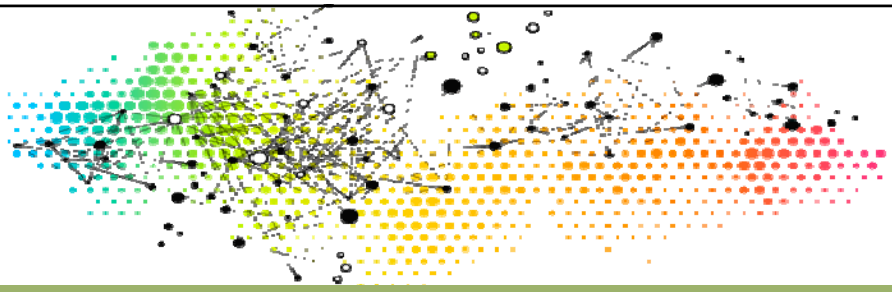

IMF Statistics Department

Generic Statistical Information Model (GSIM)

Michaela Denk, International Monetary Fund

This presentation reuses material made available by the UNECE through their Virtual Standards Helpdesk at http://www1.unece.org/stat/platform/display/VSH/Virtual+Standards+Helpdesk.

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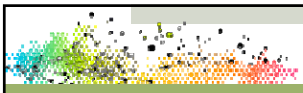
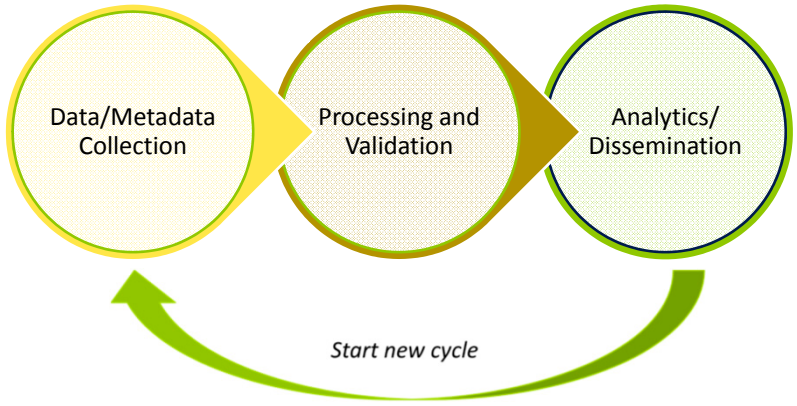


IMF Statistics Department

Statistical Data Lifecycle



- **Core process phases**
  - Every statistical organization
- **Variations**
  - Between
    - Organizations
    - Products of one organization
  - Related to
    - Terminology
    - Granularity
    - Implementation

→ **Standardized Framework: GSBPM**

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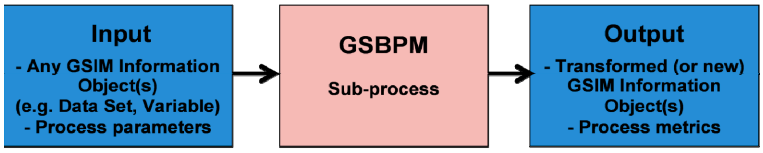
Generic Statistical Business Process Model (GSBPM)

- Standard framework
  - Flexible model
  - Harmonized terminology
  - Describes and defines the set of business processes needed to produce official statistics
- Helps statistical organizations
  - Move from topical stove-pipes (product-centric) to process-centric approaches
  - Define and describe statistical processes in a coherent way
  - Modernize statistical production processes
  - Compare and benchmark processes within and between organizations
  - Share methods and components

Relationship between GSIM and GSBPM

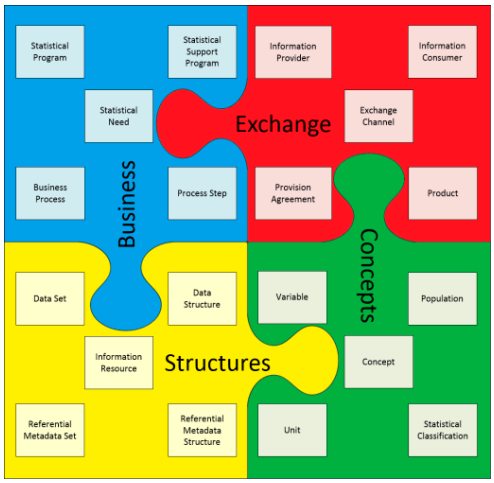
- GSBPM is about process
  - Identifies activities (sub-processes) that result in information outputs
- GSIM is about information that flows between those activities, controls activities, and documents them



- Complementary models to document the statistical business process and the information that is used in and produced by that process

Categories of GSIM Information Objects

- Business
  - Designs & plans of statistical programs, e.g. statistical program, statistical need
- Exchange
  - Incoming and outgoing information, e.g. information provider, exchange channel, product
- Structures
  - Organization and composition of data, e.g. data set, data structure, information resource
- Concepts
  - Meaning of data, e.g. variable, population, unit, statistical classification

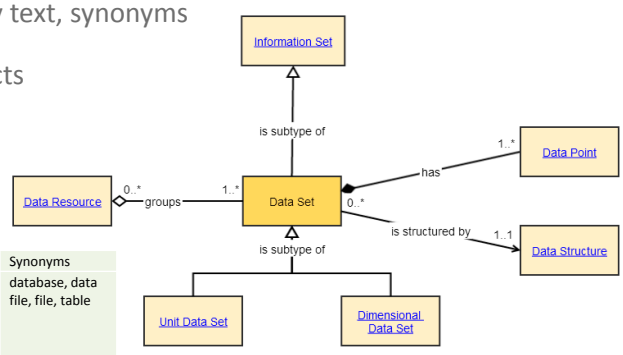


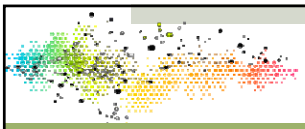
Specification of GSIM Information Objects

- Name, definition, additional explanatory text, synonyms
- Relationships to other information objects

Example: **Data Set**

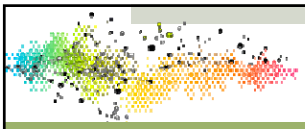
Group	Definition	Explanatory Text	Synonyms
Structures	An organized collection of data.	Examples of Data Sets could be observation registers, time series, longitudinal data, survey data, rectangular data sets, event-history data, tables, data tables, cubes, registers, hypercubes, and matrixes. A broader term for Data Set could be data. A narrower term for Data Set could be data element, data record, cell, field.	database, data file, file, table





Applicability and Use of GSIM

- GSIM is intended to apply to all information objects relevant in the production of official statistics at the national and international level
- GSIM is a reference model
  - Not all information objects are relevant to each implementation of the model
    - Differences between types of products, types of processes, organizations
- GSIM is NOT a software tool



Benefits of GSIM

- Reference framework & common terminology
  - Internationally agreed definitions, attributes, relationships describing the information used in the production of official statistics (information objects)
- Enables generic descriptions of the definition, management and use of data and metadata throughout the statistical business process → transparency
- Improves communication, coordination, cooperation, and collaboration → transparency
- Enables a higher degree of automation of the statistical business process → reproducibility
- Facilitates capacity building in statistical organizations
- Helps assess existing statistical information systems and processes

A World without GSIM

- Working in silos – each domain is different
- Lack of common terminology and understanding
- Lack of process-orientation
- Difficult to automate
- Difficult to reuse information, methods, technology
- Long time-to-market for new statistical products

One Example …

without GSIM

with GSIM

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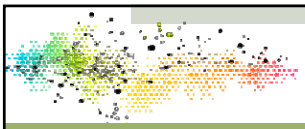
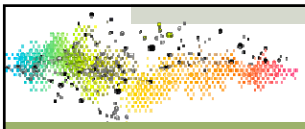


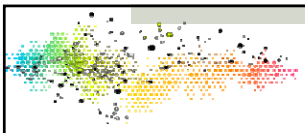
Implementing GSIM

- GSIM is a conceptual model
  - No implementation details
  - No dependence on or even reference to specific tools
- Business level
  - Map existing information model to GSIM
  - Adopt (parts of) GSIM as is
  - Combine with GSBPM
- Technical level
  - Only after business level
  - Leverage CSPA

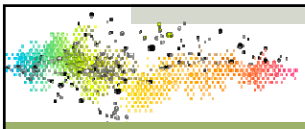


GSIM - Related Material

- "Clickable GSIM" - http://www1.unece.org/stat/platform/display/GSIMclick/Clickable+GSIM
  - Navigate the information model
  - View object definitions and relationships
- http://www1.unece.org/stat/platform/display/gsim/Generic+Statistical+Information+Model
  - Documentation of GSIM v1.1 and previous versions
  - Brochure and communication material
  - Implementation guide
  - Technical specification
  - Relation to other standards
  - Glossary
- GSBPM & GSIM case studies - http://www1.unece.org/stat/platform/display/CASES/Case+Studies+of+Metadata+use+with+GSBPM+and+GSIM



Some Background & Context



Conceptual Framework for Statistical Data Management

- Context
  - Fundamental Principals of Official Statistics (UN)
  - High-Level Group for the Modernisation of Official Statistics (UNECE HLG-MOS)
  - Modernisation Maturity Model (MMM) *
  - Data Management Maturity Assessment (e.g. Gartner)
- Generic Statistical Business Process Model (GSBPM) *
- Generic Statistical Information Model (GSIM) *
- Generic Activity Model for Statistical Organizations (GAMSO) *
- Statistical Data and Metadata Exchange (SDMX) x
- Common Statistical Production Architecture (CSPA) *
- http://www1.unece.org/stat/platform/display/VSH/Virtual+Standards+Helpdesk

* UNECE/Conference of European Statisticians
x SDMX Initiative www.sdmx.org

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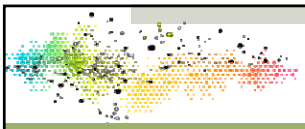
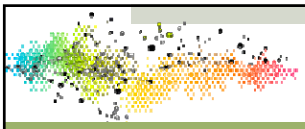


UN Fundamental Principals of Official Statistics

- Relevance, impartiality, equal access
- Professional standards and ethics
- Accountability and ***transparency***
- Prevention of misuse
- Sources of official statistics
- Confidentiality
- Legislation
- ***National coordination***
- ***Use of international standards***
- ***International cooperation***



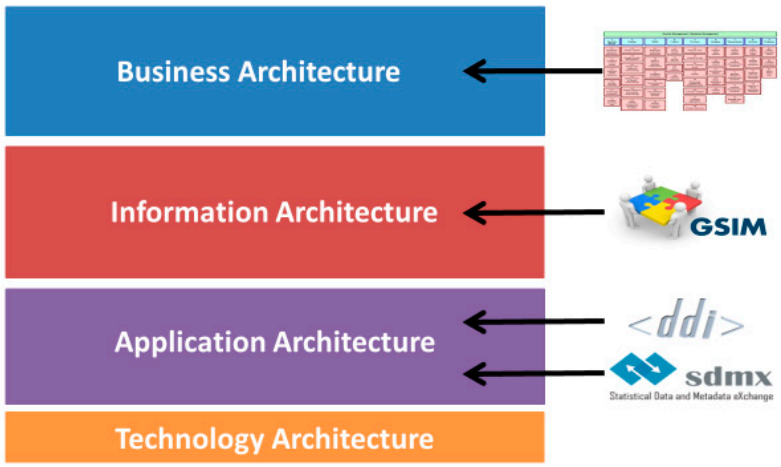
High-Level Group for the Modernisation of Official Statistics (HLG-MOS)

- Set up by UNECE Conference of European Statisticians (CES) in 2010 to oversee and coordinate international work relating to statistical modernisation
- Promotes standards-based modernization of official statistics
- Oversees modernization projects
- Manages models and tools that support modernization
- http://www1.unece.org/stat/platform/display/hlgbas/High-Level+Group+for+the+Modernisation+of+Official+Statistics

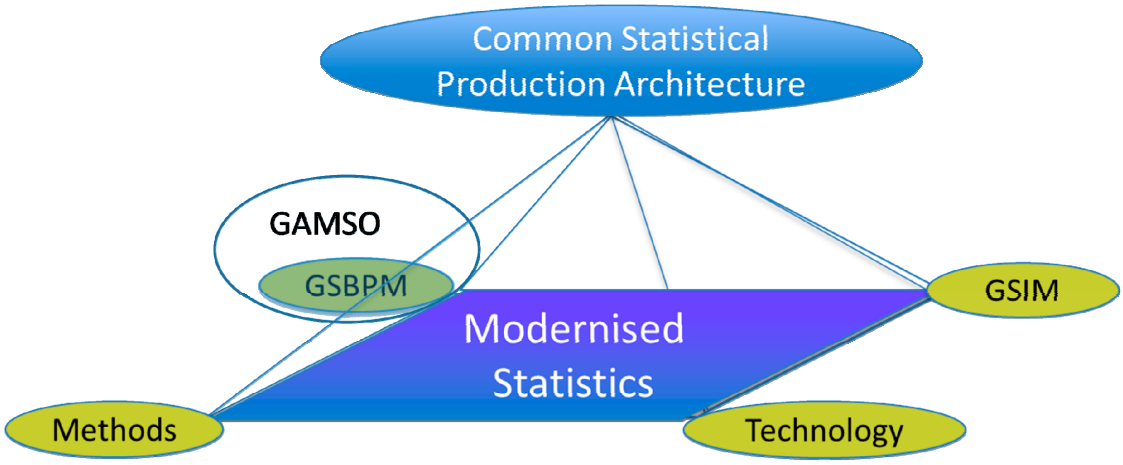
Common Statistical Production Architecture (CSPA)

- Reference architecture for statistical organizations
- Covers statistical production across processes defined by GSBPM
- Provides practical link between conceptual standards GSIM and GSBPM and technical standards such as SDMX
- Includes application architecture and technology architecture for the delivery of statistical services
- Does not prescribe technology environments
- Major aim is international collaboration & sharing
- Follows a collaborative development approach to develop re-usable systems fast and cost-effectively

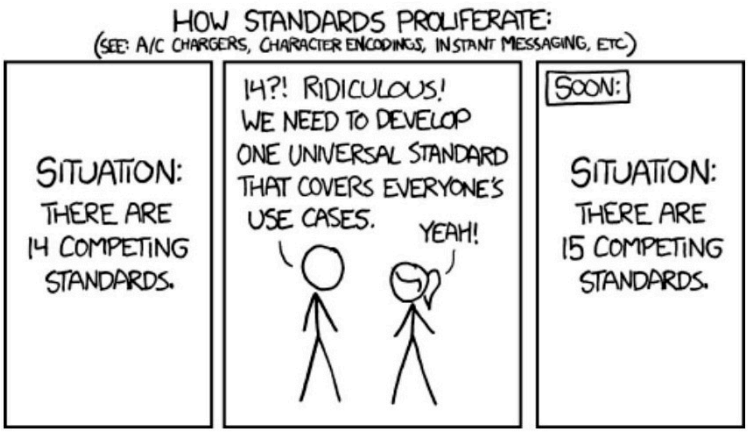
CSPA Architectural Layers



Standards in Context



How Standards Proliferate …



How Standards Proliferate …