OPEN DATA READINESS ASSESSMENT IN EDUCATION
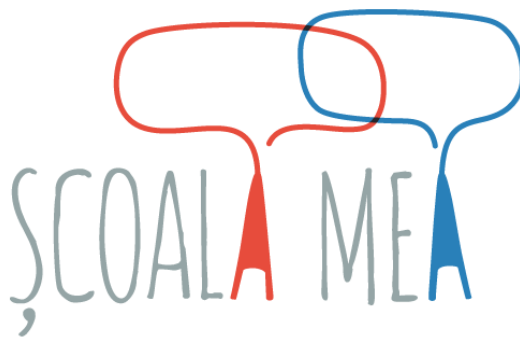
Social accountability for the education reform in Moldova.
Evaluation for 2017.

Author: Ion Gumene

Content:

List of tables

■ Introduction

Open data readiness assessment is carried out as part of *"Scoala Mea - Empowered citizens enhancing accountability of the education reform and quality of education in Moldova"* Project. The main goal of the project is to encourage Moldovan citizens to engage with local, regional and national authorities in evidence-based policy and budget dialogue regarding the reform of educational sector, the quality of educational services and the development priorities of primary, lower secondary and upper secondary schools, and to create an environment where the social accountability initiatives could develop. In this context, the data opening in educational system is both a condition and a factor in the development of the social audit of schools. Thus, taking into account the crucial importance of the data opening in the social audit of schools, the aim of this assessment is to present a complex picture of the availability of open data in education, which could be used first of all to foster development of social audit in schools.

This assessment was conducted on the basis of the methodology developed by the World Bank for the assessment of open data at the Government level[1]. Thus, the assessment was performed on eight dimensions: (i) Leadership, (ii) Policy and legal framework, (iii) Institutional framework, responsibilities and skills of the staff, (iv) Data of the Ministry of Education, Culture and Research, (v) Demand for Open Data, (vi) Open Data Ecosystem, (vii) Financing, (viii) National ICT infrastructure and skills.

Each analysed dimension is presented in three sections: (i) evidence, (ii) assessment, (iii) recommendations. The evidence of open data availability was identified based on the available information and the opinions of the Government officials and stakeholders. Each evidence has been marked with the symbol **(+)** if it is positive or **(-)** if it is negative for data opening. In their turn, evidences are grouped in sub-dimensions which describe the respective dimension. The assessment of each dimension is presented in one of three colours:

- Green (G) - denotes a condition that facilitates significantly the open data;
- Yellow (Y) - represents a situation in which evidences do not indicate crucial obstacles, but neither favour the opening of data (with some improvements it could facilitate it);
- Red (R) - evidences denote critical obstacles in the process of data opening.

Recommendations for each dimension are formulated in terms of removing obstacles and achieving a favourable situation as regards data opening.

At the end of the assessment, constraints related to the use of open data for social audits in schools are presented.

Until the moment, three assessments were performed, in 2014, in 2015 and in 2016. The fourth report, for 2017, includes: recorded progress during the year, assessment of how recommendations were implemented, as well as new recommendations.

---

[1] The World Bank's Open Government Data Working Group has developed an 'Open Data Readiness Assessment' (ODRA) methodological tool for conducting an action-oriented assessment of the readiness of a government - or even an individual agency - to evaluate, design and implement an open data initiative, http://opendatatoolkit.worldbank.org/docs/odra/odra_v3.1_methodology-en.pdf

■ Assessment of open data in education

By the Government Order No 4 of 29 April 2011[2] to ensure "transparency of the decision-making process and citizens' participation in the governance, as well as the access of citizens and businesses to government public data", the www.date.gov.md portal was launched. The e-Government Centre, subordinated to the State Chancellery, was appointed as responsible for portal maintenance, coordination of activities for its development and provision of the necessary methodological support to the public authorities. Subsequently, this initiative was included as a basic pillar in the Strategic Program for Technological Modernization of the Governance (e-Transformation)[3].

Furthermore, the Republic of Moldova has joined in April 2012 the global initiative for Open Government Partnership (OGP) in the second group of countries, following the development process of the Government e-Transformation Initiative related to "transparency, access to public sector information, accountability, citizen's involvement, fighting corruption and provision of high-quality public services"[4]. In the OGP context, the open data are regarded as a tool that ensures the right to information, contributing to transparency and accountability[5]. According to the Republic of Moldova agenda in the OGP, the Government approved the Open Government Action Plan for 2016-2018 by the Government Decision No 1432 of 29 December 2016.

At the same time, data opening in education depends not only on the general policies initiated by the Government on this subject, but also on those of the ministry responsible for educational policies, as well as on other factors that are not under direct control of authorities. Development of civil society, mass media, Information and Communication Technology (ICT) sector and IT skills is not less important in shaping the supply and demand of open data. Thus, the success of opening data in education is defined by all these factors, which can change their importance in opening data at the different stages of the of Open Government concept implementation.

In order to cover the whole range of factors that determine or influence the opening data in education, the assessment was carried out based on the methodology developed by the World Bank[6], which contains 8 dimensions: (i) Leadership, (ii) Policy and legal framework, (iii) Institutional framework, responsibilities and staff skills, (iv) Data of the ministry responsible for education policies, (v) Demand for Open Data, (vi) Open Data Ecosystem, (vii) Financing, (viii) National ICT Infrastructure and Skills. While assessing the impact of factors on these dimensions, it was taken into account their importance at the moment for the availability of open data in education. Thus, **three levels of importance** were set: *"very important"*, *"fairly important"* and *"important"*, which were taken into account when formulating recommendations and conclusions on the availability of open data.

---

[2] Government Order No 43 of April 29, 2011, http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=338417

[3] Strategic Program for Technological Modernization of Governance (e-Transformation), approved by Government Decision No 710 of 20 September 2011, http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=340301

[4] Information on the Republic of Moldova in the OGP, http://www.opengovpartnership.org/country/moldova

[5] „Open Government Partnership = Access to information as a right + Transparency and accountability as a public policy + Open data as an instrument.", European Public Sector Information Platform: Topic Report no 2013/10, The influence of the Open Government Partnership (OGP) on the Open Data discussions, Bogdan Manolea, Veronica Cretu.

[6] The World Bank's Open Government Data Working Group has developed an 'Open Data Readiness Assessment' (ODRA) methodological tool for conducting an action-oriented assessment of the readiness of a government - or even an individual agency - to evaluate, design and implement an open data initiative, http://opendatatoolkit.worldbank.org/docs/odra/odra_v3.1_methodology-en.pdf

It is worth to mention that the year 2017, in comparison with the previous years, is characterized by the change of the leadership of the ministry responsible for educational policies in May 2017 and later by the institutional reform following taking over the activity domains from the Ministry of Education, Ministry of Youth and Sports and the research part from the Academy of Sciences of Moldova by the Ministry of Culture, the name of new created institution being changed to the Ministry of Education, Culture and Research.[7] By the end of November 2017, the state secretaries for the new structure, including for the educational domain, will be selected to replace the position of deputy ministers. Under these circumstances, the progress in implementing the data opening policies is minor, registered before institutional reorganization, and some documents which organizes processes in this area are to be revised under the new structure.

---

[7] Parliament Decision No 189 of 21.07.2017 on the approval of the list of ministries,
http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=371706

1. LEADERSHIP

Importance: Very high

Context: Open Data Programs require the implementation of change - often including legal, institutional, technological and cultural changes - and may affect stakeholders both inside and outside government. Focused, strong, sustained, political/senior leadership is therefore critical to help a government overcome resistance and inertia of all kinds, to help incentivize actors to make the necessary changes in a timely and effective manner and to achieve the desired objectives and benefits of an Open Data Program.

Evidence 1.1 Is there a visible leadership at the level of MECC on data opening?

2017	(-)	No public statement (in the Government sessions or during public events) of the minister on the commitment to open data was identified, although this could be considered an important signal of support. This is largely due to the reorganization and change of the leadership of the ministry.
2016	(-)	
2015	(-)	
2014	(-)	

2017	(-)	Along with the institutional reorganization of the ministry, all orders of the Ministry of Education regarding the designation of the persons responsible for the data opening became obsolete as they refer to the position of deputy minister, which no longer exists, and to the previous structure of the ministry. At the same time, the updating of the respective orders will be possible only after the selection and confirmation of the state secretaries, which will take place during November 2017.
2016	(+)	
2015	(+)	
2014	(-)	

2017	(-)	There are no public documents and interventions identified for 2017 that the minister/ministry is supportive of open data concept in a proactive way.
2016	(-)	
2015	(+)	
2014	(+)	

2017	(-)	There are no provisions in the normative acts drafted and promoted by the ministry during 2017 that contain commitment to the principles of open governance.
2016	(-)	
2015	(+)	
2014	(+)	

2017	(+)	In the activity report of the Ministry of Education (MoE)[8] for the first semester of 2017 there are actions taken by the MoE to develop and implement mechanisms to ensure transparency and community participation in decision-making processes regarding the efficient development and management of educational institutions and the formation of competences for participation[9].
2016	(-)	
2015	(+)	
2014	(-)	

---

[8] Throughout the text of this report the abbreviation MoE (Ministry of Education) is used for the descriptions, actions and documents produced until the reorganization of the ministry in July 2017. In the rest, the abbreviation of the actual name of the ministry – MoECR (Ministry of Education, Culture and Research) – is used.

[9] http://edu.gov.md/sites/default/files/raport_pag_tr.ii_2017.pdf

---

Evidence 1.2 Is there any open data management (organizational) structure that would be responsible for development and implementation of open data/open governance initiatives in all institutions within the ministry?

2017	(-)	By the MoE Order No 96 of 12 September 2017 on data updating in the Mapping system of primary, secondary and high schools[10], e-Transformation and Computerization Division is appointed at the level of the ministry as responsible for data opening and updating process. But, along with the institutional reorganization of the ministry, all orders of the Ministry of Education regarding the designation of the persons responsible for the data opening became obsolete as they refer to the previous structure of the ministry. According to the new structure, there is ICT Unit, which, having three units of personnel, will be responsible for other domains apart from education.
2016	(+)	
2015	(+)	
2014	(-)	

2017	(+)	ICT Unit within the newly created ministry will be responsible for coordination of educational policies drafting, monitoring and evaluation as regards ICT implementation and didactic support, provision of methodological support and strengthening of the strategic planning capacity concerning ICT and educational records. It also coordinates the ICT implementation in subordinated institutions, rayon / municipal departments for education, youth and sports.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(+)	No interest groups or individuals who would be against the open data initiative are identified in the MoECR. Rather, due to problems related to the personnel turn-over and institutional memory, especially of that which is directly responsible for process coordination, technical and operational constraints appear in the management and development of open government initiatives within the ministry.
2016	(+)	
2015	(+)	
2014	(+)	

Evidence 1.3 Are there any promotional activities, implementation plans on open data?

2017	(+)	During July and August promotional campaigns on EMIS upgrade were organised. Action plan on EMIS updating were approved by the Order No 96 of 12 September 2017, following promotional campaigns on EMIS in July and August. At the same time, in the annual work plan of the MoE for 2017[11] there are action regarding open data and EMIS implementation.
2016	(+)	
2015	(+)	
2014	(-)	

2017	(+)	Within the Grant *Strengthening capacity – EMIS* Project, implemented with the World Bank support, the Open Data Portal in Education – www.sime.md – was upgraded and updated. Within the "Strengthening education policy and increasing its support among direct and indirect beneficiaries" and "Strengthening society effort to affirm an open, participatory, performance-based education" projects, implemented with the support of Soros Foundation Moldova, the Open Data in Education portal was developed. This portal grants access for public to the School files, which contain information about pupils' cohort, qualifications of teaching staff, execution of the budget, results of tests and national exams for about 1371 general education institutions. In 2016, in the framework of „Civil society monitoring of education reform", functionalities of the portal were extended to view the information in the form of infographs. At the same time, within "Scoala mea" project, implemented by Expert-Grup, a number of events were organized at the local and national level to discuss the
2016	(+)	
2015	(+)	
2014	(-)	

---

[10] http://www.ctice.md/ctice2013/wp-content/uploads/2017/09/Ordin-actualizarea-datelor-SIME.pdf
[11] http://edu.gov.md/sites/default/files/plan_activitate_me_2017_aprobat_1_1.docx

importance of community involvement in educational reform, the topic on data opening in education being also tackled.

2017	**(+)**	The ministry is supporting the initiative of opening data in schools, as part of "Empowered
2016	**(+)**	Citizens Enhancing Accountability of the Education Reform and Quality of Education in
2015	**(+)**	Moldova" Project. According to the Order of the Ministry of Education no 1201 of 28 November
2014	**(+)**	2014, educational institutions display on mandatory basis on informative boards and web-pages, if available, school files which contains data on students, qualification of teachers, annual budgets and results of tests on completion of primary education, of national exams on graduation of secondary education and baccalaureate exams.

Evidence 1.4 Is there a political context at the Government level that facilitates the opening of data at the MoECR?

2017	**(+)**	There is plenary support and firm commitment to implement the open data and open
2016	**(+)**	governance concept at the Prime Minister's level. The Government public data portal
2015	**(+)**	www.date.gov.md was launched by the Prime Minister's Provision No 43 of 29 April 2011.
2014	**(+)**	

2017	**(+)**	There is E-Government Centre at the central level, subordinated to the State Chancellery,
2016	**(+)**	which is directly responsible under the open data component for creating and maintaining the
2015	**(+)**	open data portal and providing necessary support to authorities in order to open their data.
2014	**(+)**	

2017	**(+)**	According to the Government Decision No 710 of 20 September 2011 regarding the approval
2016	**(+)**	of the Strategic Program for Technological Modernization of the Governance (e-Transformation), the Government approved the Action Plan on Open Government for 2016-
2015	**(+)**	2018 by the Government Decision No 1432 of 29 December 2016. At the same time, e-
2014	**(+)**	Government initiatives are included in the Action Plan of the Government for 2016-2018.

2017	**(-)**	Although there is firm support for open government at the level of the Government, according
2016	**(-)**	to the Action Plan on Open Government for 2016-2018, central public authorities are reluctant
2015	**(-)**	to open owned data. This is proved by the implementation manner of open government
2014	**(-)**	initiatives by the public authorities, which are not eager to make fully use, with a pro-active approach, of the opportunities created by the existing general framework related to open government.

2017	**(+)**	At the ministerial level, there is awareness of the relation between open governance as a
2016	**(+)**	driving force for other objectives, such as transparency and accountability, economic growth
2015	**(+)**	and improvement of public services quality.
2014	**(-)**	

2017	**(-)**	No parliamentary group that would rise awareness and really promote openness and
2016	**(-)**	transparency in governance was identified.
2015	**(-)**	
2014	**(-)**	

2017	(-)	In 2017 new members of the National Participation Council was approved for the mandate 2017-2019 but there is not a sectoral working group aimed at monitoring the reforms related to e-Governance, compared to previous mandate.
2016	(-)	
2015	(-)	
2014	(+)	

2017	(+)	There are capacities at the society level to perform an independent assessment of data opening.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(+)	National Bureau of Statistics has the capacities to support open data policy. In February 2015, NBS has published its open data catalogue on date.gov.md portal, and updated during 2017 all 9 data sets in education on the portal.
2016	(+)	
2015	(+)	
2014	(+)	

CONCLUSIONS

In 2017 limited progress was recorded in the *Leadership* dimension, most recommendations remaining unimplemented. Thus, orders to update data in the educational management informational system were approved, but after the reorganisation of the ministry, these became obsolete. It is worth mentioning that no declaration at the level of ministry was identified on firm commitment to open data. Moreover, no document, normative acts and public declarations were identified which would demonstrate attachment to open data and to open government.

ASSESSMENT of leadership

Table 1. Assessment of leadership

Evidence area	Importance	Assessment	
		R/Y/G	Comments
Leadership (MoECR)	Very high	Yellow	The spirit of openness for open data initiatives is supported by the ministry through the actions to organize and support the process, but neither pro-active attitude exists nor public declarations are issued in this regard
Management structure	High	Yellow	E-Transformation and Computerization Division was designated as responsible for the process management, being staffed, including with the head of Division
Open data promotion	High	Yellow	Actions to promote open data are planned, but not reported as implemented
Context	High	Green	The existence of the e-Government Centre and date.gov.md portal facilitates a lot data opening at the ministry
PER TOTAL	Very high	Yellow	

RECOMMENDATIONS on leadership

Table 2. Recommendations on leadership

Actions	In charge	Comments
1. Promotion of opening data in education concept in public statements	Minister, State Secretary	**Status:** *Stated in 2015. Not completed.*

2. Update documents of the MoECR on appointing responsible persons for opening data within the ministry	Minister	**Status:** *Stated in 2015. Not completed.*
3. Full involvement of the State Secretary of the MoECR (after his/her hiring) in coordination process	Minister	**Status:** *Stated in 2015. Not completed.*
4. Inclusion of actions regarding data promotion / opening in the planning documents of the MoECR for the next period (working plan, Strategic Development Program, sectoral expenditure strategy)	ICTU, PAMED	**Status:** *Stated in 2015. Partially completed.* Some activities were included in the activity plan of the ministry for 2017.

2. LEGAL AND POLICY FRAMEWORK

Importance: High

Context: The long-term success and sustainability of an Open Data Program depends greatly on the enabling policy and legal framework. Open Data requires that a range of policy and legal issues be addressed – for example, with respect to the licensing and reuse of data, ensuring privacy and data protection, and anonymizing personal and personally identifiable data. It is important to identify at an early stage the existing policies, laws and regulations with respect to a core set of issues, and to identify actual or perceived obstacles in order that policy or legal change can be initiated early if essential.

Evidence 2.1. **Are there any policies on open data, (re)use of public sector information?**

2017	(+)
2016	(+)
2015	(+)
2014	(+)

The policy framework at the Government level serves as a driving force for data opening in education - Law No 305 of 26 December 2012, on re-use of public sector information (the law is enforcing the Directive 2003/98/CE of the European Parliament and of the Council of 17 November 2013 on re-use of public sector information) and Government Decision No 886 of 8 November 2013 approving Methodological Norms to enforce this Law, Government Decision No 700 of 25 August 2014 approving the Conception on principles of governmental open data, Government Decision No 701 of 25 August 2014 approving the Methodology on publishing governmental open data.

2017	(+)
2016	(+)
2015	(+)
2014	(+)

The document can be re-used, according to the Government Decision No 886 of 8 November 2013, by: *reproduction, copying, publication and submittal under the relevant legislation; dissemination and redistribution; adaptation, modification, transformation and extraction of data from the document with the purpose to create derived documents; exploitation for commercial purpose*, provided that the source of the document is confirmed, including any statement of assignment specified by public authority or institution that posted the document on the single governmental open data portal and, if possible, to provide a "link" to these Terms.

2017	(+)
2016	(+)
2015	(+)
2014	(+)

Re-using of data is free of charge, according to the Law No 305 of 26 December 2012. However, certain fees may be established for re-use of data for commercial purposes, as well as for services of copying documents requested in writing.

2017	(-)
2016	(-)
2015	(-)
2014	(-)

The term "Commercial purpose" is not exhaustively defined in normative acts, situation which could lead to unjustified fees for access to information. It should be noted that methodological norms on re-use of public sector information includes only examples of data usage for

commercial purposes - by combining with other documents or by including the document in own product or application.

2017	(-)	By the Order of the MoE No 665 of 26 July 2017, which is not published on the web page of the ministry, the list of educational indicators and the revised version of the open data catalogue in education was approved. However, the version of the catalogue of March 2015 remains published on date.gov.md. At the same time, annual report on re-use of data still is not drafted and published on the web page of the ministry (according to points 21 and 22 of Methodological Norms to enforce the Law No 305 of 26 December 2012 on re-use of public sector information).
2016	(-)	
2015	(+)	
2014	(-)	

2017	(-)	The MoECR still does not have a pro-active policy on open data, but implements some activities in the limit of decisions taken by the Government.
2016	(-)	
2015	(-)	
2014	(-)	

2017	(+)	There is a favourable organizational and technical framework for the MoECR to develop and implement its own policies on open data.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(-)	Data controller bears responsibility for personal data protection (Articles 29 and 30 of Law No 133 of 8 July 2011 on personal data protection). Concurrently, according to the Terms of accessing and reusing public sector information, specified in the Annex No 1 of Methodological Norms for the implementation of the Law No 305, the re-user is accountable for any irregularities[12]. Thus, according to the current wording it can be interpreted that re-user will be responsible, including for a potential disclose of personal data, even if they are taken from a source which by definition is "open", therefore it should not contain personal data.
2016	(-)	
2015	(-)	
2014	(-)	

Evidence 2.2 What are the policies / laws on state secrets and access to information?

2017	(+)	There is a legal framework that can be characterized as favourable to the development of the open governance concept, including open data. The main acts underlying the legal and regulatory framework on the access to information and on the development of concept on open data are:
2016	(+)	
2015	(+)	
2014	(+)	

1.   Law No 171 of 6 July 1994 on Commercial Secret;
2.   Law No 982 of 11 May 2000 on Access to Information;
3.   Law No 1069 of 22 June 2000 on Computer Science;
4.   Law No 467 of 21 November 2003 on Computerization and State Information Resources;
5.   Law No 245 of 27 November 2008 on State Secret;
6.   Law No 133 of 8 July 2011 on Personal Data Protection;

---

[12] Excerpt from the Annex 1 of Methodological Norms for the implementation of Law No 305, approved by GD No 886 of 08 November 2013, "The holders shall guarantee that the document is available for free, according to the clauses envisaged by these Terms, but they do not guarantee that the document does not contain any error or irregularity, nor that they will provide documents on a continuous basis. The holders are not responsible for the loss, injury or damage of any kind caused by third parties, resulting from the re-use of documents. The re-user is the only responsible for documents re-use. He/she shall not mislead third parties or distort the content of the documents, their source and data on last update."

7. Law No 305 of 26 December 2012, on re-use of public sector information;
8. Law No 91 of 27 June 2014 on digital signature and electronic document;
9. Government Decision No 1123 of 14 December 2010 on approval of Requirements to security of personal data while processing them in informational system on personal data;
10. Government Decision No 710 of 20 December 2011 on approval of the Strategic Program for Technological Modernization of the Government (e-Transformation);
11. Government Decision No 857 of 31 October 2013 on the National Strategy for the Information Society Development "Digital Moldova 2020";
12. Government Decision No 886 of 8 November 2013 on approval of Methodological norms for the enforcement of Law No 305 of 26 December 2012 on re-use of public sector information;
13. Government Decision No 700 of 25 August 2014 on approval of the Conception on open government data principles;
14. Government Decision No 701 of 25 August 2014 on approval of the Methodology for publishing open government data.

2017	(+)	The Conception on open government data principles, approved by the Government Decision No 700 of 25 August 2014, provides basic guiding principles that should be followed by the public authorities on data publishing.
2016	(+)	
2015	(+)	
2014	(+)	

Evidence 2.3 **What policies / laws help or hinder the civil society and the public to use information?**

2017	(+)	The Parliament of the Republic of Moldova has aligned relevant legislation to the European Union law, by adopting the Law No 305 of 26 December 2012 on re-use of public sector information, and subsequently the approved Government Decision No 886 of 8 November 2013 on approval of the Methodological norms to enforce this Law.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(-)	Even if such cases were not identified at the MoECR, in other public institutions it is a common practice not to reveal data to the public invoking the lack of some mechanisms to "isolate" personal data (or commercially sensitive data) from the rest of the document (or information). Thus, under the pretext of protecting personal or commercial data, the access to the public interest information is often limited.[13]
2016	(-)	
2015	(-)	
2014	(-)	

2017	(+)	Methodological norms to enforce the Law No 305 of 26 December 2012 on re-use of public sector information, approved by Government Decision No 886 of 8 November 2013 force the central public administrative authorities to publish annually reports on documents re-use.
2016	(+)	
2015	(+)	
2014	(+)	

CONCLUSIONS

There was no progress on *Legal and policy framework* dimension. At the general level, the legal and policy framework is favourable for data opening, but at the level of the ministry there is no a coherent and pro-active policy on this subject. At the same time, a general problem is opening public interest data by isolating data which include personal information.

---

[13] https://anticoruptie.md/ro/stiri/datele-cu-caracter-personal-intre-protectia-demnitarilor-si-limitarea-accesului-la-informatie-expert-actuala-guvernare-are-interesul-ca-jurnalistii-sa-fie-hartuiti-prin-instante

ASSESSMENT of legal and policy framework

Table 3. Assessment of legal and policy framework

Evidence area	Importance	Assessment	
		R/Y/G	Comments
Policies on open data	Very high	Yellow	General legal framework is favourable, but the educational policy framework needs to be developed
Policies on access to information	High	Green	The general legal framework fosters data opening in education
Use of open data	Very high	Yellow	Data security policies are the bottleneck
PER TOTAL	High	Yellow	

RECOMMENDATIONS on legal and policy framework

Table 4. Recommendations on legal and policy framework

Actions	In charge	Comments
1. Develop a medium plan on data opening in education	State secretary, ICTU	**Status:** *Stated in 2014. Not completed.* Including subordinated institutions.
2. Develop and include vision, priorities and activities concerning data opening in education in the strategic planning documents of the MoECR	ICTU, PAMED	**Status:** *Stated in 2015. Not completed.*
3. Update the open data catalogue and corresponding data on date.gov.md portal	ICTU, PAMED	**Status:** *New action.*
4. Post on the MoECR web page the act by which the open data catalogue was approved	State Secretary, ICTU	**Status:** *Stated in 2015. In the process to be completed.*
5. Draft and post on the MoECR web page the annual report on re-use of documents	State Secretary, ICTU	**Status:** *Stated in 2015. Not completed.*

13

3. INSTITUTIONAL FRAMEWORK, RESPONSIBILITIES AND SKILLS

Importance: High

Context: As well as political and senior leadership, middle management level skills and leadership are important to success: creating an Open Data Program requires agencies to manage their data assets with a transparent, organized process for data gathering, security, quality control and release. To effectively carry out these responsibilities, agencies need to have (or develop) clear business processes for data management as well as staff with adequate ICT skills and technical understanding of data (e.g., formats, metadata, APIs, databases). Engagement among agencies and at all levels of government to set common standards and remove impediments to data interoperability and exchange is also vital, and requires mechanisms for inter-agency collaboration.

In addition to handling the "supply side" of creating an Open Data Program, agencies need the structures and capabilities to engage with communities that reuse Open Data including developers, companies, non-governmental organizations, other agencies and individual citizens.

Evidence 3.1 Is there an Agency that has the mandate, required technical skills and experience to manage the Open Data portal?		

2017	(+)	There is a single portal where open data are posted by all central public institution -
2016	(+)	date.gov.md – administrated by the e-Government Centre, which is a public institution
2015	(+)	founded by the State Chancellery. The institution has a significant political support of the
2014	(+)	Prime Minister and the Secretary General of the Government. As of August 2015, the executive director of the e-Government Centre has the status of Prime Minister adviser for electronic government issues.[14]

2017	(+)	The Centre was created in 2010 and thanks to effective knowledge management and strategic
2016	(+)	partnerships with countries and institutions with relevant expertise, the Centre have a strong
2015	(+)	position in leadership and Open Data management.
2014	(+)	

2017	(+)	E-Government Centre is responsible to implement Open Data in central administration
2016	(+)	authorities, offering full organizational, methodological and technical support.
2015	(+)	
2014	(+)	

2017	(+)	E-Government Centre has the role of main promoter of Open Data portal for beneficiaries and
2016	(+)	authorities.
2015	(+)	
2014	(+)	

---

[14] http://lex.justice.md/md/335746/, art. 41[1].

Evidence 3.2 Does the MoECR have a structure dedicated to data management in education?

2017 **(+)**	According to the new structure of the Ministry of Education, Culture and Research, there is ICT
2016 **(+)**	Unit which is responsible for coordination of the drafting, monitoring and evaluation of
2015 **(+)**	education policies related to ICT implementation and didactic support, provision of
2014 **(+)**	methodological support and strengthening of the strategic planning capacity on ICT and
	educational records. It also coordinates the ICT implementation in subordinated institutions,
	rayon / municipal departments for education, youth and sports.

2017 **(-)**	ICT Unit within the MoECR is formed by three units of personnel, which could be insufficient
2016 **(+)**	for the promotion of open data in education policies.
2015 **(-)**	
2014 **(-)**	

Evidence 3.3 Does the MoECR have informational systems (system) and/or other viable and effective mechanisms for data collection and management?

2017 **(+)**	Educational Management Information System (EMIS) is used for primary, lower secondary and
2016 **(+)**	upper secondary schools mapping. With the support of Soros Foundation Moldova, EMIS was
2015 **(+)**	developed to grant access for public to School files, which contain information about pupils'
2014 **(+)**	cohort, qualifications of teaching staff, execution of the budget, results of tests and national
	exams for about 1371 general education institutions. Having the purpose to strengthen the
	quality, openness and use of education statistics to better inform the ongoing education
	reforms, the World Bank is granting 365 thousand USD beginning 2016 to (i) strengthen
	statistical and analytical capacity of the MoECR, the Center for Information and
	Communication Technologies in Education, local authorities and schools in using EMIS, (ii)
	improve quality and reliability of data collected through EMIS and (iii) to open data in
	education sector. Thus, in August 2017, a new version of EMIS, according to the provisions of
	the Education Code, was launched, being at the moment populated with data. At the same
	time, the option to extend the system for other educational institutions, such as pre-school
	and vocational institutions, is being analyzed.

2017 **(+)**	There is Information and Communication Technologies Centre in Education subordinated to
2016 **(+)**	the MoECR, which is responsible for ICT management in education, including EMIS.
2015 **(+)**	
2014 **(+)**	

2017 **(-)**	At the moment, there is no integrated informational system or systems with a high level of
2016 **(-)**	integration. Also, currently the information produced in other ministries, e.g. Ministry of
2015 **(-)**	Finance, Ministry of Health of Ministry of Labour, Social Protection and Family. The MoE has
2014 **(-)**	developed a draft Government decision on approval the Conception of Automated Information
	System in Education according to the new Education Code, which was launched for public
	consultations in October 2015, but the process did not advanced.

2017 **(+)**	The existence of a large number of IT-skilled people allows relatively easy to organize data
2016 **(+)**	collection and production in the educational system.

2015	**(+)**
2014	**(+)**

Evidence 3.4 Is there any process to assess the quality of the provided services?

2017	**(+)**	There are processes at the national level to evaluate the quality of service provided in relation
2016	**(+)**	to open data at the national level. Evaluations are performed by experts or independent
2015	**(+)**	organizations. This topic is also addressed through Independent Reporting Mechanism under
2014	**(+)**	the Open Government Partnership. At the same time, some evaluations by the e-Government Centre, as a component of the e-Governance progress.

2017	**(+)**	Beginning with 2017, the MoECR uses an online survey, published on EMIS page, to assess the
2016	**(-)**	quality of the reports generated by the system, as well the level of user' satisfaction.[15]
2015	**(-)**
2014	**(-)**

Evidence 3.5 Is it clear who is responsible for what data in the MoECR and in the educational system?

2017	**(+)**	By the Government Decision No 899 of 27 October 2014 on approval of the Regulation
2016	**(+)**	regarding mapping system of primary, secondary and high schools, the subject of legal
2015	**(+)**	relations this system creation and functioning were defined.
2014	**(+)**

CONCLUSIONS

There are some achievements on *Institutional framework, responsibilities and skills* dimension, especially as regards the development of EMIS, open data in education and enhance institutional capacity with the World Bank support. However, a major weakness lasts in regard to the evaluation of the quality of provided services, related to open data.

ASSESSMENT of institutional framework, responsibilities and skills

Table 5. Assessment of institutional framework, responsibilities and skills

Evidence area	Importance	Assessment	
		R/Y/G	**Comments**
Existence/role of government Agency responsible for data opening	High	Green	E-Government Centre provides open data infrastructure and methodologically coordinates the opening data process
Unit responsible for data in the MoECR	Medium	Yellow	There is a unit designated to coordinate data opening process, staffed with personnel
Informational infrastructure	Very high	Yellow	There is no an integrated informational system in education, although there are technical possibilities to extend EMIS for the entire sector
Assessment of services quality	Medium	Yellow	MoECR does not perform such an assessment
Distribution of duties	Medium	Green	There are government decisions and orders of the MoE which describe legal relations and those responsible for the process

---

[15] https://docs.google.com/forms/d/e/1FAIpQLSeTWqgshKcnZg24BelprMNRWZ3nYSd47Zl-o51MuSnlU2veDw/viewform

PER TOTAL	High	Green	

RECOMMENDATIONS on institutional framework, responsibilities and skills

Table 6. Recommendations on institutional framework, responsibilities and skills

Actions	In charge	Comments
1. Extend the information system to the entire educational system	State Secretary, ICTU	**Status:** *New action.*
2. Setup internal evaluation (within the MoECR) of the quality of services related to data opening	Deputy minister, internal audit, ICTU	**Status:** *Stated in 2014. Not completed.*

4. DATA OF THE MINISTRY RESPONSIBLE FOR EDUCATIONAL POLICIES

Importance: High

Context: Open Data programs can build on established digital data sources and information management procedures within government where they already exist. Where data is only available in paper form it will be hard to release as Open Data and in reusable format quickly and cheaply. Conversely, good existing information management practices within government can make it much easier to find data and associated metadata and documentation, identify business ownership, assess what needs to be done to release it as Open Data and put processes in place that make the release of data a sustainable, business-as-usual, downstream process as part of day-to-day information management.

Evidence 4.1 What are the policies on the management of education information?

Year		
2017	(-)	At the level of educational system there is not any comprehensive policy on collection, storage and use of data. At the same time, the Education Management Informational System (EMIS), which is intended to automate the processes of collecting, updating and storing data on general education in the Republic of Moldova, could be extended for the entire educational system, in this respect a project being initiated and financial sources being planned beginning 2016.
2016	(-)	
2015	(-)	
2014	(-)	

Year		
2017	(-)	Open data in educational system are posted on www.date.gov.md and on www.sime.md by the MoE and the NBS, but the information on public expenditures in educational system is managed by the Ministry of Finance (in BOOST). Thus, there is no holistic view of the data, moreover there is no clarity on their interaction in order to exclude discrepancies and overlaps.
2016	(-)	
2015	(-)	
2014	(-)	

Year		
2017	(+)	To protect personal data, there is in place general legal and institutional framework necessary to ensure protection of personal data.
2016	(+)	
2015	(+)	
2014	(+)	

Year		
2017	(+)	By Order of the MoE No 1056 of 10 October 2014, the Regulation on ensuring security of personal data processed by the Ministry of Education while using the Mapping system of primary, lower secondary and upper secondary schools, in order to implement de provisions of the Law No 133 of 8 July 2001 on personal data protection was approved. At the same time, the National Centre for Personal Data Protection has registered the operator of personal data and/or or personal data recording system, by Decision No DD-1415710498630 of 11 November 2014, and personal data processing activities were authorised by Decision No DA-1415710116318 of 11 November 2014.
2016	(+)	
2015	(+)	
2014	(-)	

Year		
2017	(+)	Procedures to control, standardize and archive EMIS data are part of the system. At the same time, NBS data are delivered according to data production procedures established at the level of the NBS.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(-)
2016	(-)
2015	(-)
2014	(-)

For the rest of data (except EMIS and NBS provided data), no processes to ensure data quality and their archiving were identified. There are visible incomplete data in some data sets that reveals problems in ensuring the authenticity of the published data.

Evidence 4.2 Does the MoECR have a coherent image of the data and information that it owns, collects and distributes in education?

2017	(+)
2016	(+)
2015	(+)
2014	(-)

In April 2015, Open Data Catalogue of the Ministry of Education was published on date.gov.md portal, which specifies necessary elements for their management (responsible person, owner, updating frequency, sharing method, etc.).

2017	(+)
2016	(+)
2015	(+)
2014	(+)

There are systems which ensure data management (included in these systems) in order to meet own and beneficiaries' needs, but a regulation that would state their interaction when providing open data is needed.

2017	(+)
2016	(+)
2015	(+)
2014	(+)

The fact that EMIS is in place, which now covers general educational sector, is a big opportunity because it can be extended on all areas of education, completed with an application on management of educational institutions (central office and subordinated institutions) and it could become the only integrated system for the sector.

Evidence 4.3 Data storage and level of digitization

2017	(-)
2016	(-)
2015	(-)
2014	(-)

There is no assessment of the amount of digital data. Concurrently, considering the existence of EMIS for the general education sector, without comprising other data that are related to preschool, extracurricular, specialized, higher education, etc. it can be assumed that the amount of digital data is about 40% -50%.

2017	(-)
2016	(-)
2015	(-)
2014	(-)

The information before 2012 is even less digitized, because EMIS data are introduced beginning 2012.

2017	(+)
2016	(+)
2015	(+)
2014	(+)

Due to EMIS, data storage from this system is performed automatically on a separate storage device in a secured room at the Information and Communication Technologies Centre in Education (ICTCE).

2017	(+)
2016	(+)
2015	(+)
2014	(+)

ICTCE is subordinate to the MoECR.

Evidence 4.4 What data are already open?

2017	**(+)**	According to the information on the date.gov.md portal, so far (31 October 2017) 59 sets of
2016	**(+)**	data have been opened by the MoE and 9 by the NBS in the education sector. At the same time,
2015	**(+)**	there is mapping system of primary, lower secondary and upper secondary schools at the level
2014	**(+)**	of the ministry. Also, the Ministry of Finance has a database BOOST, where disaggregated data are open regarding expenses in the public sector, including in education.

2017	**(+)**	The information presented by MoE, in the .csv or .xlsx format, can be previewed and is
2016	**(+)**	available as well through API[16]. The information can be downloaded free of charge. The
2015	**(+)**	information presented by NBS can be downloaded in various formats and can be formatted on
2014	**(+)**	user queries.

2017	**(-)**	Most of the information presented by the MoE is not updated according to data description,
2016	**(-)**	thus the overwhelming part of the information refers only to the 2009-2010 academic year.
2015	**(-)**	Some data are presented since 2008-2009, the rest of data - since 2009-2010.
2014	**(-)**	

2017	**(-)**	Some data sets presented by MoE on Open Data platform - date.gov.md - are not fully
2016	**(-)**	completed. This creates an overall negative impression on data accuracy, although in 2017
2015	**(-)**	along with upgrading EMIS platform the ministry introduced the digital signatures for the data
2014	**(-)**	entry in the platform.

2017	**(-)**	The MoE data have no metadata description which would be easy to access, especially for the
2016	**(-)**	Open Data portal – date.gov.md. Thus, it is difficult to understand what some indicators
2015	**(-)**	represent, which are data sources, collection methodology etc. This limits a lot the proper use
2014	**(-)**	of data, makes it difficult to use data from multiple sources and their combination.

2017	**(+)**	The NBS data are described, presenting methodology and explanatory information, they can
2016	**(+)**	be accessed on user queries, and most of them are updated in accordance with the description
2015	**(+)**	of the data.
2014	**(+)**	

Evidence 4.5 Are there any capacities at the ministerial level or outside it with sufficient skills in "data management" that could serve as leadership for new initiatives on open data?

2017	**(+)**	At the MoECR and at the national level, there are capacities (NBS, ICTU, ICTCE, IT teaching
2016	**(+)**	staff, e-Government Centre) that could allow data collection, transmission of informational
2015	**(+)**	flows, information analysis and publishing. At the same time, to achieve qualitatively this goal,
2014	**(+)**	punctual and periodical trainings are needed.

2017	**(-)**	Data collection by persons who do not have direct responsibilities stated in job descriptions
2016	**(-)**	concerning data collection (or management), do not have a financial support and diminishes
2015	**(-)**	data quality. At the moment, data are introduced by IT teaching staff, even if they do not have

---

[16] API (Application Programming Interface) is an interface between software and facilitates their interaction, IT Dictionary, http://www.it-area.ro/dictionar/API

| 2014 | (-) | such responsibilities. Each educational institution and rayon department for education should designate responsible persons for statistical data collection and systematization. |

CONCLUSIONS

On *Data in education* dimension, there is no progress registered. However, there are numerous shortcomings regarding the vision, policy, assessment of data volume, description, publishing and updating of data in education.

ASSESSMENT of data opened by the ministry responsible for educational policies

Table 7. Assessment of data opened by the ministry responsible for educational policies

Evidence area	Importance	Assessment	
		R/Y/G	Comments
Policies on data management	Very high	Red	It is necessary to formulate a holistic vision on data collection, stocking and use at the level of educational system, ensuring the quality of data
Clarity on data ownership	Medium	Green	There is an Open Data Catalogue of the Ministry of Education, which contains necessary elements for data management
Data digitization	Very high	Yellow	Small amount of digitized data
Data already opened	High	Yellow	A large part of information is not updated, without description cannot be used with other sources
Capacity, skills	High	Yellow	There is potential, but the clarity on training and remuneration of some persons is lacking
PER TOTAL	High	Yellow	

RECOMMENDATIONS on data opened by the ministry responsible for educational policies

Table 8. Recommendations on data opened by the ministry responsible for educational policies

Actions	In charge	Comments
1. Draft a comprehensive policy on collection, storage, quality assurance and use of data in education, which will include the responsibility and interaction among institutions which hold such data, first of all NBS an MoECR	State Secretary, ICTU	**Status:** *Stated in 2014. Not completed.* The user should receive a coherent information on the sector, no matter what institution submit data
2. Take an inventory of the data held in the educational system	State Secretary, ICTU	**Status:** *Stated in 2014. Not completed.*
3. Data updating according to their description	ICTU	**Status:** *Stated in 2015. Not completed.*
4. Extend categories of collected data and increasing their protection level, especially in the case of pupils with disabilities and of data regarding social and economic status of parents	State Secretary, ICTU	**Status:** *Stated in 2015. Not completed* Changing the Order of the MoE No 1056 of 10 October 2014
5. Publish annual (or biannual) reports on open data, at least in the form provided by the Annex 7 of GD No 886 of 08 November 2013	ICTU	**Status:** *Stated in 2014. Not completed.* It is a legal obligation
6. Inclusion of modules on open data in education in the teacher training programs	ICTU	**Status:** *Stated in 2015. Not completed.*

5. DEMAND FOR OPEN DATA

Importance: Very High

Context: The value of data is in its use. A strong demand-side "pull" of data is important not only in creating and maintaining pressure on government to release data but also in ensuring that the wider Open Data Ecosystem develops and that Open Data is turned into economically or socially valuable services for citizens. The "pull" can come from civil society, the private sector, international organizations, donors and individual citizens, and from the government itself.

Evidence 5.1 What is the level and nature of demand for data in the civil society and media?

2017	(+)	There are (although few) Non-Government Organizations that monitor and analyse educational sector. At the same time, the existing demand level is reduced. This is primarily due to the fact that social audit on education is at an early stage.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(+)	Education is a popular topic that enjoys the press attention, but the level of analysis and depth is moderate to low. The most common topics are: Baccalaureate, reorganization of schools, teachers' salaries, and topics related to financing of education, expenses related to school.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(-)	Currently, the information presented on the open data portal does not contain comprehensive and easily understandable data so that journalists and/or citizens could draw conclusions, monitor, react or participate in the decision-making in education.
2016	(-)	
2015	(-)	
2014	(-)	

2017	(+)	Along with the implementation of "My School - Social Accountability for the Education Reform in Moldova" project (Expert-Grup) and making publicly available "school file" for 1371 general education institutions within the "Strengthening education policy and increasing its support among direct and indirect beneficiaries", „Strengthening society effort to affirm an open, participatory, performance-based education" and „Civil society monitoring of reforms in education sector" projects (Soros Foundation Moldova), a stable demand for social audit in education could be created.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(+)	By "My School" and "BudgetStories.md" projects - Expert-Grup uses actively and visibly open data in education.
2016	(+)	
2015	(+)	
2014	(+)	

Evidence 5.2 What is the level and nature of demand for data in business/private sector?

2017	(-)	No structured demand from the private sector concerning education data was identified. Business sector does not understand its own benefits of open data in education. At the same time, there were some requests from the NGOs that were/are interested in developing various applications (including websites) dedicated to data (information) in education.
2016	(-)	
2015	(-)	
2014	(-)	

2017	(-)	There are insufficient examples of data used for commercial purposes, neither in other sectors.
2016	(-)	
2015	(-)	
2014	(-)	

2017	(+)	At the same time, there is a relatively developed IT sector, which under favourable conditions would be able to develop products based on open data in education.
2016	(+)	
2015	(+)	
2014	(+)	

Evidence 5.3 What is the level of presence and involvement of MoECR in social media and other digital channels?

2017	(+)	Facebook, Odnoklassniki and Twitter are the main social media platforms used in Moldova. The Ministry of Education, Culture and Research has a Facebook profile, being created on the basis of the Ministry of Culture page which was before the reorganisation. The page of the Ministry of Education which was used before reorganisation is not administrated anymore. Thus, the profile of the new ministry has 6.222 followers, compared to 20.067 followers of the previous page.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(-)	No policy of the MoECR on its presence on 'social media' or on other digital platforms was identified. At the same time, "Guidelines on the use of social networks in the public sector", which was developed at the level of the Government, could be used to draft policy at the ministry level.
2016	(-)	
2015	(-)	
2014	(-)	

2017	(+)	The level of citizens' participation on digital platforms, especially of young persons, is increasing, digital platforms and digital access being the most dynamic as a form of citizen involvement.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(-)	No analysis of the MoE was identified on topics that are most interesting to the public and on who are the data beneficiaries, even if the e-Transformation Division has expressed its intention to develop a module on this subject for the official web page of the ministry.
2016	(-)	
2015	(-)	
2014	(-)	

Evidence 5.4 What is the level of demand for data among MoECR and other Government institutions and among institutions in the education sector?

2017	(+)	There is at least one potential demand for open data from other ministries, central administrative authorities and LPA. At the same time, the exchange of information among institutions mostly occurs on official request, without using open data.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(-)	No policy on analysis of request of data coming from other institutions was identified. As a rule, requests for permanent data are sent to the National Bureau of Statistics.
2016	(-)	

2015	(-)
2014	(-)

2017	(-)	Provision of information within the educational sector and in relation to other public
2016	(-)	institutions does not have an integrated character. For example, financial data are insufficient
2015	(-)	to analyse the situation of a school and, to fill in the gaps, it is necessary to address the
2014	(-)	Ministry of Finance.

Evidence 5.5 How responsive is the MoECR to requests for data?

2017	(+)	The most common opinion is that the MoECR is open to requests for information, especially
2016	(+)	when requests are approved by the management of the institution.
2015	(+)	
2014	(+)	

2017	(-)	No analyses or processes related to the demand and supply of the data in the education sector
2016	(-)	exist, therefore there is no mechanism to meet effectively and efficiently requirements.
2015	(-)	
2014	(-)	

CONCLUSIONS

On *Demand for open data* dimensions, no progress was recorded. Open data in education are used mostly by non-government institutions to monitor and to analyse educational sector, but there are no evidences about their use in the private sector. At the same time, there is no analysis of demand and use of data by public authorities in the public policy cycle.

ASSESSMENT of demand for open data

Table 9. Assessment of demand for open data

Evidence area	Importance	Assessment	
		R/Y/G	**Comments**
Demand from the civil society and media	Very high	Yellow	There is a nascent demand, related especially to the social audit
Demand form the business sector	High	Red	The are no evidences, but it is not an obstacle to open data
Involvement of the MoECR in 'social media' and other digital channels	High	Yellow	Has a positive dynamic
Inter-sector demand and among the MoECR and other Government sectors	Medium	Red	Informational relations among sectors and the MoECR, and among educational institutions do not traditionally occur through open data
MoECR responsiveness to request for data	Very high	Yellow	'Responsiveness' of the MoECR should be based on policies and instruments, rather than on will of the administration
PER TOTAL	High	Yellow	

RECOMMENDATION on demand for open data

Table 10. Recommendations on demand for open data

Actions	In charge	Comments	
1. Perform analysis of demand for open data from civil society, media and citizens, private sector	ICTU	**Status:** *Stated in 2014. Not completed.* Necessary to cover demand for open data and MoECR objectives	
2. Develop tools for monitoring, evaluation and identification of the demand for open data from civil society, media and citizens, private sector	ICTU	**Status:** *Stated in 2014. Not completed.* At the moment some steps have been taken in this direction, but they do not have a systemic approach, due to which cannot achieve necessary effects	
3. Analysis and explanation of data for which there is high interest from citizens, media and civil society, as well as presentation of information in a comprehensive form using this basis	Subdivisions of the MoECR, ICTU	**Status:** *Stated in 2015. Not completed.*	
4. Develop a concept on the presence in 'social media' and other digital channels	Communication and Public Relations Division, ICTU	**Status:** *Stated in 2014. Not completed.* It is a fast-evolving domain. This would enhance the efficiency and effectiveness of MoECR communication	
5. Develop an identification and record keeping mechanism of demand for open data from authorities, including those from education	ICTU	**Status:** *Stated in 2014. Not completed.* It is an action to present complex information, when data from many public institutions are needed to have a clear image about the activity of an educational institution	

6. OPEN DATA ECOSYSTEM

Importance: High

Context: Experience among leading governments has demonstrated that Open Data initiatives are more sustainable and high-impact when Open Data efforts use an "ecosystem" approach – meaning governments invest not only in supplying data but also address the policy/legal framework, institutional readiness, capacity building (for government and infomediaries), citizen engagement, innovation financing and technology infrastructure. Governments need to play a multi-dimensional role in an Open Data ecosystem and create new types of partnerships with a wide range of stakeholders.

Evidence 6.1 **Are there any media institutions or journalists that have necessary skills to use open data in order to formulate useful information, easily understood by the wide public?**

2017	(+)	There are some journalists and media institutions, it is true that not so many, which are concerned with the public sector. Education, as a sector, is interesting for the press, but interventions are mainly based on the politicians' statements on reforms, wage level and education quality, rather than on open data analyses.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(+)	Private media is dominant on the market. There are functional and active media associations.
2016	(+)	
2015	(+)	
2014	(+)	

2017	(-)	Concurrently, according to Freedom House, Freedom of the Press Report of 2017[17], Moldovan press is "partly free".
2016	(-)	
2015	(-)	
2014	(-)	

2017	(+)	The electronic media is ascending and along with it the number of information sources is increasing as well, including the publications of nongovernmental sector.
2016	(+)	
2015	(+)	
2014	(+)	

Evidence 6.2 **Is the MoECR involved in promoting data re-use activities?**

2017	(-)	No activities of the MoECR that would involve software developers in the use and re-use of open data in education were identified.
2016	(-)	
2015	(-)	
2014	(-)	

2017	(+)	At the same time, promotional activities were organized by the E-Government Centre regarding all data held by the Government.
2016	(+)	
2015	(+)	

---

[17] https://freedomhouse.org/report/freedom-press/2017/moldova

2014	**(+)**	

2017	**(-)**	No records exist on (re)use of MoECR open data by other Government agencies.
2016	**(-)**	
2015	**(-)**	
2014	**(-)**	

Evidence 6.3 Is there a software development industry?

2017	**(+)**	There is a relatively well-developed ICT sector in the Republic of Moldova.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(-)**	Generally, the use of software based on open data is low, being even lower in education.
2016	**(-)**	
2015	**(-)**	
2014	**(-)**	

Evidence 6.4 Is there a community of educational and/or research institutions that has persons trained in data analysis and provide trainings in this area?

2017	**(+)**	There is a basis of high education that can be used to improve technical skill needed to analyse data.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(+)**	Computer science courses are included in the high school curricula.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(-)**	At the same time, there are few people from the public and non-government sector that are sufficiently trained to analyse educational data.
2016	**(-)**	
2015	**(-)**	
2014	**(-)**	

2017	**(+)**	The MoECR can count on computer science teachers regarding its policies and activities in this area.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

CONCLUSIONS

On *Open Data Ecosystem* dimension, the progress almost is lacking. Although there are media institutions which have a certain interest towards education sector, their interventions are limited to the declarations of political decision makers. Analysis of open data in education and formulation of conclusions regarding the impact of

educational policies has a sporadic character, due to the fact that there are no activities to accelerate open data reuse and the capacities to analyse data are almost lacking.

ASSESSMENT of open data ecosystem

Table 11. Assessment of open data ecosystem

Evidence area	Importance	Assessment	
		R/Y/G	Comments
Media institutions	High	Yellow	Media sector is not well developed in terms of open data use, but it is developing, new segments have appeared, especially using the Internet
Promotion of the MoECR data reuse	High	Red	MoECR does not have a pro-active attitude on (re)use of open data
Software industry	Medium	Green	It is not very innovative, but the existing skills cover the existing demand
Academic / research community	Medium	Green	Even if the situation in this respect is not very hopeful in general, the existing conditions are good enough to facilitate data opening
PER TOTAL	Medium	Yellow	

RECOMMENDATIONS on open data ecosystem

Table 12. Recommendations on open data ecosystem

Actions	In charge	Comments
1. Develop measures to facilitate development of some communities of journalists, IT professionals, analysts for open data development	ICTU, Communication and Public Relations Division	**Status:** *Stated in 2014. Not completed.* It could be done with the support of the existing professional associations, initiative groups. Strengthening IT professionals and analysis of education data (e.g. creation of a forum for computer teachers)
2. Develop measures for a better adaptation of the IT and other related domain curricula to the existing demand and competition conditions	ICTU	**Status:** *Stated in 2014. Not completed.* This recommendation is mentioned as well in the White Book of ICT and other documents

7. FUNDING OF OPEN DATA INITIATIVES

Importance: Medium High

Context: Funding with respect to both the "supply side" and "demand side" of Open Data is important to ensure that the objectives of an Open Data Program are met.

Evidence 7.1 Existence of resources for the early stage of open data initiative

Year		
2017	(+)	At the central level, funding is provided to implement open data initiative as part of e-Government initiative to maintain open data portal operational.
2016	(+)	
2015	(+)	
2014	(+)	

Year		
2017	(+)	At the level of the MoECR, beginning 2016, the World Bank Project *Strengthening capacity –*
2016	(-)	*EMIS,* which is focused on the strengthening the quality, openness and use of education
2015	(-)	statistics to better inform the ongoing education reforms in Moldova, is supporting the
2014	(-)	initiatives to open data in education by upgrading EMIS portal.

Evidence 7.2 Existence of financial resources to finance the development of various software that will use open data.

Year		
2017	(-)	No such resources were identified at the MoECR or sectoral level, but even no request was
2016	(-)	made in this respect.
2015	(-)	
2014	(-)	

Year		
2017	(+)	There were and still are many donors' initiatives (including the World Bank) regarding the
2016	(+)	development of different software for open data use.
2015	(+)	
2014	(+)	

Evidence 7.3 Are there sufficient financial resources to develop the IT infrastructure and expenses for the management of initiatives on open data in education?

Year		
2017	(+)	At the level of the MoECR, beginning 2016, the World Bank Project *Strengthening capacity –*
2016	(-)	*EMIS,* is supporting financially the ministry to upgrade the EMIS platform and to train users of
2015	(-)	the platform.
2014	(-)	

Year		
2017	(+)	The MoECR budgets resources to ensure implementation of existing ICT platforms, including
2016	(+)	the open data initiative. However, due to the lack of a clear policy on open data developed at
2015	(+)	the level of the ministry, there is no clarity on whether these resources are sufficient to ensure
2014	(+)	enough well-trained staff to meet the requirements.

2017	(+)	The World Bank provided financial assistance to the MoECR to develop the Education
2016	(+)	Information System. Already developed or still under development information systems were
2015	(+)	developed mainly with the support of external partners.
2014	(+)	

Evidence 7.4 Does the Government or the MoECR have funds for innovation?

2017	(+)	There are several opportunities to finance innovation software. These facilities can be
2016	(+)	accessed through programs that support SMEs and innovations at the Academy of Sciences.
2015	(+)	
2014	(+)	

2017	(+)	There are sufficient opportunities to access resources for a more active involvement of NGOs
2016	(+)	in development of data use software, promotion of transparency and accountability.
2015	(+)	
2014	(+)	

2017	(-)	No government funds have been identified to implement innovative projects in education.
2016	(-)	
2015	(-)	
2014	(-)	

2017	(+)	Public-private partnerships in ICT is a relatively known and discussed topic in the IT sector. At
2016	(+)	the Government and at the Ministry of Information Technology and Communications level
2015	(+)	(Ministry of Economy and Infrastructure after de reorganisation of the Government), several
2014	(+)	events (workshops) have been organized, including with external support.

CONCLUSIONS

On *Funding of open data initiatives* dimension, the recorded some progress. There is funding at the central level, mostly from foreign sources, to promote e-Government initiatives. At the sector level, informational systems were developed with the support of the World Bank, but the funding as well as demand for funding to develop software which would use open data is lacking.

ASSESSMENT of funding of open data initiatives

Table 13. Assessment of funding of open data initiatives

Evidence area	Importance	Assessment	
		R/Y/G	Comments
Funding of open data initiatives	Very high	Green	There is funding to maintain open data portal operational (e-Gov) and resources were identified and accessed (WB) to implement initiatives in the sector
Funding of education software	High	Yellow	No resources have been identified, but there is a potential donors' support
Funding of IT infrastructure in education	High	Yellow	Important projects are funded with external assistance

Funding of innovations	Medium	Yellow	There are several funding opportunities at the Government level, but this is not sufficient and is difficult to access
PER TOTAL	High	Yellow	

RECOMMENDATIONS on funding of open data initiatives

Table 14. Recommendations on funding of open data initiatives

Actions	In charge	Comments
1. Assess the cost of activities related to open data, ICT infrastructure, software promotion and draft a financial plan to cover this cost	ITCU	**Status:** Stated in *2014. Not completed.* Most of the expenses for IT infrastructure and other expenses of the educational system will be included in the budgetary subprogram "Policies and Management in Education", and the part of the current expenses - to the respective subprograms of the educational sectors
2. Create partnerships and develop necessary public conditions for the civil society to establish these partnerships with the MoECR or with subordinated institutions	ITCU, Communication and Public Relations Division	**Status:** Stated in *2014. Not completed.* This would facilitate fundraising for NGOs which use open data in education

8. NATIONAL INFRASTRUCTURE OF TECHNOLOGIES AND SKILLS

Importance: High

Context: In very practical ways, Open Data Programs normally rely for their success at least in part on the national technology infrastructure, in terms of technology and communications services and the ICT skills among officials, infomediaries and the general public.

Evidence 8.1 Existence of physical access and accessible price to Internet infrastructure		

Year		
2017	(+)	There is a well-developed infrastructure of access to Internet, which covers the majority of the population, provided by cable and/or mobile networks. Internet upload and download speed is one of the highest in the world[18], ranking Moldova the 20th on the list. Moldova has an ICT Development Index of 5.75 and is part of upper medium group and a sub-index on access to infrastructure of 6.64[19]. Networks of optical fibre cover 90% of the country's localities, mobile networks cover 99%[20]. In the first trimester of 2017, the penetration rate of mobile telephony was 126,1 %, increasing by 1,08 % compared to trimester IV of 2016.[21]
2016	(+)	
2015	(+)	
2014	(+)	

Year		
2017	(+)	The number of users is quite high and has a dynamic of high growth, but mainly in Chisinau. According to the National Regulatory Agency for Electronic Communications and Information Technology, about 80% of households in Chisinau had Internet access at the end of 2016, while this indicator varies from 25 to 50% in majority territorial-administrative units. The number of subscribers to fixed Internet increased by 4.3% compared to 2015, while the number of mobile Internet users increased by 9.0%[22]. Broadband Internet connection services are affordable, Moldova being ranked 38th according to The Global Information Technology Report 2016[23].
2016	(+)	
2015	(+)	
2014	(+)	

Year		
2017	(+)	There is free Internet access in some landscaped parks and squares, university campuses and other public places (cafes, airport, bus stations (for subscribers of one operator), public transportation). In general, there is a trend of extending the Internet access in public places.
2016	(+)	
2015	(+)	
2014	(+)	

Evidence 8.2 Does the Government use services and infrastructure shared by several institutions?		

Year		
2017	(+)	As e-Government Centre was setup, activities of developing and sharing resources and digital services have been intensified.
2016	(+)	
2015	(+)	
2014	(+)	

Year		
2017	(+)	E-Government Centre has purchased services to implement a solution for interoperability in e-Governance in December 2013.
2016	(+)	
2015	(+)	

---

[18] http://testmy.net/rank/countrycode.down/.
[19] Measuring the Information Society Report, 2016, http://www.itu.int/en/ITU-D/Statistics/Documents/publications/misr2016/MISR2016-w4.pdf
[20] Strategy on competitiveness growth of the industry of information technology for 2015-2021, Government Decision No 254 of 14 May 2015.
[21] http://anrceti.md/files/filefield/Raport_ev.pieteiCE%20trim2-2017.pdf
[22] Evolution of electronic communications market in 2016, ANRCETI, http://anrceti.md/files/filefield/Evolutia_Pietei_2016(rom).pdf
[23] The Global Information Technology Report 2016, http://www3.weforum.org/docs/GITR2016/WEF_GITR_Full_Report.pdf

2014	**(+)**	

2017	**(+)**	In July 2012, e-Government Centre has purchased hardware, software and services related to M-Cloud (Stage-1). In April 2014, Software Licenses for M-Cloud Platform and Development of platform level services were purchased.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(+)**	There are a number of standards in this area, including standards on metadata, approved by the national organization responsible for standards - National Standardization Institute. There is also a Technical Committee (TC-28) responsible for standardization in Information Technology.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(+)**	By the Government Decision No 656 of 5 September 2012 the Programme on Interoperability Framework was approved.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(+)**	Centre of Special Telecommunication is responsible for the protection of data which are important for the state.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

Evidence 8.3 How good are the ICT skills of the MoECR staff, its management and subordinated institutions?

2017	**(+)**	The management and civil servants of the ministry have basic IT skills and use them.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(+)**	There trainings on e-Governance organized at the ministry level.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(+)**	Knowledges and skills to use ICT are taken into account when the civil servants of the ministry are appraised.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

Evidence 8.4 How strong is the ICT industry in Moldova?

2017	**(+)**	
2016	**(+)**	
2015	**(+)**	

2014	**(+)**	In 2013, the ICT sector (service, production and trade) contributed with approximately 8% to GDP reaching MDL 7.7 billion[24] and employed over 22,000 people (in 2011)[25]. The same figures were used by the ministry during 2017.[26]

2017	**(+)**	The software industry, although is not very large, could grow very quickly, being able to cover local demand linked to the development of open data initiative. In 2011, the share of IT industry in GDP was of 0.82% or approximately MDL 720 million, employing 7600 people[27].
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(+)**	There is a National Association of Private ICT Companies. It is an active organization, having a large presence in promoting the interests of the sector. The private sector shows a strong motivation for a greater involvement in local projects.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(+)**	There are few platforms for start-ups in information technology. However, there are development prospective as the ICT Centre of Excellence was launched at the end of 2015 with the support of USAID, project to which other important development partners could join.
2016	**(+)**	
2015	**(+)**	
2014	**(-)**	

2017	**(-)**	Government has few projects implemented by the private ICT sector. At the same time, there are 8 major state-owned enterprises in ICT.
2016	**(-)**	
2015	**(-)**	
2014	**(-)**	

2017	**(-)**	Even if the general level on the *skills* pillar is in the middle of world ranking (Network Readiness Index 2016), ranking the 71st out of 143, with a score of 4 points out of 7, the worrying situation is that two individual indicators related to education, *quality of schools' management* and *quality of education system,* rank Moldova the 118th and 97th, respectively[28].
2016	**(-)**	
2015	**(-)**	
2014	**(-)**	

Evidence 8.5 **How active is the MoECR and its subordinated institutions on the Internet?**

2017	**(+)**	After the reorganization of the Government, a new web page for the newly created ministry will be developed. After taking over the field of education by the Ministry of Culture, the news is placed on the pages of both ministries until the merger.
2016	**(+)**	
2015	**(+)**	
2014	**(+)**	

2017	**(-)**	After the reorganisation of the Ministry, the temporary website of the newly created ministry is only an „Advertisement Board".
2016	**(-)**	
2015	**(-)**	

---

[24] Strategy on Increasing the Competitiveness of the Information Technology Industry for 2015-2021, approved by the Government Decision No 254 of 14 May 2015.

[25] ICT Sector in Moldova: Policy White Book 2012, http://ict.md/files/White%20Book%202012%20Romanian%20Version%20FIN.pdf.

[26] http://www.mtic.gov.md/ro/news/49-de-angajati-din-domeniul-tic-au-primit-titlul-onorific-de-maestru-tehnologia-informatiei-si

[27] Ibid. 14.

[28] The quality of school management indicator is part of Pillar 2 (Business and Innovation) while the quality of education system is part of pillar 5 (skills) of the Network Readiness Index from the Global Information Technology Report 2015, http://www3.weforum.org/docs/GITR2016/WEF_GITR_Full_Report.pdf .

2014	(-)

2017	(-)	Not all subordinated institutions, especially vocational schools, high schools and boarding
2016	(-)	schools, have website or are present on the Internet. At the same time, the existing web pages
2015	(-)	of many educational institutions are not consonant and present outdated and scarce
2014	(-)	information. There is no published information on the web page of the MoECR about the

2017	(-)	Not all subordinated institutions, especially vocational schools, high schools and boarding schools, have website or are present on the Internet. At the same time, the existing web pages of many educational institutions are not consonant and present outdated and scarce information. There is no published information on the web page of the MoECR about the activity of the subordinated state-owned enterprises, according to normative provisions. In general, there is no progress compared to 2016.
2016	(-)	
2015	(-)	
2014	(-)	

2017	(+)	There is a Government website servicii.gov.md. By approving the "Actions Plan for Open Governance" and the "Strategic Program for Technological Modernization of Governance" the Government wants to digitize over 500 traditional services by 2020.
2016	(+)	
2015	(+)	
2014	(+)	

CONCLUSIONS

On the *National infrastructure of technologies and skills* dimension, a low progress is recorded. There is well-developed infrastructure for Internet access, the number of households connected to the Internet is growing, and the access to the Internet is free of charge in many public spaces. At the level of the MoECR there are sufficient ICT skills, but digital channels for citizens' involvement are not sufficiently used. Alike, there are few initiatives to promote ICT projects.

ASSESSMENT of national infrastructure of technologies and skills

Table 15. Assessment of national infrastructure of technologies and skills

Evidence area	Importance	Assessment	
		R/Y/G	Comments
Interne / mobile infrastructure	High	Green	A wide and relatively affordable coverage, as well in terms of cost
Use of shared services and infrastructure	Medium	Green	Although not all shared platforms are functional, they are in a process of rapid development
Skills in the MoECR	High	Green	There are fundamental skills, but an organizational power and continuous trainings are required
ICT industry	Medium	Yellow	ICT industry and in general IT is not considered as a constraint in the open data development, but neither cannot be seen as a force that contributes to this process
MoECR presence on the Internet	Medium	Yellow	MoECR presence on the *social media* and digital channels is still not sufficient to achieve a high level of involvement and participation of citizens
PER TOTAL	High	Yellow	

RECOMMENDATIONS on national infrastructure of technologies and skills

Table 16. Recommendation on national infrastructure of technologies and skills

Actions	In charge	Comments
1. Develop a policy on external assessment (by civil society and using its resources) of the level and quality of presence of educational institutions on websites	State Secretary, ICTU	**Status:** *Stated in 2014. Not completed.* This would allow independent assessments, which could serve as motivation and guidance to increase the presence of educational institutions on the Internet
2. Strengthen the role of the MoECR through eTCD, Communication and Public Relations Division and the rest of the MoECR subdivisions as a leader in opening national data at the national level, including by using own pages of educational institutions	ICTU, Communication and Public Relations Division, MoECR subdivisions	**Status:** *Stated in 2014. Not completed.* By its mission, the MoECR has more intellectual resources to become the driving force in several Government reforms

■ Constraints to implement of social audit in schools

According to the "Empowered Citizens Enhancing Accountability of the Education Reform and Quality of Education in Moldova" project, social audit is being performed at the level of schools in a number of localities from the Republic of Moldova. The ultimate goal of social audit is to enhance the quality of education in available financial conditions. In order to achieve this goal, comprehensive information is required on all operational aspects of a school, as well as general information on the operation and performance of schools in the region and in the country. These include non-financial and financial indicators on school inputs, performed activities and achieved results, school management, on some results of the assessments and controls that take place in schools and on education policy documents. Therefore, information and data from multiple sources are needed, in some cases being necessary to combine data in order to obtain relevant indicators on the real activities of the school.

Table 17 reflects data availability according to the main groups of data needed to ensure an effective involvement of citizens in obtaining a quality education in schools having pre-set funding.

Table 17. Data availability in educational sector

	Types of open data	In Open Data	In EMIS
1	Identification data of the school (address, name, code, type, etc.)	Partially, but not critically	Full information
2	Data on school infrastructure and its characteristics	Only a small part, without characteristics of the infrastructure	Partially exist
3	Facilities available for teaching process	There is equipment (laboratories, TV, computers, web)	Partially exist
4	Data on teachers and workload (profile, experience, degrees, merits, etc.)	Partially, but it would be enough at an early stage	Full information
5	The number of pupils and structure of classes, subjects, extracurricular activities	Partially, but extracurricular activities are only on the list of extramural activities	Partially exist
6	Financial indicators (at least in the economic budget classification structure)	Partially, without sufficient details in MoECR, but exists in BOOST	Partially exist
7	Reports on learning outcomes (grades, promotion, skills)	Partially existing	Full information
8	Reports on the external assessment (or/and internal assessment) on observing school standards (quality standards assessments)	Not existing	Not existing
9	School management (category, level of training, managerial degree)	Not existing	Full information
10	Auxiliary personnel (level of training, ratio per student and per teachers)	Not existing	Full information
11	Data needed for inclusive education	Partially existing	Partially exist

The analysis of open data in the education system has shown that the level of open data can meet the information requirements for social audits in schools, with some constraints. At the same time, along with the implementation of the System of standards for hub schools and the Education Management Information System (EMIS), the informational basis and data production opportunities will be considerably improved. A

temporary solution would be formulating requests for data required to the rayon departments for education and to schools.

At the same time, it is necessary to note that an easy access to data is possible only by developing an interface, via which the user could form tables required by concrete queries (requests), similar to the NBS' one. It is also necessary to fill the data with financial information, which could be taken from the Ministry of Finance. But, as regards financial information, there are some constraints related to data opening in treasury system, amendments of the legal framework regarding competences in education of authorities and additional funding from various sources (including the parents' contributions). In this respect, it is necessary a commitment of the State Treasury on opening data in education and data of rayon departments for education, so that data would be published monthly (or at least quarterly) in the disaggregated structure of budget classification.

Moreover, for a comprehensive coverage with data and information, besides data from the EMIS and the Treasury, it is necessary to publish assessment reports and other monitoring documents related to didactic process and school functioning (e.g. fire inspection report, etc.). Among these, surveillance and monitoring activities that are compulsory under the legal framework on schools and didactic process can be listed, and the results (reports) should be published in electronic form in the "school file", which will be centrally stored as a component of the EMIS. Ideally, to ensure an easy access to the data of a school, it is necessary to make it possible to access all data related to a school in one place.

Another constraint is the schedule for opening and updating data. For an effective social audit, it is very important for the information to be available at the right times, when draft decisions are developed, immediately after the reporting periods (monthly and/or quarterly, biannually, annually). The information published with delay basically becomes useless, and in some situations can be daunting even for citizens to get involved.

For an effective social audit, it is not enough to have access to information about only one particular school, but it is necessary to have available similar information for as many as possible schools. Therefore, opening data for schools must become a policy for the Ministry of Education, Culture and Research, facilitating and encouraging at the same time the rayon departments for education and schools to have their own open data initiatives.