
The Public-Data Opportunity

Why Governments Should Share More

Discussion paper

Prepared by the Lisbon Council based on the discussions and presentations at the workshop on Public Sector Data: Still a Missed Opportunity held in Brussels on 04 June 2019. The workshop was convened by the Digital Transformation Team of Italy and the Subgroup on Data Analytics of the European eGovernment Action Plan Steering Board.

1. Sharing Data: The Road Ahead

Today, data is produced at an unprecedented scale and speed.¹ It is copied and transferred at zero cost in real time and has become a basic tool used in every government department.

Yet government agencies remain reluctant to share the data they hold with other agencies. One example is government spatial data, an area where vision has been far-reaching but actual data sharing has been rare. In 2007, the European Union approved the ambitious Infrastructure for Spatial Information in the European Community (INSPIRE) directive.² It set out a mandate for data sharing in the geospatial domain among member states with well-defined format and protocols.

But a recent European Commission evaluation report is adamant that “although progress has been made in implementing the Directive by 2014, none of the deadlines listed [...] have been met by all member states.”³

‘Data sharing and analytics can have a transformative power in public services.’

1 The authors would like to thank the participants of Public Sector Data: Still a Missed Opportunity Workshop – several of whom are quoted in this paper – for sharing their wisdom so generously, as well as the European Commission and the Digital Transformation Team Presidency of the Council of Ministers of Italy for hosting the workshop – and supporting this project. Thanks as well to Cécile Bergmans, Paul Hofheinz, Chrysoula Mitta and Viorica Spac. All errors of fact or judgement are the authors’ sole responsibility.

2 Vlado Cetl, Vanda Nunes de Lima, Robert Tomas, Michael Lutz, Joachim D’Eugenio, Adam Nagy et al, *Summary Report on Status of Implementation of the INSPIRE Directive in EU* (Ispra: Joint Research Centre, 2017).

3 European Commission, *Report from the Commission to the Council and the European Parliament on the Implementation of Directive 2007/2/EC of March 2007 Establishing an Infrastructure for Spatial Information in the European Community (INSPIRE) Pursuant to Article 23, SWD(2016) 273*, 2016.

While member states report the availability of 35,000 data download services, it appears that 80% of these services are provided by only two member states (France and Germany), and 63% of datasets focus on land use, only one of 34 themes which the directive was intended to reach. In other words, INSPIRE has not reached a sufficient coverage of themes and member states despite its excellent protocols and evident utility. Put simply, the initiative stumbled on the limited enthusiasm it generated at the member state level and the extremely meagre rate of adoption.

To exchange experience, work through problems and discuss how joint action might be undertaken to generate and foment greater data sharing among European Union member states – working within the crucial data-privacy parameters of the General Data Protection Agency and with an eye towards maximizing public good in this fast-growing economic area – the Presidency of the Council of Ministers of Italy’s Digital Transformation Team and the Subgroup on Data Analytics of the European eGovernment Action Plan Steering Board convened a workshop on *Public Sector Data: Still a Missed Opportunity* in Brussels on 04 June 2019. The discussion showed that there are many barriers to data sharing among European public services – some real, some imagined. But, at the same time, there is plenty of ongoing experimentation to address these barriers. And there is a strong need for a less fragmented, more systemic approach that accelerates the learning process, avoids redundancies and facilitates cooperation.

Ultimately, coercive regulations to force agencies to share data are important – but not enough in and of themselves to decisively change the situation. Data-driven public services will only be achieved by a careful

balance of enforcement, adequate incentives and nudging towards data holders. As Mike Bracken, founder of the legendary United Kingdom Government Digital Service, put it in a recent speech, change in government can be achieved by fear or, more effectively, by envy: by introducing a positive competition between agencies experiencing change.⁴ If, thanks to data sharing, a department achieves radically new insights or improves its performance, then other departments will start “queuing” for innovation.⁵

‘Data can radically improve policymaking and service delivery. What is less clear is why this is happening slowly – and what can be done to accelerate it.’

This paper summarizes the key insights of the workshop – not as literal minutes but as the analytical interpretation of the authors. Section II looks at why data sharing is important and how it can be achieved. Section III illustrates the opportunities of big data for the public sector. Section IV discusses the main barriers to adoption and the lessons learned from experience in some EU member states. The final section provides forward looking policy conclusions for further work.

4 Mike Bracken, “Public Service of the Future” (unpublished speech presented at the High-Level Summit on Co-Creation and Design Thinking, The Lisbon Council, Brussels, 2019).

5 See as well the five-minute interview with Mike Bracken at <https://www.youtube.com/watch?v=wuj4xN2k2Zc>.

2. Why Data Sharing Matters

In government as in other parts of the economy, secondary use of data (for a different purpose of the original one) is where most of the value lies. PageRank, Google's famous search-engine ranking, is a well known success story. In order to provide an effective search engine for billions of people, Google devised an innovative approach to gaining new insight from until then largely unused but widely available data: the search engine ranks a page's importance by the number of other sites linking to that page. But there are similar examples throughout public policy as well. Wales, a country in the United Kingdom, used data from mobile phones networks to assess mobility patterns and improve local transport infrastructures. The result is an important anomaly. It's often hard to tell what value the data you or someone else can bring. And, if life is any judge, the most innovative uses are often found by others with new and novel needs and new and novel insights. As Rufus Pollock, founder of the Open Knowledge Foundation, puts it, "the best thing with your data will be done by someone else."⁶

'Government agencies are reluctant to share data that they perceive as "theirs."

Towards that end, it might be worth remembering that the typical "data value chain" includes different roles:⁷

- **Data Holder.** She, he or it has control over data and high knowledge of the topic;
- **Data Analytics Provider.** She, he or it processes these data to provide new insight, with in depth knowledge of methodologies and tools;
- **Data User.** She, he or it benefits from this insight and applies it to the specific problem.

These roles are frequently integrated in a single organisational unit, but the greatest benefits often come from a decoupling of the roles of data holder, data analytics and data user.

How Eurostat builds trust

Users' involvement is necessary to create trust. Lack of trust is a very powerful deterrent to collaboration. In public services as well as in private ones, trust is gained through delivery. Trust – or the lack of it – affects all aspects of government collaboration: from possible data mishandling to lack of visible results. Statistical offices such as Eurostat have learned to place trust at the center of their activity, from managing data collection to assessing data quality to delivering robust indicators. This is especially important in a moment where government have to deal with the novel problem of data deluge, rather than scarcity. The strategic aim is to deliver trusted smart statistics from the widest possible range of data sources and with full compliance with personal data requirements. Eurostat has a well-established experience in managing data sharing from national statistical offices, for instance by delivering data quality assessment services. It is now extending this experience towards new and wider territories, such as Internet of Things (IoT) data and data held by the private sector. Once again, trust is the key to delivering data driven innovation.

⁶ For a thorough analysis of the ideas of data commons, see Paul Hofheinz and David Osimo, *Making Europe a Data Economy: A New Framework for Free Movement of Data in the Digital Age* (Brussels: The Lisbon Council, 2017).

⁷ There are many slightly different data value chain, but all share these high-level categories. See OECD, *Data-Driven Innovation: Big Data for Growth and Well-Being* (Paris: OECD, 2015).

In the case of government data sharing, the organisational mode needs to move from vertical silos to horizontal layers.

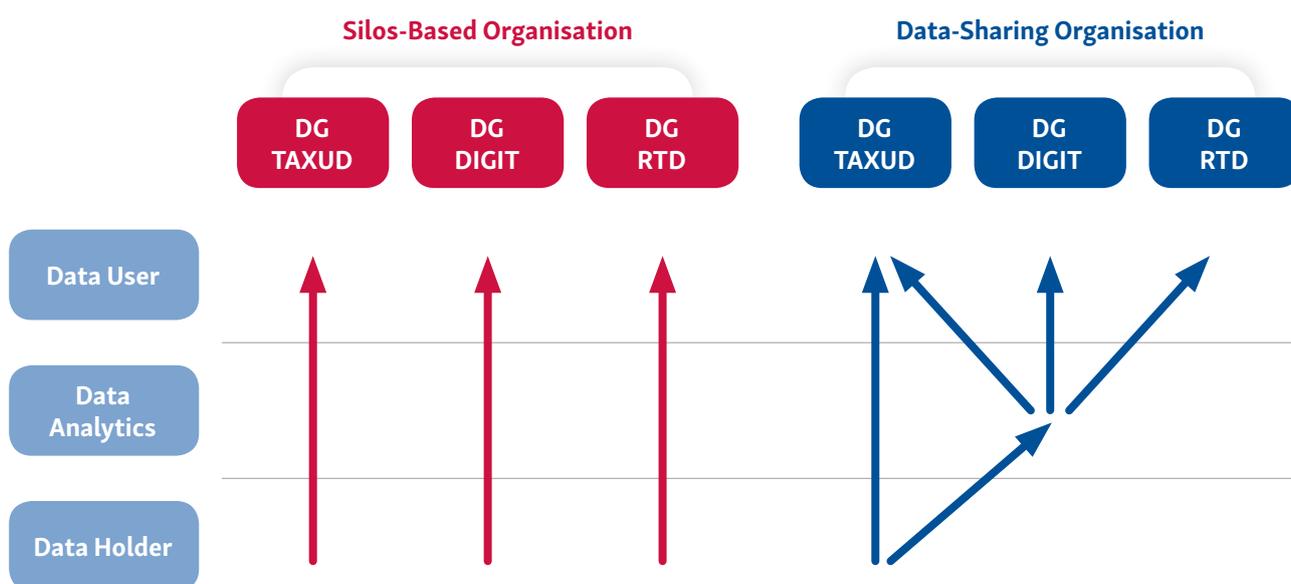
Chart 1 below provides a simplified view of how this change might apply if it were implemented inside the European Commission.⁸ The Directorate General for Taxation and Custom Union (DG TAXUD) and the Directorate General for Research and Innovation (DG RTD) are examples of “vertical DGs” inside the European

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Commission; their dossiers are sectoral. By contrast, the Directorate General for Informatics (DG DIGIT) is “horizontal;” its dossiers are transversal, cutting across departments, requiring that DG to find ways of working seamlessly with others. In Chart 1, in the figure below we imagine what would happen to the two vertical DGs if they moved from silos-based departments where each DG manages and analyzes its own data, to horizontal DGs where data acquisition, analytics and usage are decoupled. For instance, data from DG TAXUD could be used by DG DIGIT to provide advance analytics of the evolution of research and development tax credits in Europe, and vice versa.

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Chart 1. Data Flows in Silos vs Data Sharing Forms of Organisation



Sources: European Commission Directorate General for Informatics, Lisbon Council

Similar patterns could be imagined across other organisations, including at the national and local government level. European, national and local governments could share data to deliver better cross-border services, following the once-only principle which EU member states committed to adopt in The 2017 Tallinn Declaration.⁹ In some specific cases, this is already happening, as for instance when Eurostat gathers aggregate and micro-data from EU member states.

⁸ The analysis in this section is adapted from an excellent presentation from the European Commission’s Directorate General for Informatics at the *Public Sector Data: Still a Missed Opportunity* workshop.

⁹ Council of the European Union and European Economic Area, The 2017 Tallinn Ministerial Declaration on eGovernment, 06 October 2017.

Yet, the truth is that government agencies are reluctant to share data that they perceive as “theirs.” Many are the reasons behind this resistance to sharing – some more valid than others. Costs are significant while benefits are unclear. There are real (as well as perceived) risks related to data protection. GDPR, for one, has brought much-needed attention to data governance, though the regulation is sometimes abused as an excuse not to share data that could otherwise be legally shared. And often, as discussed in the revisions of the Directive on the Re-Use of Public Sector Information (PSI), some government agencies know the value of data even if they can’t quite figure out how to use it; they fear the loss of a potential revenue source.¹⁰

These barriers are not different from what we see in the private sector and academia, where sharing data is the exception rather than the rule. Companies choose to keep the data in house and deliver full data enabled services, rather than share them with third parties which could provide value added services.¹¹ Only one researcher in six publish research data on dedicated repositories, instead preferring to publish fully fledged papers.¹² The reason is

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simple. In both cases, the system rewards more the output built on data (the commercial service or the article) than sharing only data. In other words, companies and researchers do not have the appropriate incentives to share data.

Regulatory intervention

Italy introduced in 2017 in its “digital government code” the obligation for public administrations to share “strategic datasets” with the Digital Transformation Team. The team also provides a data analytics platform, and provides services of support, maintenance and development to simplify the management of high-quality public data.

Ireland approved its “data sharing and governance act” in 2019. It regulates the sharing of personal data between public bodies. The act is the first action of the 2018 Public Service Data Strategy 2019-2023, a comprehensive programme which aims to provide a “whole-of-government” approach to data governance. In particular, it sets the rule for GDPR compliant data sharing across government.

A similar holistic approach was adopted by **Malta** in its draft National Data Strategy. The strategy encompasses the “open data agenda” (in terms of implementation of the revised PSI directive”) and the “data sharing agenda” (through the internal data sharing platform).

The Netherlands have also launched in 2019 a dedicated “data agenda government” which seeks to provide a joint whole of government approach that spans between different institutional levels. It set out legislation about data in the public domain, principles on the responsible use of data and rules for personal data management.

10 Marc De Vries and others, “POPSIS-Pricing Of Public Sector Information Study”, European Commission, 2011.

11 Laia Pujol Priego, David Osimo, and Jonathan Douglas Wareham, “Data Sharing Practice in Big Data Ecosystems”, ESADE Business School Research Paper, 2019.273 (2019).

12 For more data on this issue, see the European Commission’s Open Science Monitor at https://ec.europa.eu/info/research-and-innovation/strategy/goals-research-and-innovation-policy/open-science/open-science-monitor_en. See also Katarzyna Szkuta and David Osimo, “Rebooting Science? Implications of Science 2.0 Main Trends for Scientific Method and Research Institutions”, Foresight, 18.3 (2016).

When it comes to government, the biggest obstacle is cultural and organisational – the so-called “silos” mentality. But behind this buzzword lie real concerns. Data sharing implies a loss of control over what is done with the data: the analysis and the results. The data holder is no longer the only agent able to perform the

analysis and draw conclusions: other agencies can derive different conclusions, possibly different to the data holder’s interest. It is a long, hard job to convince them otherwise.

‘If life is any judge, the most innovative uses are often found by others.’

How can these objections be overridden? Many member states have put in place **regulatory interventions** to make it compulsory to share

data between agencies (see the box on regulatory intervention on page 5).

However, to make sure that agencies share data, regulatory interventions are a good place to start. But they are not sufficient to guarantee success. The INSPIRE directive, discussed at the onset of this discussion paper, is a good example of well-intentioned and ambitious goals that only slowly translate into action.

Big data in Slovenia (KERN)

The starting point is the issue that in Slovenia public administrations databases are unlinked and located in different silos. Therefore, a lot of time is wasted in weekly monthly reports carried out by government agencies (one-half to two days per report), which could instead be predefined and automated, freeing analysts to focus on predictive analytics, what if scenarios and data interpretation. Similarly, a lot of time is spent in answering questions raised by journalists and members of parliament (again, one-half to two days per answer), since data are not collected and managed. Therefore, it is estimated that one-third to one-half full-time equivalent per year of work per analyst could be saved. In this regard, the aim of the project is to understand what big data applied to the public administration cloud could do to improve efficiency in the field of human resources and public procurement. Specifically, the idea is to support analysts in the automatization of repetitive tasks by mean of infographics and prediction analytics. In this regard, a core role is played by public agencies which are the owners of the data, that include: data on employees’ time management, salaries data, human resources data, finance data, data on public procurement, open data on postal codes, weather and personal data. Therefore, important elements are the processes of data substitution and anonymisation (especially personal data), and the change management aimed at re-establishing trust within the public administration. Concerning lessons learned, there is a huge challenge in change management and the necessity to ensure personal data security and anonymisation. Further, also the convergence of strategies and goals among different teams (human resources, finance, legal, information and communications technology) proved difficult. A core role has been played by the training programme for public servants jointly organized by the University of Ljubljana, the University of Maribor and the MPA Administration Academy, to which more than 200 participants took part. The next challenge for the Slovenian public administration consists in the development of a common governmental platform for data analytics, which will integrate a data warehouse, a data lake for big data and business intelligence and artificial intelligence functionalities.

As Mike Bracken put it in his remarks cited above, envy works better than fear. Regulations need to be accompanied by clear benefits, constructive competition and good incentives capable of motivating all.¹³

In other words, data sharing has to bring benefits to the data holder and the data user. For this to happen, these two key members of the data value chain need to be involved throughout the process to provide knowledge about the data context through a process of co-creation. Data driven services are no different from other services, insofar as they benefit from a continuous involvement of users and from the design of the final analytic services around users' needs. Only by accurately designing data driven services around the needs of different agencies can digital government successfully generate the trust necessary to share data.¹⁴

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Community engagement is therefore crucial. As Emanuele Baldacci, director of "digital analytics as a service" at DG DIGIT, puts it, one of the lessons learned from experimentation is that there is a need to a stronger effort of community engagement towards the different departments (both data holders and data users) and continuous communication to bring the various players onboard by identifying individual people (rather than organisational units) to be involved. So far, DG DIGIT has collaborated extensively in pilots with "vertical" directorate generals, such as DG RTD, DG TAXUD and the Directorate General for Budget. And design thinking and iteration have to be at the core of this process. User centricity, co-creation and design thinking not only apply just to citizens services but are equally important to government to government services.

For instance, the Italian National Digital Data Platform, an initiative run by Presidency of the Council of Ministers of Italy's Digital Transformation Team and described in the box on Italian National Digital Data Platform (PDND), provides value-added data analytics services to public administrations: helping the anti-corruption authority to manage inflows and outflow of data from all public administrations, or helping municipalities run their open data portal, or creating dashboard to support decision making. In the Netherlands, the office of national statistics joins forces with local administration to pilot urban data labs.

¹³ Andrew Greenway, Ben Terrett, Mike Bracken and Tom Loosemore, *Digital Transformation at Scale: Why the Strategy Is Delivery* (London: London Publishing Partnership, 2018).

¹⁴ Francesco Mureddu and David Osimo, "Co-Creation of Public Services: Why and How, *Lisbon Council Interactive Policy Brief*, 2019.

3. Grasping the Data Opportunity

There is little doubt that data analytics provide a transformative opportunity to improve public services and public policies – and there are plenty of reports to illustrate it.¹⁵ It does not come as a surprise that data are a fundamental tool for policy monitoring and evaluation, but the reality is that data analytics can improve decision making **across the whole spectrum of the policy cycle**.¹⁶

- In the **agenda setting** phase, data can detect a policy problem before it is apprehended as such, indicating where a need is being unmet or where an emerging problem might be countered early.
- In the **definition of new policies** phase, opinion mining and sentiment analysis can help to inform policymakers about the current trend of the political discussion as well as the changes in public opinion in the light of discussed and proposed changes.
- In the **policy formation and acceptance** phase, big data and data analytics solutions can be used for providing evidence for the ex-ante impact assessment of policy options through advanced predictive analytics methodologies and scenario techniques.
- In the **implementation phase**, data analytics supports the so-called provision of means on how to most efficiently provide the required personnel and financial means by analyzing in detail past experiences, and in the identification of key stakeholders and areas to be targeted.

‘At a time where the European economy shows high demand for data scientists, governments face increasing difficulties in attracting qualified candidates.’

Data analytics is equally important for delivering **better public services**. It can help in optimising resource allocation, identifying specific cases in a wider target group and prioritising cases based on risk or need. As an example, Internet of Things (IoT) technologies can be used to map circulation data from sensors in order to depict traffic patterns with the aim to alleviate traffic congestions. By the same token, data from disease monitoring can help draw a picture of health trends in a community, or to track epidemic spread. Furthermore, data analytics can be used

by law enforcement to uncover crime and national security threats by combining databases on social media, arrest records and crime statistics. Finally, data analytics can be used to uncover fraud related to misallocation of social services, or for matching tax information against personal records to discover uncollected taxes and fraudulent claims.

15 See in particular the comprehensive overview provided by Charlotte van Ooijen, Barbara Ubaldi and Benjamin Welby, *A Data-Driven Public Sector: Enabling the Strategic Use of Data for Productive, Inclusive and Trustworthy Governance* (Paris: OECD, 2019); Deloitte, *Big Data Analytics for Policy Making* (Brussels: European Commission, 2016).

16 See Jurgen Höchtel, Peter Parycek, and Ralph Schöllhammer, “Big Data in the Policy Cycle: Policy Decision Making in the Digital Era,” *Journal of Organizational Computing and Electronic Commerce*, 26(1-2), 147-169 (2016).

And looking ahead, with the advent of the use of artificial intelligence in public service provision, a huge amount of data is also needed to properly train machine learning algorithms, especially in new application fields such as voice-first services. In this regard, many member states have in place experimentation and pilots, as illustrated in the box on KERN, the big data pilot project in Slovenia.

‘Many member states have made it compulsory to share data between agencies.’

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Italian National Digital Data Platform (PDND)

The aims of the PDND is first to develop and provide compliance models and tools to simplify the publication and sharing of data in compliance with GDPR, as well as to support interoperability through centralized data collection and distribution. In this way, PDND ensures easy and autonomous access to open data for everyone, and engagement of citizens, developers and data journalists. Further, PDND provides standardisation and data validation services, together with data driven decision tools and models. PDND adopts the application software distribution model as a service (SaaS), and it is maintained and developed by the Presidency of the Council of Ministers’ Digital Transformation Team in order to facilitate the work of public administrations. There are several implementations ongoing. First, the PDND works as data hub for the Anti-Corruption Authority, which must collect data related to tenders from many public administrations, and after normalizing and filtering them, must share the results with many other public administrations. Another is the provision of open data as a service: in this respect, the Municipality of Turin has configured the PDND DataPortal to appear as their “Open Data Portal,” where all searches retrieve only results from their DataSets. Further, the provision of analytics as a service: the City of Milan, through the creation of a data application showing geographical maps with various key performance indicators, is supporting the planning of investments in the territory. Another set of services includes data story telling building on the data of the Inventory of National Enterprise Incentives. Specifically, explanatory graphs are taken from PDND superset widgets and are dynamically updated as soon as new data comes into the platform. Finally, public administrations that already have commercial tools for data visualization, business intelligence or data science, can connect directly to the PDND DataSets using its web application programming interfaces (APIs). Further developments include supporting public administration in compliance with GDPR by mean of the implementation of data protection impact assessment forms in the ingestion and data sharing processes, as well as provision of data quality services through the implementation of an integrated data governance framework that takes advantages of standard catalogs and ontologies to create data quality control services to seamlessly identify personal or sensitive information.

4. Barriers to Adoption

Many EU member states are facing barriers related to data availability, silos, skills, privacy frameworks and impact assessment tools, according to a 2017 survey on public sector data analytics prepared by Italy for the eGovernment Action Plan Steering Board, a high-level body that coordinates member state activities in the eGovernment sphere.

One major barrier are **skills** – just as for digital government in general. For one, the existing job profiles in government do not cover data analytics. As Luca Attias, high commissioner for the digital agenda in the Italian Presidency of the Council of Ministers, points out, many ICT jobs in the public sector are overrepresented, such as system administrators and workflow document managers, while many others are underserved, such as web analytics and data scientists. As he puts it, there is a peculiar situation with “many people who perform useless jobs or [jobs that do not] match their skills.”

Table 1. Profiles vs Needs : ICT Jobs in Government

Existing Job Profiles	Existing Needs	
<ul style="list-style-type: none"> ● Systems administrators ● Systems analysts and application programmers ● Web designers ● Protocols specialists ● Management control ● Financial and management accounting ● Legal knowledge management ● Workflow and document management ● Payroll management process ● Office automation trainers 	<ul style="list-style-type: none"> ● Chief Information Officer ● Chief Digital Officer ● Chief Technology Officer ● Chief Security Information Officer ● Chief Data Officer ● Digital Architect ● Cloud Computing Architect ● Cloud Computing Integrator ● Data Driven Decision Business Intelligence ● Data Scientist ● Open Data Expert ● Internet of Things ● Big Data Expert ● Mobile App Development ● e-Commerce Specialist ● e-Public Procurement 	<ul style="list-style-type: none"> ● Digital Marketing Manager ● Web Marketing Manager ● Online Store Manager ● User Experience Manager ● Analytics Director ● Web Analytics Manager ● Digital Copywriter ● Digital Designer ● Search Engine Optimization ● Search Engine Marketing ● Community Manager ● e-Reputation Manager ● Social Media Manager ● Machine Learning ● Blockchain ● Cyber Security ● Industry 4.0

Source: Luca Attias, high commissioner for the digital agenda (Italy), presentation to the *Public Sector Data: Still a Missed Opportunity* workshop

The solution is not easy. At a time where the European economy shows high demand for data scientists, governments face increasing difficulties in attracting qualified candidates. And as the NL Digitaal, the Netherlands' ambitious digital agenda, shows, the problem is broader than that and deserves a strategic approach. Beside bringing data scientists into government, there is a need to provide general data skills and awareness throughout government, ensuring better understanding with policy officers. What is clear is that the recruitment methods and human resource management in the public sector require a fresh approach, and that exceptional measures such as the creation of digital teams is only the first step.

Another well-known critical area is the **interoperability and the discoverability of data**. Semantic technologies create new opportunities and expectations with respect to data discovery, and exchange creates the conditions for a wider semantic interoperability and accessibility of statistical data produced by public administrations in general. The 2017 Tallinn Declaration on eGovernment indicates that member states should "increase the findability, quality and technical accessibility of data in key base registers." The European Interoperability Framework spells out how data should be managed and made available to other administrations in the EU.¹⁷

In this respect, agencies in the public administration as well as external data brokers collecting and reusing data can benefit, but interoperability remains a far-reaching goal, achieved only in specific domains. Data sets are of different sizes sometimes relating to small localities only, which makes them less interesting to the broader community such as the infomediary sector. Furthermore, the datasets are in different formats which complicates their reuse. In this respect, the use of data portals and internal data exchange platforms is necessary, as well as the use of shared vocabularies.

'Data can radically improve policymaking and service delivery. It is less clear why this is happening slowly – and what can be done to accelerate it.'

Netherlands strategic approach to skills

The Dutch data agenda includes as one of the main pillars "investing in people," which covers multiple initiatives. There are professional development programmes available for middle managers and policy officers, and there is discussion whether to make them compulsory. The data science trainee scheme supports the recruitment of ICT students in government. And the Data Driven Approach Learning and Expertise Center helps bring policy officers and academic researchers together to address policy problems through a co-creation approach.

17 See European Interoperability Framework: Implementation Strategy (Brussels: European Commission, 2017).

5. Conclusions and Policy Recommendations

What emerges from the experiences of EU member states is a rich landscape and a learning path. It is clear that delivering data driven public services require not just regulation and technology adoption but cultural and organisational change as well. Every country is experimenting in similar directions, but in order to achieve results, the learning process needs to be accelerated through cross-fertilisation and mutual learning.

‘Delivering data-driven public services requires not just regulation and technology adoption but cultural and organisational change as well.’

The good news is that the importance of data is widely recognized and most member states are active in this. Few people doubt that data sharing and analytics can have a transformative power in public services. The bad news is that we still have not achieved a “public data commons.” Public bodies are reluctant to share their data with other public entities – because they believe this would entail loss of a strategic asset and loss of control over what conclusions are drawn from the data. Data sharing remains a goal, not a reality.

This discussion paper, based on the insight gained at a workshop, does not aim to provide final answers, but to draw attention to specific issues. To achieve the promised benefits, several actions seem worth pursuing:

1. Deliver The 2017 Tallinn Declaration on eGovernment and implement the updated European Interoperability Framework (EIF) proposed by the European Commission in 2017. Much of data driven innovation requires the achievements of the goals already set. The once only principle contained in the Tallinn Declaration requires data sharing at EU level. So do the authoritative base registries set out in the European Interoperability Framework. While the goals are set, the speed of delivering them needs to accelerate. If you don’t have good data in the first place, it’s not useful to share it.

Malta Information Technology Agency (MITA)

Malta has been implementing a policy framework that includes the transposition and implementation of the PSI directive through the chapter 546 – re-use of public sector information act, the national data strategy, and the national data infrastructure, including the authorisation and representation platform, the foundation data layer, the metadata platform (register of registers), and the national data portal. Specifically, the national data portal consists in an open data portal including a common front end, and an internal data sharing platform, including a structured process for data requests and feedback, several user interfaces for administrative data updating and the maintenance of a register of registers. Basically, the portal acts as a platform through which datasets are made available, catalogued and made searchable; promotes the provision of metadata and makes it easy for that metadata to be added at the time of publication; works as a show case for applications that re-use the data, and finally can also act as a community hub.

2. Streamline national regulatory measures for data sharing. Many member states, but also local and regional government, have established mandates for data sharing, sometimes through legislative measures. This is certainly important and in many ways necessary, but we need to make sure that these measures are coherent with EIF and across member states. Data sharing practices within member states needs to be coherent with data sharing across them or new barriers will effectively have been introduced.

3. Create appropriate incentives and benefits. There need to be clear benefits for public administrations to share their data. Many member states and the European Commission have experimented with pilots that deliver value added for data holders: from quality checks to advanced analytics to GDPR compliance test. For instance, the Italian framework provides the possibility for advanced data analytics and machine learning services based on government data “as a service.” Equally, in the European Commission, DG DIGIT has launched dedicated pilots based on data together with different departments (DG TAXUD and the Directorate General for Employment, Social Affairs and Inclusion, *inter alia*).

‘The 2017 Tallinn Declaration on eGovernment commits European Union member states to “increase the findability, quality and technical accessibility of data in key base registers.”’

4. Provide safe spaces and safeguards for innovation. It is clear that agencies are reluctant to engage in data sharing largely following GDPR. There is a strong need for awareness and clarification on how GDPR affects data sharing among governments – to build genuine competence to manage data and to avoid the excuse for not sharing data. But the support should be understandable and granular enough to be useful to all levels of government, and notably to local government which traditionally struggle with sufficient resources and expertise. At the same time, safe spaces such as the new European Commission’s Big Data Test Infrastructure are necessary to allow for experimentation and risk minimisation when dealing with personal data and full compliance with ethical requirements and guidelines.

5. Bring new skills in government. Too much of the ICT skills present in European public administration are outdated. Bringing new, appropriate skills in the public sector also requires new recruitment and career models. In this sense, the path opened by the digital teams needs to be extended and upscaled to the public sector as a whole – not as an exceptional provision but as a standard.¹⁸

6. Experimentation and innovation require peer to peer learning. Many government agencies are experimenting with data driven innovation, and everyone is looking at the topic with interest. There is a strong need for continuous, hands on mutual learning. This includes a whole panoply of measures – from sharing good practices in designated databases such as JoinUp and Observatory of Public Sector Innovation (OPSI), to face to face meeting, to the creation of “competence centers” on specific topics, possibly in the framework of the “digital innovation hubs” supported by the European Commission.

¹⁸ For an in depth analysis of the digital team model, see Ines Mergel, *Digital Service Teams: Challenges and Recommendations for Government*, Using Technology Series (Armonk: IBM Center for the Business of Government, 2017).

7. Provide evidence on the **business case of data sharing**. To convince agencies to share data, it is important to provide robust evidence (rather than anecdotes) on the benefits of data analytics – in particular for the data holders. The ongoing pilots and experimentation should therefore be accompanied by appropriate evaluation mechanisms to clearly indicate the benefits of innovation in terms of better service delivery and improved policy making. These business case should be designed from a public value perspective, addressing the benefits of citizens as a whole, rather than purely from a government efficiency point of view.

‘Data-driven public services will only be achieved by a careful balance of enforcement, incentives and nudges towards data holders.’

Ethelbert Stewart was a founder of the U.S. Bureau of Labour Statistics. In 1921, the U.S. Congress, perhaps sensing for the first time the immense value that could come from sharing and analysing public data, called Mr Stewart before Congress and demanded that he hand over datasets on automobile manufacturers’ labour practices.

“I’ll burn them first,” he said.¹⁹

The world has come a long way since 1921. And it has a long way to go still. The challenge today is not just to convince Mr Stewart and his successors of the value of sharing data; it is also to demonstrate the value and immense public good that would come of it. The work is only beginning.

Interoperability Solutions for Public Administration (ISA) Core Vocabularies

An interesting example is provided by the European Commission’s Interoperability Solutions for Public Administrations (ISA) core vocabularies, which are simplified, re-usable and extensible data models aimed to capture the fundamental characteristics of an entity in a context-neutral fashion. Specifically, the core vocabularies are used as a starting point for designing the conceptual and logical data models in newly developed information systems, as the basis of a context-specific data model used to exchange data among existing information systems, as a tool to integrate data coming from different sources and create a data mash-up, and finally as the foundation of a common export format for data in base registries.

19 Quoted in Zachary Karabell, *The Leading Indicators* (New York: Simon and Schuster, 2014).

6. References and Further Reading

- Cetl, Vlado, Vanda Nunes de Lima, Robert Tomas, Michael Lutz, Joachim D'Eugenio, Adam Nagy et al. *Summary Report on Status of Implementation of the INSPIRE Directive in EU* (Ispra: Joint Research Centre, 2017)
- De Vries, Marc, Lionel Kapff, Mar Negreiro Achiaga, Patrick Wauters, David Osimo, Paul Foley et al. *POPSIS- Pricing Of Public Sector Information Study* (Brussels: European Commission, 2011)
- Deloitte. *Big Data Analytics for Policy Making* (Brussels: European Commission, 2016)
- European Commission. *European Commission Digital Strategy: A Digitally Transformed, User-Focused and Data-Driven Commission*, C(2018) 7118 (Brussels: European Commission, 2018)
- Gluckman, Peter. "Using Evidence to Inform Social Policy: The Role of Citizen-Based Analytics," *Office of the Prime Minister's Chief Science Advisor*, 19 June 2017
- Greenway, Andrew, Ben Terrett, Mike Bracken and Tom Loosemore. *Digital Transformation at Scale: Why the Strategy Is Delivery* (London: London Publishing Partnership, 2018)
- Hofheinz, Paul, and David Osimo. *Making Europe A Data Economy: A New Framework for Free Movement of Data in the Digital Age* (Brussels : Lisbon Council, 2017)
- Karabell, Zachary. *The Leading Indicators* (New York: Simon and Schuster, 2014)
- Mergel, Ines. "Digital Service Teams: Challenges and Recommendations for Government," *Using Technology Series* (Armonk: IBM Center for the Business of Government, 2017)
- Mureddu, Francesco, and David Osimo. "Co-Creation of Public Services: Why and How" *Lisbon Council Policy Brief*, 2019
- Organisation for Economic Co-operation and Development. *Data-Driven Innovation: Big Data for Growth and Well-Being* (Paris : OECD, 2015)
- van Ooijen, Charlotte, Barbara Ubaldi and Benjamin Welby. *A Data-Driven Public Sector: Enabling the Strategic Use of Data for Productive, Inclusive and Trustworthy Governance* (Paris: OECD, 2019)
- Osimo, David. "A Six-Point Programme for EGovernment Renewal," *Lisbon Council Policy Brief*, 2018
- Pujol Priego, Laia, David Osimo, and Jonathan Douglas Wareham. "Data Sharing Practice in Big Data Ecosystems," *ESADE Business School Research Paper*, 2019.273 (2019)
- Szkuta, Katarzyna, and David Osimo. "Rebooting Science? Implications of Science 2.0 Main Trends for Scientific Method and Research Institutions," *Foresight*, 18.3 (2016)

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The “Understanding Value Co-Creation in Public Services for Transforming European Public Administrations” project, or Co-VAL, is a 12-partner consortium, co-funded by the European Union. The project aims to find new ways of examining the co-creation of value in public services in order to transform public administrations and processes. Along with a plethora of new tools, cutting-edge research and a survey of public administrations, it will produce four policy briefs, which will set out the challenge of public administration reform in Europe and explore the cutting edge of unique “value co-creation” models for delivering better public services and improving citizen-state relations. For more, visit www.co-val.eu or follow the consortium on twitter at [@CoVAL-eu](https://twitter.com/CoVAL-eu).

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