I3S - Implementing and sharing statistical services

Communication
« Shared SERVices » Project (SERV)

• One of the implementation projects, defined in the ESS Vision 2020 programme

• Defines and implements the necessary preparations for developing and sharing generic software solutions among NSI and other ESS authorities.

• 2 ESSNets
  ◆ Sharing Common Functionalities in the ESS (SCFE, 2016-2017)
  ◆ Implementing Shared Statistical Services (I3S, 2019-mid 2021)
I3S Consortium Members

- Insee, coordinator
- Istat
- INE (Portugal)
- Stats Sweden
- Stats Norway
I3S Work Packages

- WP1 – Develop new services
- WP2 – Define integration and architecture guidelines
- WP3 – Build a sandbox and test available services – containerise
- WP4 – Create and communicate success stories
- WP5 – Communication and Dissemination of Results
List of shared services

- SCFE
  - Time Series Service (DO: France, RO: Germany)
  - Metadata Dissemination Service (DO: France-Insee, RO: France-CASD)
  - Questionnaire Generation Service (DO: France, RO: Slovenia)

- I3S
  - PXWeb (DO: Sweden, RO: Portugal, Norway)
  - ARC and VTL tools (DO: France, RO: Italy)
  - Record Linking (DO : Italy, RO : France)
Communication Package – Main goals

- Understand and counteract that there are far more statistical services developers than reusers in the ESS.
- This ESSnet focus not only in developing shared services but also in enhancing its reuse.
- Develop an adequate way to communicate the shared services availability to the statistical community.
- Understand the current status and maturity of the countries in the ESS toward service adoption, and the areas and processes where those will be most needed or required.
Communication Package – Main goals

• Understand and counteract that there are far more statistical services developers than reusers in the ESS

• Understand the current status and maturity of the countries in the ESS toward service adoption, and the areas and processes where those will be most needed or required.
### 3 Sharing a Statistical Service

#### 3.1 In the process of sharing a service, what are the key reasons that you value more?

Choose one of the following:
- [ ] Increasing community of users
- [ ] Get help in the maintenance
- [ ] Quality of the service (trustiness, robustness)
- [ ] Improve the adherence to standards
- [ ] Lower the burden for future developments and error correction
- [ ] Never tried to share a service
- [ ] Other

#### 3.3 How frequently do you face challenges when you try to share services?

Choose one of the following:
- [ ] Never
- [ ] In some cases
- [ ] Always

#### 3.5 Do you share statistical services in the ESS?

Choose one of the following:
- [ ] Yes
- [ ] No

#### 3.8 If yes (you do share) what kind of users of shared services do you have?

Choose from the following:
- [ ] Inside my own NSI
- [ ] Other NSIs
- [ ] Other National Statistical Authorities
- [ ] National Banks
- [ ] National Universities and Researchers
- [ ] International Statistical Authorities
- [ ] Other

#### 3.6 If not (you don’t share), what is the top reason for not sharing?

Choose one of the following:
- [ ] Doesn’t comply with standards
- [ ] It’s not open source
- [ ] Doesn’t meet the required level of quality for external use
- [ ] Architectural requirements
- [ ] Not available to support it or solve errors
- [ ] No adequate documentation to accompany it
- [ ] It’s not generic enough
- [ ] Lacks interest to others
- [ ] Other
4 Search for Service

4.1 In the process of reusing a service, what is the characteristic that you value more?
- Community of users
- Type of licence
- Technology
- Cost of implementation
- Adherence to standards
- Impact and size of the service
- Never tried to reuse shared services
- Other

4.2 Which characteristic you value more?

4.3 Do you reuse any service that was made available in the ESS
- Yes
- No

4.6 If yes (you do reuse), what are the main factors that made you reuse that service?
- Compliance with standards
- Low cost/resources
- Ready to use solution
- Technical qualities of the service
- Trust in the service development and support
- Organizational endorsement of the service
- Large community of users
- Good documentation and examples for reuse
- Similitude with your own services/solutions
- Existence of support team for the service
- Other

4.4 If no (you don’t reuse), what are the main factors that blocks you from reuse a shared service?
- Differences in requirements
- Preference of a customized solution
- Cultural differences
- Internal policies
- Lack of internal knowledge about the target service
- Infrastructural differences make it complex or impossible
- Low awareness to the available services
- Distance and lack of interaction between service developers and your reuse team
- Poor communication/documentation on how to reuse the service
- Fear that support/error solving maybe not guaranteed in the future
- Other

4.7 Which is the main factor that made you reuse a service

• Not all countries answered the survey despite we did two attempts

Difficulty to identify the community of managers
58.8% said that they reuse statistical services

41.2% said that they share statistical services

Observing the answers of each country, and knowing their status in term of reuse and share services we conclude that:

- Managers are not aware that they are sharing or reusing tools
- There are some confusion on the concept of reuse or share services
If not, what is the top reason for not sharing?

- **Don’t share**: 58.8%
  - Not available to support it or solve errors: 40%
  - It’s not generic enough: 20%
  - It’s not open source: 20%
  - Doesn’t comply with standards: 10%
  - Other: We don't produce services: 10%
If not, what is the top reason for not sharing?

- Doesn’t meet the required level of quality for external use
- Architectural requirements
- No adequate documentation to accompany it
- Lack interest of others
If no, what are the main factors that blocks you from reuse a shared service?

- Don’t reuse: 41.2%
  - Infrastructural differences make it complex or impossible: 28.5%
  - Low awareness to the available services: 28.5%
  - Lack of internal knowledge about the target service: 14.3%

- Other: 14.3%
  - Differences in requirements
  - Lack of internal knowledge about the target services
  - Fear that support/error solving maybe not guaranteed in the future
If no, what are the main factors that blocks you from reuse a shared service?

- Preference of a customized solution
- Cultural differences
- Internal policies
- Distance and lack of interaction between service developers and your reuse team
- Poor communication/documentation on how to reuse the service
If yes, what are the main factors that made you reuse that service?

- Compliance with standards: 40%
- Good documentation and examples for reuse: 30%
- Low cost/resources: 10%
- Trust in the service development and support: 10%
- Large community of users: 10%

Total: 58.2%
If yes, what are the main factors that made you reuse that service?

- Ready to use solution
- Technical qualities of the service
- Organization endorsement of the service
- Similitude with your own services/solutions
- Existence of support team for the service
Some conclusions:

50% don’t share services because they are not generic enough, not open source or don’t comply with standards

40% reuse services because they are compliant with standards

43% don’t reuse services because they don’t know much about them
Source
Message
Channel
Receiver
Feedback
Environment
Context
Interference

Situational Awareness Matters!
In communication, defining the target is very important because different target should get different messages

<table>
<thead>
<tr>
<th>Service name</th>
<th>Manager</th>
<th>Subject matter Specialist</th>
<th>IT</th>
</tr>
</thead>
<tbody>
<tr>
<td>The source of the service is explicit?</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Some story about the service? – How long, who uses it, incentives to use it or create the service</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Is the service easily connectable with the source?</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>How?</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>How is the service advertised?</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>How can someone become aware of it?</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>In which forum?</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Is it in service catalogue?</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>In peers meetings (of IT or Subject Matter or other)?</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>How is the service described?</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>What problems it solves</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>High level of GDBPM description</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Architecture</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To which group of users is the communication more directed?</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Is additional help necessary for the service deployment</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
In communicating statistical services we considered three different targets:

• Managers

• Subject matters specialists / Methodologists

• IT persons
Source Message Channel Receiver Feedback Environment Context Interference
Communication channels

- Flyers
- Promotion Videos
- Success stories written testimony
- Success stories videos
- Posters
- Workshop or conferences advertisement
- Catalogue
- Sinder
JDEMETRA+ : L’HISTOIRE D’UN PARTAGE D’EXPERTISE INFORMATIQUE
THE STORY OF SHARED IT EXPERTISE

Imaginer que différents instituts nationaux de statistiques utilisent les mêmes outils informatiques pour produire leurs indicateurs ou chiffres n'est pas une utopie. Confrontés aux mêmes besoins ou aux mêmes contraintes, les INS peuvent avoir une approche mutualisée des ressources informatiques. Ce partage d'outils s'inscrit dans le partage de méthodes qui facilitent la production de statistiques harmonisées. L'histoire du développement de JDemetra+ est emblématique de ce que peut représenter le partage d'une solution informatique à l'échelle de plusieurs instituts. Retour sur une expérience fondatrice.

The idea of different national statistics institutes using the same IT tools to produce their indicators and figures is not merely a pipe dream. As they face the same needs or constraints, NSIs can adopt a pooled approach to their IT resources. This tool sharing is part of a system of exchanging methods that facilitate the production of harmonised statistics. The story behind the development of JDemetra+ is emblematic of just what can be achieved when multiple institutes come together to share an IT solution. Here, we take a look back at this truly foundational experience.
Developing and sharing statistical services

The project
In the European Statistical System (ESS), the Vision 2020 promotes a joint strategic vision, based on common models and standards. In this context, the project "Integrating Shared Statistical Services" (ISSS) aims to:

- foster the implementation of shareable statistical services
- reduce the technological and methodological barriers that make the process of sharing rather complex

Contacts

Software download
The new version of Relais performs the probabilistic linkage approach, based on the Fellegi-Sunter method
A shareable service, should be compliant with CSPA 2.0 principles.

The main architecture components should be designed according to the following model:

- **Core logic**: the core algorithm implemented by the service.
- **Features**: a set of components (not only software) that take into account specific requirements from different stakeholders (e.g., IT, methodology, domain experts, etc.) and allow the execution of the service in several environments.

Following the ESS Vision 2020, the I3S (Integrating Shared Statistical Services) project aims at implementing and reusing statistical services.

The development of shareable services can be either from scratch, or from existing components.

Implementing Shared Statistical Services
http://www.cros-portal.eu/
**Description**

PxWeb is used for publishing statistics in a database or in px-file format at the web and is since 1 January 2016 free of charge for Swedish government agencies and municipalities, international NSIs and international organisations. PxWeb offers all the datasets in the database as open data through an API in many formats.

**History**

The software is used in 40 countries 63 international organisations, 21 Swedish organisations.

**Main features**

The PX-Web application consists of two parts:

**Architecture**

- PX-Web
- Web controls
- PX-Win
- PX-Api
Description
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History
The software is used in 40 countries 63 international organisations 21 Swedish organisations.

Conditions regarding use of PxWeb
The receiving authority/organisation are responsible for handling the tool on their own using the instructions supplied with the tool. The access to PxWeb does not include ongoing support, any promises of further development or any guarantee against errors in the program and any use shall be at the users own risk.

Documentation & Additional resources
CSPA Katalog: [https://www.statistical-services.org/](https://www.statistical-services.org/)

PX-Web information page:

Statistics Sweden Github:
[https://github.com/statisticssweden/PxWeb](https://github.com/statisticssweden/PxWeb)
**Description**

The ARC (from the French: Acquisition - Réception - Contrôles) software allows to receive (administrative) data supplied by the providers (several formats are supported, particularly XML), to control the compliance of the received files, and to transform administrative data to elementary statistical data. The software enables the statistician to define and apply controls and mappings, to test them in a sandbox environment (linked to the software), and to put them into production without frequently calling on a developer.

**Stakeholder commitment**

Three instances of the ARC application are running in production within the Insee information system on employment and income (called “SIERA”). The main instance leads every month the 2.5 millions of

ARC provides a web interface to lead the user through the rule definitions. The language for defining complex rules is based on the SQL language.

User defined rules and metadata are stored and versioned in the database. ARC currently supports two types of metadata:

- The models identify the normalized relational models defined by the user, they are used to define the rules and store the output generated by the statistical formatting module.
- The external tables integrated by the user are used by the rules of the different modules.

**Conditions regarding use of ARC**

The receiving authority / organisation are
ARC Video
Lisbon Workshop
ESSnet-SERV2 - Implementing shared services

26-28 April 2021