# Assessing Your Modernisation Maturity

Under the High-level Group project on Implementing ModernStats Standards, a Modernisation Maturity Model (MMM) has been developed. The maturity self-assessment would ideally be performed by a cross-cutting group involving members of the Business, Information, Methods, Applications and Technology functions within the statistical organisation.

There are multiple aspects of Maturity in the context of Modernisation, and as such the model that has been developed has a number of distinct ***dimensions***. Within each dimension, different organisations may have different ***levels*** of maturity.

These ***dimensions*** and ***levels*** are described in the tables below in general terms. However, to be more specific, we have formulated a set of self-assessment criteria that is specific to each ***dimension*** x ***level*** combination, as well as being specific to each of the following *HLG-MOS standards*:

* [GAMSO](http://www1.unece.org/stat/platform/display/GAMSO/Generic+Activity+Model+for+Statistical+Organizations)
* [GSBPM](http://www1.unece.org/stat/platform/display/GSBPM/Generic+Statistical+Business+Process+Model)
* [GSIM](http://www1.unece.org/stat/platform/display/gsim/Generic+Statistical+Information+Model)
* [CSPA](http://www1.unece.org/stat/platform/display/CSPA/Common+Statistical+Production+Architecture)

Those undertaking a self-assessment are encouraged to assess their maturity in this way at the ***current time***, as well as the ***target level*** of maturity that they are seeking to achieve in 5 years’ time. Additionally, they are invited to list the first major 1-3 steps they expect their organisation would take to move its maturity level toward the target for each dimension. (These could be steps the organisation would undertake on its own or these might be steps based on enablers from HLG.)

Organisation: **Statistics Canada**

For each **Tester** please fill out

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Main area(s) of expertise (Business, Methods, Information, Applications and/or Technology):

JM: Business, methods, applications

RM: Business, information, applications, technology

HLG-MOS standard(s) **tested** (GAMSO, GSBPM, GSIM and/or **CSPA**)

## Description of Maturity Levels

| **Number** | **Level Name** | **Level Description** |
| --- | --- | --- |
| 1 | Initial implementation | A few individuals are becoming interested in the potential value of the standard.  The organisation as a whole is unaware of the standard. |
| 2 | Pre-implementation | Use of the standard is basic and limited to a few individuals.  Parts of the organisation are becoming interested in the potential value of the standard. |
| 3 | Early implementation | Use of the standard is spreading, but it is used in an inconsistent manner by individuals and single business units.  A corporate-wide programme/strategy for use of the standard is in being prepared. |
| 4 | Corporate implementation | A corporate-wide programme/strategy for use of the standard exists.  There is a widespread awareness of the standard and it is used in a consistent way across the organisation. |
| 5 | Mature implementation | The standard is perceived as an important part of business operations/management, delivering value across the organisation.  The standard is well understood, integrated into business processes & practices and used in a consistent manner across the organisation. |

**Questions for Testers on the Level names and descriptions:**

**Are the descriptions easy to understand?**

Yes

**Are the Levels sufficiently distinct?**

Yes

## Description of Dimensions

**Dimensions** (Architecture is implicit)

|  |  |  |
| --- | --- | --- |
| **Number** | **Name** | **Description** |
| 1 | Business | This dimension focuses on the business activity domain i.e. the organisation's core business practices and policies. |
| 2 | Methods | This dimension focuses on the management of methods i.e. how methods are designed, structured, implemented and executed.  It includes statistical methodology, quality management, IT methods, process methods e.g. data collection methods and any other methods needed to support the business. |
| 3 | Information | This dimension focuses on how information is structured and integrated, how information is modelled, the method of access to data, abstraction of the data access from the functional aspects, data characteristics, data transformation capabilities, service and process definitions, handling of identifiers and the information model. |
| 4 | Applications | This dimension focuses on the structure and interaction of applications[[1]](#footnote-1) to provide business functionality using the information/data assets needed to deliver this functionality. |
| 5 | Technology | This dimension focuses on the logical software and hardware capabilities that are required to support the deployment of business, information, and application services. This includes IT infrastructure, middleware, networks, etc. |

**Questions for Testers on the Dimension names and descriptions:**

**Are the descriptions easy to understand?**

**Yes**

**Are the Dimensions sufficiently distinct?**

**Yes**

## CSPA Self-Assessment Criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Levels**  **Dimensions** | **Initial**  **implementation** | **Pre-**  **implementation** | **Early**  **implementation** | **Corporate implementation** | **Mature**  **implementation** |
| Business | Each area designs and develops its own solutions. Budget and staff is located at each area. | Although each area continues designing its own solution they try to make them modular and share the code.  The IT budget and staff are still located at each area but central coordination creating some general guidelines exists. | There is analysis of the business processes. GAMSO and GSBPM are applied as a basis to identify each statistical service and business function.  Some of the roles defined by CSPA start being recognized and informally adopted by the IT areas. | A unique services environment running on a common IT platform to attend all organisational needs is part of the organisation’s long term plans.  All services are defined following an agreed granularity level. IT resources (people, budget, skills, etc.) are mainly oriented to build and maintain the common platform. CSPA roles and responsibilities are clearly defined and mapped to areas in the organisation. | Statisticians are able to make specific orchestrations of services to cover their projects and new user’s requests. A specialized IT cross-organisation group is in charge of the maintenance and expansion of the services platform. There is a planned evolution of the IT services based in long term institutional goals, historic performance indicators and external changes. |
| Methods | Methods are not standardized. | There are some attempts to use some common methodologies, mainly related to codification standards and APIs definition but under the interpretation of each area. | CSPA and other standards starts to be implemented as a concern of the whole organisation, but the implementation is partial obeying to internal needs. First attempts to develop SOA/CSPA based services. | CSPA has been implemented, and all IT staff in the organisation follows it. Reuse and sharing of services developed by other NSOs is a common practice.  Service virtualization is a “must” characteristic in order to make the instantiation of the services easier in different environments. | A basic set of skills shared by all NSOs is defined making it easier to find trained people able to participate on inter-institutional collaboration efforts. |
| Information | Information is duplicated and each application uses its own structure. | Separated information structures in separated systems are common. Some applications share information but in the form of views or other similar mechanisms. Separation of development and production databases starts to being made. | Integrated databases covering several domains exist and services use these shared information sources. Early attempts to apply GSIM and CSPA LIM are carried out. There are separated instances of the databases for development, testing and production, each one following specific rules. Production and dissemination databases are clearly separated. | The common services platform accesses an integrated information environment. The information environment follows the CSPA LIM so shared services can be configured by each organisation to cover its own needs. | Information databases can incorporate new sources of information without affecting the services environment applying an internationally agreed set of models and standards. Information is independent of the environment, so internal, public and hybrid facilities can be used in a transparent way. |
| **Levels Dimensions** | **Initial**  **implementation** | **Pre-**  **implementation** | **Early**  **implementation** | **Corporate**  **implementation** | **Mature**  **implementation** |
| Applications | Applications run as separated instances. It’s very difficult to make them interoperable, manual work is inevitably required. | Some common component libraries start to appear. The components are difficult to integrate in practice and therefore often rejected.  Some commercial components start to be integrated. | Some early service oriented systems making use of services attending certain common activities start~~s~~ to appear.  Services orchestration is still an issue that is mainly carried out for each system. | All applications are developed as an orchestration of services following the CSPA guidelines. Services are developed to be independent of specific IT configurations.  An international service catalogue is used to complement the organisation's own one. | Some (or all) services are shared by several statistical organisations.  There is a shared catalogue that is used by the institutions as a first level place to find existent services.  Local catalogues are still being used for very specific services. |
| Technology | Technology implementations are carried out by demand satisfying individual, isolated, requirements and generating heterogeneity of hardware, software, languages, protocols, etc.  Management and support of technology goes from absent to very basic. | There is a definition of a set of core technologies supported by the organisation which is mostly used as a guideline, but each area still deciding how to fulfil the needs of each project so the integration, reuse and support of technologies is very limited. | There is a standardized IT platform which is supported by the organisation.  Interaction of IT solutions is a common practice because all areas share the same set of technologies.  Reutilization of solutions on different projects is the common rule.  Resources are dynamically managed to optimize its distribution. | IT platform fully supports the SLAs of the services platform, and includes all the needed components to virtualize the services.  IT solutions are customized for the needs of the projects. Hardware and software are optimized dynamically to attend changes in requirements and demands of the statistical business processes. | There is a consolidated corporate IT platform and parts of it are used by several subscribed organisations sharing costs, responsibilities and management supporting commonly agreed SLAs. |

## CSPA Maturity Assessment

The current version of CSPA is version 1.5.

Version Assessed: **1.5**

|  |  |  |  |
| --- | --- | --- | --- |
| **Dimension** | **Current Maturity** | **Target Maturity** | **Key Steps/**  **Requirements** |
| Business | Early implementation | Corporate | Policy/directive from senior management that *a unique services environment running on a common IT platform to attend all organisational needs is part of the organisation’s long term plans* could help.  More communication on strategy for use of CSPA.  CSPA referenced in Enterprise Architecture reviews.  Training/information sessions on the use and application of CSPA. |
| Methods | Early implementation | Mature | Plan, document and widely communicate strategy for CSPA implementation in order to increase adoption in IT organisation.  Include as a standard practice, in EA review and EA core systems planning activities, the possibility to reuse and share of services developed by other NSOs.  Training/information sessions on the use and application of CSPA. |
| Information | Early implementation | Mature | Working with Shared Services Canada on consistently separated instances of the databases for development, testing and production.  Increasing development and availability of common services accessed an integrated information environment. |
| Applications | Early | Corporate | Training/information sessions on the use and application of CSPA, CSPA guidelines and use of the international service catalogue to complement the organisation's own one. |
| Technology | Pre-implementation | Corporate | (We never intend to be on a single set of technologies, will rely on a set of sets of technologies.)  List of EA core systems approved by senior management, prescribed and governance process reinforced.  SLAs in place. |

**For Testers**

**Were there any self-assessment criteria that were particularly difficult to understand? No**

**If yes, please provide the Dimension and Level for those self-assessment criteria:**

**Were the Levels sufficiently distinct per Dimension?** No

**If not, please provide the Dimension(s) and Level(s) where you experienced difficulties**

Applications – Early implementation to corporate implementation seems like too big of a jump (international service catalogue is used). Should have something in the middle.

Technology – Early implementation - One single platform for *all* activities across *all* domains is not the target for us

* There is a *limited number of* standardized IT platform*s* which *are* supported by the organisation.
* Interaction of IT solutions is a common practice because *all related* areas share the same set*s* of technologies.

**FINALLY (across all standards)**

**Do you have any general feedback/suggestions to help us make the filling out of this maturity assessment easier?**

- once we have them, providing examples from countries on how they walked through the assessment might be helpful

## Definitions

**Capability:**

An ability that an organisation, person, or system possesses. Capabilities are typically expressed in general and high-level terms and typically require a combination of organisation, people, processes, and technology to achieve. Source The Open Group Architecture Framework (TOGAF)  
**Capability element:**

Capabilities provide the agency with the ability to undertake a specific activity. A capability is only achieved through the integration of all relevant capability elements (e.g. methods, processes, standards and frameworks, IT systems and people skills).

**Corporate capability element:**

A corporate capability element is a capability element that is managed at the corporate level for use across the entire organisation.

## Abbreviations

* IT – Information Technology
* CSPA – Common Statistical Production Architecture
* GAMSO – Generic Activity Model for Statistical Organisations
* GSBPM – Generic Statistical Business Process Model
* GSIM – Generic Statistical Information Model
* HLG-MOS – High-level Group for the Modernisation of Official Statistics

1. Applications are software components or programs which provide specific functionality for end users. Web browsers, email programs, and word processors are examples of generic desktop applications, but the term 'applications' also encompasses enterprise-level components providing functionality specific to the business. [↑](#footnote-ref-1)