Implementation of the 'Once-Only' Principle in Europe – National Approach

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Abstract. The 'once-only' principle (OOP) in the context of the public sector means that citizens and businesses supply data only once to a public administration. The role of public administrations is to internally share these data also across borders so that no additional burden falls on citizens and businesses. This paper presents what steps are taken to implement the OOP both on the European and national level. The national approach in European countries towards implementing the OOP is analysed and compared in terms of legislation, strategies and infrastructure. The most important benefits of the OOP are described as well. One of the most important initiatives in Europe to explore and demonstrate the OOP in practice is the TOOP project. The paper presents how TOOP technical solution is practically implemented within three pilot areas: general business mobility, e-procurement, maritime domain.

Keywords: The once-only principle · Public administration · e-government · Digital public services · Digital government

1 Introduction

The 'once-only' principle (OOP) is a crucial element in the delivery of the user-friendly digital public services and modernisation of public administration. Providing the same data over and over again is troublesome and time-consuming both for citizens and businesses. It is also not reasonable since most of the data is already stored in authoritative sources. The key is to enable public administration to retrieve it in an efficient and safe way.

EU-wide implementation of the OOP is one of the priorities of the European Commission, which is reflected in the strategic documents. The principle appeared for the first time in 2009, when the Member States committed themselves to, among others, jointly investigate how public administrations can reduce the frequency with which citizens and businesses have to resubmit information, by signing the Malmö Ministerial Declaration on eGovernment [38]. Reduction of administrative burdens by applying the principle of "once-only" registration of data for citizens was one of the actions of the eGovernment Action Plan 2011 – 2015 [25]. Furthermore, the principle has been highlighted in the European Council Conclusions in October 2013 [29] by stating that "efforts should

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be made to apply the principle that information is collected from citizens only once, in due respect of data protection rules". Another the OOP milestone was signing the 'eGovernement Declaration' in Tallinn on 6 October 2017 [28], in which 32 countries of the European Union and the European Free Trade Area made a political commitment to implement the principle for key public services. Furthermore, in the EU eGovernment Action Plan 2016–2020 [26] the OOP is listed among other principles for effective eGovernment such as digital by default, inclusiveness and accessibility, openness and transparency, cross-border by default, interoperability by default, trustworthiness and security. According to the Plan, "public administrations should ensure that citizens and businesses supply the same information only once to a public administration. Public administration offices take action if permitted to internally re-use this data, in due respect of data protection rules, so that no additional burden falls on citizens and businesses". Additionally, a recommendation to "as far as possible under the legislation in force, ask users of European public services once-only and relevant-only information" is provided in the new European Interoperability Framework [27] within the user-centricity principle for establishing interoperable European public services. Finally, the Single Digital Gateway Regulation [30] provided legal basis for the cross-border application of the OOP, that should result in citizens and businesses not having to supply the same data to public authorities more than once, the possibility to use those data at the request of the user to complete cross-border online procedures involving cross-border users. According to the Regulation, by December 2022 a dedicated technical system will connect the 21 online procedures, key for citizens and businesses, established in each Member State with the data sources across Europe.

Even there is no one concrete definition of the OOP, based on the EU level documents mentioned above, the following elements of the OOP can be identified:

1. collecting only necessary information,
2. exchanging data so the citizen or entrepreneur is never asked again,
3. respecting data protection rules when re-using data.

2 National Approaches Towards Implementing the OOP

Although the OOP is relatively new in the actions of the European Commission, it seems that the Member States realized its benefits a long time ago. In many countries, this has been a natural reaction on isolation of databases. The existence of numerous registries not linked with each other caused low quality of the data, redundancy of data collected, work duplication of administrative workers, and dissatisfaction of the citizens and businesses due to the growing red tape. Although most countries face similar challenges, understanding and the way of application of the OOP may vary. National differences such as different administrative structures, IT systems, database models affect the deployment of the EU-wide OOP.

The table presented in Appendix provides an overview of national OOP implementations of EU Member States and European Economic Area countries (Norway, Island, Lichtenstein). The table was developed based on the available online sources (Digital Government Factsheets of 2019 published by the European Commission's National Interoperability Framework Observatory, collection of Joinup cases, national sources) as well

as information gathered from the TOOP partners and representatives of Member States. The table includes information on the legal basis of the OOP, national programs/actions supporting the OOP and the solutions enabling realization of the principle. The information in the table, especially related to the solutions enabling the OOP, refers to the business data exchange (among other data). Therefore, the OOP applications in sectors such as health, justice, social security etc., which are often supported by a dedicated infrastructure are intentionally not presented (Fig. 1).

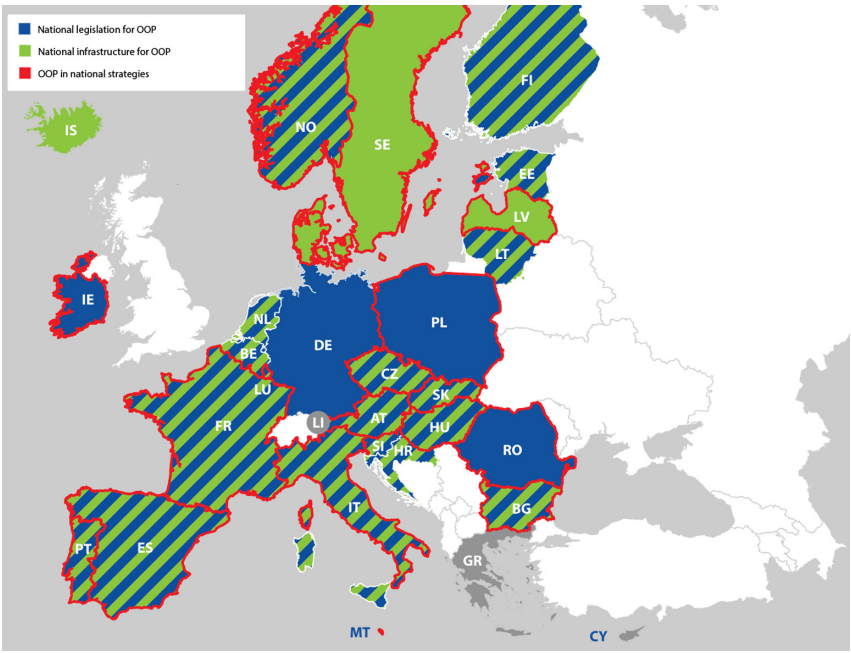

Fig. 1. Legislation, strategies and infrastructure for OOP in the EU Member States and EEA countries

Legislation can be an important driver for the application of the principle. Most of the countries (22 out of 30) have national legislation for OOP in place. Not all regulations directly prohibit requesting data more than once. Legislation obliging authorities to obtain and reuse data stored in public administration databases as well as introduction of meta/base registries are also treated as OOP enabling regulation (e.g. case of Slovakia, Norway, Finland, Croatia, Czech Republic). Base registries provide authentic sources of data for public administrations, and therefore, are the key to making the OOP a reality [23]. In some EU countries, law does not only prevent the collection of data more than once but also ensures that data are stored only in one place. For example, the Estonian law prohibits the creation of separate databases for the collection of the same data [46]. Public institutions exchange information between each via a system called X-Road. Information, stored in decentralized registers can be securely accessed through a data exchange layer. Additionally, in the case of Estonia, the legislation is used to force the

use of the X-road solution, which is a recommended good practice [23], facilitating the broad uptake. In the Netherlands, the common rules for the base registries [22] do not permit to collect data that is already stored in any of the registers. Sharing and exchange of data are enabled by four system services Digikoppeling, Digilevering, Digimelding and the Stelselcatalogus [18]. Duplication of data held in the central business registries (the Business Registry and the Private Entrepreneur Registry) is also not allowed in Hungary. Public administration bodies are obliged to retrieve data from the registries via secure data exchange. The legal obligation for OOP does not exist in Denmark, Greece, Iceland and Sweden. Lack of the OOP legal basis in Sweden may be justified by the "Swedish tradition" that common infrastructure is governed through guidelines and recommendations. Therefore, the OOP is underlined in the national digitization plans but not dedicated legislation. No data was found for Cyprus, Latvia, Lichtenstein and Malta. It must be however remembered that the Single Digital Gateway Regulation, which mandates the use of the principle from 12 December 2023, became immediately enforceable as law in all Member States when it entered into force in 2018. In this way, each EU country has legal basis to enable at least key OOP based digital services.

The OOP is often seen as a part of a global plan of public services modernization and cutting red-tape and therefore is part of national programs and strategies related to digital government. 18 (out of 30 countries have highlighted the principle in the documents such as digitalisation strategies, interoperability strategies, or programs dedicated to reducing administrative burden. For example, The Dites-le-nous une fois (Tell us once) is part of a global plan to modernise public services in France and is one of a range of actions being taken to digitalise processes and improve collaboration between ministries and public services [35]. In Luxembourg, the OOP is one of the five eGovernment principles, approved within "Digital Luxembourg". OOP is the core goal of the "Mapping Tomorrow", which is a strategic plan for the public administration for 2019–2021 in Malta, aiming at internal sharing and re-use of data and information that has been previously provided by a citizen or organisation. 5 countries have not highlighted the OOP in any strategic documents. No data was collected from 7 countries.

The infrastructure enabling the OOP is in place in 22 (out of 30) countries. The solutions are at various maturity levels and cover different scope of information.

The MAGDA platform (Maximum Data Sharing between Agencies) of Belgium is connected with base registries at the federal level through the relevant service integrators. In France, where the OOP principle was implemented along with a wide range of base registry initiatives, public administrations can access this information through APIs (Apientreprisesl) that provide information from different base registries. In Hungary, the Central Governmental Service Bus, the technical interoperability platform, which is online since 1 January 2018, enables automatic information exchange from 27 base registers indicated in the e-Administration Act. Others can also connect to provide their services over the central data exchange platform voluntarily. Furthermore, the Public Connectivity System [51], one of the Italian OOP solutions, is a network that connects Italy's government agencies, allowing them to share and exchange data from six base registries based on Domain Gateways (Data Providers and Consumers). Another OOP solution in Italy is the National Digital Data Platform (PDND). The X-Road system, which is the backbone of the OOP in Estonia, enables multiple databases

to communicate. Apart from Estonia, the solution is already implemented in Finland and Iceland. Not all Member States realize the OOP by the deployment of the data exchange infrastructure. In Denmark for example, Data Distribution Platform, an authoritative data source infrastructure makes basic data from several authorities accessible in the same place. In this way, the Platform ensures that authorities are provided with easy and safe access to basic data in one collective system.

The OOP solutions are often interconnected with the Points of Single Contacts (PSC) for businesses operated in each Member States, following the implementation of the Directive 2006/123/EC on services in the internal market [49]. The business portals facilitate access to information and the completion of administrative procedures online. Luxembourg has implemented the OOP by making it a component of the Guichet.lu whilst in Norway, the exchange of information from business registries at the Altinn system (PSC) is possible thanks to the Central Coordinating Register for Legal Entities. In Sweden, the Composite Service of Basic Information on Companies, which supports the exchange of business-related data, collects and forwards replies from the PSC - verksamt.se portal, (as well as municipalities, government authorities) to data sources (Swedish Tax Agency, Statistics Sweden, Swedish Companies Registration Office). In Estonia the X-Road system is the basis for the core-functionality of eesti.ee among other portals.

No central infrastructure supporting the OOP is currently available in Germany, Greece, Poland and Romania, although for selected services the automatic data exchange is gradually being enabled (e.g. business registration service in Poland). No information was found for 3 countries.

Looking from the European perspective of the once-only, different maturity levels as well as fragmentation of the OOP applications significantly hamper extending the principle to the cross-border level. Still, in some Member States, the OOP is not applied horizontally but has a limited – service-oriented character. Exchange of data in selected processes or a single database is an indisputable added value for a business but does not realize the OOP in general. This quite low level in the OOP advancement is reported in countries such as Poland and Greece, although a more holistic approach is envisaged in national plans and strategies.

3 Benefits of the OOP

The once-only principle puts the public services user in the centre. Public administration eliminates burdens in access to public services by reorganizing internal processes and enabling cooperation between public bodies. Implementation of the OOP is not only about exploiting the advantages of new technologies but overcoming organizational as well as legal challenges. Thanks to this effort, handling administrative matters becomes more efficient and friendly. The principle refers both to retrieving documents required as attachments to the form as well as filling the form with necessary information. The time required to prepare a form to be submitted to the public office is limited to the minimum as only data and documents that the administration is unable to obtain on its own are requested. Keeping data up-to-date, which is citizens and business responsibility imposed by law, also becomes less cumbersome. In the case of dispersed and not

interconnected registries, there is a risk that citizens or businesses might lose control over data submitted in various databases. The interconnection of databases enables swift notification of respective sources in case of change submitted to the one place. Furthermore, the OOP has a great potential of minimizing administrative burden for businesses in meeting the reporting obligations. The businesses during its operation need to submit numerous reports related to taxes, employment, working conditions, fixed assets, financial information and many others. The research conducted in 2019 Poland reviled [32] that an average Polish entrepreneur in a medium-size company needs to submit 208 reports. The authors of the report say the data submitted to the different bodies (up to 14) are often duplicated or unnecessary. This area has been the case of OOP application in some countries. The Register of the Reporting Obligations of Enterprises in Norway is responsible for a constant overview of the reporting obligations of enterprises to central authorities and finding ways to coordinate and simplify these obligations. In the Netherlands, Standard Business Reporting was introduced. It provides governments and businesses with a secure method for the exchange of business information between organisations in a reporting chain [18].

The OOP is expected to bring savings to businesses in terms of time devoted to multiple submissions of the same data and in turn complying with administrative requirements. According to an OECD Survey [35], 3 companies out of 4 consider that reducing repeat requests for information should be a government priority. As an example, it is estimated that data related to revenues and the workforce is, on average, requested from companies by public services between 10 and 15 times, which generates the cost between 3% and 5% of GDP a year.

A breach in the OOP has an impact on creating an administrative burden for citizens but public administrations are negatively affected as well. It fosters building administrative silos and lowers the efficiency of public processes. Ineffective processes related to data management generates extra workload. Additionally, duplication of the same actions by different bodies is costly for governments as extra effort needs to be put on ensuring data quality and reliability.

Investing in solutions related to enabling the OOP pays off. One of the examples is the Basic Data Programme in Denmark which introduced the OOP for many data collected in 10 electronic registries. According to estimations, it is expected to have annual revenues of around € 100 million, since the number of transactions between citizens/businesses is limited and the burden of reporting information is reduced [31]. Another example is the estimation on the application of the OOP, which has been carried out based on the Register of non-residents (RNI) in the Netherlands. RNI allows for data sharing among Ministries and National Agencies, which generates time savings related to the reduced number of transactions related to collecting and managing data. In line with the OOP principle, users registered in the RNI have to communicate their data only once to public authorities. As a result, a 50% decrease in potential transactions between users and public authorities was reported. According to estimation, the RNI generated benefits of €112 million [31].

Bringing the principle to the European level is expected to bring further benefits. For many years, the European Commission is devoted to making the citizens and business life easier by enabling seamless digital public services. Application of the OOP further

improves their quality and contributes to the creation of the real Digital Single Market. Furthermore, it is expected that extending the OOP to the EU level could result in significant savings, estimated for as much as €5 billion per year [24]. However, the final benefits, as well as savings, will depend on the scale of the OOP application – the more data from various registries is exchanged the higher savings can be expected. Currently, information about citizens and businesses is reused only in 48% of cases.

4 Implementing the OOP in the TOOP Project

On 1 January 2017, the Once-Only Principle Project (TOOP) was launched with the aim to investigate and demonstrate the practical operation of the "once-only principle" in the field of cross-border public services to businesses in the EU Member States.

The substance of the OOP across borders is shown in the diagram below. It shows the case where a user from country B intends to execute a public e-service in country A. To do so, he starts the service in the service portal of country A (Data Consumer). The one-off principle is fulfilled in such a way that the service portal in country A retrieves the data of the user from country B directly from the system in country B (Data Provider). The aim of the TOOP project was to create an architecture that would enable data exchange as shown in the figure. The architecture developed in the project is federative as it is dispersed and does not create a single central system but enables data exchange between existing public administration systems in different EU Member States and associated countries (Fig. 2).

The technical solution developed in the TOOP project has been tested in three pilot areas: general business mobility, e-procurement and maritime pilot.

4.1 General Business Mobility

The TOOP architecture is used to facilitate the provision of cross-border services related to obtaining licences and permits for companies planning to do business in a Member State associated country other than their home country. The developed IT architecture enables business data to be automatically transferred from one system of a country to another, without the need for the entrepreneur to submit it again. This not only saves costs and time, but also improves data quality and consistency.

An exemplary cross-border implementation of e-services looks based on the TOOP project architecture is following:

1. an entrepreneur from Poland visits the eGovernment portal in Germany in order to obtain the permission necessary to provide the service in Germany;
2. the eGovernment portal in Germany authenticates the Polish entrepreneur through the eIDAS solution[1];

[1] The eIDAS solution allows citizens from Member States to prove and verify their identification when accessing on-line services in other Member States. It allows citizens to authenticate themselves by using their eIDs and connecting with their Identity Provider (IdP) from their country.

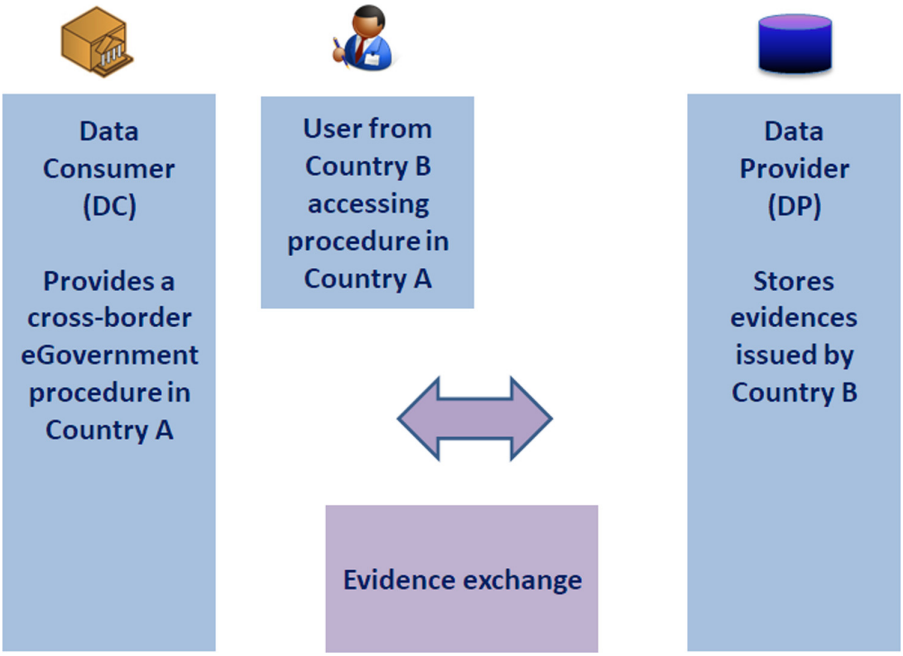

Fig. 2. The TOOP architecture concept

3. the Polish entrepreneur begins the process to obtain a permit in Germany. The eGovernment Portal in Germany verifies through the TOOP architecture what data is already stored in the Polish register. In case the data is available, it notifies the Polish entrepreneur and asks him/her for consent to download the data directly from the Polish register;
4. if the consent is given, the data is retrieved directly from the Polish register and the Polish entrepreneur completes only data, which are not available but necessary to obtain permission in Germany.

4.2 E-procurement

In the area of public procurement, TOOP solutions will facilitate the implementation of procedures related to the contractors' compliance with the requirements for participation in the tender procedure. The technical solution created in the project enables automatic completion of the European Single Procurement Document (ESPD)[2], which is one of the documents required to be presented by the contractor participating in the tender procedure. Thanks to this, the process of verification of documents submitted by contractors participating in public procurement procedures is faster and easier. The TOOP solution can also support further stages of the procurement process. In the award

[2] European Single Procurement Document is a self-declaration of the business used as a preliminary evidence of fulfilment of the conditions required in public procurement procedures across the EU, created under the EU's 2014 Directive on Procurement.

phase, the contracting authority will retrieve the evidences, which have been declared in the ESPD by the winner of a tender procedure, directly from the competent authority of the country in which the tenderer is registered. To make this automatic data exchange possible the contractor needs to give an appropriate consent so the data can be accessed by the contracting party. The process can be repeated multiple times after awarding a contract.

4.3 Maritime Pilot

The application of the OOP in maritime transport is aimed at eliminating the need to provide ship and crew certificates, which are currently issued and kept in paper form by national maritime authorities. Ship and crew certificates are issued by various organisations such as the Maritime Administration and the Recognised Organisation. According to International Maritime Organisation (IMO) Conventions, these certificates should be "available in its original form on board the ship on which the holder is serving". The shipowner and, in practice, the ship master acts as an intermediary between the issuer of the certificates and the entity that requires them to be presented, i.e. the Port State Control Officers (PSCOs). Thus, an entrepreneur - the shipowner in this case, is burdened with providing information which is already in the possession of the public administration. The purpose of implementing the OOP is to enable PSCOs to access directly the databases of certificate issuers. This would result in automating a largely manual and paper-based procedure, which is used now.

5 Summary

The article presents the definition of the OOP and discusses the most important EU initiatives to make it a reality in Europe. The analysis carried out indicates that in most EU countries, the principle is both embedded in national legislation and indicated in national eGovernment strategies. However, having legislation is not equivalent to the practical functioning of the OOP. Some countries still have only solutions limited to selected group of services or registers and the priority is given to the national level applications. Such an approach already brings tangible benefits of reducing bureaucracy, but much higher savings can be generated at cross-border level and broad application of the OOP. This is the aim of the TOOP project, which has created a generic IT architecture, tested by a number of eGovernment systems in 19 European countries. The solutions developed in the TOOP project will be used in the implementation of the Single Digital Gateway. Its launch in 2023 will be a significant landmark for the OOP in the EU and the EEA countries and the next milestone in the development of seamless cross-border digital services.

Appendix

Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Austria	The Austrian eGovernment Act (§ 17 (2)) stipulates that whenever technically possible, citizens shall not be asked to present proof of data that already exists in an electronic register in the public sector. Instead, public sector organisations need to make requests of data directly to the relevant databases [6]. The legal framework for the system for electronic data exchange between public registers, the Austrian Information Hub, is currently being created and will be embedded in the Austrian Business Service Portal Act	The OOP has been a pivotal part of Austria's digital government efforts in recent years, with a strong focus within the current Austrian government program, as well as the Austrian Digitisation Strategy [6]	The Business Service Portal (Unternehmensserviceportal, USP) is a one-stop-shop for businesses which offers information and transaction services that help businesses fulfil their legal obligations. In combination with the infrastructure of two national once-only core components, the Information Obligation Database ("DLK") and the Information Hub ("RSV"), data exchange with different registers is achieved

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Belgium	The Belgian law requires the federal government's public administrations to retrieve all available data from official registers with a unique identification feature instead of asking citizens and companies to make this data available more than once The Flemish Public Governance decree introduced the Once Only obligation to use base registries in Flemish administrative processes, with the obligation to notify back any errors found in these base registries [7]	No data	The MAGDA platform (Maximum Data Sharing between Agencies) is the once-only principle implementation supporting electronic delivery of public services, at the federal, regional, and local levels of the government. The platform enables the reuse and sharing of citizens' and companies' data between the Flemish government authorities (190 agencies and 13 departments) MAGDA is connected with base registries at federal level through the relevant service integrators. When consuming the data in various formats, it transforms the data to a single format
Bulgaria	According to the eGovernment Act, entered into force on 13 June 2008, administrative bodies, persons charged with public functions and organisations providing public services cannot require citizens and organisations to produce or to prove data which has already been collected or created [8]	One of the priorities of the Governance Programme of the Bulgarian Government is connection of key registers and provision of interoperability for switching to automated/semi-automated exchange of data and electronic documents	The Registry Information Exchange System (RegiX) is an environment for automated interconnections between registries. With RegiX it is possible for the authorised users of information to automatically retrieve data from basic registers such as the National Population Database, BULSTAT Register, Property Register, Commercial Register and other (62 registries in total) [8]

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Denmark	There is no legislation for OOP	The Digital Strategy puts forward the ambition that, as far as possible, citizens and businesses should not have to spend time submitting the same information to several public authorities or providing documentation for information that is already in public registries [1]	There is currently no government-wide data exchange infrastructure in Denmark however Data Distribution Platform offers an authoritative data source infrastructure. The Data Distribution Platform is the distribution channel that makes basic data from several authorities accessible in the same place. The Data Distribution Platform replaces a series of public distribution solutions and ensures that authorities and companies are provided with easy and safe access to basic data in one collective system, rather than having many different systems and interfaces
Czech Republic	The Act amending certain acts in connection with adoption of the Act on Base Registries (Act No 227/2009 Coll.) defined the rights and duties related to information editing, publishing and receiving data through the System of Base Registries. Act No. 111/2009 Coll. introduced base Registries into operation in other agendas of public services and created a cooperative network of various agendas around base registries including rules for information interoperability [10]	The Digital Czechia Programme covers the use and upgrade of base registries and their inter-connection [10]	The Registry of Economic Entities is one of 4 Base Registries. The interoperability between these base registries is ensured through the Information System of Base Registries [23]. National public administrations not only have access to the reference data in base registries, of which accuracy and validity is guaranteed by the state, but also to other attributes and data from other public administration information systems, in compliance with national legislation [10]

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Cyprus	No data	No data	No data
Croatia	On 15 July 2014, the Croatian Parliament adopted the Law on the State Information Infrastructure, which introduced a meta-register thus ensuring preconditions for the 'Paperless government' and realisation of the "once-only" principle [9]	No data	The Metaregistry is a public register used to control the system of all public registers. It contains detailed information on public registers, the data they hold, as well as how to connect with other systems. The Metaregistry is still not yet fully operational [9]
Estonia	Since 2007, the Public Information Act prohibits the establishment of separate databases for the collection of the same data (§ 43). Also, the General Part of the Economic Activities Code Act (2011), establishing the general conditions and procedures for exercising the freedom of economic activity, states that economic administrative authorities are prohibited to require companies to provide information that is already entered in a public database. The prohibition also applies to information which can be obtained from the relevant register of another Contracting State (§ 13)	No data	X-tee (X-Road) is based on an interoperable ecosystem and a technical ability to exchange data. To exchange data, one member of X-tee describes the shared data and other members are able to use this data based on an agreement

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Finland	The Act on Public Administration Information Management requires government agencies to utilise datasets of other government agencies whenever possible, if they by law have access to such data via electronic interfaces. Regular exchange of data between agencies has to be organised via electronic interfaces. The Act also prescribes to the Ministry of Finance a general coordination task of interoperability of public sector data sets. The act entered into force on 1 January 2020 [11]	No data	Data Exchange Layer Palveluväylä is the Data Exchange Layer, which was based on Estonian X-Road technology. It is connected to Suomi.fi, which provides e-services to citizens, businesses and government organisations [11]

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
France	Code des relations entre le public et l'administration which came into force on 1 January 2016 contains, among others, the exchange of information between administration (once-only) rules. Book III of the code deals with the access to administrative documents and re-use of public information [12] Additionally, following the law of 10 August 2018 for a State in the Service of a Company of Trust, a decree published in the Official Journal of 20 January 2019 supplements the principle of "Tell us once", where a user of the administration (individual or company) carrying out an action will no longer be obliged to provide certain information or supporting documents as soon as these elements are already held by the administration's services [12]	The Dites-le-nous une fois (Tell us once) is part of a global plan to modernise public services and is one of a range of actions being taken in France to digitalise such processes and improve collaboration between ministries and public services [35]	The OOP principle was implemented along with a wide range of base registry initiatives introduced through a number of strategies and respective initiatives. The digital tool enabled the pre-filling and digitisation of administrative forms that businesses were required to complete, in particular, to consent the exchange of information between the different departments and agencies. Public administrations can access this information through APIs (Apientreprisesl) that provide information from different base registries. The base registries available through APIs are: INSEE (Administrative information / contact details and identity); Infogreffe (Legal information / legal status); DGFiP (fiscal information / taxation / turnover); ACOSS (social situation / social security contributions); Caisses retraites (pension funds) [12]

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Germany	The possibility for Once-Only has been created in the eGovernment Act of the Federal Government and those of some countries (§5 (2) EGovG) which states that the competent authority can electronically obtain necessary evidence originating from a German public body directly from the issuing public body with the consent of the party to the procedure. For this purpose, the requesting authority and the issuing public authority may collect, process and use the necessary personal data	No strategy highlighting the OOP	At the moment there is no infrastructure supporting the OOP. In the future, an online gateway portal network will connect the administrative portals of the countries and enable their exchange of information. Using basic components, the decentralised data sets are exchanged and updated via all portals, so that all service descriptions can be found and online services can be called up via each portal With this decentralized approach, the project Online Gateway Portal Network will address the different development stages, technology approaches and IT strategies of the federal countries. The participation possibilities in the portal network are manifold and will be solved easily and cost-efficiently via standard interfaces[a]
Greece	At the moment the OOP is not regulated[a]	The OOP is not highlighted in any national strategy. At the moment the Ministry of Digital Governance is working on the design and implementation of the government's digital transformation policy	There is no infrastructure supporting the OOP

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Hungary	According to law, a person cannot be obliged to provide any data which is publically known or being stored in any authoritative data sources. At the same time it is not allowed to duplicate the data of base registries by other public administration bodies, they have to retrieve data from the given registries via secure data exchange[b]	The National Infocommunication Strategy 2014–2020 contains the necessity of simplifying administrative processes, reducing the administrative and bureaucratic burdens, and the establishment of interoperability among the major base registries until 2020	The technical infrastructure to support the OOP in Hungary is the Central Governmental Service Bus, the technical interoperability platform which is online since 1 January 2018. It enables automatic information exchange from 27 base registers indicated in the e-Administration Act. Others can also connect to provide their services over the central data exchange platform on a voluntary basis
Iceland	There is no legislation, however it is being analysed what needs to be changed in Icelandic laws to ensure the legitimacy of digital services and data sharing between parties	A new digital strategy is underway for Iceland. In the green book, which is the foundation for the new strategy, it is recommended that the OOP will be a part of it	The infrastructure enabling the OOP is already in place as a working X-Road implementation called Straumurinn,. Icelandic government is working on connecting all governmental organisations to this solution

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Italy	The Italian law (Legislative Decree no. 82 of 2005, the Digital Administration Code (CAD) Articles 50 and 58) states that public administrations should cooperate to obtain information and not as to provide information more than once [14]. Additionally, it establishes that public administrations shall exchange data between each other by default. Article 60 defines the Business Register as one of the Base Registries in Italy of national interest. Additionally, OOP is also explicitly mentioned and supported in the Public Contracts Code (Legislative Decree no. 50 of 2016) [5]	The OOP is one of the principles in the national strategy for digitization and in the three years Plan for digitization of public administrations 2019–2021 [3]	The infrastructure to enable OOP is the so called the Public Connectivity System (SPC) [51], which is a network that connects Italy's government agencies, allowing them to share and exchange data and information resource. The System is an eGovernment Digital service Infrastructure based on Domain Gateways (Data Providers and Consumers), a common format for the Data Request/Response (the so called eGov XML envelope) and Registers to publish the agreements (TOOP register) [48]
Ireland	Data Sharing and Governance Act 2019 provides a generalised legal basis for the sharing of data between public bodies for making public services more seamless by reducing the burden of providing the same information to different public bodies [13]	The Public Service Data Strategy for the period 2019–2023 aims to put in place a series of measures to improve how data is governed, managed and re-used in a secure, efficient and transparent manner, for the benefit of citizens, businesses and policy makers	No data

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Latvia	No data	The OOP is highlighted in the Information Society Development Guidelines 2014–2020 within Action Direction "Advanced and Effective Public administration" (Single Public administration Data Space) [33]	The IVIS is tasked with the unification and central management of the integration of platform-independent standardised data exchange between national registries and information systems. It provides a platform for sharing resources and for the public administration in using electronic services in the creation and delivery. Together with the state portal latvija.lv, it creates a single national electronic service delivery platform. One of the IVIS components is the public administration documents management system integration environment (DIV), which provides safe and secure environment between different record keeping systems of public administration [15] State information system register (SISR) was set up for the registration of State Information Systems (SIS), in which data on the national information systems - their use, technical resources and administrators - is stored. It supplies information to natural and legal entities on the data contained in the registers, as well as to system developers and organisations that integrate SIS. There are 173 registered SIS in the SISR [15]
Lichtenstein	No data	No data	No data

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Lithuania	Article 36 of the Law on Public Administration states that an economic entity shall enjoy the right not to submit documents to a supervising entity, if it has already submitted the same documents to at least one supervising entity. However, when refusing to submit documents, the economic entity must indicate in writing the supervising entity to which it has submitted the said documents [47]	No data	The State Information Resources Interoperability Platform (SIRIP) is the public interoperability platform, which consists of two main parts: Data exchange platform and Central electronic services portal eGovernment gateway [16]

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Luxembourg	The Law of 25 June 2013 concerning the digital identification of physical persons forms is the main basis for the OOP by prescribing that authentic data, already contained in the National Register of Natural Persons, have to be reused by public administrations. These administrations are not allowed to ask once more for these data and citizens do not need to provide evidence that the data in the register is correct. Nevertheless the OOP is also applied for other registers or databases not covered by the Law of 25 June 2013 but containing other authentic data: Cadastre, Cars register, Driving licence, VAT balance sheet [36]	The OOP is highlighted in the Digital Luxembourg initiative [50]	Luxembourg has implemented the OOP as efficiently as possible by making it a component of the Guichet.lu One Stop Shop [36]. It is possible to integrate authentic sources within the Guichet.lu back-office to retrieve and/or verify authentic data. The OOP is implemented in three distinct ways: data is reused automatically in the context of procedures at back office level without any explicit intervention of the user; for some cases citizens' or businesses' explicit consent is necessary in order for the administration to retrieve the necessary data from the central registers and databases; the citizen or the business decides to reuse information that he inserted himself in his personal space and that therefore is not information coming from an authentic source, i.e. from a central authoritative register or database
Malta	No data	Mapping Tomorrow is a strategic plan for the public administration for 2019–2021. Once-only is the core goal, aiming at internal sharing and re-use of data and information that has been previously provided by a citizen or organisation	No information about the implementation status. The Maltese Government Common Database (CdB) was enhanced with some minor amendments. An ongoing effort is being done for the simplification of processes by internally sharing data and re-use previously gathered information, in line with the OOP [17]

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The Netherlands	All base registries are anchored in legislation according to 12 agreed common principles [22]. One of them is that the use of basic registries is mandatory for all bodies that perform public tasks. It is not permitted to collect data that is already present within a basic register and citizens and businesses have to provide data once	No data	The System of Base Registries was created to share authentic data provided by citizens and businesses. It is composed of 10 base registries. In order to enable sharing and exchange of data, four system services were developed: Digikoppeling, Digilevering, Digimelding and the Stelselcatalogus [18]

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Norway	The Act relating to the Central Coordinating Register for Legal Entities LOV-1994–06-03–15 and the regulation regarding the registration of legal entities in the Central Coordinating Register for Legal Entities mandates public authorities to re-use information from the Central Register. Moreover, the Act regarding the Register of the Reporting Obligations of Enterprises (LOV-1997–06-06–35) obliges public authorities to coordinate reporting obligations in order to reduce multiple reporting[a]	OOP is supported in the Norwegian Digital strategy for the public sector 2019–2025	'Altinn' is the governmental system for digital communication between state, businesses and citizens. The exchange of information from business registries at the Altinn system is possible thanks to the Central Coordinating Register for Legal Entities, which identifies legal entities. The Register of the Reporting Obligations of Enterprises takes care of the re-use of data, enables the extracting of data from administrative systems and supplies metadata for electronic reporting solutions. CCR serves as a link between the entities and registries, making key data accessible. Associated registers shall use information registered in the CCR, and submit information they receive to the CCR. This is important in order to pre-fill forms and confirm whether a person is authorized to act on behalf of an entity
Portugal	The Decree-Law no. 135 of 1999, reviewed by the Decree-Law no. 73 of 2014, approved in May 2014, established important administrative modernisation measures, including the OOP, according to which the citizen must not be obliged to give the public administration the same document twice [19]	According to the Portuguese Government's interoperability strategy, public services should be allowed to exchange data in real time, facilitating the OOP, whereby citizens don't have to provide information to a public administration that is already in a public administration database [37]	The administration interoperability platform (iAP) connects various services between public entities and digital platforms that accumulate public information. The technology platform is based on a SOA and open standards, providing real time access to authentic sources of information and an Identity Federation mechanism [37]

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Poland	The Polish law (The Code of Administrative Procedure [34]) forbids public bodies to request information that is already stored by any other public body	The OOP is part of the action for the citizens and businesses oriented services in the national Integrated Program for Digitalization [44]	There is no general infrastructure to enable secure exchange of data between public registries. This kind of exchange is enable only for selected services
Romania	The 41/2016 Ordinance, issued in June 2016, introduced the obligation for public authorities, on request from citizens, to accept documents in electronic format and reuse any personal data previously delivered to the public administration. The ordinance stipulated new rules concerning source code for ICT systems developed under an eProcurement contract. The ordinance also established a national CIO in partnership with the Ministry of Communication and Information Society and the rest of government	The OOP is part of the Strategy for enhancing the Public Administration 2014–2020 (with the purpose of establishing the general framework for public administration reform), MDRAP [39]; the Action Plan - Strategy for enhancing the Public Administration 2014–2020 [40]; the Integrated plan for simplifying administrative procedures applicable to citizens, CNCISCAP, 2016 [41]; the Romania's development strategy for the next 20 years, Romanian Academy, 2017 [2]	There is no a national infrastructure enabling the OOP in relation to business data

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Country	Oop – legal basis	Program/strategy	National infrastructure supporting the OOP for business
Spain	Law 39/2015 of 1 October 2015, on Common Administrative Procedure of Public Administrations, art. 28 and law 40/2015 art. 155 facilitate the OOP. Public administration cannot require data and documents that have been previously delivered. Each administration must facilitate access to data in its possession [4]	The Action Plan for Digital Transformation in the Ministry of Finance includes Initiatives that are proposed for compliance with article 28 of Law 39/2015, related to the 'once-only' principle [21]	The Data Intermediation Platform (PID) is a horizontal service that simplifies administrative procedures, so that citizens or businesses do not have to deliver data or documents already held by public authorities [21]. Using the PID with the SCSP protocol, public bodies in charge of administrative procedures can automatically check the required information. The SCSP protocol is aimed to substitute paper certificates by electronic data exchanges and it defines a common structure for the messages and a governance model that considers four roles as result of two dimensions: data consumer/provider and business/technical actor [21]
Sweden	There is no legal obligation for the OOP	OOP is underlined in the national digitization plans	The Composite Service of Basic Information on Companies - CSBIC supports exchange of business related data in line with the OOP. The CSBIC works as an intermediary and forwards basic data requests from consumers (municipalities, government authorities, verksamt.se business portal) to data sources (Swedish Tax Agency, Statistics Sweden, Swedish Companies Registration Office) and then collects and forwards the replies from the producers to the consumers. The service is based on xml/soap

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Slovenia	According to art. 139 of General Administrative Procedure Act [52], the official who conducts the proceeding shall obtain the data on the facts of which the agency competent for deciding, any other State agency, local community agency or statutory authority keeps official records	At the moment only guidelines for information solution development [45] cover the OOP. The new Public Administration Development Strategy, which is under preparation, will highlight the OOP	The TRAY is a central system for electronic data enquires, which enables efficient, reliable and secure collection of data for different clients, from numerous and heterogeneous data sources, by handling electronic data enquiries and electronic answers. It also enables the handling of data sources in a customised and parameterised way. In 2019 an AI based algorithm for data traffic optimization was added to the system, minimizing congestion risks with data collection
Slovakia	Act no. 177/2018, on measures to reduce administrative burden by using public administration information systems and on amendments and supplements to certain acts (Act Against Bureaucracy), came into force on 1 September 2018. According to the provisions of § 1 par. 1 of the Act, in their official activities public authorities were obliged and authorised to obtain and use data recorded in public administration information systems, to make extracts from them, and to provide such data and extracts when necessary [20]	National strategy for public governance informatization (document National Concept of Public Administration Informatization of the Slovak Republic [42]) contains also several OOP mentioning in context of public services improvements. The European scope of OOP is mentioned in document 2030 Digital Transformation Strategy for Slovakia [43]	The digital service OVER SI started in September 2018. Based on the Central Data Integrated Platform, was set up in response to the Government´s Stop to Bureaucracy initiative. In due course, more than 16000 public administration clerks performing duties at different domains were registered in order to provide themselves with the requested evidence (in the first phase evidence came from business registers of companies and self-employed, from cadastre and from criminal register). By the end of 2019, another batch of 11 sources of evidence was expected to be made available via the OVER SI. The portal allows the verification and exchange of four documents between government authorities [20]

[a]Questionnaire with a TOOP partner.
[b]Information obtained from the Ministry of Interior, Hungary.

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