

# Exploring and Demonstrating the Once-Only Principle: A European Perspective

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## ABSTRACT

The paper provides a case study of the implementation of “Once-Only” principle in Europe, where a related large-scale initiative began in 2017 for the first time. The project aims to explore and demonstrate the “Once-Only” principle in practice through multiple sustainable pilots using federated architecture on a cross-border European scale, connecting 60 systems across countries involved. Drivers and barriers (such as data protection and data-sharing requirements, implementation costs, public sector silo issues, legal barriers and/or gaps) are identified as well as the benefits and impacts, both tangible and intangible. The generic approach developed brings along a significant reduction in the cost of future “Once-Only” based e-services globally.

**Keywords:** Once-only principle, data reuse, public administration innovation, cross-border public services, interconnection, interoperability

## 1. INTRODUCTION

The main objective of the “Once-Only” principle (hereinafter – OOP) – reducing the administrative burden of users and businesses by re-organizing public sector internal processes - emanates directly from the overall political objective of improving economic efficiency of the EU by facilitating cross-border trade through such initiatives as digital single market [1]. It is based on the assumption that collecting information is more expensive and burdensome than sharing already collected information. Hence this principle proposes to collect information only once and then share this information, respecting other constraints, such as regulations. The political reality of the EU, however, is such, that precludes swift and direct application of the once-only principle, given that first, different EU Member States have different understanding of the once-only principle, different approaches to public service provision, different IT systems that make such services possible, but also different understanding of issues relevant to the once-only principle, such as protection of personal data, for example. Therefore, implementation of the once-only principle EU-wide will require legislative changes on the EU level.

The Once-Only Principle (hereinafter – TOOP) project contributes to this by exploring and demonstrating the 'once-only' principle in practice through multiple sustainable pilots using federated architecture on a cross-border collaborative pan-European scale in order to identify drivers and barriers and to provide a basis for future implementation and wider use, as well as provide input into the legislative process. TOOP will be implemented by a consortium of 51 organisations that include 19 national administrations from 19 different European Union (hereinafter – EU) Member States and two countries outside of the EU and will ultimately connect around 60 systems across countries involved.

The paper is structured as follows. First, we provide a definition of the OOP. Second, we outline the scope of the project, providing a brief overview of project's aim and main intentions. Third, we provide an overview of the potential impact of TOOP on public administrations and users of public services, followed by conclusions.

## **2. DEFINITION**

There is no single definition of the Once-only at the moment, and different EU Member states interpret it differently. In some EU Member States 'Once-only' refers to data storage, in which case national legislation requires that data collected from citizens is stored in one database<sup>1</sup>; in other cases 'once-only' refers to collection of the data, stipulating that data can be submitted to public administrations only once, while still allowing for multiple repositories<sup>2</sup> [2]. TOOP project uses the latter definition of the Once-Only Principle, focusing on collection of data by public sector organisations and subsequent sharing of the collected data across public administrations as well as borders. The implementation of this principle needs to comply with the requirements of EU data protection legislation.

## **3. SCOPE OF THE PROJECT**

The main objective of the “Once-Only” Principle Project (TOOP) is to explore and demonstrate the “once-only” principle through multiple sustainable pilots using a federated architecture on a cross-border collaborative pan-European scale in order to identify drivers and barriers and to provide a basis for future implementations and wider use.

TOOP will enable a better exchange of information or documents of businesses with and between public administrations. The major measurable quality goals of the project are time-savings, lowering the administrative burden and reducing costs for businesses, fulfilling legal obligations faster, improved service quality and administrative efficiency and, in the longer term, a better-functioning digital single market with increased customer satisfaction and a better image of public authorities. Another important quality goal for the project is that the data shared between public administrations remain under the control and the consent of the businesses involved, in line with the data-protection legislation by the EU. Further quality goals are security, interoperability, data quality, data protection, user friendliness, facilitated personalisation, pro-activeness of services and business confidentiality.

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<sup>1</sup> As is the case in Estonia

<sup>2</sup> As is the case with the "Tell us once" service in the UK, collecting data on the deceased from their relatives and sharing it across different services.

In order to achieve the main goal of the project a number of sub-objectives will need to be attained:

1. to collaboratively design a generic federated architecture implementing OOP that is able to connect different registries containing base data and e-Government architectures in different countries employing standards, re-using and/or extending existing building blocks;
2. to explore and demonstrate the functionality of OOP through multiple cross-border pilots of e-services (e-Government Services) for at least 12 months in real conditions; and
3. to carry out an evaluation, including identification of drivers & barriers and conducting a cost-benefit analysis of the pilots, to identify the benefits and impacts, both tangible and intangible, and generate insights on the European value in order to facilitate the wider use of OOP.

### **FEDERATED ARCHITECTURE**

One of the innovative solutions developed within the TOOP is a generic federated architecture, developed in collaboration between different Member States. TOOP approach to federated architecture and building blocks reuses existing building blocks and components and integrates new elements in the European and participating States' ecosystem, develops them further and applies them to new areas, using innovative and flexible methods and putting a strong emphasis on subsequent proliferation, extension and facilitation.

### **HOLISTIC APPROACH**

Over the last decade the multi-disciplinary and inter-sectoral character of e-Government – the holistic approach to information systems development – has become widely recognised, both in theory [3] and in empirical studies<sup>3</sup>. Still, often the development of e-services is rooted narrowly in existing organisational structures, without any vision on how those structures can be improved and related to, and supported by the legislative process and other drivers often attributed to successful public sector innovation (such as effective leadership, co-ordination) [5, 6], leading to failures in information systems development. Our approach recognises that today's technology is not only a strategic driver for improving public sector efficiency, but can also support the effectiveness of policies and create more open, inclusive, innovative, participatory and trustworthy government [7]. Such a holistic approach to large-scale information system development (such as TOOP) thus calls for the presence of a variety of strengths, capacities and mandates in the developing team, including public administrations and their private sector partners, who are directly responsible for the practical implementation of TOOP in the pilot areas, and research partners, whose main role it is to provide assistance in the areas where public administration partners need additional support. This includes the development of appropriate technical solutions for bridging the different architectures in place in the pilot countries, an analysis of the legal and organisational context in which the pilots are implemented and the formulation of tailor-made recommendations for

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<sup>3</sup> For example, the success of Estonia in e-government is related to leadership, public sector ICT competencies, legislative and regulatory support (incl. standards), and the existence of (strategic) IT infrastructure; see [4].

pilots as well as generic recommendations for any future efforts in the cross-border implementation of OOP, based on the project's experience.

## DESCRIPTIONS OF THE PILOTS

TOOP consortium has the ambition to demonstrate the project's contributions in three real-world pilots. These pilots will each deploy the required subset of TOOP service components necessary for the specific application scenario in order to prove the viability of the overall approach and demonstrate that trustworthy and legally binding electronic transactions are possible on a European scale. TOOP is especially ambitious regarding the number of states and areas concerned: It aims to connect 38 information systems as data consumers – i.e. receiving data – and 32 as data providers – i.e. sending data to data consumers in any-to-any transactions. The list is indicative of participating countries' intentions at present time and may be confirmed or modified once the pilots start.

The goal of all TOOP pilots will be to reach production level, not to do proof of concepts and lab tests only. Two kinds of production pilots can be foreseen: (1) those that start with technical development and achieve production level, going live and having real transactions within the lifetime of TOOP, (2) those which are already in production with real transactions in the system/services connected to TOOP but will pilot new consolidated/re-usable BBs.

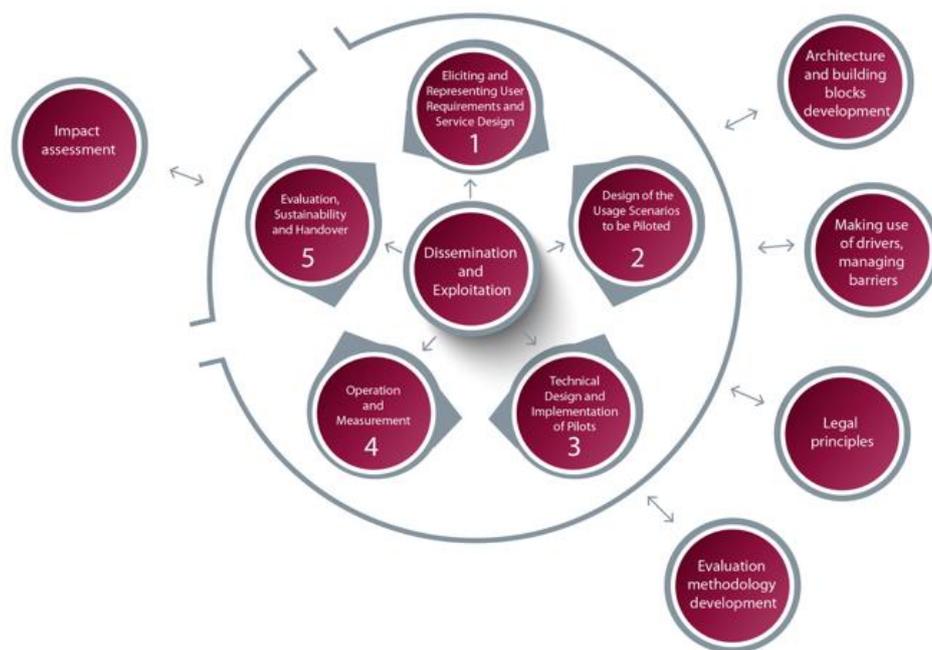


Figure 1: Overview of the methodological approach within TOOP

In order to explore and demonstrate the functionality of the OOP, three pilot areas have been selected for the project. Two of these focus on cross-border exchanges of company data, one in the context of cross-border services (Cross-border e-Services for Business Mobility) and the other on exchange of registry data (Updating Connected Company Data). The third pilot area is inherently cross-border in essence (Online Ship and Crew Certificates). Main criteria for their selection were (1) cross-border relevance, (2) potential to reduce administrative burden, and (3) feasibility of implementation.

The first pilot area - Cross-border e-Services for Business Mobility – is versatile and composed of different usage scenarios that are of interest to the participating states. It is based on the

assumption that government administrations from different countries expose e-services directed at Economic Operators from various countries. During the respective service provision company-related information is needed. The pilot will show how such information can be automatically retrieved from the Economic Operators' country of origin without the business representative having to enter it again.

The second pilot area – Updating Connected Company Data – foresees a central role for the Business Registers. At the moment, company data are officially stored in the Business Register within individual Member States according to requirements of relevant EU regulations and directives as well as national legislation. However, the same (or part of the same) data are also stored for other purposes by various public administrations in the same and other MS. Keeping these data up to date is a real challenge, especially when they are related to foreign companies. While companies are required to notify their National Business Register of different events, such as company creation, opening of branches, change of legal address, etc., this information is automatically available to interested parties only in some Member States through the so-called "Event Notification Service". This pilot brings the "Event Notification Service" to the European level, reducing the burden for companies, all the while making sure that all interested parties receive a correct, timely and complete update of the relevant company data.

The third pilot area – Online Ship and Crew Certificates – addresses the need for simplification in the area of ship and crew certificates<sup>4</sup>, which are currently issued and maintained in paper format, while certificate data is stored by national Maritime Administrations. TOOP aims at connecting the databases of national Maritime Authorities and make the information available to all interested parties, as well as providing a possibility of online certificates, which will substitute paper-based or electronically-signed certificates that have to be carried on board. Once TOOP is implemented, the flag state's Maritime Authority will be able to issue the online ship or crew certificates, while all other interested parties, such as port authorities, police and border guard and the like, will be able to view and check the online certificates, thus reducing the risks and the amount of paperwork.

All pilots result in ambitious process innovation – the implementation of a new or significantly improved delivery method – and include significant changes in techniques, equipment and software. Process innovations as such are intended to decrease unit costs of production or delivery, to increase quality or to produce or deliver new or significantly improved products. Innovation also lies in all pilots in new service design, starting from the information and functional needs of businesses and administrations based on end users performing specific roles (e.g. Civil Servant, Business Owner), rather than from the existing business processes.

#### **4. EXPECTED IMPACT**

TOOP realises time savings and cost reductions for businesses and administrations by reducing the administrative burden as demonstrated by pilots carried out. Also, the generic approach TOOP develops is expected to bring along a significant reduction in the cost of future e-Government pilots or setting up of services, leading in turn to a larger number of such pilots.

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<sup>4</sup> Ship and crew certificates include several hundred data objects, e.g. ship's name, keel date, gross tonnage, IMO number, allowed classes of dangerous cargo, life-saving equipment on board, endorsement date, name of issuing/endorsing authority etc.

This would in particular go a long way to creating sufficient demand for Connecting Europe Facility's Digital Service Infrastructures to help make them economically feasible post 2020.

All pilots will produce time savings and cost reductions for businesses and administrations. They will also support the daily activities of many public administrations at the EU level, enhancing their performances and reliability. It will contribute to guaranteeing the correct functioning of the economy and of the market, market transparency, creditor protection, tax authorities for fraud prevention, law enforcement agencies and investigation bodies in their activity against money laundering, financial crime and terrorism. It could contribute to a real evolution in the Company Law field as foreseen by the Member States and by the European Commission.

TOOP will have immediate impact on thousands of organisations. For example, in the field of procurement the total estimated number of awarded contracts based on public procurement is around 630,000 in Europe (2014 data) [8]. The number of awarded contracts for cross border companies is now “only” the 3.5% of the total awarded contracts (22,000), but is growing thanks to simplified and electronic procedures. TOOP has also potential to contribute to this growth by lowering administrative burden.

In addition, the average number of “changes” for each registered company in the Business Registers in EU is around 3 per year [9]. So, TOOP’s “monitoring service” could generate a total yearly number of around 2 million notifications of which 70,000 at cross border level. Also, there are around 130,000 branches of foreign companies registered in the European Business registers and using the same average number of yearly “changes”, the “monitoring service” could generate a total yearly number of around 400,000 notifications.

The benefits of online ship and crew certificates are related to gains in time-savings, money and maritime safety. It is expected that the Port State Control (PSC) inspection time on board will be reduced by 1.5 hours to 3 hours due to having certificates available online and therefore having the possibility to check the certificates before actually going on board the ship; the main beneficiaries are the ship and her crew. Also, Master’s/crew’s time is saved by several hours per voyage thanks to the use of on-line certificates, thereby allowing the crew to concentrate on safe navigation of the ship. The ship operator saves money as paper certificates are no longer needed on board. The time saved depends largely on the size of the fleet and trading area, but can reach up to thousands of Euros annually per operator and/or tens of thousands annually per Maritime Administration. An immediate impact of TOOP is also related to lowering the risk for a ship being detained due to not having a valid certificate on board. Costs related to this can otherwise be as high as tens of thousands of Euros per ship per day. The certificate data will be authentic due to secure links to the issuing MA database. Falsification of the certificate becomes virtually impossible, thereby increasing the level of maritime safety.

Other positive impacts are related to the time spent on data exchange between Flag States being reduced by several days or even up to several weeks. This, too, increases the level of maritime safety, allowing the receiving Flag State’s register to make prompt and informed decisions on whether or not to accept the vessel into its registry, or whether prior inspection is needed. Time and money of the ship operator is saved when changing the ship’s flag.

## 5. CONCLUSIONS

TOOP project was started on 1 January 2017 and will go on for 30 months. It explores and demonstrates the “Once-Only” principle in practice and contributes potentially to a better exchange of information with and between public administrations, bringing along time-savings, lowering the administrative burden and reducing costs for businesses, etc. Various challenges need to be addressed. Technologically it aims provide a generic federated architecture that is able to connect different registries containing base data and e-Government architectures in different countries employing standards. Various political and administrative barriers (such as data protection and data-sharing requirements, implementation costs, public sector silo issues, and especially legal barriers and/or gaps) could hinder the actual implementation of such cross-border initiatives and will be addressed in detail. Finally, costs and benefits are identified. Testing our approach on pilots on a cross-border European scale has a potential to bring positive change for both public administrations and users of public services across Europe and beyond. The project might serve as a role model for similar interconnectivity issues in similar environments outside of the EU.

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