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**Interoperability Maturity Assessment for Public Services**

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# Interoperability Maturity Assessment For Public Services

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# 1 IMM QUESTIONNAIRE BY EXAMPLE

The objectives of this section are to assist trainees to:

- Describe the main elements of the interoperability checklist.
- Identify the causes that hinder the interoperability maturity of electronic public services
- Identify and refer to the supporting material provided by the European Commission
- Describe the structure of the questionnaire
- Recognise the maturity levels and what they mean in terms of availability, utilization and architecture
- Describe the provided recommendations for improving the maturity level of the assessed electronic public services

## 1.1 Service Management (Section D of the IMM questionnaire)

This section of the questionnaire aims to assess the Public Service as a part of the holistic e-Government and Interoperability architecture.

### 1.1.1 Question D1: Cost-Benefit Analysis (Organisational interoperability – weight 10%).

*Has the public service been evaluated in terms of its cost and benefits before deciding on whether/how it should be implemented (e.g. through conducting an ex ante Business Case)?*

Having a cost benefit analysis for the service implies that the service was carefully designed in order to justify the investment. This facilitates the sustainability of the service. It is

important for interoperable services to be sustainable as if they stop working a lot of organization will be affected.

Depending on the answer that can be given to this question the following maturity level can be achieved:

- Ad –hoc: No, cost and benefits of the public service are not identified
- Essential: Yes, cost and benefits of the public service were detailed based on a common business case approach (e.g. cost-benefit analysis, total cost of ownership calculation)
- Seamless: Yes, cost and benefits of the public service were detailed based on a common business case approach. In addition multiple scenarios were compared (inventory of all cost categories)

Given the examples that were presented, the business Registration Service can be regarded as **essential** since many studies have been conducted by the European commission for the importance of electronic procedures in the European growth considering the service directive implementation. Provided that a detailed study has been conducted in a country, considering every aspect of the service of business registration, the seamless choice can be achieved.

Regarding the service of e-Administration fee, it seems that a detailed study has been conducted in order to verify that this service will not support both conventional and electronic ways of payment. This service has comparatively less cost than the service of issuing a paper based administration fee ticket.

### 1.1.2 Question D2: Service Provisioning (Organisational interoperability – weight 25%).

*Does your public service provide services towards the external environment for reuse?*

If the service has been designed in a generic way that can be reused by other systems then it is more interoperable than a service that has been designed only for a specific purpose.

The maturity levels that can be achieved are the following:

- Ad – hoc: The public service makes no services available towards the external environment, while this would be possible
- Essential: The public service makes no services available towards the external environment due to constraints
- Sustainable: The public service makes some services available towards the external environment
- Seamless: The public service makes available all services towards the external environment

In the case of Business Registration Service part of the information that is handled by the service is being reused by other services. For instance, establishing a branch in another country requires information from the business registry of the country of origin. Moreover the requirement for the beneficial owners for money anti laundry purposes also requires information from the Business Registry. In the light of these evolutions the service can be considered Sustainable i.e. some of the data and functionality of the service is offered to other systems.

The e- Administration Fee service is regarded as Sustainable since some of the information should be transferred to the banks for the execution of the payment and to the public authorities that need to verify that that payment has been made.

### 1.1.3 Question D3: Procurement criteria (Organisational – Technical interoperability – weight 5%).

Has standardization been a procurement criterion when procuring the service's components?

The potential answer related to the interoperability maturity can be:

- Ad –hoc: No
- Essential: Yes, however not enforced sufficiently
- Seamless: Yes, and enforced to ensure compliance

The Business Registration Service should have taken into account the work that has been done for the Business Registry interconnection, the descriptions that have been defined in the various directives and regulations regarding the business registries. From that point of view the potential answer can be Essential because some of them have been implemented and some of them are still in progress at European level.

The e-Administration Fee service has not taken into account in the procurement procedure any standard related to the payment methods or any administrative standard that has been defined. From that point of view the answer may be no which corresponds to the ad-Hoc maturity.

#### **1.1.4 Question D4: Central point of control (Organisational interoperability – weight 10%).**

Does the public service feature a central point of control for choreography of externally consumed and provided services?

It is important from interoperability point of view the service to be part of a generic interoperable architecture. In this case the service should be included in a central point e.g. a service catalogue that facilitates the reuse of the service and coordinates the relation with other services in order to provide other aggregated services.

The typical answers in this question can lead to the following ranking regarding maturity:

- Ad –hoc: No



- Essential: No, this is decentralized or not considered relevant
- Seamless: Yes

In the case of Business Registration service the Central point of control can be the Point of Single Contact that has been established in the context of the services directive. So the service is usually being referred in the point of single contact and is usually part of a licensing procedure that can be applied to a new legal person or company. Therefore typical answers ideally are yes and lead to a seamless service.

The e-Administration fee service is part of payment services and therefore is usually coordinated by a central point of control that acts as a payment gateway.

### 1.1.5 Question D5: Level of automation of the choreography (Technical interoperability – weight 10%).

To what extent is the choreography automated?

Although fully automated choreography is not always in place ideally from interoperability point of view is a goal that we should try to achieve

The typical answers can have the following options:

- Ad –hoc: Fully manual (all transactions are handled manually) choreography
- Essential: Semi-automated (a part of the service choreography relies on manual interference) choreography
- Seamless: Fully automated (no manual interference is required) choreography

The aggregated services that use the Business Registration service are usually too complex and therefore the typical answers that are expected are either Ad-Hoc i.e. fully manual or Essential i.e. if in some cases there is electronic automation regarding the orchestration of the services.

The e-administration fee service usually is part of other payment services and therefore the use of this service is totally automated and the answer is usually seamless.

### 1.1.6 Question D6: Status information (Semantic – Technical interoperability – weight 5%).

Does the public service share status information on the cases handled with external services?

The typical answers have the following ranking:

- Ad-hoc: No status information shared
- Essential: Yes, with some services
- Seamless: Yes, systematically with all services

Both the business registration and the e-administration fee services provide the status information since they are successfully implemented. Business registration usually adds a new entry in the business registry that is open to the public. Other services can exploit this information so the potential answers are either Essential or Seamless. The e-administration fee status is necessary for all the other public administration services that use it. The other services need to know if the payment of the fee has been done. In some exceptional case this information cannot be provided real time but it is provided at a later stage. So in this case the potential answers are either Essential or Seamless.

### 1.1.7 Question D7: Business process definitions and rules (Organisational interoperability – weight 5%).

Does the service establish business process definitions and/or business process control rules (e.g. rules for process control, validation, quality control, tracking and tracing) jointly with the orchestrated services?

This question tries to identify the quality of the modelled process. In the manual cases the process usually is not modelled in a structured way. From that point of view different flavours in the implementation may arise.

In electronic transactions the type of the modelling is better but in some cases may not be done.

The potential answers are:

- Ad –hoc: No, processes are not modelled
- Opportunistic: No, even though processes are modelled
- Essential: Yes, in some cases
- Seamless: Yes, systematically with all services

The Business Registration service usually has a pre - defined process that aims to cover the requirements of the various European directives that regulate the functions of the Business registries. The expected answers are either Essential or Seamless.

The e-Administration Fee service is modelled in a clear way so other payment services can reuse it. Seamless is the potential answer that is expected.

### 1.1.8 Question D8: Business Process Management standards (Organisational interoperability – weight 5%).

To what extent are Business Process Management (BPM) standards applied to the orchestration of the public service?

Complex services need to have a specific and detailed description of the process. Usually tools that support different standards can be used for this description and at a later stage can guide the orchestration of the basic services that contribute to the public service that is being assessed. Therefore the use of Business Process Management tools and Standards can facilitate the achievement of interoperability goals.

The potential alternative choices are:

- Ad-hoc: Business processes are not modelled at all
- Essential: Business processes are modelled and executed on a proprietary basis
- Seamless: Business processes are modelled and executed using BPM standards

The Business Registration Service has important cross border dimension and therefore the description of the services is done usually with BPMN notation or UML modelling.

So the expected answer whenever cross border service provision exists is expected to be seamless.

In many cases especially when the services is addressed at national level the Alternative answers may lead to Essential. The e-administration fee belongs to this case.

### 1.1.9 Questions D9: Architectural Framework (Organisational-Technical interoperability – weight 5%).

Has the public service considered an architecture framework in its design (EU, national level, international (open) standard)?

In this question one should consider the European Interoperability Reference Architecture (EIRA) and similar national policies. Especially when it comes to the use of specific building blocks the Reference architecture becomes more crucial.

- Ad –hoc: No, although relevant frameworks are available
- Essential: No, there are no relevant frameworks available to consider
- Sustainable: Yes, one or multiple architecture frameworks are used
- Seamless: Yes, one or multiple architecture frameworks are used -independent audits

The expected answers for the Business Registration service could be either Sustainable or Seamless provided that the service is functioning following at least the proposed architecture at European Level.

In the case of e-Administration fee there is no specific architecture although the European interoperability architecture could also be applicable, in that case the expected answer can either be Ad-Hoc or Essential.

### 1.1.10 Questions D10: Architectural flexibility (Technical interoperability – weight 10%).

Has the service’s architecture been designed in a way that it is flexible for future upgrades and/or interconnections with other services?

From interoperability point of view the design of the services should be generic enough so that it can be reused by other services. From technical point of view this requirement implies that the service can be easily connected to other services and the architecture can be easily adapted to the evolution of the other services.

The potential answers can be:

- Ad –hoc: No, the architecture cannot be considered flexible

- Essential: The architecture allows for some flexibility
- Seamless: Yes, the architecture is highly flexible

If the EIRA has been taken into consideration then there is a high possibility that the architecture will be flexible enough to be seamless.

Both Business Registration and e-Administration fee services can be flexible enough since they take into consideration EIRA

### 1.1.11 Questions D11: Specification process (Legal - Organisational interoperability – weight 10%).

Has the public service established an (open) specification process in which administrations and businesses can participate?

In the case of Business Registration service there are a lot of collaborative initiatives that discuss the potential solution such as Business Registry Interconnection<sup>1</sup>, Large scale pilots such as SPOCS<sup>2</sup>, eSENS<sup>3</sup> etc . For the e-Administration fee there was no similar process established. So considering the following answers:

- Ad –hoc: No, the specification process is closed
- Essential: Yes, participation upon invitation
- Seamless: Yes, open participation

The Business Registration service falls mainly into Essential and exceptionally to Seamless ranking and the e-Administration fee falls into ad-hoc ranking.s

<sup>1</sup><https://joinup.ec.europa.eu/taxonomy/terms/34442>

<sup>2</sup> <http://www.eu-spocs.eu/>

<sup>3</sup><http://www.esens.eu/>