SDMX: An Overview

Session 2: Introduction to SDMX

What is SDMX?

Statistical **D**ata and **M**etadata e**X**change

- A registered ISO standard
- Approved by the United Nations Statistical Commission as the preferred standard for statistical data and metadata exchange.
- An initiative sponsored by Eight international organizations
  - Bank for International Settlements
  - European Central Bank
  - Eurostat
  - International Labour Organization (ILO)
  - International Monetary Fund
  - Organization for Economic Cooperation and Development
  - United Nations
  - World Bank

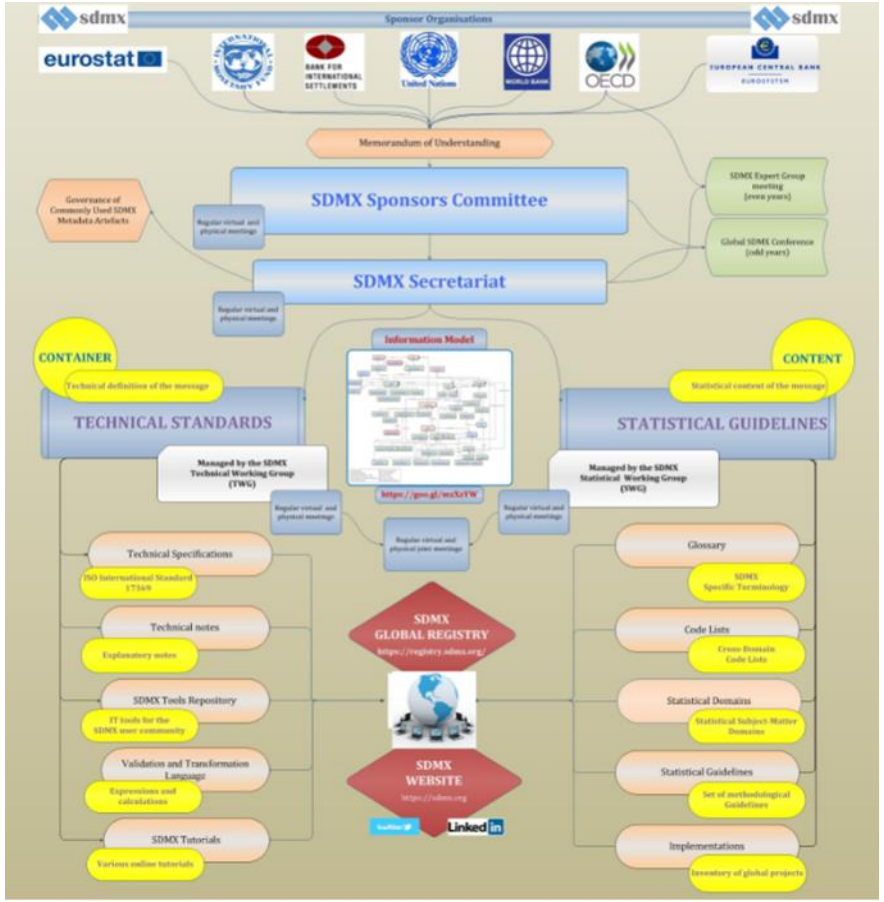
Objectives of SDMX

- SDMX was originally designed to standardize data and metadata exchange between and among international organizations and member countries

- However, the power and utility of its underlying information model has increasingly broadened the scope of use of SDMX in addition to data/metadata exchange
  - Processing
  - Validation
  - Dissemination

SDMX Governing Bodies

- **SDMX Sponsors Committee**
  Highest decision-making body which provides overall guidance as well as decides on issues that the SDMX Secretariat cannot resolve.
- **SDMX Secretariat**
  Oversees implementation and functioning of the governance framework and submits proposals for improvement to the SDMX Sponsors Committee
- **Statistical and Technical Working Groups**
  Maintain, improve or further develop the SDMX technical and statistical standards



UN environment programme

SDMX as the Infrastructure

- Standards for:
  - Structuring of statistical data
  - Packaging of statistical data as XML, JSON, CSV, and other formats
  - Registry of data and metadata
  - Application Programming Interface (API)

- Specifications, guidelines, tools, and manuals are freely provided to support implementation

SDMX Specifications and Guidelines

Technical specifications

→ Speak the **same IT language**

→ Describe the **container (i.e. the message)**

SDMX Guidelines

→ Speak the **same statistical language**

→ Describe the **content (i.e. data and metadata)**

Statistical Data Structures

- SDMX specifies how statistical data can be structured.
  - Technical specification does not detail specific structures or codes, it only provides a framework for developing those.
  - Guidelines, best practices, and recommended building blocks including structures and codes are provided at the sdmx.org web site.
- **Data Structure Definitions** (DSDs) describe characteristics of the data to be exchanged.
- A DSD **must** be developed before any SDMX exchange, dissemination, or processing can take place.

Where do those DSDs come from?

- Generally, when SDMX is used for reporting, a global DSD will have been developed by an international working group, such as those for Macro-Economic Statistics, Labor, SDGs
  - Take the global DSD, use tools to map your data to the DSD, convert to SDMX, and provide to the recipient.
  - Global DSDs are published at the SDMX Global Registry.
- When SDMX is used for dissemination, you create your own DSD and publish the data at your web site
  - Dissemination DSDs may use internal concepts and codes but it is preferable to use global concepts and codes, when available, for better interoperability.
  - Global DSDs may also be used for dissemination, and customized dissemination platforms are increasingly developed for those.

Guidelines: SDMX Glossary

- Common terminology to be used in order to facilitate communication and understanding
- Concepts and related definitions used in structural and reference metadata of international organisations and national data-producing agencies
- Overall message: if a term is used, then its precise meaning should correspond to the Glossary definition, and any reference to a particular phenomenon described in the Glossary should use the appropriate term
- 250 concepts stored in a Concept Scheme in the Global Registry

Guidelines: Cross-Domain Code Lists

- Used to support cross-domain concepts
- Higher efficiency (through re-use), easier maintenance, less mappings
- Some 20 cross-domain CLs currently available, others under development
- Stored as Codelists in the Global Registry

Content-Oriented Guidelines

- Set of documents providing methodological guidance to SDMX implementers in various domains
- Examples of SDMX Content-Oriented Guidelines:
  - Governance of commonly used SDMX metadata artefacts
  - Modelling Statistical Domains in SDMX
  - Guidelines for SDMX Data Structure Definitions
  - Guidelines for the Creation and Management of SDMX Code Lists
  - Guidelines on the Versioning of SDMX Artefacts
  - Guidelines on Non-Calendar Year Reporting of Data
  - Possible Ways of Implementing the CL_OBS_STATUS Code List
  - Guidelines for Confidentiality and Embargo in SDMX
- Made available as MS-Word and HTML documents

SDMX Tools

- A large number of SDMX-related tools that implement the technical specifications have been developed by different organizations.
- Some but far from all include:
  - Structure maintenance
    - DSD Constructor (ILO), Matrix Generator (OECD), Fusion Metadata Registry (Metadata Technology)
  - Data mapping and preparation
    - SDMX Converter (Eurostat), SMART (ILO), SDMX Reference Infrastructure (Eurostat) , Fusion Registry (Metadata Technology, subscription based)
  - Data, metadata, and structure dissemination
    - .Stat (OECD), SDMX Reference Infrastructure (Eurostat), Fusion Registry (Metadata Technology, subscription based)

More information

- SDMX Web site: http://sdmx.org
- SDMX tools: https://sdmx.org/?page_id=4500
- SDMX Global Registry: http://registry.sdmx.org
- Eurostat's SDMX InfoSpace: https://ec.europa.eu/eurostat/web/sdmx-infospace

Thank you

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