Interoperability Maturity Model (IMM)

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Improving European Interoperability - Interoperability Maturity Model (IMM Lite) Online Survey

The Digital Agenda for Europe has identified the lack of interoperable public services as a major obstacle for growth.

Interoperability at its core addresses how different and often varied organisations work together towards agreed common goals.
The Interoperability Maturity Model (of which this survey is a key input) has been developed as a response to this challenge and has two core objectives:

1. To provide insight into the current interoperability maturity of public services based on a set of defined interoperability attributes and maturity stages
2. To provide guidelines to improve European public services' interoperability maturity.

Following completion of this survey you will receive your results, key insight into your public service's interoperability performance and guidance of how to maximise your organisation's potential to the email address provided below.

Please note - your submission will be treated confidentially.

Your input is helping advance European interoperability so thank you for taking the time to contribute to this critical activity.

Service Context (A)

Addressing your contact details, the description of your public service and the public administration delivering it

A.1. Please provide your name, organisation and contact details

* Name

* Organisation

* Email

* Telephone Number

A.2 A public service is a service rendered in the public interest. What is the public service you provide to end users (either citizens, businesses or other public administrations)?
Please note that all further questions in this survey must be applied to this (single) public service only

A.3 Which public administration is responsible for providing the public service?

A.4 What is the primary end user group to which your public service is delivered?

A.5 At what administrative level is the public service being delivered?

(multiple answers are possible)

- ☐ Local (e.g. City, Municipality)
- ☐ Regional
- ☐ National
- ☐ European
- ☐ International

Service Delivery (B)

Assessing End-Users' accessibility to your Public Service

B.1 Through which delivery channels can the public service be accessed by the end user?
(multiple answers are possible)

- ☐ Counter / Desk
- ☐ Postal
- ☐ Telephone
- ☐ Dedicated Application *(functionality that needs be installed on a device by the end user before it can be used. E.g. apps from an online application store)*
- ☐ Website *(functionality that is directly accessible for the end user via an Internet URL)*
- ☐ Portal *(functionality that is directly accessible via a portal that amongst other provides access to the public service)*
- ☐ Not applicable – the public service cannot be accessed by the end user directly

B.2 Can the public service be accessed using multiple devices, platforms or browsers?
Example of devices: *PC; Tablet; Mobile Phone; Platforms: Windows OS; Mac OS; Mobile OS; Browsers: Internet Explorer, Google Chrome; Firefox; Opera*

- ○ No, the public service is offered for a single device, platform and/or browser
- ○ Yes, the public service is offered for multiple but not all available devices, platform and/or browsers
- ○ Yes, the public service is offered for all common available devices, platforms and/or browsers

B.3 Does the public service use pre-filling of forms?
Re-use of existing trustworthy data sources to pre-fill forms (or search fields, drop-down boxes, etc.) should be stimulated as it minimizes end user effort and reduces the risk for erroneous data entries.

- ○ No
- ○ Yes, pre-filling is used but only for some data fields that are electronically available
- ○ Yes, pre-filling is used for all data fields that are electronically available
- ○ Not applicable - the public service does not require the end user to enter data

B.4 To what extent is multilingualism supported?

- ○ Not at all
- ○ Partly, only the user interface is multilingual (two or more official EU languages supported)
- ○ Fully, the entire service (user interface, support documentation, technical specifications, etc.) is multilingual (two or more official EU languages supported)

B.5 Does your public service promote the usage of its own or other (public) services through linking to/interlinking with other web sites?
Promoting other related (public) services can contribute to the overall use of (digital) public services. Public services that reference towards related (public) services therefore contribute to greater interoperability

○ No

○ Yes, the public service is being referenced from other sites

○ Yes, the public service is referencing to other sites offering related public services

○ Yes, the public service is being referenced from other sites and the public service is referencing to other sites offering related public services

B.6 Is your public service delivered as part of a Service Catalogue?

○ No, even though there is a Service Catalogue in place

○ No, because there is no Service Catalogue available

○ Yes, the service is included in the Service Catalogue

Service Consumption (C) - Selection and use of consumed services

This section assesses if and how services are consumed from other administrations and businesses. This can include the consumption of functionalities, base registry information and security services your public service needs in order to function.

C.1 Please select the services which your public service has to consume in order to work.
Firstly: Please indicate which of the below generic services are required *(note that this is an indicative list)*. See section 1.4 of the IMM Guideline for more information.

Important note: Please list both services that are consumed from within the administration (internally) and from a third party (externally). Please include both manually and digitally consumed services.

☐ Authentication Service

☐ eSignature Service

☐ ePayment Service

☐ Messaging Service

☐ Audio-visual Service

☐ Data Transformation Service

☐ Data Validation Service

☐ Machine Translation Service

☐ Data Exchange Service

☐ Business Analytics Service

☐ Business Reporting Service

☐ Forms Management Service

☐ Records Management Service

☐ Document Management Service

☐ Content Management Service

☐ Access Management Service

☐ Logging Service

☐ Audit Service

☐ Metadata Management Service

☐ Networking Service

☐ Hosting Service

☐ Storage Service

☐ Base registry information source

Secondly: Please name any relevant *specific* services that are required by your public service in order to function.

Again: Please include both services that are consumed from within the administration (internally) and from a third party (externally). Please include both manually and digitally consumed services.

C.2 How does the public service currently consume the services (manually versus digitally)?

- ○ Fully manually
- ○ Mainly manually, some digitally
- ○ Mix of manual and digital consumption
- ○ Mainly digitally, some manually
- ○ Fully digitally

Please Note: Question C.3. refers explicitly to *Digital* Services only

C.3 Does the public service reuse or self-produce consumed services? *Specify how the service is being consumed (reuse versus produce). Producing a service, while a service is available externally for reuse is considered less interoperable as it implies that the public service has "reinvented the wheel".*

- ○ Most consumed services are self produced, while relevant services are available for reuse
- ○ A selection of consumed services are reused
- ○ (Nearly) all consumed services are reused

Please Note: All following Section C Questions refer explicitly to Reused (consumed) Digital Services only

C.4 What is the processing mode of the consumed services?
There are two types of processing modes: real-time or batch processing mode (initiated per unit of time: daily, 4 times a day, etc.).

- ○ Mainly batch whilst real-time processing could be implemented
- ○ Mainly batch, due to legal, technical or other constraints
- ○ Both processing modes are supported
- ○ Fully real-time processing

C.5 What is the typical interaction mode with the consumed services?
Push consumption refers to the public service receiving automatic updates (e.g. of data) or triggers (for executing a process for example). Pull consumption refers to the public service having to request updates or triggers.
Push consumption or having both mechanisms in place are considered more mature as these demonstrate that the public service seamlessly interconnects with the services it is consuming.

- ○ Mainly pull, whilst push could be added
- ○ Mainly pull, due to legal or other constraints
- ○ Mainly push, whilst pull could be added
- ○ Mainly push due to legal or other constraints
- ○ Both mechanisms (push and pull) are being used

C.6 What type of protocol specifications are being used for exchanging structured information between the public service and consumed services?

Usage of existing protocol specifications implies a higher interoperability than developing a dedicated protocol.

Please note: The protocol specifies the dialog not the content of the messages.

- ○ Fully proprietary protocol specifications
- ○ Mainly proprietary protocol specifications, some common protocol specifications
- ○ Balanced mix between proprietary and common protocol specifications
- ○ Mainly common protocol specifications, some proprietary protocol specifications
- ○ Fully common protocol specifications

C.7 Are services typically consumed via an existing network infrastructure or a dedicated, private network?

Reuse of existing network infrastructure rather than using a private network indicates higher interoperability.

- ○ The services are mainly consumed via a dedicated private network whilst they could leverage on an existing network infrastructure or the Internet
- ○ The services are mainly consumed via a dedicated private network due to security or other specific concerns
- ○ The services are mainly consumed via an existing dedicated private network
- ○ The services are mainly consumed using the publicly available Internet

C.8 To what extent are semantic standards and specifications used for data modelling of the data exchange between the public service and consumed services?

Use of existing semantic standards and specifications (e.g. data model standards, standardised XML schemata, metadata standards, standardised reference data e.g. code lists) is considered more interoperable than developing proprietary standards.

- ○ The data models have been created for the public service without using any existing semantic standards or specifications
- ○ Some proprietary semantic standards and specifications are used for creation of the data model
- ○ The whole development of the data models are based on existing (open) semantic standards and specifications

C.9 Received information may be inconsistent with internal information. Initiated transactions may lead to an unexpected response for example. How are such exceptions typically resolved?

- ○ Fully manually
- ○ In a semi automated way
- ○ Fully automated

C.10 Has the public service followed certification procedures before making use of the consumed services?

Certification refers to a formal procedure to verify if a constituency meets the prerequisites to connect to a service. Certification may examine areas like: security, governance, technological and semantic interoperability and availability.

- ○ Mostly No, while certification procedures are available
- ○ Mostly No, there are no certification procedure available
- ○ Sometimes, certification procedure have been followed for some consumed services
- ○ Mostly Yes, certification procedures have always been followed where available

C.11 Has the public service been involved in establishing the specifications of the consumed services?

An open process to establish specifications is likely to yield more interoperable results.

- ○ Mostly No, although this would have been possible
- ○ Mostly No, this was not possible
- ○ Sometimes, the public service has been involved in the specification process of some consumed services
- ○ Mostly Yes, the public services has always been involved in establishing specifications

Service Management (D)

Addressing Service Management aspects such as architecture, procurement and cost-benefit analysis

D.1 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)?

While designing the public service, a cost-benefit analysis should be made to get a deep insight into the benefits and cost reduction possibilities of an interoperable public service compared to proprietary development.

- ○ No, cost and benefits of the public service are not identified
- ○ 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)
- ○ Yes, cost and benefits of the public service were detailed based on a common business case approach. In addition multiple scenarios (e.g. proprietary solution versus reuse) were compared with each other

D.2 Does your public service provide services towards the external environment for reuse?

Public services that provide digital services for reuse towards other administrations and/or business contribute proactively towards higher interoperability in the public domain. See section 1.4 of the IMM Guideline for more information.

- ○ The public service makes no services available towards the external environment, while this would be possible
- ○ The public service makes no services available to the external environment due to constraints
- ○ The public service makes some services available to the external environment
- ○ The public service makes all services available to the external environment

D.3 Has standardization been a procurement criterion when procuring the public service's components?

A focus on standardisation procurement criteria can contribute to higher interoperability by avoiding common pitfalls (such as vendor lock-in).

- ○ No
- ○ Yes, however not enforced sufficiently
- ○ Yes, and enforced to ensure compliance

D.4 Does the public service feature a central point of control for choreography of externally consumed and provided services?

The central point of control keeps track of information regarding the status of all individual cases currently active in the public service.

- ○ No
- ○ No, this is decentralized or not considered relevant
- ○ Yes

D.5 To what extent is the choreography automated?

Automation of the choreography (automated coordination of services) facilitates a rapid and seamless interaction between the public service and the consumed and provisioned services.

- ○ Fully manual (all transactions are handled manually) choreography
- ○ Semi-automated (a part of the service choreography relies on manual interference) choreography
- ○ Fully automated (no manual interference is required) choreography

D.6 Does the public service share status information on the cases handled with external services?

Sending status information indicates that the service is seamlessly interacting with other services.

- ○ No status information shared
- ○ Yes, with some services
- ○ Yes, systematically with all services

D.7 Does the public 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?

Business process definitions and rules are the basis for day-to-day collaboration, providing actionable directives that govern the service's interactions with the other services.

- ○ No, processes are not modelled
- ○ No, even though processes are modelled
- ○ Yes, in some cases
- ○ Yes, systematically with all services

D.8 To what extent are Business Process Management (BPM) standards applied to the orchestration of the public service?

Business Process Management standards are (open) standards and specifications used to model and execute business processes, ideally in an interoperable manner.

- ○ Business processes are not modelled at all.

- Business processes are modelled and executed on a proprietary basis.
- Business processes are modelled and executed using BPM standards.

D.9 Has the public service considered an architecture framework in its design (EU, national level, international (open) standard)?

Using existing, common architectural frameworks (e.g. TOGAF, EIRA) ensures that the administration is leveraging best practices, avoids pitfalls and designs a public service that is interoperable with other public services and/or public service domains.

- No, although relevant frameworks are available
- No, there are no relevant frameworks available to consider
- Yes, one or multiple architecture frameworks are used
- Yes, one or multiple architecture frameworks are used and the compliance is ensured by independent audits

D.10 Has the public service's architecture been designed in a way that it is flexible for future upgrades and/or interconnections with other services?

Architectural flexibility enables greater interoperability by, for example, building functionalities as software components which can be reused for different purposes and loosely coupling services with operating systems and other technologies that underlie them.

- No, the architecture cannot be considered flexible
- The architecture allows for some flexibility
- Yes, the architecture is highly flexible

D.11 Has the public service established an (open) specification process in which administrations and businesses can participate?

Providing an open process to establish specifications is likely to yield more interoperable results.

- No, the specification process is closed
- Yes, participation upon invitation
- Yes, open participation

Further Comments

Please provide any further comments, insights or ambitions you may want to share in respect to Interoperability and your public service

This marks the end of the IMM Survey.
Thank you again for taking the time to support this initiative.

isa Interoperability Solutions for European Public Administrations