ReSPA
Regional School
of Public Administration
BUILDING TOGETHER
GOVERNANCE FOR THE FUTURE

ZERO OPEN DATA GUIDELINES

ReSPA activities
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2020

ReSPA activities are funded by the European Union

Contents

Abbreviations/Acronyms

ADISA	Agency for the Delivery of Integrated Services Albania#
AI	Artificial Intelligence
AIS	Agency for Information Society – Kosovo*
API	Application Programming Interface
BiH	Bosnia and Herzegovina
BI	Business Intelligence
CSO	Civil Society Organisation
EU	European Union
GDPR	General Data Protection Regulation
ICT	Information and Communication Technology
IDDEAA	Agency for Identification Documents, Registers and Data Exchange of Bosnia and Herzegovina
ITE	Office for Information Technology and e-Government – Serbia
MIPA	Ministry of Internal Affairs and Public Administration – Kosovo*
MISA	Ministry of Information Society and Administration – North Macedonia
MPA	Ministry of Public Administration – Montenegro
MPALSG	Ministry of Public Administration and Local Self-Government – Serbia
NAIS	National Agency for Information Society – Albania
ODRA	Open Data Readiness Assessment
OGP	Open Government Partnership
OKFN	Open Knowledge Foundation
PA	Public Administration
PSI	Public Sector Information
ReSPA	Regional School of Public Administration
SLA	Service-level Agreement
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
WB	Western Balkans
ZOD	Zero Open Data Guidelines

I. Executive summary

The present Zero Open Data Guidelines (ZOD) offer the reader the insight into the approaches and solutions taken, as well as challenges faced in the five ReSPA Members[1] and Kosovo*[2] in managing, sharing, and re-using open data. The issue is highlighted on the country level from three perspectives: the normative overview in handing open data, administrative overview and the management approaches of open data taken (sets, tools, coordination…), and private and public cases of open data use in each country.

In addition to the country-specific overview, the ZOD also presents a comparative overview and analysis of the practices, approaches and solutions implemented. This shows that weak legislation and fragmented the strategic framework impedes the growth of open data. Despite significant efforts by certain institutions, none of the countries developed a dedicated strategy on how to handle and promotes the re-use of the open data. This is reflected in an extremely limited evidence of the social and economic impact of open data use by both the public and private entities. Addressing the demand side will support the development of evidence of impact. For this reason, the ZOD in the following chapters focuses on practical questions and challenges faced in approaching the demand side of the open data. It highlights the example of "Data Hub" as a possibility for more systematic, innovative, experimental, and atypical communication possibilities with the demand side.

The ZOD analysis of practices applied confirms that better regional coordination and cooperation are essential for open data use. Currently not existent regional cooperation on the exchange, practices, technological solutions taken, standardisation and re-use of open data would not just increase the use and impact of the open data. The availability of data on the regional level would also make the data and the service providers more economically interesting.

Although most of the countries have developed their open data portals, different technologies have been used. Absence of regional consultation and coordination process impedes the re-use of good practices, avoidance of difficulties and reduction of costs, as well as the interoperability and connectivity of open data on the regional level. A common platform, e.g. Open Data Portal for the Western Balkans, like the European Open Data portal, could help to address these issues.

Data openness requires resources. Political will is not enough. To ensure sustainability and support the impact of the open data initiatives and open data, these need to be systematically financed. Regional open data network might support this, as well as open the possibilities for new financial resources.

To overcome the fragmented, over-diversified and often noncomplimentary technological solutions in making the open data visual, the ZOD proposes an integrated approach on how to visualise data based on existing solutions, foremost open-source.

Open Data Directive is a further step of the EU towards the creation of a common and more coherent legal framework for the EU single digital market for governmental data. The ZOD focuses on the main elements of the directive and connected recommendations for the ReSPA Members and Kosovo* in transposing the directive into their legal frameworks. It particularly focuses on the issues of ban of exclusive agreements, high-value datasets, and standard licences. The Open Data Directive introduces the concept of high-value datasets with a very

[1] Albania, Bosnia and Herzegovina, Montenegro, North Macedonia and Serbia

[2] This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and ICJ Advisory opinion on the Kosovo Declaration of independence

vague definition and the absence of methodology for their definition. The methodology should be comprehensive and include both quantitative and qualitative indicators, as well as expert judgements from multiple disciplines. Developing a common and sound methodology for defining the high-value datasets on a regional level would be more than justified.

Similarly, the ZOD recommends that standard licences are explored, discussed, and agreed jointly by all ReSPA Members and Kosovo* (and applied in their legal framework and data portals). A possible option, aligned with the European Commission's approach, would be to agree and adopt the Open Definition compliant licences from Creative Commons or Open Data Commons for the Western Balkan Region/ReSPA Members and Kosovo*. This would have a major impact on the interoperability of open datasets (including the high-value ones) in the region. On the other hand, this would also increase the attractiveness of datasets and their re-usability by the private sector. Joint approach might also resolve the risks associated with cybersecurity. Although practical aspects and approaches are highlighted already in the ZOD.

Data ethics are becoming more and more a prominent issue in the debates around datasets, their visibility, sharing and re-use. The ZOD proposed a practical tool for the assessment of data ethics – Data Ethics Assessment Framework. Its objective is to assist the readers to focus on the potential impact op data related directly to individuals and society. It focuses on eleven elements of assessment (Data Sources, Rights related issues, Core purpose, Potential Negative Effect, Communication of potential risks, Data limitations, Applicable laws, Users' understanding and acceptance, Measures for minimising the negative impact, Review, Sharing of data, Positive impact, Users' engagement and feedback channels, and Next key actions). The purpose of the Data Ethics Assessment Framework is to stimulate the development of similar assessment frameworks for data ethics on national level(s), or, even better, on a regional level. This could significantly support the ReSPA Members and Kosovo* also in facing ethical questions related to the open data and Covid-19 pandemic data use. The ZOD here presents various examples of open data use in the Member States and in the Region of Western Balkans. With the assistance of the assessment framework, it also highlights the main threats for the implementation of contact-tracking apps. Here the principles of the Common EU Toolbox for the Member States for Mobile applications to support contact tracing in the EU's fight against COVID-19 is taken on board.

To conclude the ZOD focuses on one of the key elements in the opening, sharing and re-use of the open data – community building and management. The reader receives practical advice and recommendations in communicating open data and in the organisation of community events, including the non-traditional and atypical ones. The authors hope that the user cases and apps developed and described in the previous chapter and the very brief standard explanation text on open data (in annex) may further assist the reader in the creation of open data communities in the countries and in the region.

II. Introduction and rationale

ReSPA established the network on eGovernment in 2011, nowadays called eGovernment Working Group. It is composed of senior professionals, decision-makers and expert practitioners who can support regional cooperation by deploying on eGovernment to build trust and collaboration across governments and with end-users as well as support to improving collaboration across government institutions. ReSPA gave priority to the process of transition of its beneficiaries from Information Society to eGovernment and is still working in this area to support their transition to Digital Society. In 2015 ReSPA supported E- to Open Government - Regional Comparative Study (https://www.respaweb.eu/11/library#respa-publications-2017-7) focusing in particular on open data and cloud computing and providing a set of both regional and country-specific recommendations.

During 2017 e-Participation Roadmap was developed for each participating country (in-depth self and external evaluation). The assignment included Providing expertise and consulting on the e-Participation introduction (guidelines, standards, and roadmap), e-Participation education (training, study visits, case studies), and e-Participation promotion (conferences and workshops), a unique, thorough, and systematic country-specific in-sight into e-Participation developments, achievements, challenges, and opportunities, as well as an excellent opportunity for peer learning. The guideline is a well proportionate mixture of self- and external evaluation, developed in continuous consultation and active involvement of all ReSPA beneficiary countries. It was promoted at the Open Data – OGP ReSPA Conference in Brussels in 2017 https://www.respaweb.eu/11/library#respa-publications-2018-7.

Finally, latest consultative process with eGovernment Working group members reconfirmed that open data remained one of the regional priorities and even though most of the Western Balkan countries progressed in the related area, the support is still needed.

During the ReSPA eGovernment Working Group meetings in 2017 and 2018, it has been agreed that in necessary to develop the Zero Open Data Guidelines (ZOD). The objective of this action is to offer the national administrations coherent definitions, standards, and guidelines for Open Data, customized to the needs of the Western Balkans region. Besides a short explanation of what is considered public open data, what makes data open and why it is important, the guidelines would emphasize on the comparative review of the current state of affairs in the ReSPA Members and Kosovo*: an overview of the policy and legal framework; national action plans for opening the public data; implemented technical solutions for national Open data portal; examples of the apps and systems being developed on the open data infrastructure. The guidelines would provide an overview of the knowledge and practices on the subject in the region and would provide operational support for the creation of comparable open data initiatives on the national levels. Sharing perspectives would directly contribute to the realization of Open Data agendas and Actions Plans made by the national governments in the ReSPA Members and Kosovo*. The ZOD guidelines would be a precondition for further Open Data development on the national and possibly regional level.

The structure, content, and scope of the present ZOD reflect the consultation process done with the key stakeholders from the eGovernment Working group conducted in December 2019-January 2020. Also, the current text includes elements and aspects relevant to open data arising issues connected with global Covid-19 virus crisis (as per the agreement in April 2020).

III. Public open data concepts and comparative analysis and presentation of the current state of affairs in the domain of public open data in the Western Balkans

1. Albania

a. Normative overview of open data in Albania

Albania **began participating in the OGP in September 2011**. As part of OGP participation, countries undertake commitments to a two- year action plan. The **OGP's first 2011-2013 action plan** focused primarily on increasing the quality and efficiency of public utility management by implementing measures in the area of fiscal transparency, access to information, the use of information technology (ICT) and the participation of citizens in the process of public policy development. During 2014, the second Action Plan for OGP was drafted. The drafting of this plan was made with a long consultation process with broad participation of interest groups. The **second action plan entered into force in July 2014**. In the implementation of the government program and the OGP plan, a policy document for the implementation of open data was adopted and approved by a Decision of the Council of Ministers in February 2015 (Decision no. 147 dt. 18.2.2015). The implementation of the **third Action Plan 2016-2018** was focused on the implementation of the Electronic Register of Public Notifications and Consultations which serves as a consultation place among citizens and decision-making institutions in Albania and was published in 2016. Also, the number of e-services on e-Albania Portal was doubled by the end of 2018, compared to 2015. The implementation of open data and the creation of a **government portal for open data** is an important government engagement, part of the **2018-2020 Action Plan developed under the Open Government Partnership (OGP) Global Initiative**. Albania's fourth OGP country action plan was developed after input was sought and obtained from government departments, communities, civil society, and citizens, through surveys, public participation, and consultative dialogue. This ensured that all stakeholders involved in the programme were active drivers of the process and owners of its end-product.

Currently, the current activities linked to the OGP implementation are:

- Publication of legislation data
- Registry of business legislation
- Electronic register for public notification and consultation
- Data on election results
- Detailed budget data
- Detailed data on government spending.

b. Administrative overview of open data in Albania - management approaches regarding open data (sets, tools, coordination…)

The **Prime Minister's Office** is the leading institution which coordinates the open data strategy and action plan. The open data action plan is monitored by the Prime Minister's Office a few times per year.

The **National Agency of Information Society** (NAIS) is responsible for the technical implementation and enrichment of the national open data portal. A few times per year, the **Thematic Group on Digitalization** is gathered to discuss ICT issues in the PA. One of the topics discussed is also the enrichment of the open data portal with more data coming from institutions, be they manually or automatically via web services.

The **Government Gateway**, established by the National Agency of Information Society, is a major technical support to enable communication among all institutions to maximize the automation of the government data disclosure process. Some of the open data published on the Open Data portal are automatically triggered from the electronic systems of state institutions, through dedicated web services that expose the data to the portal. The other part is updated manually usually monthly, quarterly, or annually (depending on the dataset periodicity).[3]

Based on the Albanian **"Technical Standards for Publication of Data in The Open Data Format"** version 1.0, published by NAIS, **government data will be considered "open"** if the following principles publish them:

- Data should be complete;

- Data should be authentic;

- Data should be published on time;

- Data should be easily accessible;

- Data should be machine-readable/ editable;

- Data access shall not be discriminatory;

- Data should be "non-proprietary";

- Data should be available under an open license.

There is **only one centralized national open data portal in Albania http://opendata.gov.al/ -** where each institution is obliged to publish open data. However, ministries or institutions are free to publish their open data in their official websites as well. 7 ministries have open data published in their web pages.

The portal **distinguishes between Open Data and Open information** (reports and legal frameworks). The distinction seems artificial and less apparent. On the reference date of this study, **72 datasets and information from 17 organisations are published on the open data portal**.

[3] Decision No. 147, dated 18.02.2015, "On the Approval of the Policy Document for the Implementation of Public Open Data and the Creation of the Open Data Portal"; As well as: http://akshi.gov.al/wp- content/uploads/2018/02/standardet_teknike_te_publikimit_te_te_dhenave_ne_formatin_open_data.pdf

There are **almost 100 datasets published**. The Open Data portal is developed with **Framework .Net Core, MVC**. Datasets are **stored in SQL server**.

The first sets of open data published on the **opendata.gov.al** portal have been those with major interest from the public as well as data related to government transparency. These sets of data were identified after periodic meetings of the Thematic Group on Digitalization, from each institution, after guidelines sent to them by the NAIS. NAIS frequently requests public institutions where they have other open data to be published on the portal, considering the electronic systems in place.

After a new electronic system is developed by NAIS, in collaboration with public institutions, the latter identify whether there is open data that can be published via web services on the portal.

Also, there is **a parallel open data portal supported by external donors** (USAID, Open Society Foundations and the Netherlands Embassy in Tirana) - http://open.data.al/en. The main data contributor is the Ministry of Finance and the Institute of Statistics. As it seems the data sets available are not interoperable.

The open data portal **monthly service-level agreement (SLA) is 3300 EUR**. However, it is impossible to state a specific budget because current or new electronic systems developed, have their SLA-s and developing the relevant web services that are then connected to the Government Gateway to have this data published on the open data portal is partly part of the systems' SLA-s and partly of the open data portal SLA.

The number of clients for every dataset is kept track.

c. Cases of the public open data use in Albania (both public and private)

At **TechSpace, the biggest ICT** hub founded by the Albanian government, ICT students and start-ups are usually advised to use the Open Data portal for obtaining relevant data that they can later use in their research theses, in start-ups' apps, investments etc.

ADISA has made accessible for everyone information regarding public services through different channels (Information Passports, Application forms, Green number 08000118, Live chat in ADISA's website www.adisa.gov.al). NAIS creates and publishes info on the open data portal and the new datasets added through animated videos published on its social media accounts. It also promotes the portal to ICT students and start-ups registered at TechSpace, the state-funded ICT hub.

A good example to highlight is the fact that some of the data published on the **Open Data portal are automatically triggered from state electronic systems via the Government Gateway (Government Interoperability Platform)** and then published in real-time to the portal. This eliminates human interaction, enabling accurate and up-to-date data anytime.

2. Bosnia and Herzegovina

a. Normative overview of open data in Bosnia and Herzegovina

Bosnia and Herzegovina (BiH) officially joined the multilateral global OGP initiative in **September 2014**. OGP has a country-wide approach in terms of a policy framework on public disclosure and standardisation of data. On **10 October 2016**, the BiH Council of Ministers adopted the Decision on the Establishment of the **Advisory Council of Open Government Partnership Initiative**[4] (OGP Council) to play an advisory coordination role, to promote transparency and openness of public administration bodies and involve citizens and civil society organisations in the formulation of public policies. After all the members representing state and entity levels and CSOs were appointed, the BiH OGP Council held its constituent session in late May 2018, followed by a workshop on the preparation of the OGP Action Plan. On the **4 April 2019,** the Council of Ministers adopted the **Action Plan of the Council of Ministers of Bosnia and Herzegovina for the implementation of the initiative "Open Government Partnership" for the period 2019 – 2021**[5]. Under this action plan seven commitments are being implemented in Bosnia and Herzegovina:

- Open Data on Public Procurement;

- Development of a web platform for online drafting of integrity plans in institutions;

- Development of online training modules for civil servants in the process of drafting and implementing integrity plans;

- Increase availability, openness and use of official statistical data;

- Involvement of civil society organizations in policy-making processes;

- Improving transparency in BiH institutions; and,

- Drafting of the budget for citizens.

Although the adoption and implementation of the OGP Action Plan 2019-2021 represent a significant step forward in the implementation of the OGP, the country lacks the strategic and systematic policy approach to open data. Integrated legal framework (country and entities level) on open data would allow moving from initiative/project-based to fully systematic approach to open data challenges and opportunities in the country.

b. Administrative overview of open data in Bosnia and Herzegovina - management approaches regarding open data (sets, tools, coordination…)

On the **state level**, the **Ministry of Justice** is the responsible entity regarding the open data. In the **Republic of Srpska** the **Ministry of Scientific and Technological Development, Higher**

[4] Službeni glasnik BiH", br. 94/16

[5] https://www.opengovpartnership.org/documents/bosnia-and-herzegovina-action-plan-2019-2021/

Education and Information Society is the entity responsible for the open data, as well for the implementation of the OGP, including the current OGP Action Plan.

Advisory Council of Open Government Partnership Initiative is the main coordinating body for the implementation and monitoring of the OGP initiative/OGP Action Plan on the state level. On the state level, the **Agency for Identification Documents, Registers and Data Exchange of Bosnia and Herzegovina** (IDDEEA) is a dedicated agency supporting Open Data implementation. Roles and responsibilities of IDDEEA and the **Public Administration Reform Coordinator's Office** in systematic approach and management of the Open Data still need to be defined.

Neither on the state nor the entity level, there is an open data portal.

There are no specific budget allocations for the development of the open data portal or open data initiative.

Due to the constitutional set-up, Bosnia and Herzegovina has adopted a multi-level/de-concentrated approach regarding open data and open government. Therefore, the strategy (or strategies) on open data have not been adopted yet. Similarly, the responsibilities, relationships and the coordination of the open data and legal framework(s) still need to be defined.

c. Cases of the public open data use in Bosnia and Herzegovina (both public and private)

Authorities in Bosnia and Herzegovina have their web portal – either on the state (www.fbihvlada.gov.ba, http://euprava.fbih.gov.ba/, http://www.ads.gov.ba/v2/index.php?lang=en) or entity level (http://www.esrpska.com/default.aspx?id=). Absence of an open data portal(s) reduces the availably and potential re-usability of the open data by the private or public sector.

The Government of the Republic of Srpska has recently, with the support of the UNDP, launched several initiatives in support of the Digital Transformation[6]. Identification of strategic opportunities in the ICT sector and the definition of concrete legal, budgetary, and operational solutions will be addressed in cooperation between the public and private sector and other stakeholders. The economic and societal potential and potential impact of open data have not been specifically addressed at this stage; however, the envisaged framework offers an excellent opportunity to make tangible progress in the domain of open data usability.

[6] https://www.ba.undp.org/content/bosnia_and_herzegovina/en/home/presscenter/articles/2020/partnership-for-digital-transformation-covideja2020.html

3. Kosovo*

a. Normative overview of open data in Kosovo*

To increase the transparency and accountability of the state administration, the Government of Kosovo* is implementing **Open Data Initiative**, managed by the **Ministry of Interior and Public Administration** (MIPA). The Government began **implementing Open Data Initiative in May of 2016**, when the Government of Kosovo* approved International Open Data Charter, according to a decision no. 07/87.

According to this decision, the MPA is in charge to coordinate the development of work and promote Open Data in Kosovo*. In this framework, **Open Data Portal** - https://opendata.rks-gov.net/en/ was created, in which data publication produced by the Government of Kosovo* is foreseen.

Improvement of public services, increasing of transparency, accountability and public administration efficiency, and creation of a more professional civil service is among the most important priorities the MPA is undertaking.

In the context of promoting an open government, in **September of 2018**, MIPA has launched **ODRA report - Open Data Readiness Assessment** prepared by local and international experts according to the World Bank methodology which provides a comprehensive overview of the situation in the field of Open Data in Kosovo*.

MIPA has started the inventory process of data in all ministries of the Government, redesigning the national portal and increasing the number of datasets in machine-readable formats.

Open Government Data foresees positive changes in the way the Government interacts with the citizens. This process enables citizens and businesses to actively undertake informed decisions in various fields of activity. Consequently, making the data usable is a key element of the Open Data Initiative.

b. Administrative overview of open data in Kosovo* - management approaches regarding open data (sets, tools, coordination…)

Open Data Readiness Assessment (ODRA) report is an important document in Open Data process. This report presents an assessment and detailed study of capacities, opportunities, and challenges in the field of Open Data, according to World Bank methodology. The assessment is required and initiated by the MIPA, as part of efforts to advance the Open Data process, aiming the preparation of effective interventions by the Government. At the same time, ODRA serves as a guide for drafting the action plan of the Open Data Initiative.

The report is based on a range of interviews with stakeholders, including government officials and representatives of Civil Society and from the field of technology, as well as reviewing strategic documents and relevant reports, existing legal framework, etc.

The report is relevant for the progress of the initiative because it provides a concrete action plan and recommendations. MIPA is working on ensuring the implementation of recommendations, implementing necessary institutional changes to avoid any kind of obstacles for the effective implementation of Open Data.

On the reference date of this study, **224 datasets from 52 organisations are published on the open data portal**. The portal uses the **CKAN technology.**

c. Cases of the public open data use in Kosovo* (both public and private)

Open Data Portal - https://opendata.rks-gov.net/en/ is the official catalogue of data and 'metadata' published in an open format by institutions of the Government of Kosovo*. There are several datasets produced by the line ministries and state agencies. All institutions are obliged to open and publish their data on this platform.

The portal is promoted by the Government of Kosovo* and managed by the **Agency of Information Society** (AIS) – under the responsibility of the MIPA. Inter alia, AIS is engaged in implementing new functions and eventual improvements on users' digital experience.

4. Montenegro

a. Normative overview of open data in Montenegro

Law on free access to information, adopted in **August 2012**[7], constitutes the basic legal framework for the open data processing, publication, and re-use in Montenegro. In addition to the legal framework, the open data filed is addressed also by the key strategic document - **Public Administration Reform Strategy 2016–2020**[8]. Corresponding Action Plans (2016-2017 and 2018-2020) envisage measuring of user satisfaction, introducing quality management, reducing administrative burdens, creating new digital services, and developing a government-wide interoperability framework. Open data are further recognised as a **key strategic development area** by the **Strategy for the Development of Information Society until 2020**[9]. The implementation of the strategic document, adopted in 2016, was in the responsibility of the former **Ministry of Information Technology and Telecommunications**. This Strategy defines strategic guidelines on the development of information society, in line with the EU Digital Agenda 2020 and the Single Digital Market Strategy. The Information Society Strategy 2020 identifies open government data as a **strategic lever for good administration and better public services**. This consequently led the Government to develop and launch the open data portal – www.data.gov.me (for more information see sub-chapter below). With the establishment of the **Ministry of Public Administration** (MPA), the implementation of this strategy became its responsibility, as well as the implementation of the Public Administration Reform Strategy 2016–2020 and the corresponding Action Plans.

Montenegro adopted several correlated strategies that create a supportive environment for the development of potential open data initiatives in the public and private sector – e.g. 2018–2020 Economic Reform Programme[10], National Interoperability Framework[11].

In 2011 Montenegro joined the **OGP initiative**. Since then the administration has been adopting commitments (through the adoption and implementation of the corresponding Action Plans) to open up the government databases and to promote their use in Montenegro. In 2018 the Government adopted the **2018-2020 OGP Action Plan**[12]. Within the framework of the OGP Montenegro committed focusing on five key areas:

- Enhanced public services;
- Public participation;
- Improved public integrity;
- More efficient resource management; and,
- Access to information.

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7 Official Gazette - "Sl. list Crne Gore", No. 44, 9 August 2012

8 2016-2020 Public Administration Reform Strategy, Government of Montenegro, 2016.

9 The Strategy for the Development of Information Society until 2020, Government of Montenegro, 2016 - http://www.mid.gov.me/ResourceManager/FileDownload.aspx?rid=251855&rType=2&file=StrategijaMID_finalENG.pdf

10 2018-2020 Economic Reform Programme (ERP), Government of Montenegro, available in English at: http://www.gov.me/en/homepage/Montenegro_Economic_Reform_Programme/

11 E-Government Analysis: from E- to Open Government, ReSPA, 2015, p. 39.

12 https://www.opengovpartnership.org/wp-content/uploads/2018/11/Montenegro_Action-Plan_2018-2020_EN.pdf

b. Administrative overview of open data in Montenegro - management approaches regarding open data (sets, tools, coordination…)

The **MPA** is in charge of the overall coordination, implementation and monitoring of the implementation of the open data, in close coordination with other state institutions in charge of implementing the specific measures laid down in the Law on free access to information and the Public Administration Reform Strategy 2016–2020.

To promote the open data initiative and the open data portal, as well to facilitate the inclusion of additional open datasets and cooperate in designing the capacity building for open data in public administration the MPA organised a **special Working Group for Open Data**. The working group includes and under the coordination of the MPA connects the representatives of the public administration entities, research and academia, business and CSO representatives.

In **June 2019**[13] **a national Data Hub** was constituted. The Data Hub was created in the framework and because of the **Odeon project** (detailed presentation below) and combined the work of the project team and the special Working Group for Open Data. The Data Hub is led by the **Chamber of Economy of Montenegro** with the objective of creation of a more favourable ecosystem for the open data in Montenegro. This would facilitate the use and the economic potential of re-use of the open data – through the development of skills and competences on the use of open data (in education, research, business and public sector), financial opportunities and connectivity with other Data Hubs in the region.

Open data portal in Montenegro - **www.data.gov.me** - is a centralised platform, managed by the MPA, where all state bodies and agencies publish their open datasets. The portal is an **open-source database, using CKAN technology**. At the time of this study, there are **107 datasets** available on the portal. In regards to the tracking mechanisms that measure the usage of open data www.data.gov.me tracks the number of downloaded datasets and produces the statistics for the API service.

There are no specific budget line/allocations concerning the open data or further development of the open data portal.

To harmonise the open data information, the MPA adopted the **Rulebook on the Method of Publishing Information in the Open Format** (.xml, .csv, .json etc).

Through the Working Group on Open Data, Data Hub or through direct contact with the MPA the interested stakeholders, whereby particular attention is dedicated to the CSOs, have the possibilities to communicate the feedback, needs, availability and use of open data to the MPA. The portal as such offers the opportunity of contact, however, does not offer a standardised form for requesting additional, new, or specific datasets or directly invite the interested stakeholders to request them.

[13] http://www.privrednakomora.me/projekti-aktuelnosti/uspostavljeno-cvoriste-otvorenih-podataka

c. Cases of the public open data use in Montenegro (both public and private)

Project **ODEON – Open Data for European Open iNnovation** is an Interreg Mediterranean project joining up 10 partners in 7 countries[14]. Its objective is to explore Open Data in the region and to strengthen the relationship between digital agenda, e-government strategy, the open data platforms implemented at several levels and the availability of Open Data to support innovation process within Interreg Mediterranean Area. The total budget of the 30 months' project is EUR 2.000.000.

In Montenegro, the coordinating institutions are the Chamber of Commerce, MPA and the UNDP.

The project activities resulted in the creation of the above-mentioned Data Hub and the organisation of the **Hackathon** "Let the available be useful" in **October 2019**[15]. The event connected twenty-eight participants divided into six teams. Ideas of the hackathon were: the applications *Open Montenegro* and facilitating the business environment, *Data Design* - application for the use of information and improving the environment relating to NGO sector and the *digital tourism* web application. A **Virtual Hackathon** with the theme "restart of our economy" is scheduled in 2020[16]. The cooperation between the supply and the demand side (public and business organisations) suggests an opportunity to be further developed as a tool to stimulate both the supply and the demand side and re-use of open data in Montenegro.

14 https://odeon.interreg-med.eu/

15 https://odeon.interreg-med.eu/news-events/news/detail/actualites/hackathon-open-data-idea-presentations-in-budva-montenegro-1/

16 https://odeon.interreg-med.eu/news-events/news/detail/actualites/on-line-hackathon/

5. Northern Macedonia

a. Normative overview of open data in North Macedonia

Basic legal framework on Open Data - **Law on Public Sector Data Use** has been adopted by the **Assembly of the Republic of Macedonia**, on its session held on 03 February 2014. Under the coordination and responsibility of the **Ministry of Information Society and Administration** (MISA) the **Open Data Strategy (2018-2020)** for North Macedonia has been adopted in 2018.

The Government of the Republic of North Macedonia **in October 2018** joined and adopted the **Open Data Charter**. The Ministry of Information Society and Administration, via the Minister of Information Society and Administration, has been nominated as the responsible institution for implementation of the **Open Data Charter**.

Open Government Partnership National Action Plan (2018-2020) address Open Data priority with two commitments:

- Cataloguing data sets in state institutions; and,
- Regional initiatives for cooperation in the field of open data, where the leading institution is MISA.

b. Administrative overview of open data in the North Macedonia - management approaches regarding open data (sets, tools, coordination…)

MISA is spearheading the open data initiative in North Macedonia. In its work, MISA follows the defined KPIs and upon request **reports back to the Government** on the implementation of the initiative.

MISA, as the key responsible and implementing entity of the Open Data Strategy, is collecting information on the implementation of the strategy from the involved entities through **regular meetings and official letters** asking for reports on the implementation of the measures. **MISA** maintains a **central portal for open data**, from where it will directly receive information on:

- how many institutions publish open data;
- how much the portal is visited;
- how much data sets are downloaded from the user; and,
- what data users are searching for, etc.

MISA is conducting activities for **measuring the influence of society on the release of open data, especially in cooperation with the civil society sector**.

According to **Annex C from Open Data Strategy**, the prioritization model for opening data will be made according to the following set of criteria:

- Institutions will open up data that is already in an open format;
- Institutions will open up datasets that are already publicly available, not in open, but in some other format;
- Institutions will open up data that is updated, well- structured and of high quality;
- Institutions will open up data that require minimal input of resources to prepare for opening;

- Institutions will open up the datasets for which there is a request for opening made by potential users (private sector, civil sector, other government institutions, etc.); and,
- Institutions will open up datasets that appeared to be useful given usage elsewhere (Open Data Index, Open Data Barometer).

Open Data Portal is centralised and available at http://data.gov.mk/en/

On the reference date of this study, **203 datasets from 14 organisations are published**.

The portal is built on a **CKAN platform**.

The portal offers the **option for issuing an on-line demand for Open Data**. However, up to date, no demands have been received.

There is a dedicated budget for Open Data.

c. Cases of the public open data use in North Macedonia (both public and private).

The Government is promoting transparency and accountability; therefore, the public institutions/administrations **are actively encouraged to open up as many datasets as available and promote their reuse by the citizens and businesses**.

MISA recognises a **significant need for public awareness and training for the promotion and use** of Open Data by CSO-s, businesses, and citizens. Besides there is also a USAID-EWMI **funded initiative – Civic Engagement project** - to improve the Open Data accessibility and use in North Macedonia.

Good examples of the use of Open Data published by PA in North Macedonia are: **Financial expenditures data from the state budget** and **Air quality sensor data** - https://mojvozduh.eu/web/

6. Serbia

a. Normative overview of open data in Serbia

The domain of open data in Serbia is addressed and framed by several legal acts and strategic documents, however, none of them is specifically dedicated to open data. Also, the Government has over the past decade adopted action plans and with the support of (mainly), external donors co-financed projects for opening of public data and improving citizen-oriented services.

The overarching legal act is the **Law on e-Government**, adopted by the National Assembly in April 2018[17]. The law establishes a framework for the systematic development of electronic governance, introduces basic control mechanisms, as well as for open data and reuse of public sector information. The secondary legislation should further develop the rules and procedures for law implementation.

Law on Public Administration and the **Law on Local Self-Government** have recently been reviewed[18] and additionally stipulate the public access to public data, particularly in the framework of participation of interested members of the public in the work of the public administration, especially in the process of passing regulations and developing and implementing public policy documents at all levels of government.

The over-arching strategic document for the whole public administration reform is the **Public Administration Reform Strategy**[19] (PARS) and the **Action Plan for Implementation of the Public Administration Reform Strategy in the Republic of Serbia for the 2018-2020**[20] (PARS AP). The PARS addresses the issues of open government, e-Government, as well as regulatory reform and public policy management. The implementation of PARS is monitored and reported – recently through the open data application[21].

The strategic framework is rounded up with the **Strategy for the Development of Electronic Communications 2010-2020**[22] and the **Strategy for the Development of Information Society 2010-2020**[23]. While the first defines the key guidance on the development of electronic communications in Serbia, the later represents the Digital Agenda for Serbia, aligned with the (past) EU Digital Agenda.

Since 2012 Serbia participates in the OGP initiative. Since then the administration has been adopting commitments in three action plans to open up the government databases and to promote their use in Montenegro. In 2018 the Government adopted the **2018-2020 OGP Action Plan**[24]. Within the framework of the lasts OGP Action Plan Serbia decided to implement fourteen commitments, many of which are directly linked to open data, their access and management:

17 Official Gazette of Republic of Serbia, No. 27/2018.
18 Official Gazette of Republic of Serbia, No. 47/2018.
19 Official Gazette of Republic of Serbia, No. 09/2014, No. 42/2014 –correction and 54/2018.
20 http://mduls.gov.rs/wp-content/uploads/AP-PAR-2018-2020-eng-1.pdf
21 https://monitoring.mduls.gov.rs/
22 Official Gazette of Republic of Serbia, No. 68/2010.
23 Official Gazette of Republic of Serbia, No. 51/2010.
24 https://www.opengovpartnership.org/wp-content/uploads/2018/11/Montenegro_Action-Plan_2018-2020_EN.pdf

- Publishing of the Law on Budget of the Republic of Serbia in a machine-readable format;
- Development of an e-Calendar of public calls for the financing of projects and programmes of civil society organisations from budget funds of public administration bodies of the Republic of Serbia;
- Ensuring the availability of data on planned and spent amounts within local funds for environmental protection;
- Preparation of reports/indicators on CSOs (associations, foundations, and endowments) in an open format;
- Amending of the Bylaw on Documentation Enclosed for Registration of the Media with the Media Register and technical improvement of the presentation of data in the Register;
- Assistance with and monitoring of adoption of Local Anti-Corruption Plans;
- Updating of electoral roll;
- Establishment of an e-Notice Board for all state administration and local self-government bodies;
- Improving proactive transparency – Information Booklet;
- Amendments to the Law on Free Access to Information of Public Importance;
- Support to improved cooperation between public administration bodies and civil society[25] organisations in the process of drafting, enactment and monitoring of the application of regulations; and,
- Creating a legal basis and implementing an electronic system for e-civic engagement.

The OGP Action Plan is a result of Serbia's multi-stakeholder consultation process, including on the local level. Related and Not non-significant the **Law on the Planning System of the Republic of Serbia** encourages and enables citizens to initiate themselves the drafting, adoption, or amendment of public policy documents by submitting initiatives to the relevant proponent.

b. Administrative overview of open data in Serbia - management approaches regarding open data (sets, tools, coordination…)

The **Ministry of Public Administration and Local Self-Government** (MPALSG) oversees the overall coordination, implementation and monitoring of the implementation of the public administration reform according to the Public Administration Reform Strategy. Operationally the collection and management of the open data in Serbia are entrusted to the **Office for Information Technology and e-Government** (ITE). ITE is also responsible for the implementation of the **Open Data – Open Opportunities** project, supported by the **United Nations Development Programme** (UNDP). In the framework of this initiative also the open data portal in Serbia was developed and launched.

ITE also coordinates the **Open Data Working Group**, formed in 2016. The working group examines, plans and assists the public administration (ITE and MPALSG) in planning and coordinating activities on further data opening, providing support to institutions that open data, ensures ongoing cooperation between public administration and the civil sector, encourages the demand for open data and promotes the results and benefits of opening data. The representatives of state institutions, civil society organizations, academic institutions, business associations,

[25] Official Gazette of Republic of Serbia, No. 30/2018.

international organizations and development partners are included as the members of the working group or their observers/experts. At the time of this study, the Open Data Working Group consisted of 120 members from 62 organizations (namely 39 state institutions, 13 civil society organizations, four academic institutions, two business associations and four international development partners).

The **National Open Data Portal** - https://data.gov.rs/sr/ - was launched in **mid-October 2017**, The scope and volume of available data sets grew from 20 to over 114 available data sets from 28 institutions. Main data sets comprise of open public data from the transportation, environment, and health sector – e.g. traffic accidents, public transport, environment protection, statistics, geospatial data, data on medicinal products etc. Furthermore, interest in data opening has spiked, both within and outside of the administration. The availability and re-use of open data have identified Serbia as the regional leader in open data (comparatively ranked using the Open Data Index[26]). The portal uses the **CKAN technology.**

The open data portal is financed by the UNDP project. There are no specific national budget line/allocations concerning the open data or further development of the open data portal.

To streamline the management of open data on the open data portal the Government in **December 2018** adopted a **Decree on work with open data sets on the open data portal**[27].

The first point of contact for the open data portal and request considering the published data or the request for new ones is ITE. Request can be posed directly or through the Open Data Working Group. However, there is no standardised form for requesting additional, new, or specific datasets or a direct invitation to the interested stakeholders to request them.

c. Cases of the public open data use in Serbia (both public and private)

Under the same UNDP project (Open Data – Open Opportunities) an **Open Data Week** was organised in **March 2018**. The programme of the Open Data Week included a **Conference Open Data – Open Opportunities**, as well as a presentation of the national open data initiative, a draft legislative framework for open data and new data sets published by state institutions on the open data portal. Besides, the Open Data Week featured a series of workshops, lectures, and mentoring sessions across Serbia (Belgrade, Novi Sad, Indjija, Sabac, Vrsac, Valjevo and Subotica). The participants in the workshops, start-ups, small and medium-sized enterprises, researchers, and other stakeholders have had an opportunity to hear about the data posted on the open data portal and to learn how they are processed, combined with data from other sources, analysed, visualised etc.

In ITE held a **Workshop Open Data Challenge** in **June 2018**. The workshop was attended by more than 20 institutions interested in opening their data, while those institutions that had already opened their data stated their interest in the next step, which would enable them to implement cost-efficient ideas/solutions for simple access to data by the public.

In **May 2018**, the ITE, in collaboration with the **Cabinet of the Prime Minister** and the **Digital Serbia Initiative**, organised three **#CodeGovernment hackathons** (Belgrade, Novi Sad and Niš) intending to improve the user experience of the eGovernment Portal and devise a better and more

[26] https://index.okfn.org/place/?filter-table=serbia

[27] Official Gazette of Republic of Serbia, No. 104/2018

functional technological solution to improve the user experience of the eGovernment portal. Similar Hackaton for using the open data and connecting both portals has not been organised yet.

There are several examples of using open data on a central and local level. A good example of the use of open data from the central open data portal is: **Medicine registry – Baza lekova - https://data.gov.rs/sr/reuses/baza-lekova/**

Overview Table with conclusions

Country	Legal basis and Strategy	Coordination with the private sector	Portal	Dedicated budget	Technology	Examples of private users use
Albania	Yes, however not as a specific strategy	Not systematically	Yes, 2 portals	No	Framework .Net Core, MVC	-
Bosnia and Herzegovina	No	No	No	No	N/A	-
Kosovo*	Yes, however not as a specific strategy	No	Yes	No	CKAN technology	-
Montenegro	Yes, however not as a specific strategy	Yes Guidelines	Yes	No	CKAN technology	-
North Macedonia	Yes, however not as a specific strategy	Not systematically	Yes	No	CKAN technology	Yes
Serbia	Yes, however not as a specific strategy	Yes Decree	Yes	No	CKAN technology	Yes

Weak and fragmented legislation and the strategic framework impedes the growth of open data: Majority of countries have adopted the legal framework and included the open data in their digital development strategies. However, none prepared a dedicated strategy on how to handle and promote the re-use of the open data.

Addressing the demand side will support the development of evidence of impact: While all of the countries mainly focus on the supply side of the open data, the demand side has not been systematically consulted and included in the opening up, publication and use of open data. Also, the communication possibilities with the demand side are very formal (if existing at all) and not systematic. The practice of **Data Hub** developed by Montenegro and hackathons organised by Serbia and Montenegro present an opportunity that would need to be further explored and developed. There is **no regional cooperation** on the **exchange and re-use of open data**. Economically interesting would be the data available on the regional level.

Better regional coordination and cooperation are essential for open data use: ReSPA Members and Kosovo* have used different technologies in developing their open data portals. There is **no regional consultation process** that would allow the **re-use of good practises, avoidance of difficulties** and **encourage the interoperability and connectivity of open data** on the regional level. A **common platform e.g. Open Data Portal for the Western Balkans**, like the European Open Data portal could help to address these issues.

Data openness requires resources. Political will is not enough: There is also **no dedicated national budget for open data**. Many of the open data portals are **project financed**. This issue could be addressed also with the **support of the regional open data network** (including financial possibilities – e.g. joint projects have a larger possibility of getting available funds and a bigger social and economic impact).

IV. Visualization of open data (proposal based on existing solutions, foremost open-source, in which ways open data sets can be visualized)

The movement of open data within administrations has focused in recent years on the issues of their publication. On the one hand, policies and regulations have been defined to make authorities open their data to society, both for transparency commitments and seeking a return on the re-use of information through other organizations and the development of a productive system around it.

On the other hand, formats and best practices have been defined for administrations to know not only what to publish, but how and when, so that search, exchange and access to information processes obey the principles of standard design to facilitate the automated re-use of open data. In this regard, we can highlight the cataloguing of the different levels of data publication and the identification of good practices in re-use (for example, the 5-star distinction of Tim Berners-Lee).

Organizations such as the W3C, the Open Knowledge Foundation (OKFN) or the World Wide Web Foundation have been decisive for evangelization on the need to open up public data and promote technical work on their publication. In Spain and Europe in general, this has resulted in numerous initiatives and projects as well as the emergence of specific legislation. The European Union very clearly is actively promoting the harmonization of these dynamics through concrete technology proposals.

Nevertheless, one of the most common criticisms about open data is that the current effort is focused on publishing data and not on its usability; i.e. how this data will be consumed by the end-user. Many open data projects have been overly focused on these technical issues: formats, endpoints, etc., unfamiliar to the potential user, and they have not paid attention to how this data can be used and value can be extracted from it.

This has caused many portals to become mere repositories of data, with marginal traffic and with an extremely low social impact. Beyond a critical valuation in this regard, which is completely beyond the scope and intent of this document, it is crucial to understand that it is natural for the first steps in the open data movement to be focused precisely on the definition of what open data is and what the publication procedure for it is.

Right now, however, both the available technology and the maturity of the movement, as well as the demand from citizens, need to take a further step and evolve the open data concept to a wider dimension in which not only issues related to publication and re-use from the technical point of view are taken into account.

The next milestone is to provide tools for users to be able to consume and exploit data independently, making real the initial objective that information from administrations should have a real positive impact on our society. In this respect, visualization, as mentioned before, is the most powerful tool to bring data to any user.

Currently, visualization is part of any standard management process and data analysis in the business world, especially when referring to issues related to statistical analysis and "Business Intelligence" (hereinafter BI), although not exclusively. In any case, we can define these processes as a set of techniques and tools for the acquisition, processing, and transformation of raw data into useful information and knowledge for a particular purpose of analysis.

Currently, the number of tools and platforms for data visualization that can be accessed is very extensive. Depending on user requirements you can choose from several cutting-edge options.

Given the magnitude and existing variety, it is difficult to make a rigorous classification. However, we can distinguish several distinct groups of well-differentiated tools according to the data management and the type of result desired:

- Office tools- Allows you to move/copy content among different applications.
- Web - Orientation to create web content, not files.
- Analytics - (Advanced) calculations with data can be performed.
- Coding - The user has full control via a programming language.
- Open data - Guidance to use open data (available on the web).
- Maps - Native mapping (data on a base layer).

Some of these tools are closer to the realm of analysis and pure data visualization (on the web). Others, though created with the initial purpose of supporting the publication of data, then add to their functionality capabilities of graphical representation of data for their consumption. What are the main tools?

Tableau[28] Software

Tableau Software is a company entirely dedicated to data analysis and visualization. Through its product Tableau Desktop and Tableau Server, it offers users a powerful tool for data analysis and enrichment. Also, its powerful graphics engine can generate stunning visualizations on large volumes of data. Tableau Software is widely used in the communication sector (New York Times, O'Reilly Media), pharmaceuticals (Bayer CropScience) and education (mainly American universities).

Tabulae

Tabulae[29] is a web platform based on W3C standards, for data exploitation and visual analysis. It is a flexible tool that stands out for its ease of use and ability to fully customize the presentation of information through dashboards and interactive reports. Tabulae provides dynamic mechanisms of exploitation, enriching the users' experience and their ability to interpret the data. Without programming knowledge, you can transform any data set into an interactive web application accessible from any device.

QlikTech

QlikTech[30] offers two main products QlikView and QlikSense. Its flagship product, QlikView is a business intelligence software that stands out for its ease of use and visuality allowing business users to make decisions based on data. QlikView enables the consolidation of data from multiple sources in a single application, which facilitates the exploration of associations between data. On the other hand, QlikSense is a lighter and simpler version more oriented to visualization than analytics. Both solutions allow the construction of dashboards and reports easily. The website

[28] https://www.tableau.com/
[29] https://tabulaeapp.com/en/
[30] https://www.qlik.com/us

has a varied catalogue of demos, which allows us to quickly discover functionality and visual appearance.

Carto

Carto[31] is a cloud service that provides GIS capabilities and tools to build maps accessible through a web browser. Carto is a service widely used for creating thematic maps because of its ease of use and visually attractive results, so we can find maps created with this tool in many news digital newspapers, blogs, etc.

Socrata

Socrata[32] is a company that offers to non-technical users who want to share information the ability to easily create visualizations of their data. Founded in 2007 it is specialized in supporting the public sector offering a comprehensive service ranging from support for data collection to its conversion into applications.

CKAN

The widely known platform for publishing data catalogues, CKAN[33], offers a set of visualization modules that can generate different graphical representations. The Table view allows us to have a tabular version, in a table format, of the data of a particular dataset, offering listing tools and faceted view. It also has a module for data visualization in graph form, enabling the comparison of variables through a series within the same graph.

Similarly, if the data contains geo-referenced data the module maps can be used to create interactive visualizations. These visualization modules within the platform are CKAN Data Explorer, DataStore Grid, DataStore Graph, DataStore Map, Text view, Image view and Web page view. They are installed together with the platform. Moreover, there are also numerous extensions to complete this basic functionality, such as ckanext-basiccharts, ckanext-dashboard, ckanext-map, ckanextMapSearch, ckanext-mapviews, etc.

Once the public administrations have advanced significantly in the publication of open data - legislation, formats, best practices, defining standard vocabularies, etc. - the next step is to facilitate usability and data access by any user.

Data visualization is one of the most powerful mechanisms to exploit and analyse autonomously the implied meaning in the data, regardless of the degree of technical knowledge of the user. Visualization allows us to construct meaning from the data and create narratives based on the graphical representation.

Data visualization, from a formal and scientific point of view, is a mature discipline. Also, the degree of implementation in the industry is very wide, from the industrial and processing field to aspects more intricately linked to financial reporting and business management.

Its application is transversal to any process in which there are data, as in the case of the open data movement. This is a great advantage of the introduction of data mining tools based on visualization. The methodological and usability principles are well known.

[31] https://carto.com/

[32] https://www.tylertech.com/products/socrata

[33] https://ckan.org/

Besides, there is now a wide variety of software available for the development of visualization projects within the open data portals[34].

[34] https://data.europa.eu/euodp/en/visualisations

VI. Main elements and recommendations in transposing the new Open Data Directive into national legislation

In 2003 the EU comprehensively addressed the open data area with the **Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information**[35] (also the *Public Sector Information Directive* or the *PSI Directive).* The legal framework set by this directive has been amended in 2013 by the adoption of the **Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013 amending Directive 2003/98/EC on the re-use of public sector information**[36].

The revised PSI Directive focused on the economic aspects of the re-use of public information. It invited the Member States to make as much data and information available for free use and re-use as possible. It **expanded the scope of public data to written texts, databases, audio files and film fragments**. The revised PSI Directive addressed public sector bodies in the Member States at national, regional, and local levels. In practice, this meant entities like the ministries, state agencies and municipalities, however, also organisations performing public tasks and funded mostly by or under the control of public authorities. It additionally **broadened the scope of data-holders to museums, libraries, and archives**.

Following the developments in the area of open data and the need to establish a **common and more coherent legal framework for the EU single digital market for government data** (public sector information), as well as for the **publicly-funded data, including the research data**, the EU launched the process for preparation and adoption of a dedicated **Open Data Directive**. Evaluation and impact assessment of the Directive 2013/37/EU and the public consultation for the Directive 2013/37/EU review was launched in 2017. As a result, the **Directive (EU) 2019/1024 of the European Parliament and of the Council of 20 June 2019 on open data and the re-use of public sector information** was adopted in 2019.

The Open Data Directive is built on the two key pillars of the internal market – transparency and fair competition – and thus contributes also to the creation of a single European digital market for the public-sector data. By 16 July 2021, the Member States must transpose the Open Data Directive into their legal frameworks. In the light of the EU accession process of the ReSPA Members and Kosovo* and the alignment of their legal framework with the legal framework of the EU, it is sensible to outline the most important elements of the new Open Data Directive and, based on the experience from the EU Member States, to formulate recommendations on its transposition into the national legal frameworks.

The Open Data Directive updates the rules controlling the re-use of public sector information and enlarges the scope of the directive to:

- **data that are held and managed by public undertakings, such as water, energy, transport, and postal services**. The specific set of rules under which the data are accessible and re-used are set in the directive. In principle, the directive applies to data which the undertakings make available for re-use. Charges related to the provision of data should in principle be limited to marginal costs related to the initial provision of the documents;

[35] OJ L 345, 31.12.2003, p. 90–96.

[36] OJ L 175, 27.6.2013, p. 1–8.

- **research data**[37] **resulting from publicly-funded research activities.** According to the new directive Member States must develop policies for open access to publicly funded research data. Article 10 obliges the Member States to "*support the availability of research data by adopting national policies and relevant actions aiming at making publicly funded research data openly available ('open access policies') following the principle of open by default and compatible with FAIR principles.*" Ensuring and promoting open access to EU research and scientific data represents an important contribution to re-use of publicly funded scientific data and, finally, to more evidence-informed policymaking. Members States have, where justified, the right to include important exemptions for personal data protection and security, other considerations such as "intellectual property rights"[38], "knowledge transfer activities"[39], and "legitimate commercial interests"[40]. When designing national legal frameworks for open access to research data **all needed attention should be given to proper safeguards and measures that would minimise the potential abuse of the "confidentiality" and "legitimate commercial interest" argument by the publicly funded research organisations** (and research projects) **to restrict the open access to research data.**

The Open Data Directive encourages the Member States to **strengthen the transparency requirements for public-private agreements that involve public data and information** and **to avoid exclusive arrangements**. Already the revised PSI directive from 2013 expanded the scope of open data access to museums, archives, and libraries, including university libraries. The Open Data Directive further calls upon the Member States and the responsible public bodies **to avoid**, as far as possible, **exclusive agreements between themselves and private partners**. However, the new directive **deviates from the principle of broad re-use of cultural works in the case of rights related to the digitalisation of cultural resources**[41]. Article 12 defines that "where an exclusive right relates to the digitisation of cultural resources, the period of exclusivity shall in general not exceed ten years." In case such exclusivity would be granted, arrangements between the cultural heritage organisation and the private partner granting exclusive rights shall be transparent and made public. Any exclusive giveaway allowing private companies, engaged in the digitalisation of public cultural resources, to control access to the re-use of the digitalised cultural goods for 10 years should therefore really **represent an absolute exception** in the countries (both Member States and Candidate Countries). Connected to the above written, the Open Data Directive also limits the exceptions which currently allow public bodies to charge more than the marginal costs of dissemination for the re-use of their data.

The Open Data Directive further encourages the **publishing of dynamic data and the uptake of Application Programme Interfaces** (APIs). According to the information collected during the preparation of this guidelines, tangible progress, and operational experience in the uptake of APIs have been obtained in the ReSPA Members and Kosovo* (e.g. Montenegro, for more details please see Chapter III). Perhaps **technical knowledge and operational experience in the application and the use of APIs** could be **shared/disseminated among ReSPA Members and**

37 Directive (EU) 2019/1024, Art. 2. - 'research data' means documents in a digital form, other than scientific publications, which are collected or produced in the course of scientific research activities and are used as evidence in the research process, or are commonly accepted in the research community as necessary to validate research findings and results.

38 Directive (EU) 2019/1024, Art 10.

39 Directive (EU) 2019/1024, Art 10.

40 Directive (EU) 2019/1024, Art 10.

41 Directive (EU) 2019/1024, Art 12.3.

Kosovo*, also in the framework of the Open Data Days or upcoming Regional Info-day/Conference.

The Open Data Directive introduces the concept of "**high-value datasets**". These are defined as the "documents the re-use of which is associated with **important benefits for society, the environment and the economy**, in particular, because of their suitability for the creation of value-added services, applications and new, high-quality and decent jobs, and the number of potential beneficiaries of the value-added services and applications based on those datasets"[42]. As defined by Article 14 the high-value datasets, should:

- be available free of charge;
- in machine-readable format;
- provided via the APIs; and,
- where relevant, provided as a bulk download.

According to Article 14.1 the European Commission will, with the **adoption of implementing acts, define a list of high-value datasets to be provided free of charge**. These datasets will be defined within the **thematic range described in Annex I to the Directive** and will have a **high commercial potential, as well as contribute to the emergence of value-added information products**. The high-value datasets will, as key data sources, contribute also to the development and use of **Artificial Intelligence** (research and use/tools).

The **thematic categories of high-value datasets**, as referred to in Article 13.1, are:

1. Geospatial;
2. Earth observation and environment;
3. Meteorological;
4. Statistics;
5. Companies and company ownership; and,
6. Mobility.

The thematic categories are broadly defined, and their specifics will be determined in the next years by a series of implementing acts. Moreover, the Open Data Directive gives the **responsibility to define which high-value datasets to be published to the Member States**. The Open Data Directive itself, however, **does not define or suggest the methodology for their establishment**.

In the ReSPA Members and Kosovo*, the **consultation mechanisms for the general public and private sector/businesses to provide input** into the decisions on the area and scope of open data are **not sufficiently developed**. To **generate awareness and increase the re-use of open data early, intense, and permanent engagement** of the governments with the private sector and the citizens is **essential**. The importance of early and permanent engagement with the public in definition and the re-use of open public data has also been confirmed by the findings of the Global Open Data Index[43]. To reduce the further loss of public trust in governments and governments' attempts to open public data, the **consultation with the private sector and citizens should be permanent, open, and transparent**. High-value data should not be made private based on the interventions and exceptions proposed by special interests, lobbyists, and companies.

[42] Directive (EU) 2019/1024, Art. 2.

[43] https://index.okfn.org/

The **definition and the evaluation of data's "value" are not provided** by the Open Data Directive. Also, the experts' definition of data's value is not consistent. It is therefore even more important that Member States' (and Candidate Countries') evaluation of high-value is based on both quantitative and qualitative indicators. **Quantitative indicators** (and assessment) – e.g. potential income generation, breadth of business applications, numbers of beneficiaries (also proposed by the Open Data Directive), should be **complemented using qualitative assessments (qualitative indicators)** and **expert judgment from multiple disciplines**. Latest Open Data Barometer[44] shows that less than a quarter of the data with the biggest potential for social impact is available as truly open data even from countries seen as open data leaders. This is largely because the governments' engagement beyond the open data and open government communities is limited. Positives trends initiated in some ReSPA Members and Kosovo* (e.g. Data Hub) should be **further developed, as well as connected, and with this synchronised and strengthened, on a regional level**.

The Open Data Directive encourages to implement the principle of "open by design and by default" also by using **standard open licences**. According to the directive, any licences for the re-use of public sector information should place as few restrictions on re-use as possible, for example limiting them to an indication of the source. Using standard open licences for publishing high-value datasets should also assist the Member States (and Candidate Countries) **to overcome any potential interoperability issues** and consequently encourage and support the re-use of the whole scope and potential of the high-value, and other open datasets. Article 8 states that in "Member States where licences are used, Member States shall ensure that standard licences for the re-use of public sector documents, which can be adapted to meet particular licence applications, are available in digital format and can be processed electronically. The Member States shall encourage the use of such standard licences"[45]. Standard licenses are defined as "a set of predefined re-use conditions in a digital format, preferably compatible with standardised public licences available online"[46].

The Open Data Directive aims at the ideal of standard open licences, however, **it is up to the Member States to fully implement** standardised, permissive open licensing requirements. According to the estimations of the European Data Portal, there are up to 90 different licences currently used by national, regional, or municipal governments. The quality assurance report[47] by the same portal also shows that the licences used to publish most datasets published on the/by open data portals from EU countries cannot be automatically detected. The question which licences are acceptable for the application of the public open data and public sector information is not clearly defined by the Open Data Directive. This could potentially result in **confusion and issues in interoperability**. Tailor-made and complicated licences also increase the risk of further strengthening data silos and making open data unused.

European Commission itself has **recently adopted Creative Commons licences**[48] for publishing its documents and data. However, the adoption of **Open Definition compliant licences**[49] from **Creative Commons** or **Open Data Commons** is not required by the Open Data

44 https://opendatabarometer.org/leadersedition/report/#findings

45 Directive (EU) 2019/1024, Art. 8.

46 Directive (EU) 2019/1024, Art. 2.

47 https://www.europeandataportal.eu/mqa?locale=en

48 https://creativecommons.org/2019/04/02/european-commission-adopts-cc-by-and-cc0-for-sharing-information/

49 https://opendefinition.org/licenses/

Directive. This might lead to the fact that despite the EU Member States have open data policies and open data portals in place, these **use different** (and often confusing) **licences and that the datasets included in the open data portals lack interoperability.**

In this light, it might be worth discussing the possibility to **discuss, explore and agree on the standard open licences used by the ReSPA Members and Kosovo*** (in their legal framework and data portals). A possible option, aligned with the European Commission's approach, would be to agree and adopt the **Open Definition compliant licences from Creative Commons or Open Data Commons** for the Western Balkan Region/ReSPA Members. This would have **a major impact on the interoperability of open datasets** (including the high-value ones) **in the region.** On the other hand, this would also **increase the attractiveness of datasets and their re-usability** by the private sector.

The Open Data Directives also addresses the issues of **practical arrangements**, such as the development of **tools and online portals for users to easier find and re-use public open data**[50]**.** This is connected to open licensing, as it is vital that the search tools and repositories properly identify, map, and connect datasets and other documents with the appropriate license metadata. If this is not possible, the users will be unable to find and understand how the particular data sets can be re-used. This is also an obvious case for the European Data Portal where more than 50 licence options**. Definition and adoption of common standard open licenses for the Western Balkan region** and **capacity building for both open government data publishers and users** (also through **Western Balkans open data portal**) would be more than justified and recommended.

[50] Directive (EU) 2019/1024, Art. 9.

VII. Risks associated with Open Data implementation (cybersecurity and privacy)

Open data can also pose substantial risks to the privacy of individuals whose information is collected and shared by the public administrations. Inadequate privacy protections for open data can lead to significant financial, physical, reputational, organizational, and societal harms.

For example, citizens might object to the release of their home address in connection with a crime tracking dataset, allowing nosy neighbours or prowlers to identify them or learn sensitive information about their lives. In other cases, poor quality data could lead to an individual being wrongly identified in a police database, causing lasting harm. And people who baulk at data brokers, advertisers, or insurance agents profiting off or profiling their purchasing or financial habits from public datasets might cease participating in public services.

Public administrations must be vigilant and resourceful to deter and defend against these privacy risks, no matter how they arise. One of the principals and unavoidable risks of opening government datasets to the public is the possibility that the data might reveal sensitive information about a specific individual. In cases where open datasets are not adequately vetted, personally identifiable information (PII) may be published inadvertently. Even when a dataset has been scrubbed of names and other potentially identifying traits and rendered “de-identified,” there is a chance that someone (referred to in professional literature as an “adversary”) might be able to deduce that some of the data related to a specific individual. This can be a professional skilled in re-identifying individuals from seemingly “anonymous” information; a commercial information reseller with access to millions of other data points; or an insider like a friend, co-worker, or neighbour (or social media follower) who knows other personal information about an individual. If municipal employee salaries are published to an open dataset, for example, a family member who knows an individual’s job title may suddenly be able to easily learn how much money their relative makes.

As open data programs mature and shift from merely providing historic data and statistics to more granular, searchable, accessible, and comprehensive “microdata” about citizens and their activities, the risk of re-identification rises even further. Databases of calls to emergency services, civil complaints about building codes and restaurants, and even civil rights violations will potentially become available for anyone in the world to explore. The ease at which adversaries (including professional researchers, commercial organizations and data brokers, other government and law enforcement agencies, civic hackers, and individual members of the general public) could download, re-sort, and recombine these datasets carries an obvious risk for the leakage of sensitive data.

Open data programs are not only challenged in terms of cybersecurity by sophisticated adversaries combining multiple databases to reveal sensitive attributes about individuals. Opening administrative datasets that appear more routine or mundane (and therefore fail to raise the same privacy red flags) can also leave individuals exposed. In 2017, for example, a parent who was examining expenditure files on the Chicago Public School’s website discovered that deep within the tens of thousands of rows of vendor payment data were some 4,500 files that identified students with Individualized Educational Programs – revealing in plain text the students’ names, identification numbers, the type of special education services that were being provided for them, how much those services cost, the names of therapists, and how often students met with the specialists.

One of the unavoidable challenges of open data is that once information has been published publicly, it likely can never be retracted. Unfortunately, data de-identification is a moving target – data that could not be linked to an individual when it was released, could become identifiable over time. For example, if sometime in the future another dataset is published that links one record to another or if a new technique becomes available to match information across multiple datasets, the risk of re-identifying an individual in the original open dataset may increase significantly. While it is difficult to predict when such future data may become available, cutting-edge research into more dynamic de-identification techniques is underway by disclosure control experts around the world.

The transparency goals of municipal open data programs are critical to the improvement of civic life and institutions in the modern city and rely on the release of microdata about the city and its citizens' activities. And yet people who provide personal information to their governments must be able to trust that their privacy will be protected. If individuals find their personal information exposed, or their neighbourhoods singled out or discriminated against, or their data collected for one purpose and used for another, this can undermine public trust in the city as a whole and slow or even reverse the momentum of the open data program. On the other hand, where cities engage the public and communicate the benefits of the open data program while addressing any shortcomings, they may build public trust. Responsible privacy practices and effective communication provide the foundation for successful, trustworthy, and innovative open data programs.

VIII. Ethical aspects of Open Data, also in the perspective of the Covid-19 epidemy

In the time of the digital age and the Industry 4.0, where our **services, decisions and technologies rely on data, issues connected to ethical data collection, sharing and re-use are becoming more and more prominent**. In the light of the Covid-19 pandemic crisis, the questions, and discussions on ethical and unethical use of the data practices have further increased, both in frequency and intensity.

Data Ethics Codes are being developed across different sectors. Legal basis for personal data protection (e.g. General Data Protection Regulation), licensing, and property rights (e.g. Open Data Directive) and anti-discrimination are being strengthened. Equally, the debates on transparency in the collection, management and monetisation of personal data, the bias in data sets and data analysis mechanisms and discrimination based on data are being more eloquent. Data ethics is becoming a more and more important tool to evaluate data management practises – covering both data collection, sharing and re-use – in the light of their potential adverse impact on individuals and society.

It is crucial to understand that the ethics considerations **involve both personal and non-personal data** (e.g. non-availability of data on access to the general practitioner in rural areas represents a disadvantage for people living in this areas, as well for the areas themselves). Complying with the legal framework, e.g. the GDPR, when collecting, sharing, and re-using data, means that the data were collected, shared, and re-used in legally. However, this can still mean that the data were collected, shared, and re-used unethically. **The legality of data-related activity is just one part of handling data ethically.** In today data-dependent world collecting and sharing or omitting and restricting data from certain people or groups can have serious implications on their lives. **Data ethics is therefore focused on the (potential) impact of data-related activities to individuals and the society**.

Development of capacities of government (open) data managers and public organisations represents one of the key skills and capacities need to be addressed. Ethical aspects cover both personal and non-personal data, as well as the whole circle of data management – from the collection, sharing and the re-use. The objective of this chapter is to raise data ethics awareness, the need to create data ethics principles, policies and processes in the national administrations and to indicate possible steps in developing the necessary capacities within public services of ReSPA Members and Kosovo* to collect, share and re-use data ethically. The Chapter will present the legal pillars for the data ethics and attempt to incorporate them into a data ethics assessment framework, based on the Open data Canvas, developed by the Open Data Institute. As a conclusion and the practical example in evaluating the ethical collection, sharing and re-use of data the example of Covid-19 related data will be presented and discussed.

a. Legal considerations and aspects

When design the data ethics code the question of legal compliance represents does not represent a complete answer and approach in managing data ethically. The even increasing offer and the demand for data also pose new questions on responsibility, accountability, and fairness. Questions of legal certainty against harm to the individual and collective privacy, safety and welfare are consequently often raised to the legislator, and, in general governments. Often the emerging ethical debates precede and encourage of the revision or adoption of the new legislative framework that additional safeguards the privacy, integrity and the welfare of the individuals and

the society. Such legislative framework addresses data specifically, like the data protection regulations and directives, as well as data in a wider sense, like the protection of intellectual rights, anti-discrimination, and consumer protection. In this guideline, we **highlight just the most important legal aspects and their implications** in managing open data.

Data protective legislation on the level of the EU has a long history. **Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data**[51] was adopted in 1995 to unify data protection legislation across EU member states. The lessons learned and the issues raised have been addressed by the **Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC**[52] - General Data Protection Regulation or the GDPR. The objective of this comprehensive regulation is design measures and tools to safeguard the personal data of the EU citizens, as well as give the EU citizens greater control over their personal data against the increasing threats caused by the automation, expanding mobile connectivity, government and corporate surveillance, and large-scale commercial hacks of sensitive personal data.

The GDPR strengthens rights of data subjects (persons) on personal data collection, storage, management, and use. The important changes are the right of data erasure - 'right to be forgotten' - and the right to data amendment. In Article 20 the GDPR introduces the new right - data portability. This right allows the data owners to obtain, transmit and reuse the collected personal data from one to other data controller (services) without hindrance from the controller to which the personal data have been provided. The transfer should be, where possible, done directly between the two data controllers (services or governmental entities or databases).

The GDPR also expands the responsibilities (and liabilities) for organisations managing or processing personal data. A **Data Protection Impact Assessments** is **mandatory in cases where the processing of is likely to result in a high risk to the rights and freedoms of individuals** (when using new technologies)[53].

The Data Protection Impact Assessments should contain at least:

- a systematic description of the envisaged processing operations and the purposes of the processing, including, where applicable, the legitimate interest pursued by the data controller;

- an assessment of the necessity and proportionality of the processing operations concerning the purposes;

- an assessment of the risks to the rights and freedoms of data subjects; and,

- the measures envisaged addressing the risks, including safeguards, security measures and mechanisms to ensure the protection of personal data and to demonstrate compliance

[51] OJ L 281, 23.11.1995, p. 31–50.
[52] OJ L 119, 4.5.2016, p. 1–88.
[53] Directive (EU) 2019/1024, Art. 35.

with the GDPR and taking into account the rights and legitimate interests of data subjects and other persons concerned.

It is recommended that the assessment is performed also when assessing the ethical aspects of collecting, sharing, and re-using of open data. Many aspects of the assessment have also been taken on board in preparation for the Data Ethics Assessment Framework.

Even stricter conditions for obligatory Data Protection Impact Assessments are required where extensive personal information about a person is analysed and used as the basis of decisions which have legal effects or otherwise significantly affect that person[54]. Application of this Article is particularly important in decision-related to the introduction of Covid-19 tracking applications and personal data management (please also see below).

Legal issues concerning **property rights and data licences** have been substantially addressed by the Open Data Directive[55]. As substantially elaborated in Chapter VI, the decision on the standard open licences will be one of the crucial issues when transposing the directive into national legislation. Following the example of the European Commission, it would be advisable to use Open Definition compliant licences from Creative Commons or Open Data Commons on national, as well as regional level, to support the **potential creation of a single open data market for the Western Balkans**.

To address the issue of **confidentiality of data,** the European Parliament and Council adopted the **Directive (EU) 2016/943 of the European Parliament and of the Council of 8 June 2016[56] on the protection of undisclosed know-how and business information (trade secrets) against their unlawful acquisition, use and disclosure**. The scope of the directive, and the corresponding national legislation, is both long-held, strategic information held by companies, as well as "short-lived" data and information (e.g. market research results). The directive strictly addresses the circumstances in which confidential information has been misappropriated.

The right to privacy (and the obligation of its protection) is recognised also in the **European Convention on Human Rights[57]** and the **Charter of Fundamental Rights of the European Union[58].** Article 8 of the Convention defines the right to respect for family and private life. Here the private life refers to things like a person's sexuality, body, personal identity, family and relationships, and **their personal information**. It is an open-ended provision that also allows several exceptions for national security, public safety, the economic wellbeing of a country, protection of health and protection of the freedoms of others. Similarly, the EU Charter of Fundamental Rights also recognises a right to the protection of personal data. According to Article 8, data must be processed:

- fairly;
- for or specified purposes; and,

54 Directive (EU) 2019/1024, Art. 35.3.
55 Directive (EU) 2019/1024.
56 OJ L 157, 15.6.2016, p. 1–18.
57 https://www.echr.coe.int/Documents/Convention_ENG.pdf
58 OJ C 326, 26.10.2012, p. 391–407.

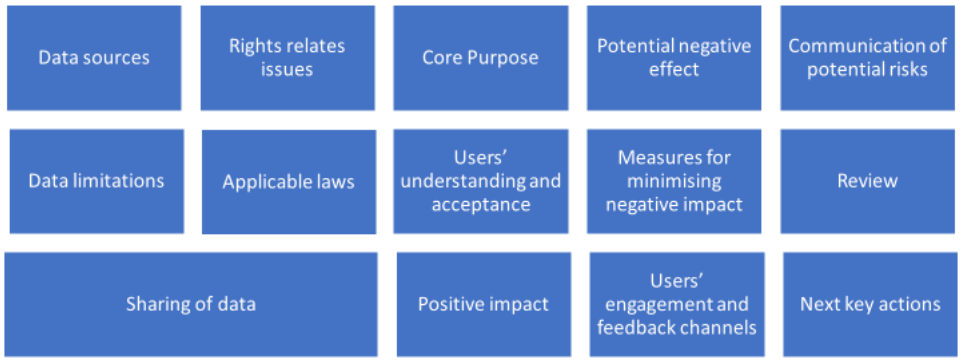
- based on the consent of the person concerned or other legitimate basis laid down by law.

The Charter further emphasis the right of everyone to access the data collected and the right to data rectification.

b. Ways towards of a Data Ethics Assessment Framework

Data Ethics focuses on the impact of the collection, share and re-use of data on individuals and communities. Type of data related activity can have several outcomes (and potential consequences), depending on the context within which the activity takes place, its purpose and the organisation involved. This requires an assessment process that goes beyond the compliance check. Measures supporting the ethical collection, sharing and re-use of data require discussion, critical thinking, identification of potential risks and evaluation of expected impact. These arguments require a tool that goes beyond an explicit ethics code or set of ethical principles for data management. Data ethical assessment framework, based on the Data Ethical Canvas, developed by the Open Data Institute[59], seems like a useful tool for any (public) organisation managing open (public) data. On one hand, the assessment framework allows structured analysis of the ethical impact of data management on the individuals and society, and on the other hand, due to its openness, allows early risk identification and risk management, and last, but not least, a permanent progression of the tool (framework) itself, based on the latest legal, strategic and policy developments. Development of own data ethics assessment frameworks within public organisations should assist public administrations to design better products and/or services that have a positive impact on the life of both individuals and society, while simultaneously minimising bias and negative impact. The openness of governments to discuss the ethical impact of the services and related data management creates engagement and builds trust. Building trust and demonstrating leadership in data ethics will be crucial to modern public administration and successful governance.

Data Ethics Assessment Framework[1]



[1] based upon Data Ethics Canvas, Helping organisations navigate ethical concerns in their data practices, Open Data Institute 2017.

The framework can be used for the assessment of any data; however, the text below specifically refers to open data.

59 Helping organisations navigate ethical concerns in their data practices, Open Data Institute 2017.

The Data Ethics Assessment Framework, in essence, resembles the Data Protection Impact Assessments, mandatory by the GPRD[60] in cases where the processing of is likely to result in a high risk to the rights and freedoms of individuals (in particular when using new technologies)[61]. As the GDPR Data Protection Impact Assessment is a decision-making tool for data processors and controllers under data protection laws, in the same way the Data Ethics Assessment Framework is designed to function for broader ethical considerations. To develop and consequently use the full potential of the Data Ethics Assessment Framework, both the framework and the results should be shared with affected individuals and key stakeholders, and, where possible, with the general public. This should apply to a complete cycle of product or service management.

Key building blocks in assessing the data ethics of a new, or existing, service or product:

- **Data Sources**

Key data sets for the new product/service or a database should be identified and basic characteristics, scope and function in the new product/service defined.

New or revised product/service can indeed involve only non-personal data, however, still, be unethical.

When assessing data sources, attention should be given to the issues of bias, inaccuracies and inconsistencies in data which can arise regardless of the nature of its source (issues of data gaps and bias in data are substantially elaborated below). This can involve both personal and non-personal data. If data issues from the data collection/data sources are not identified, assessment and mitigated, this might harm individuals and communities. Identifying and mitigating issues within data sources that could negatively affect certain population demographics if left untreated is part of treating data ethically.

- **Rights related issues**

Any issue related to the fair and lawful collection of data should be resolved. This is particularly important when data are not collected directly. All issues about permissions and no-restrictions need to be clarified. Issues of the rights to re-use the data need to be resolved. Chronological duration (and potential limitations) of rights needs to be fixed.

- **Core purpose**

Use case needs to be clear and obvious. Collection and use of data must be based on a clear users' need, and/or public benefit, particularly in handling public open data. Any personal data collected from people must be collected for a specific and clear purpose, and only used for that purpose (or for future uses that are not 'incompatible' with the original purpose).

- **Potential Negative effect**

Collecting, sharing, and re-using data may cause harm to individuals or society. Harm can be direct or indirect and result from disadvantage or prejudice arising from how the data is managed

[60] Directive (EU) 2019/1024, Art. 35.

[61] Directive (EU) 2019/1024, Art. 35.

by the organisation with whom it is shared. The negative effects and harm can occur also in cases where the distribution of data is lawful. Data Analytic Services can have a negative impact – e.g. data about a person's online browsing habits, their geographical location and social media interactions are frequently used for targeted advertising, including to the most vulnerable. Concretely advertisements targeting people with poor credit offering payday loans, and people with limited job opportunities being offered expensive courses at private colleges[62]. When designing the product or service it is important to reconsider who will have access to collected data and what potential of harm or prejudice might arise from that access. Accordingly, and if needed, mitigating actions should be put in place. If the data, especially open data, concern core public infrastructure – such as weather, mapping, energy, transport, and health – or stands to enable powerful discoveries, then there is a responsibility to examine any ethical implications. The use of the Data Ethics Assessment Framework should also assist in preventing the creation of unfair access to exclusive arrangements and data monopolies, as well as encourage an open debate on data needs and assets.

- **Communication of potential risks**

All potential risks and limitations of the future service or product should be communicated to potentially affected individuals or communities. All channels of communication need to be considered.

- **Data limitations**

Any collection of personal data must be non-excessive. Scope of the data collected, shared, and re-used must be strictly limited to the original service/product purpose and results. Two aspects are frequently forgotten in considering data limitations: data gaps and bias in data.

Gaps in data are data omissions. Gaps as such do not cause direct harm, however where a limited data source is used to generate insights, conclusions and general measures concerning a larger population, gaps in data can have negative impacts.

Bias in data can pose a significant limitation. Biases occur because of different factors. Data obtained through survey questions can be designed by people with different interests or political/social/economic background. Selection of data, whereby limiting the scope, to data from individuals with a background can also lead to bias in data. The difficult with the bias is its recognition. Therefore peer-review, or even better – completely open review of data sources and data collection, share and re-use methodologies and algorithms play a significant role in reducing bias in data. Opening the algorithms for their collection, management and use for interested public review opens up the possibility to reduce errors, improve data management mechanisms and build trust, as well as encourage data-reuse.

- **Applicable laws**

Any collection and use of data must be fair and lawful. Data protection legislation, intellectual property rights, data licences and specific ethic legislation (if existent) needs to be considered.

If intellectual property rights, laws on confidentiality and law protecting the personal data are breached, data might be collected unlawfully. In the case where data projects involve pre-existing

[62] Helping organisations navigate ethical concerns in their data practices, Open Data Institute 2017.

data sources, it is exceedingly difficult to determine whether these sources were collected lawfully (e.g. no documentation on the origin of data sources, unclear legal responsibility, and legal applicability).

- **Users' understanding and acceptance**

Potential impact and purpose of the product or service need to be clearly explained to both individuals and communities. In doing these, organisations managing personal data must be completely open (and communicative) about their processes, policies, uses and collection of personal data.

- **Measures for minimising the negative impact**

Formal procedures need to be in place to identify and minimise the negative impact. Monitoring of the negative impact and the supporting effect of mitigating activities needs to be in place.

The negative impact can be supported by the unfair monopolies in data collection, share and re-use. In the domain of open data, the issue of potential monopolies is addressed with the Open Data Directive (although with limitations). Unfair monopolies are a consequence of arrangements that allow data access to a single organisation (or a small group of organisations), rather than having open access. Exclusive arrangements in the domain of open data are prohibited, although with exceptions. Any exception should be thoroughly reviewed, and its impact evaluated thoroughly. This is extremely important also in the light of the current Covid-19 pandemic where medical research, disease prevention and disaster risk planning (under the presumption for all to be funded through public funds) need to be available as open-source/open data to more than one organisation.

- **Review**

All procedures and methodologies regarding the data ethics need to be permanently reviewed and, if needed revised. This goes for the Data Ethics Assessment Framework assessment also. Biases can affect the methodology for data collection, sharing or/and re-use.

- **Sharing of data**

The key question is the impact of sharing the data with selected entities (private or/and public) or having data freely and openly accessible for access, share and re-use by anyone – as open data.

- **Positive impact**

This is a key requirement in data ethics assessment. Any collection, use and share of data must be based on clear users' needs and/or with public benefit.

- **Users' engagement and feedback channels**

Due to different reasons the error in data collection, sharing or collection might occur. The procedures for their identification, communication and feedback must be in place.

The possibility that datasets and data management models are free or errors, limitations or biases is virtually impossible. Procedures allowing systematic response to inconsistencies and errors

must be put in place. This should be complemented by measures and procedures to mitigate potential harm to individuals or/and communities caused by data collection, sharing and re-use.

- **Next key actions**

All potential ethical issues need to be resolved before moving to the next steps of service or product phase implementation. These next steps need to be defined and agreed with individuals and communities potentially affected.

c. Deliberations on open data and Covid-19 pandemic data use

The Covid-19 pandemic crisis has unprecedentedly affected and changed the economic and social situation and relationships on a global scale. These relationships are more than ever affected also on a personal level. **Transparency and accountability of the governments**, as well as **communication and participation of the citizens,** are being questioned and tested daily. Availability of reliable and trustworthy data and information, as well as their ethical management, has become one of the key issues in the crisis.

In the creation of adequate disaster response and disaster management measures, the **use of open data can importantly contribute better outcomes**. Governments themselves or in cooperation with the civil society, citizens, or the private sector are creating solutions using open data. Currently, 55 datasets are available on the **European Data Portal**[63]. Most of the datasets are coming from France, Austria, and Spain. The sites provide also key stories and Data Related Initiatives. Further insight into open data engagement and use concerning the pandemic can be obtained on the **Open Government Partnership**[64] page. Through a dedicated "open response – open recovery" promotes the open data use in response to the pandemic crisis, provides guidelines and encourages the sharing of accessible data sources and practical solutions.

In general, the main clusters of re-use - via publication of relevant datasets or development of targeted applications - of open data are (examples per each category are presented below):

1) publishing proactive information for the epidemiologic situation and affected communities, including economic and social support;
2) informing citizens, providing practical advice, support public participation and promote open data (via platforms or applications);
3) child-care and education (predominantly primary, as well as secondary);
4) citizen-led community responses and post-crisis planning;
5) tackling disinformation; and,
6) scientific knowledge sharing, including the forecasting models and strategies.

Belgium, for example, is making Covid-19 related public data and information available on two sites – **EpiStat** (https://epistat.wiv-isp.be/covid/) and **FAIR.Heathdata** (https://fair.healthdata.be/sources/covid-19). While the first one provides data, reports and dynamic dashboard on the epidemiological situation in Belgium, the second one provides several

63 https://www.europeandataportal.eu/en/covid-19/datasets

64 https://www.opengovpartnership.org/campaigns/open-response-open-recovery/

datasets concerning the execution of the critical tasks, the quality of execution of tasks, the need for help, the available capacity, the number infections, and the availability of medical equipment. Similarly, several countries (including e.g. Serbia[65]) have developed centralised portals combining data on the epidemiological situation (including the interactive maps), as well as practical information on the crisis management, rules, and restrictions.

The Covid-19 situation on the EU level is monitored by the **European Centre for Disease Prevention and Control (ECDC)**. ECDC also produces risk assessments to advise the Member States and the European Commission in the design of response activities. The available dataset provides data on the regional distribution of Covid-19 cases and deceased (https://data.europa.eu/euodp/en/data/dataset/covid-19-coronavirus-data).

A more comprehensive database is provided by the **OECD** (http://www.oecd.org/coronavirus/en/). The portal **Tackling coronavirus: Contributing to a global effort** is an extremely rich multidisciplinary portal providing policy papers and analyses, data visualizations, and an open data portal describing Covid-19 impacts (global and country-specific).

In France, open data portal **En premiere ligne** (In the first line) - https://enpremiereligne.fr/ - provides information to healthcare workers and critical infrastructure employees in finding childcare solutions and groceries supply.

Bulgarian platform - https://www.sofia.bg/en/covid-19/-/asset_publisher/5mTkmwueyEMI/content/fand-kova-nad-300-v-zrastni-hora-poluciha-do-doma-si-hrana-i-lekarstva-za-sedmi-1 - identifies, connects and manages volunteers in Sofia for support to most critical population groups (elderly in Sofia metropolitan region) in groceries and medicines supply and remote social contact. Similar pages for volunteers exist also in the **Western Balkans** – e.g. in **Serbia** - https://budivolonter.gov.rs/.

Citizens participation platform - https://participa.io/ - in **Spain** allow to report local incidents and threats related to Covid-19, as well as to introduce the local initiative. Several countries have organised **virtual hackathons** in support of the development of data portals for the citizens for the design of post epidemy measures for the economic and social recovery – e.g. **Lithuania** (**Hack The Crisis** - https://hackthecrisis.lt/), **Latvia** (https://techchill.co/hackforce-hackathon-solutions-are-already-being-implemented) and **Germany**.

Interesting product has been developed in **Croatia**, using open data sets and artificial intelligence. **Andrija is a digital assistant** and "virtual doctor", developed in cooperation of the domestic ICT sector and epidemiologist. Andrija can be reached via the WhatsApp or the webpage - https://andrija.ai.

Due to the confinement rules and mobility restrictions educational process had to be organised via distance learning. **Educational resources and practical information** – collected and shared by both the government, educational sector and the CSO have been merged in creating the platform in **Slovakia**. Although the platform is hosted and managed by the ministry, its creation and management are an example of participatory co-creation and collaboration, including in data collection, sharing and use. The platform is available in Slovak and Hungarian - https://www.ucimenadialku.sk/.

[65] https://covid-19.rs/

EU vs DiSiNFO - https://euvsdisinfo.eu - is a European External Action Services's project on tackling the **disinformation on the EU level** since 2015. It now includes Covid-19 specific disinformation tracking and resources.

The **Joint Research Centre of the European Commission** has further developed its artificial intelligence-powered tool for media monitoring – **Europe Media Monitor**. News on Covid-19 epidemic are automatically gathered, monitored, displayed and accessible via the portal in several languages and regions - https://emm.newsbrief.eu/NewsBrief/alertedition/en/CoronavirusInfection.html. The platform is available also as a mobile app.

COVID 19 Data Portal - https://www.covid-19dataportal.org/ - provides bioinformatics and research literature open data portal jointly created by the European Union Commission, the European Bioinformatics Institute of the European Molecular Biology Laboratory. Via a special tool, it is possible also for external users to share appropriate data with the curators for publication on the site.

Social distancing has been one of the most present and impactful measures implemented in the fight against the spread of Covid-19 pandemic. Currently, measures against virus spreading are gradually being lifted and the question of the **return to the "new normality"** becomes more and more pertinent. The fact is that the Covid-19 will remain an imminent risk for the societies. The dilemma for the governments is how to mitigate the potential future medical emergency while restarting business activities and the "normal" activities of the citizens. The idea that is directly linked with this, and is raising technical, legal, ethical, and political discussions, is the **introduction of contact-tracing mobile applications**.

Contact-tracing applications – supported by mobile technologies and devices – are a possible risk mitigating activities in the times of the "new normal". The objective of these applications is to monitor social interactions of Covid-19 infected persons with other individuals and the potential risk that these interactions pose to the resurgence in Covid-19 infections. The use of these application interferes with the life and rights of both individuals and the society/social groups.

One of the **wicked problems** related to the Covid-19 spread is the relatively long asymptomatic incubation period. Contact-tracing applications should address this issue by tracking persons that have been in proximity to persons who are (highly potentially) infected or virus transmitters, either because they were positively tested for the virus, or were otherwise diagnosed, or were in interactions with persons that have been infected and unwell. Tracking should reduce the risk of the virus spreading with identifying such individuals and through different measures stop the potential unknown virus transmission. Contact-tracing of potentially infected persons and virus transmitters is **not new epidemiologic measure or practice**. The difference is that the tracing has until now been performed manually – through personal contact and time-consuming epidemiological assessment. Human tracing is in today's inter-connected, highly mobile, and the globalised world almost impossible. Also, the **scope and the level of details** of information obtained through mobile tracing applications open up the **possibility for fast data processing and deployment of immediate risk-mitigation activities**. This is a huge argument for the wide-spread use of automated tracking applications via smartphones.

Despite the early deliberations on potential different technical solutions, today the most prominent idea in use by the contact-tracking applications is the **Bluetooth supported solution**. Using the Bluetooth, the application constantly broadcasts an identification key. The information entailed in the identification key is constantly modified to prevent misuse. When two mobile phones come in

proximity, each application detects the other device, communicate its identification key, and records the identification key of the other device. If either of the device users is identified as at Covid-19 associated risk the information of the information key the communication between two devices is stored in the system. If an individual is identified as at-risk all his key broadcasting and communication activities are monitored and stored for the asymptomatic incubation period (14-28 days). If key communication activities are recorded affected persons are informed. One of the key discussion points is that this information is also shared with the government that could, based on this introduce surveillance and, potentially, the quarantine on individuals.

Based on the current discussions held at the European level 14 Member States have declared their interest in developing and/or implementing the contact-tracking application. The Netherlands[66] and the Czech Republic[67] (eRouska) have started the development of their contact-tracking applications. There are also attempts to develop a Pan-European contact-tracing application PEPP-TT[68] and DP-3T[69]. As the transposition of data privacy and transparency directives is in the hands of the Member States the successful development and deployment of a universal EU contact-tracking application is questionable.

To synchronise and harmonise the national responses to contact-tracking applications, and as part as coordinated EU approach to returning to the "new normal"[70], the European Commission prepared and published the **Common EU Toolbox for Member States for Mobile applications to support contact tracing in the EU's fight against COVID-19**[71]. The document sets a clear set of requirements for the application of contact-tracing applications.

The **essential requirements** for national apps are:

- participation and personal data sharing are **voluntary**;
- gathering of data and the contact-tracking application is **approved by the national health authority**;
- privacy-preserving - **personal data** is **securely encrypted**; and,
- data and applications are **dismantled as soon as no longer needed**.

The toolkit clearly defines that all apps that might/will be deployed in the European Union must be installed (and used) voluntarily. The purpose of any application must clear and approved by the national health authority. demonstrate full compliance with EU data protection and privacy rules. All data should be anonymised. Safety of any application is an absolute imperative for the EU. The "right to be forgotten" is the last essential criteria. All applications must also be shut down and data erased when the justified reason and need no longer exists. Interoperability across the EU Member States is needed to ensure the health and safety of the citizens across borders. The toolbox is based on a data ethics assessment framework where the value of public and individual health is evaluated in relations with privacy rights.

66 https://www.rijksoverheid.nl/actueel/nieuws/2020/04/15/ministerie-van-vws-organiseert-digitaal-evenement-voor-beoordeling-corona-apps

67 https://erouska.cz/

68 https://www.pepp-pt.org/

69 https://github.com/DP-3T/documents

70 https://ec.europa.eu/info/sites/info/files/recommendation_on_apps_for_contact_tracing_4.pdf

71 https://ec.europa.eu/health/sites/health/files/ehealth/docs/covid-19_apps_en.pdf

The contact-tracing applications themselves cannot stop the spread of the virus. Once, and only when all ethical dilemmas are resolved, the contact-tracking application can be one of the support tools in an integrated and complex national (and EU) health infrastructure.

Once they are launched, their effectiveness will hugely depend on the citizens adopting these solutions. **The danger is that the mobile apps will not reach all citizens**. The apps presume that the users use and turn on the smartphone. Evidence from Singapore and a study performed by Oxford University indicate that **60-75% of a population need to have the app (and use it) if the application is to be efficient**[72]. Also, the application builds on the existence of Bluetooth technology. The available estimations indicate that between 50-80% of Europeans have a smartphone with Bluetooth technology. Access to and possession of the technology is on the other hand only half of the story. The user would also need to know how to operate the smartphone (and the Bluetooth). Possession of smartphones and the skills to use it are the lowest among the generation that represents the highest risk for Covid-19 infection and mortality. Having the above-listed arguments in practice means that certain groups of the population, and among those the most vulnerable ones, and certain demographic groups would be completely left out.

The public opinion and current level of acceptance of such applications are low, therefore the EC taking a guarantee role might be an incentive for user adoption. In any case, important issues of legality and data ethics would need to be resolved before the contact-tracking application can be rolled out and used as a reliable support tool reducing the risk of Covid-19 pandemic spreading.

[72] E Health Network: Common EU Toolbox for Member States for Mobile applications to support contact tracing in the EU's fight against COVID-19, European Commission, 2020, 19.

X. Towards the re-use of open data

The frustration that openly and freely accessible data is not re-used is a shared issue for any open data, knowledge management or training/capacity-building platform. Opening governmental data, including the design of the national legal and ethical framework, and the open data portal, is a demanding task *per se*. When data is finally made available, however, remains unused to generate new data, information and knowledge, the disappointment is obvious. The key to the bridge is not in more data but the creation of the community and its management.

If the community (e.g. Data Hub) has not been established, or the revision needs to be made, the first step is to open up the process of mapping your potential community members. The call for interest should be completely open – e.g. citizens initiatives and young professionals (including the ones in the tertiary education process) are often forgotten partner in the process.

Understanding the audience is the precondition of successful collaboration and the development of services. As for public communication in general, engaging with the data community needs to be targeted. Like all stakeholder groups, the right message can be wasted if it is directed to the wrong area.

Events with the communities must be focused on specialised topic areas. In the case of the United Kingdom (a long time EU leader in open data) open data are re-used – measured by apps that use the UK eGov Open data - predominantly in the sector of transport, society, mapping and crime and justice. Communities are always focused on one thematic area and quite often focused also geographically – local or regional. Local examples of data re-use can be equally eloquent promotor of open data use in local environments and motivator for duplication on other local communities and even regions.

It is mutually beneficial to promote thematic focused events on partners or even third-party spaces. Contribution to partners content is rewarded with greater outreach to potentially interested partners. When a message is shared with others, the recipient of the referral will be looking for the relevant content quickly.

When communicating community events (or news after the event) it should be written as a clear invitation. All reports and invitations in downloadable form should be avoided. The downloaded document is not read as the contact appearing on the screen would be. People are also less likely to click and to download. Also, search engines less often index content.

When designing an open data event, different ways of organising should be taken into consideration, depending on the target audience and organisers needs. The event can be organised as a more traditional conference, including more formal (key) talks, presentations, and round tables. The other possibility is to organise more participant-driven open data event that includes lighting talks, speed geeking, workshops, barcamp, text sprints, code sprints, datathons, unconferences or hack day. The purpose of the later is to organise an event as an open knowledge event that is community-driven and community building/strengthening event.

The following steps are often unintentionally forgotten when organising an open data event:

- Preparation of communication, visibility, and social outreach

Open social media channel to organise and promote the event (Facebook, twitter – with the appropriate/accompanying hashtag, video invitation, infographics, media material produced during and post the event)

- During the event, different work techniques should be used (based on the desired outcomes and the target audience):

When exploring a new topic or introducing a new one talks, panel discussions (not presentations!) and discussions seem the most appropriate modality of work. Lightning talks and speed geeking are the methods that could support and develop discussions around participants, as well as organisers, showcases and ideas. Workshops, barcamps are good methods for knowledge sharing. Hack day, text sprints, code sprints, hack days and datathons are good examples for collaboration and a way towards a practical result.

- Post-event activities

If the community building is the key to boost the re-use of open data, the community management does not end with the organisation of the event. Events could be key milestones in the life and work of the community. The work of a community manager is a permanent task that should be adequately appreciated and recognised. In the first instance, the community management is taken up by the initiator (governmental services), however, ideally passed on to a community member (from public office, private sector, or civil society). Several tools (MS Teams, JIVE, slack channels, team calls) can be used to build up the communities and support their ongoing work. Equally important is the skills sharing and skills development within the community. This can be done via video calls, tutorials, in addition to the more traditional document and information sharing.

The timing and frequency of the events depend primarily on the needs of the community. The event should always be focused – on a specific dataset, data management issue or an operational/applicative solution to be developed. A yearly event for a large audience is the least appropriate way forward. Community participation in the design, delivery and post-event activities do not represent an additional work only but are the guarantee for active participation, ownership (also through task delegation), meaningful deliverables and permanent engagement.

As part of the open data events or an event by itself hack days can be organised. First hack days with the structure of competitions where several datasets are released, and programmers have a short time-frame (e.g. 48 hours) to develop innovative applications using the data have been organised in the US and the UK. Although the prize, awarded to the best application, is important, however, the possibility for the governmental services to demonstrate the value of opening up their datasets and to practically show the multiple ways in which the information can be managed to achieve social and economic benefit is perhaps even more important. Hack days (or hackathons) should always be organised by the user community. Most successful hackathons have been organised on the extremely focused issue and a local or regional level. The community should get involved in the identification of datasets needs, as well as in datasets proactive promotion, once published.

ANNEX I

What is Open Data?

Open data is data that can be freely used, re-used, and redistributed by anyone - subject only, at most, to the requirement to attribute and share-alike.

Why Open Data?

Open data, especially open government data, is a tremendous resource that is yet largely untapped. Many individuals and organisations collect a broad range of different types of data to perform their tasks. Government is particularly significant in this respect, both because of the quantity and centrality of the data it collects, but also because most of that government data is public data by law, and therefore could be made open and made available for others to use. Why is that of interest?

There are many areas where we can expect open data to be of value, and where examples of how it has been used already exist. Many different groups of people and organisations can benefit from the availability of open data, including the government itself. At the same time, it is impossible to predict precisely how and where the value will be created in the future. The nature of innovation is that developments often come from unlikely places.

It is already possible to point to many areas where open government data is creating value. Some of these areas include:

- Transparency and democratic control
- Participation
- Self-empowerment
- Improved or new private products and services
- Innovation
- Improved efficiency of government services
- Improved effectiveness of government services
- Impact measurement of policies
- New knowledge from combined data sources and patterns in large data volumes
- Examples exist for most of these areas.

In terms of transparency, projects such as the Finnish ‘tax tree’ and British ‘where does my money go’ show how your tax money is being spent by the government. And there is the example of how open data saved Canada $3.2 billion in charity tax fraud. Also, various websites such as the Danish folketsting.dk track activity in parliament and the law-making processes, so you can see what exactly is happening, and which parliamentarians are involved.

Open government data can also help you to make better decisions in your own life or enable you to be more active in society. A woman in Denmark built findtoilet.dk, which showed all the Danish public toilets so that people she knew with bladder problems can now trust themselves to go out more again. In the Netherlands, a service, vervuilingsalarm.nl, is available which warns you with a message if the air quality in your vicinity is going to reach a self-defined threshold tomorrow. In New York, you can easily find out where you can walk your dog, as well as find other people who use the same parks. Services like ‘mapumental’ in the UK and ‘mapnificent’ in Germany allow you to find places to live, considering the duration of your commute to work, housing prices, and how beautiful an area is. All of these examples use open government data.

Economically, open data is of great importance as well. Several studies have estimated the economic value of open data at several tens of billions of Euros annually in the EU alone. New products and companies are re-using open data. The Danish husetsweb.dk helps you to find ways of improving the energy efficiency of your home, including financial planning and finding builders who can do the work. It is based on re-using cadastral information and information about government subsidies, as well as the local trade register. Google Translate uses the enormous volume of EU documents that appear in all European languages to train the translation algorithms, thus improving its quality of service.

Open data is also of value for government itself. For example, it can increase government efficiency. The Dutch Ministry of Education has published all their education-related data online for re-use. Since then, the number of questions they receive has dropped, reducing workload and costs, and the remaining questions are now also easier for civil servants to answer because it is clear where the relevant data can be found. Open data is also making government more effective, which ultimately also reduces costs. The Dutch department for cultural heritage is actively releasing their data and collaborating with amateur historical societies and groups such as the Wikimedia Foundation to execute their tasks more effectively. This not only results in improvements to the quality of their data but will also ultimately make the department smaller.

While there are numerous instances of how open data is already creating both social and economic value, we do not yet know what new things will become possible. New combinations of data can create new knowledge and insights, which can lead to whole new fields of application. We have seen this in the past, for example when Dr Snow discovered the relationship between drinking water pollution and cholera in London in the 19th century, by combining data about cholera deaths with the location of water wells. This led to the building of London's sewage systems, and hugely improved the general health of the population. We are likely to see such developments happening again as unexpected insights flow from the combination of different open data sets.

This untapped potential can be unleashed if we turn public government data into open data. This will only happen, however, if it is open, i.e. if there are no restrictions (legal, financial, or technological) to its re-use by others. Every restriction will exclude people from re-using public data and make it harder to find valuable ways of doing that. For the potential to be realized, public data needs to be open data.

What is Open Government?

Open government, in line with the open movement generally, seeks to make the workings of governments transparent, accountable, and responsive to citizens. It includes the ideals of democracy, due process, citizen participation and open government data. A thorough-going approach to open government would also seek to enable citizen participation in, for example, the drafting and revising of legislation and budget-setting.

ANNEX II

Zero Open Data Questionnaire

Introduction

Dear colleague!

Coordinated by the Regional School of Public Administration (ReSPA) the Western Balkans Region is keen to increase the awareness, availability and usability of public open data. We firmly believe that much has been done in the domain over the past years. We would like to highlight these successes, support and further develop best practices and mutually learn from each other. Therefore, your experience and knowledge in the field are of extreme importance to us. The questionnaire below gives us the tool to map, analyse and understand it. The usability cases and your hands-on experience s of special importance to us.

The results of this questionnaire will be summarised in the Zero Open Data Guidelines. The aim of this resource is to raise awareness of the significance and opportunities of the open data, present the possible approaches and tools for management of the open data and to facilitate their use.

Allow us to thank you already for your contribution and assure you that the data obtained will be handled with the utmost care and integrity. You will need approximately 30 minutes to complete this questionnaire.

If you should face any difficulties answering this questionnaire, or have additional questions regarding the Zero Open Data Guidelines, please do not hesitate to contact us on s.bukarica@respaweb.eu.

ReSPA team

Question Title

* 1. Is there an open data strategy in your country?

Yes

No

Question Title

1.a. If the answer to the 1st question is YES, please add the name of the document, year of adoption and responsible institution!

Question Title

1.b. If the answer to the 1st question is NO, please state the main reason!

Question Title

* 2. Are there any relevant open data initiatives (national, EU, international donors) in place?

Yes

No

Question Title

2.a If you answer to question 2 is YES, please provide the name of key relevant initiatives, year of implementation and responsible institution!

Question Title

* 3. Is there any framework or program for open data in place (e.g. policy, legal or regulatory framework such as OGP, Open Data for education, transport, customs, etc.)?

Yes

No

Question Title

3.a. If your answer to question 3 is YES, please add the name of the framework/programme, year of adoption and responsible/coordinating institution!

Question Title

* 4. How are open data embedded in PAs in your country and in society?

Question Title

* 5. How are the access and management of open data organised in your country (e.g. centralised, decentralised, multi-level/de-concentrated approach)?

Question Title

* 6. Are there coordination structures/bodies in place responsible for the coordination of open data initiatives (e.g. strategies, action plans, legal or regulatory) in your country?

Yes

No

Question Title

6.a. If your answer to question 6 is YES, please provide a brief name of the structure/bodies, contacts (email/phone) and a brief description of coordination mechanisms)!

Question Title

* 7. How are the open data delivered by the PAs in your country, is there any systematic process (e.g. every two months following a specific circular by a ministry etc.)?

(if there are no systematic processes in place please NOT insert NOT applicable

Open comment

Please insert NO if there is no systematic processes in place!

Question Title

* 8. Are there any cross-cutting initiatives to improve open data implementation (e.g. national statistics project aims also to improve open data implementation etc.)?

Yes

No

Question Title

8.a. If your answer to question 8 is YES, please state the name of the initiatives and the leading/coordinating entity/body for these initiatives!

Question Title

8.b. If your answer to question 8 is NO please state what are the main obstacles for such horizontal activities?

Question Title

* 9. Are there dedicated departments/bodies/agencies in place to support open data implementation (at central or local level)?

Yes

No

Question Title

9.a. If your answer to question 9 is YES, please state the name of the coordinating authority!

Question Title

* 10. Are guidelines or standards for open data clearly defined in your country?

(YES, NO, I DO NOT KNOW.

Yes

No

I do not know

Question Title

10.a. If your answer to question 10 is YES, please provide details on how these standards are provided to you/your organisation)!

Question Title

* 11. Is there a priority when it comes to which data sets are published?

Yes

No

Question Title

11.a. If your answer to question 11 is YES, please describe how this is organised, by whom, how often…)!

Question Title

* 12. Are there any monitoring mechanisms specifically for open data in place?

Yes

No

Question Title

12.a. If your answer to question 12 is YES, please describe how this is organised, by which institution/body, how often…)!

Question Title

* 13. Does your organisation have an open data portal (or provides data for one)?

Yes

No

Question Title

13.a. If your answer to question 13 is YES, please provide the web address. In case you do not manage the open data portal, please state the responsible institution)!

Question Title

* 14. How many data sets are published in the open data portal?

Question Title

* 15. How many Ministries have an open data portal?

Question Title

* 16. Do you receive demands from CSO-s, business or citizens to open up data?

Yes

No

Question Title

16.a. If your answer to question 16 is YES, please provide details on how many on average

Question Title

* 17. What technological solution do you use for the open data portal?

Question Title

* 18. Do you have a specific budget line for open data (and opening data up)?

Yes

No

I do not know

Question Title

* 18.a. If your answer is YES, could you please indicate approx. annual allocation for open data?

Question Title

* 19. To what extent have open data been used so far either by PAs, businesses or citizens?

Insert reply

Mark "I do not know" if not applicable

Question Title

* 20. Are there any tracking mechanisms that measure the usage of open data by any user?

Yes

No

I do not know

Question Title

20.a. If the answer to question 20 is YES, please briefly describe the tracking mechanism!

Question Title

* 21. Is the process of open data implementation evaluated by somebody?

Yes

No

I do not know

Question Title

21.a. If your answer to question 21 is YES, please provide details!

Question Title

* 22. Are PAs in your country promoting the usage of open data and if yes to what extent?

Yes

No

I do not know

Question Title

22.a. If your answer to question 22 is YES, please provide details, including the name of the campaign and the coordinating institution/body!

Question Title

* 23. Do you receive any feedback from CSO-s, businesses or citizens during the promotion of the usage of open data?

Yes

No

Question Title

23.a. If your answer to question 23 is YES, please provide details, including the name of the campaign and the coordinating institution/body)

Question Title

* 24. Are there any initiatives (national, EU, international donors) to improve the open data implementation process in your country?

Yes

No

I do not know

Question Title

24.a. If your answer to question 24 is YES, please provide details!

Question Title

* 25. Can you provide an example of usage of open data published by PA in your country?

Insert your reply

If not in position to give a response please insert "I am not able to provide you with any examples on the use of open data"

Question Title

* 26. What would be a good Case Study regarding open data from your country from which other countries in the WB would benefit?

Question Title

* 27. Can you mention some apps or systems that have been or are currently being developed on the open data infrastructure in your country?

Insert your reply

If not in position to give a response please insert "I am not able to provide you with further details on this question"

Question Title

* 28. Your input is extremely valuable for us! Can we get in touch with you for further information?

Yes

No

Question Title

28.a. If your answer to question 28 is YES, please provide us with your email address!