number of stakeholders in society.

The population of Moldova is very rural - about 57%, while a large part of the population lives in small towns. In total, they account for about $\frac{3}{4}$ of the entire population, in an environment that is not conducive to the development and absorption of high-performance e-Governance.

The issue of implementing eGovernance is a societal one, and solutions have to be identified through broad society participation. Experience and good practice in this respect show that the participation of the various social actors, first of all, of the private sector [10], [13], is crucial for ensuring the sustainability of the development and implementation of e-Governance services. In order to encourage and motivate local ICT businesses, but also to fill huge gaps in the capacity (Figure 3) to provide e-Governance solutions with the necessary resources, social eGovernance collaboration policies are required as many stakeholders as possible. Governance can and must share resources and services with society so that synergy of collaboration produces results expressed in quality services, close to the needs of the citizen, accessible to local business and in line with trends in the field.

The Information and Communication Technology sector is experiencing rapid development in recent years, constituting about 8% of the Gross Domestic Product of the Republic of Moldova,

according to the ministry's data (www.mtic.gov.md). IT service exports have increased 15 times over the last 5 years.

The benefits of multi-stakeholder participation in the e-Governance implementation process are evidenced by international practice [10], [11], [13], as well as by some successful local practice initiatives, such as the mPay electronic payment service (<https://mpay.gov.md/>), which was realized and is provided in collaboration with institutions from the banking system, the mobile signature service (<http://egov.md/ro/projects/semnatura-mobila>), which is a collaboration of governance with mobile providers, and so on.

The problem is to identify effective ways and solutions that will contribute to mobilizing the potential of the IT and related sectors in the efforts to develop and implement e-Governance services in the spirit of best practices in the European and international space [1], [2], [10], [11].

6. Conclusions and recommendations

e-Governance has had a significant development in the Republic of Moldova and has achieved notable performances recorded in national and international reports.

The development of the e-Governance system in Moldova is currently facing a number of challenges. They depend, on the one hand, on the modest economic and social potential of public administration, especially at local level, to bear the costs of development and, on the other hand, on the organization and functioning of the public administration which, at the current time is not ready for profound transformations being heavily segmented from a structural and functional point of view.

Activities aimed at implementing e-Governance services have not yet gone beyond the departmental framework and have not ensured the coherence and interoperability needed to develop integrated, complex, high performance services.

Intensifying and accelerating the implementation of e-Governance in Moldova depends on how they will be identified and new opportunities will be created.

The opportunities lie in a new vision and system approach of activities for the development of the e-Governance system at all levels of public administration.

In this respect, it is necessary to adopt a conceptual reference model of e-Governance in the Republic of Moldova that will serve as a conceptual benchmark and methodological guide for the e-Governance development actions on the whole spectrum of activities in the public sector throughout the development period system.

Particular attention should be paid to the problem of establishing a common data infrastructure in public administration that ensures information coherence and interoperability between all departmental data infrastructures and enables the development of integrated services at all administrative levels.

Governance is today unable to cope with all the tasks that stand before it on the development of e-Governance solutions, and in this sense it needs to work more closely with the business community and civil society to provide citizens with services high performance. Governance with social

partners can ensure the sustainability of e-Governance, and stakeholders in society can take up some of the burden of public services, thereby creating real development opportunities.

Governance can and must share resources and services with society so that synergy of collaboration produces results expressed in quality services, close to the needs of the citizen, accessible to local business and in line with trends in the field.

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