Modernization Maturity Model and Roadmap

Implementing Modernstats Standards project

- Provide the means for statistical organizations to evaluate their levels of maturity against a standard framework.

- Help them determine the priorities for the next steps based on a roadmap.
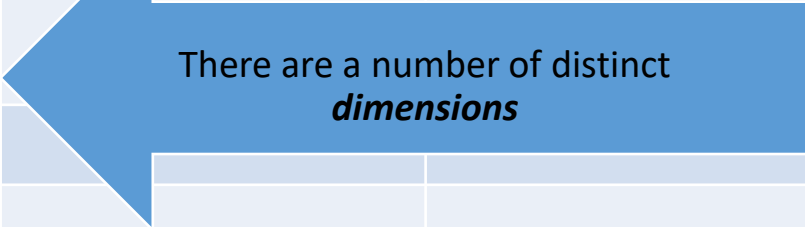
Modernisation Maturity Model (MMM)

- The MMM allows statistical organisations to evaluate their current level of maturity against a standard framework, while the Roadmap provides clear guidelines on the steps to take to reach higher levels of organisational maturity more quickly and efficiently.
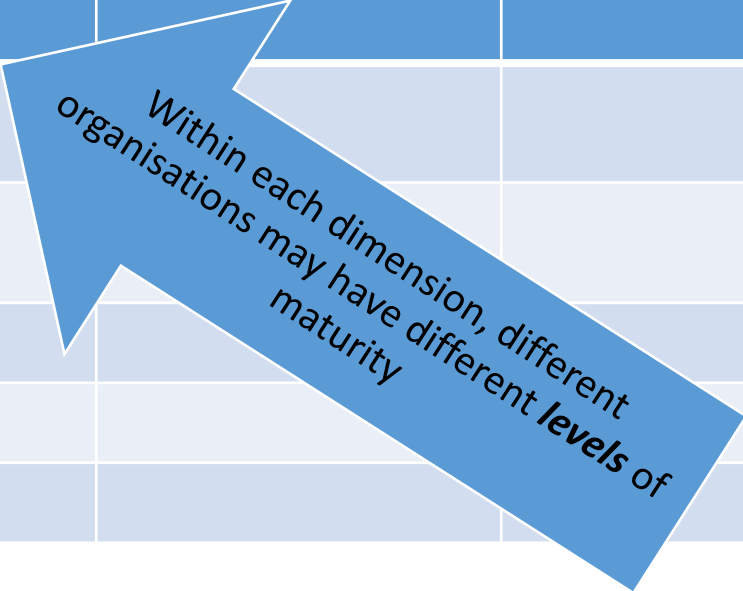
	Silo	Integrated	Componentised	Services	Composite	Virtualised	Dynamically Re-configurable
Business Activity View ie. Collections	Isolated Collection Driven	Collection Business Process Defined	Componentised Business Activities	Business provides & consumes activities	Assemble to Order (design-time)	Provider-independent Assemble to Order	Plug n Play (run-time) BPM & BAM
Business Capability View	Isolated Business Line Driven	Collection Business Functions Defined	Componentised Business Functions	Business provides & consumes services	Formal, Standardised Business Services	Provider-independent Business Services	Business Capabilities via Run-time Configurable Services
Statistical Methodology	Isolated Business Line Driven	Collection Methods Defined	Common Methods	Service Oriented methods	Standardised, Configurable Methods	Standardised, Configurable Methods	Run-time Configurable Methods
Information	Application Specific Data Solution	Collection Specific - Data Subject Areas Established	Canonical Models	Information as a Service	Enterprise Business Data Dictionary & Repository	Virtualised Data Services	Semantic Information Representation
Application	Monolithic Solutions	Layered Solutions	Component Solutions	Emerging SOA	SOA	Cross Organisational SOA	Dynamically Re-Configurable (Plug n Play) Solutions
Infrastructure & Management	Solution Specific	Enterprise Standards	Common Reusable Infrastructure	Project Based SOA Environment	Common SOA Environment	Virtual SOA Environment: Sense & Respond	Real-time Event-based: Sense & Respond
Governance & Organisation	Adhoc Strategy & Governance	Defined governance processes	Common Governance Framework	Emerging business service governance	Business Service and IT Governance Aligned	Business Service and IT Governance Aligned	Governance via Embedded Policy
Design Practices	Isolated or Non-existent Design	Centralised, non-standard Design	Common Design Objects	Service Oriented Modelling	Business Process and Capability Modelling	Business Process & Capability Modelling for Infrastructure	Run-time Business Process & Capability Modelling

Target

Surrounding influences

Modernisation Maturity Model (MMM)

▶ There are multiple aspects of maturity in the context of modernisation

Levels / Dimensions	Initial awareness	Pre-implementation	Early implementation	Corporate implementation	Mature implementation
Business					
Methods					
Information					
Applications					
Technology					

There are a number of distinct **dimensions**

Within each dimension, different organisations may have different **levels** of maturity

▶ A set of self-assessment criteria has been formulated that is specific to each *dimension* x *level* combination, as well as being specific to each of the standards

modernstats
BY HLG – MOS

4

Modernisation Maturity Model - Dimensions

Name	Description
Business	✓ This dimension focuses on the business activity domain i.e. the organisation's core business practices and policies.
Methods	✓ This dimension focuses on methods i.e. how methods are designed, structured, implemented and executed. ✓ It includes statistical methodology, quality, IT methods, data collection methods, process methods and any other methods needed to support the business.

…cont'd

Modernisation Maturity Model – Dimensions (cont'd)

Name	Description
Information	✓ This dimension focuses on how information and/or metadata are structured and integrated, how information is modelled, abstraction of the data access from the functional aspects, data characteristics, service and process definitions, handling of identifiers and the information model.
Applications	✓ This dimension focuses on the structure and interaction of applications to provide business functionality using the methods and information/data assets needed to deliver this functionality.
Technology	✓ This dimension focuses on the logical software and hardware capabilities that are required to support the deployment of business, methods, information, and application services. This includes IT infrastructure, middleware, networks, etc.

BY HLG – MOS

Modernisation Maturity Model - Maturity Levels

Level Name	Level Description
Initial awareness	✓ A few individuals are becoming interested in the potential value of the standard. ✓ The organisation as a whole is unaware of the standard.
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.
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 being prepared.

...cont'd

modernstats
BY HLG – MOS

Modernisation Maturity Model - Maturity Levels (cont'd)

Level Name	Level Description
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.
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.

Dimensions \ Levels	Initial awareness	Pre-implementation	Early implementation	Corporate implementation	Mature implementation
Business	Each area designs and develops its own solutions. Budget and staff is located in 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. Statistical Services are defined following the principles of the CSPA, their granularity is large enough for the business to understand, and are not low-level services used by IT. Some of the roles defined by CSPA start being recognized and informally mapped 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 respond to 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 common methodologies, mainly related to codification standards and APIs definition but under the interpretation of each area.	CSPA and other standards start to be implemented as a concern of the whole organisation, but the implementation is partial and aligns to internal needs. First attempts to develop Service Oriented / CSPA-based services.	CSPA has been implemented, and the organisation adheres it. Reuse and sharing of services developed by other NSOs is feasible.	A basic set of skills shared by all NSOs is defined making it easier to find trained people able to implement CSPA Services and collaborate with other institutions.

Dimensions / Levels	Initial awareness	Pre-implementation	Early implementation	Corporate implementation	Mature implementation
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 some domains exist and services use these shared information sources. Early attempts to apply the principles for the information architecture contained in CSPA are being made.	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.	There is an information architecture for the whole statistical office which applies the reference frameworks identified in the CSPA. There is a coherent and consistent definition of information assets at an enterprise level to the information needs of specific business processes and IT systems in practice.
Applications	Applications run as separated instances. It is 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 expecting common activities start 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 and principles. Services are developed to be independent of specific IT configurations. The CSPA catalog is used to complement the organisation's own one.	Main statistical services in the statistical organisation follow the guidelines and principles contained in CSPA so it is possible to share them and to stablish collaborative efforts to develop new ones.

modernstats

Roadmap

- The roadmap includes supporting instruments to help statistical organisations, at different maturity levels, to implement the different standards.

- The MMM and its Roadmap should help any organisation regardless of their level. They acknowledge that within one statistical organisation there can be different maturity levels depending on the statistical domain or part of the organisation.

Draft Roadmap in progress

Stage	Supporting instruments
Preliminary	Modernisation maturity assessment template
Planning	Gap analysis template Recommended practices matrix
Implementation	Resources and skills checklist Implementation checklist
Evaluation	Evaluation template
Consolidation	Action plan template
Knowledge management	Lessons learned

Implementation Checklist

From initial awareness to pre-implementation
•Introductory sessions have been held explaining the CSPA objectives and describing the various material supporting it.
•There is already a good understanding of the GSBPM and especially the GSIM in the organisation.
• The "separation of concerns" and the related CSPA "perspectives" have been explained.
From pre-implementation to early implementation
•The GSBPM and the GSIM are already at a corporate implementation stage (at least) in the organisation.
•The Architects (Enterprise, Business, Information, Technology) withinthe organisation have been made aware of CSPA. This is to ensure that CSPA starts being used in development projects.
•The organisation has publicised CSPA e.g. posters on walls, wikis, internal communication, focus groups, external communication

modernstats
BY HLG – MOS