# SDMX Implementation in Egypt

# Outline

- *About CAPMAS*
- *SDMX Trip*
- *Mars*
- *Statistical Functions*
- *Achievements*
- *Going Forward*

# About CAPMAS

## Central Agency for Public Mobilization and Statistics

# Who We are?

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✓ **The Central Agency for Public Mobilization and Statistics is the official national body that provides all state agencies with reliable data and statistics that decision-makers, as well as stakeholders and researchers in all fields rely on, So its roles are to:**

- **Develop, coordinate and harmonize statistics** with all state agencies.
- **Provide the high quality** statistical and knowledge products and services necessary to support the Agenda2030 with all initiates.
- **Support monitoring the implementation** of the SDGs wit all international organization.
- **Highlight the gaps in data** to make the process of development cover all the country levels.
- **Provide up-to-date data for all throw its site.**

A cooperative partnership between the **National Statistical Systems** and **CAPMAS**, powered by the Standing Committee for Statistical Affairs

# CAPMAS statistical strategy


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**3**

**Statistical analysis and knowledge production**

**2**

**Collect data from various sources with various forms**

**1**

**Diversify sources Take advantage of emerging sources**

# SDMX Trip in CAPMAS

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**2022**

- Started a training about SDMX and Fusion Registry9. AS a literature review about the SDMX manuals with ESCWA .

**2023**

- Updating and reviewed about 77 indicators of SDG data file in SDMX format in the first stage with ESCWA as a step to update the national reporting platforms .

# What is SDMX?

Statistical Data and Metadata eXchange (SDMX)


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- SDMX is considered the international language of statistics, which effectively contributes to unifying the form and structure of statistical data and data until it has become an international standard and approved by obtaining the ISO 8 certificate.

# Our Benefits

## Statistical Data and Metadata eXchange (SDMX)

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### Collection

- Transfer of Data & Metadata
- Automate and scheduled data collection
- Standardization
- Unifying the DATA Structure

### Processing

- Data processing governance
- Data quality
  - Audit
  - Correctness
  - accuracy
  - Timing
  - Relevance
  - Completeness
  - Trust
  - Standardization

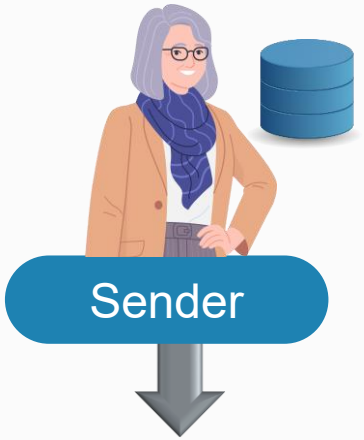
### Storing

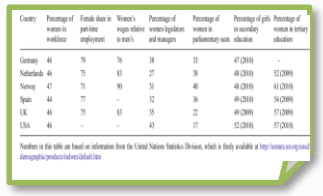
- Auto-updating
- Save historical data
- Multiple copies of data structures

### Dissemination

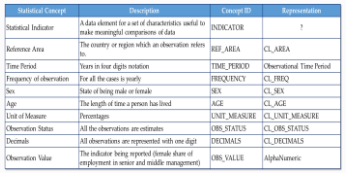
- Indexing statistical data
- Inquiry and search-Review and describe data
- controls and restricting publication
- Downloading data-machine-to-machine publishing
- switching between the Classifications

# What Makes Statistical Messages Exchange Effective?



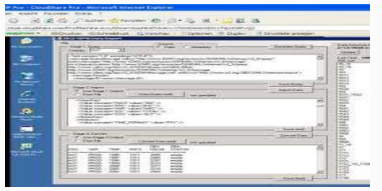



Agreed Common Concepts



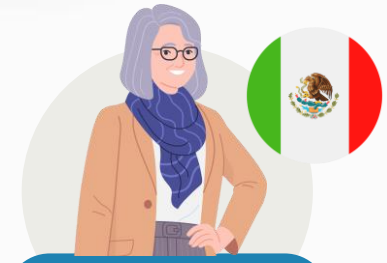
Structures with Complete Information

Common Formats



Stable and Predictable Exchange Scheme And Mechanism (Process)

# What Are the Problems in the Convention Statistical Messages Exchange?



Sender

Receiver

**Message sent:**
En 2020 Mexico tenía 126 millones de habitantes, aproximadamente la mitad eran mujeres

Exchange Channel

Messages not structured properly

Missing information

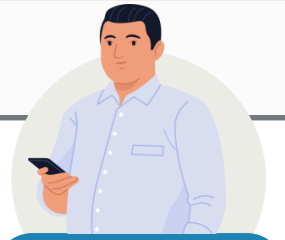
**Message received:**
Mexico had 126 millions of <$??***”##$> women {??==¡¡**}

Errors caused by information format or channel

Different languages used by sender and receiver

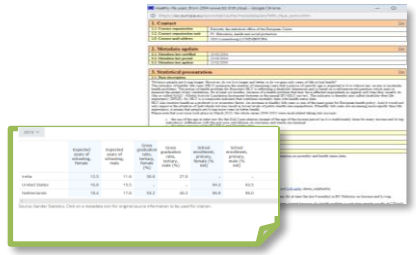
# SDMX Statistical Messages Exchange

Sender



Receiver

## SDMX Dataflows



SDMX Messages

SDMX Web Service

Dataflows

SDMX Web Service

Registry

Notification Updates, Information Requests

# SDMX Components

## Technical Standards

**(Core of SDMX)**

- Formats
- Structures
- Functionalities

## Statistical Guidelines

**(Harmonisation and Governance of Concepts)**

**Management**

- Concepts
- Classifications
- Methodologies
- Modelling

## IT Architecture and Tools

**(Support of the SDMX Implementation)**

- Design
- Map
- Package
- Exchange
- Disseminate

# Overview about MARS Project

# Overview about MARS System

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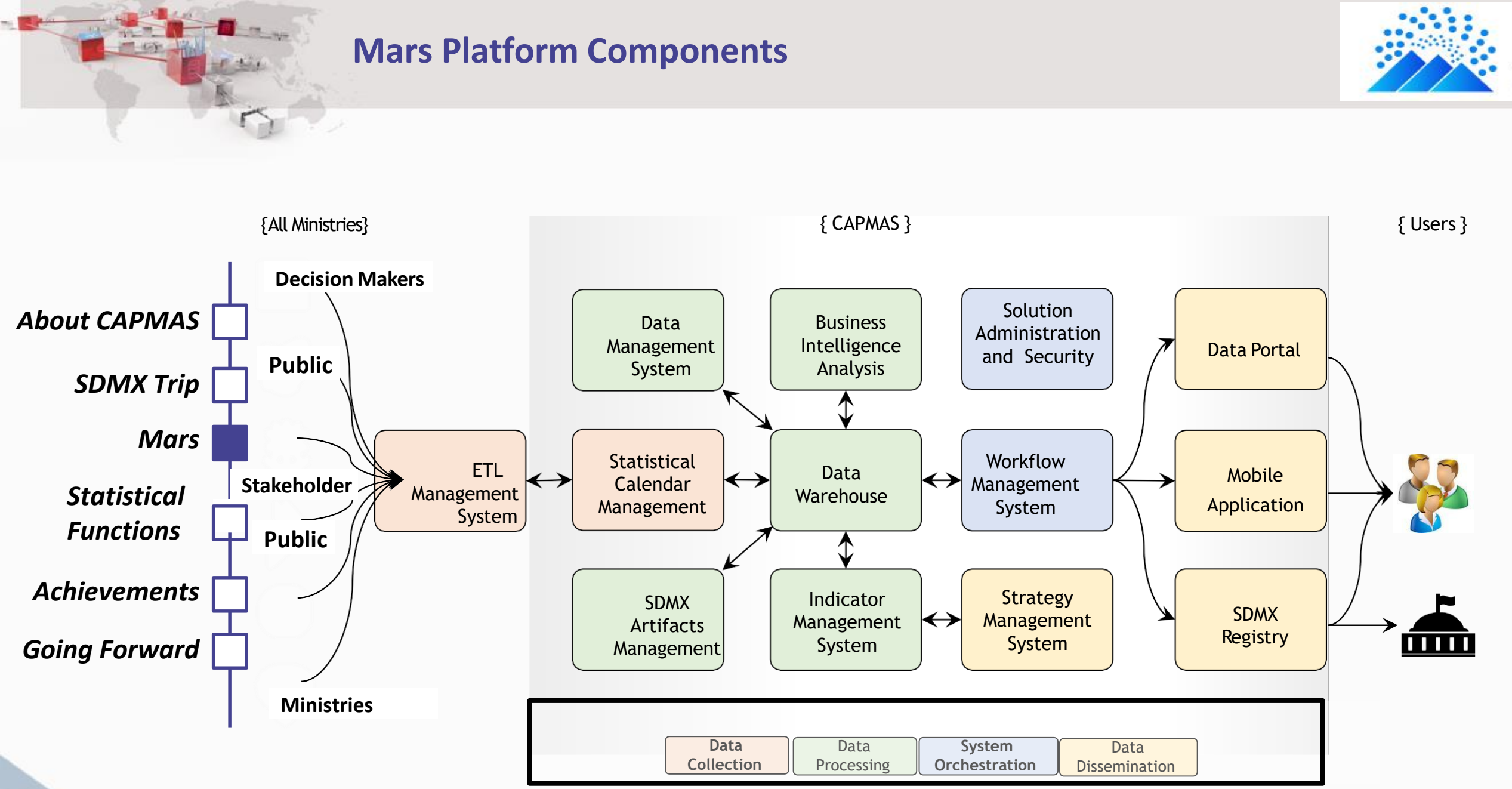
**<u>MARS:</u> Is a monitoring application for reporting SDGs, which automated data collection, storage and dissemination system by ESCWA.**

- ❑ Platform used by CAPMAS as the core practical solution.
- ❑ Its main functionality to provide "**end-to-end**" official statistics management in response to dynamic internal and external stakeholders needs.
- ❑ Its delivered a variety of services through the deployment of multiple integrated applications and tools.
- ❑ Integrated system between CAPMAS and the data source

# Mars Platform Components



# What is the Impact?

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## CAPMAS

- ✓ Fully Automated Data Project
- ✓ Fast way of exchange data
- ✓ Centralized data warehouse
- ✓ Measure the strategy indicators
- ✓ Filling the data gaps
- ✓ Cover various statistical topics with the Current resources.

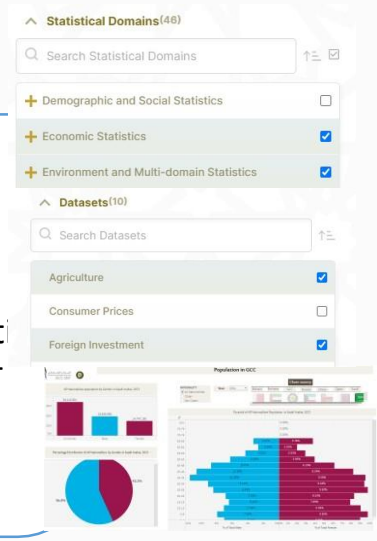
## Decision Makers

- ✓ Monitoring Strategy by Create special Dashboard for different topics.

**Ministries**

## Public

- ✓ Easy to search/store data
- ✓ User friendly data portal
- ✓ Select Multi-Datasets from Multi Domains
- ✓ Interactive Dashboard




## Employees

- ✓ Promote a culture of data science
- ✓ Simplify the use of the data warehouse
- ✓ Simplify analysis of the data
- ✓ Creation of the Dashboard
- ✓ Dealing with different parts of the system
- ✓ Save time & effort

# Statistical Functions

# a. Structures Building

Using as a resource

**Transmission tables .xlsx**

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- *Statistical Functions*
- ***1. Data Preparation***
- *Achievements*
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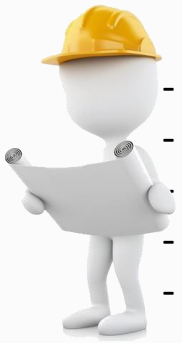
**{ Brainstorming to specify: }**



- Dimensions
- Attributes
- Measures
- Code lists
- Frequencies

**{ Resulting in }**

- Cross-section concepts
- Related section concepts
- Some tables need more than one DSD
- Naming ways of all artefacts and related IDs

**Structure Modeling**

Building **SDMX** artefacts in Fusion Registry

**Normalization**

- Common Concepts
- Code-lists
- DSDs
- DFs
- Metadata

# b. Building three registries to match Egypt needs

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**Origin**

**Store** the original data from the data sources

**Final**

**Validated**, Transformed to SDMX

**Dissemination**

**Approved** data to be disseminated

# Linking options

- About CAPMAS
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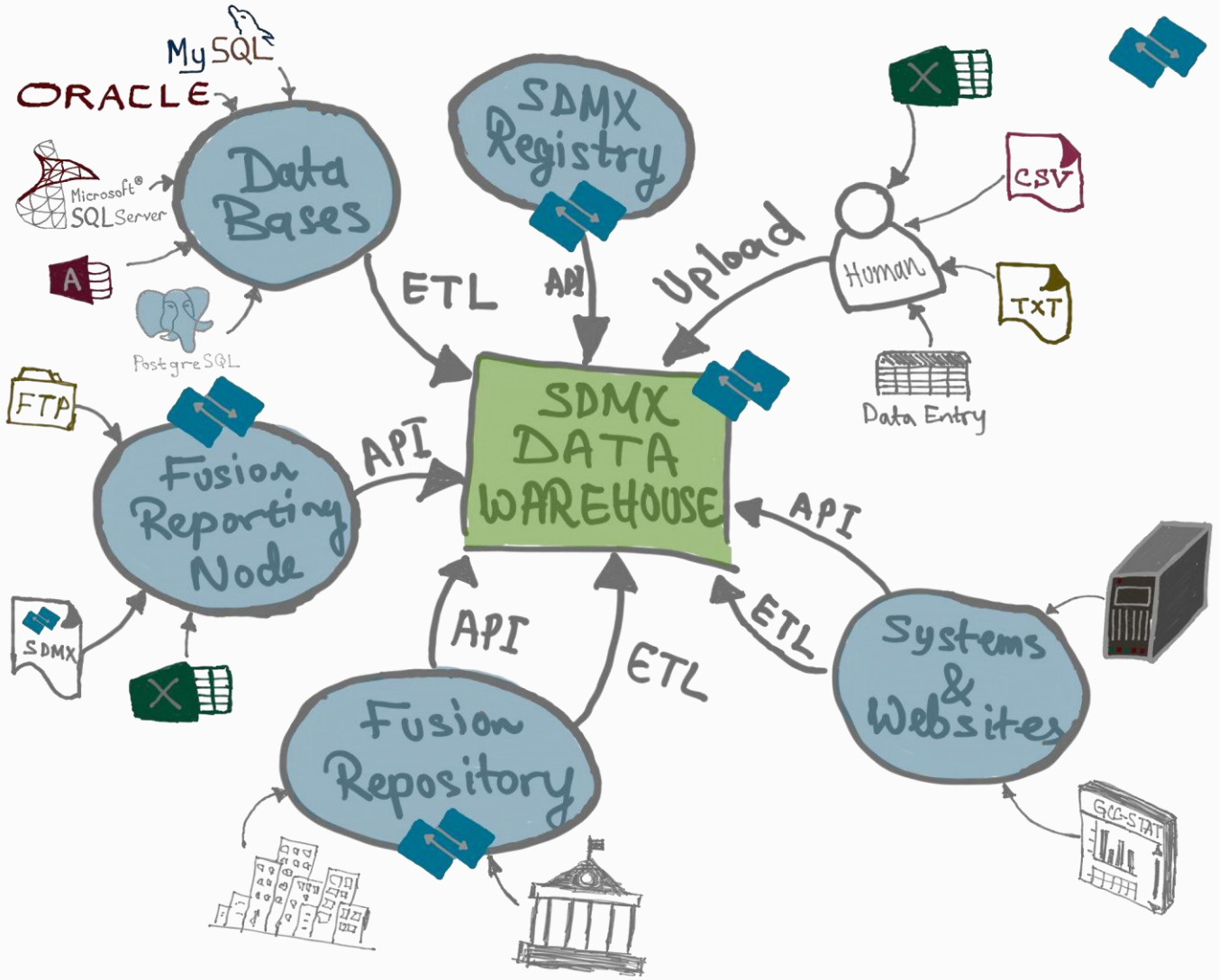
- Statistical Functions
  - 2. Data Collection
- Achievements
- Going Forward



# Egypt-Data Portal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3. Data Dissemination
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## 1 Datasets

linked to dissemination instant (dataset name, description, data, download as different data types).

## 2 Explorer

Linked Directly to dissemination instant and users can work with data and build there own tables.

## 3 Dashboards

make dashboards ready using Tableau or superset tools and embed them on the data portals as interactive dashboards.

## 4 Statistical Demand Management

Linked to dissemination and it is a place where we can build strategy and its goals and indicators are read and updated due to any update in the registry.

# Achievements

# Achievements


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- **Raising the level** of automation of work procedures, controlling governance and powers, and reducing effort, time and cost.
- **Create a updating**, database that is a unified and reliable source.
- **Building a culture of SDMX** within the CAPMAS statisticians and raising their capabilities.
- **Promote a culture** of SDMX in CAPMAS and other agencies.
- **Build an integrated solution** that covers the entire statistics functions lifecycle from collection to dissemination.
- **Ability to transfer data** of large size or different shape and form.
- **Ease of publishing** which facilitates the process of exchanging data and from machine to machine.
- **Readiness** to auto connect with any data providers, regardless of their systems or technologies, and to automate and schedule the automatic fetching of statistical and descriptive data.

# Going Forward

# Going Forward


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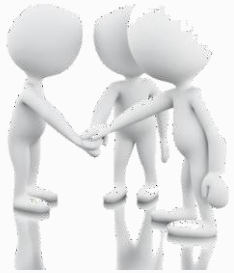
**Strengthening statistical capabilities** in CAPMAS



**Support & assist** Statistical system in implementing the SDMX.

**Completing the Automation** collection process in CAPMAS and covering all the statistical fields.

**Continuing using SDMX** as a tool in searching for alternative statistical data sources without worrying about their structures.

# Thank you for your attention
# Egypt