# Evolution of the .Stat architecture using CSPA

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# Key Short-Term Economic Indicators ℹ

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| →ǀ Subject | Industrial production, s.a. ▼ | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| →ǀ Measure ℹ | Growth previous period ▼ | | | | | | | | | |
| →ǀ Frequency | Annual | | Quarterly | | | | | | | |
| | 2015 | 2016 | 2015 | 2016 | | | | | | |
| →ǀ Time | | | Q4-2015 | Q1-2016 | Q2-2016 | Q3-2016 | Q4-2016 | Q1-2017 | Jan-2017 | F |
| →ǀ Country | Unit | | | | | | | | | |
| Australia | Percentage ℹ | 1.2 | 1.0 | -0.4 | 1.8 | -1.2 | -0.9 | 0.9 | 0.4 | .. |
| Austria | Percentage ℹ | 2.1 | 2.0 | 0.2 | 1.4 | -0.9 | 0.6 | 1.7 | 0.8 | -0.7 |
| Belgium | Percentage ℹ | 0.0 | 4.2 | 1.3 | 2.8 | -1.2 | 1.7 | 1.0 | -0.1 | -4.5 |
| Canada | Percentage ℹ | -0.7 | 0.4 | -0.6 | 0.4 | -2.0 | 3.3 | 0.3 | 1.3 | 1.2 |
| Chile | Percentage ℹ | 0.2 | -0.8 | 0.3 | 0.6 | -2.1 | 1.3 | -1.3 | -1.3 | -2.3 |
| Czech Republic | Percentage ℹ | 0.0 | 0.4 | -0.4 | 1.3 | 0.4 | 0.1 | -0.1 | 1.3 | 3.7 |
| Denmark | Percentage ℹ | 1.2 | 3.5 | -2.8 | 4.2 | 0.9 | -1.1 | 5.5 | -1.7 | -4.3 |
| Estonia | Percentage ℹ | 0.3 | 2.4 | -1.4 | 0.2 | 1.1 | 3.0 | 3.2 | 2.8 | 0.8 |
| Finland | Percentage ℹ | -1.0 | 2.5 | 0.2 | 0.2 | 1.8 | 0.1 | 0.7 | -0.4 | 0.1 |
| France | Percentage ℹ | 2.0 | 0.4 | 0.4 | -0.6 | -0.1 | -0.2 | 1.2 | -0.3 | 0.2 |
| Germany ℹ | Percentage ℹ | 0.4 | 1.3 | -0.2 | 1.6 | -0.5 | 0.0 | 0.3 | 1.3 | 1.8 |
| Greece | Percentage ℹ | 1.0 | 2.6 | 2.1 | -2.0 | 1.5 | 0.7 | 3.5 | 3.2 | 2.4 |
| Hungary | Percentage ℹ | 7.1 | 0.8 | 1.2 | -2.5 | 3.3 | -1.9 | 1.6 | 3.2 | 0.2 |
| Iceland | Percentage ℹ | (E) 9.4 | (E) 9.0 | (E) 0.9 | (E) 4.7 | (E) 2.0 | (E) 5.5 | (E) 6.5 | .. | (E) 2.0 | F |

Legend:

E  Estimated value

Data extracted on 03 Jul 2017 05:07 UTC (GMT) from OECD.Stat

**SIS-CC: Building an Inclusive Data Ecosystem**
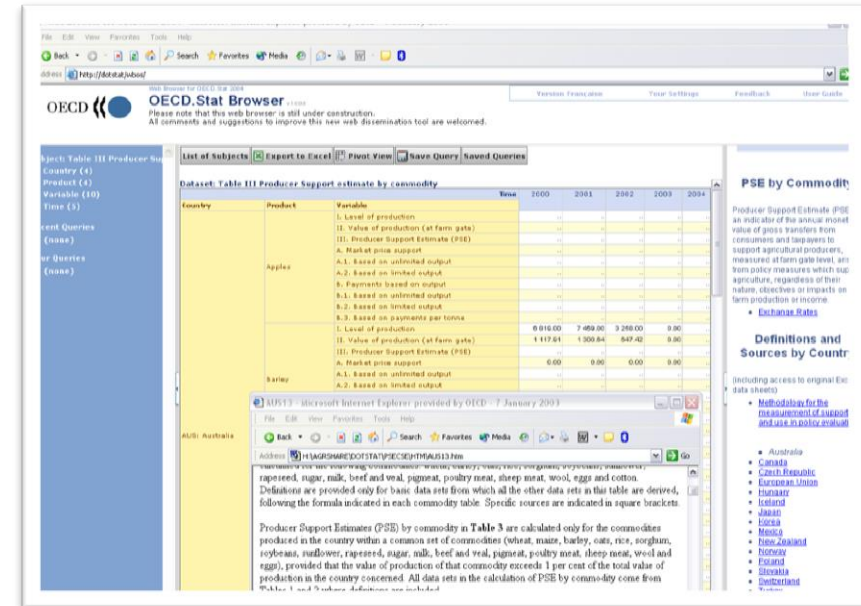
SIS-CC

Statistical Information System Collaboration Community

Main feature: Allow hosting and disseminating flexibly
multi-dimensional datasets and their referential metadata
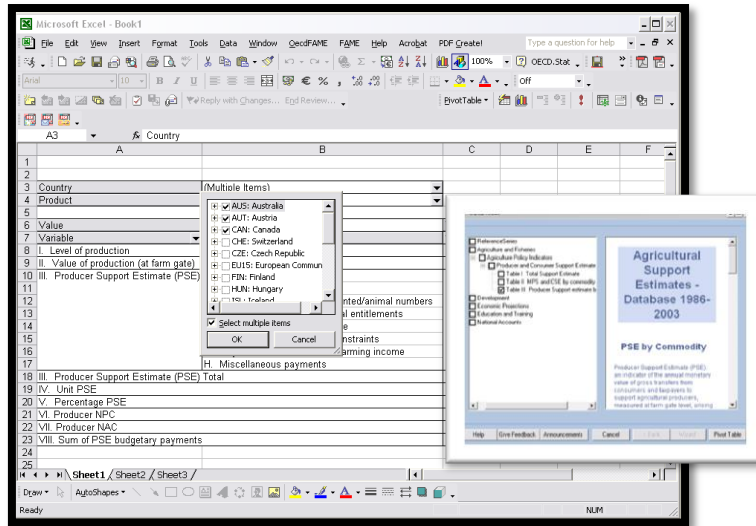


**2002-2005:** SQL-based DWH
with OLAP Cubes accessible
internally from within Excel
and externally through an
OLAP web plug-in



**Since 2005:** SQL-based DWH
with web services accessible
through web application,
direct SQL interface and Excel

Monolithic

Lacking reusability

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*

Statistical Information System to provide solutions for statisticians to process the data through steps of the GSBPM

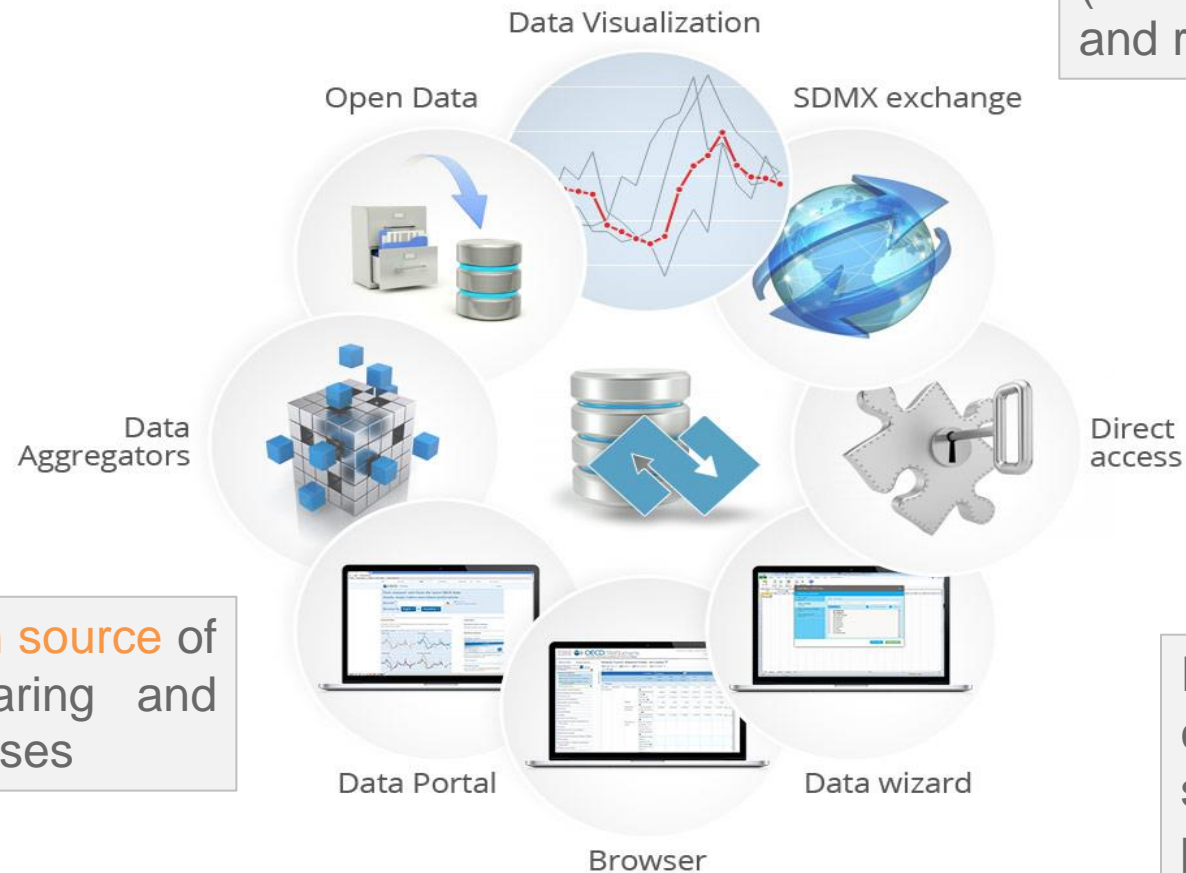| **Collect** (incl. Validate) | **Process** (incl. Edit & Calculate) | **Disseminate** |
|---|---|---|
| StatWorks/MetaStore Data Wizard | | .Stat .Graph |

# Component Architecture Model

*Enforce Full SDMX & CSPA Compliance*

*Ensure reusability and feasibility*

The central repository ("warehouse") of validated statistics and related metadata



Data Visualization

Open Data

SDMX exchange

Data Aggregators

Direct access

Data Portal

Data wizard

Browser

It is the organisation source of data for data sharing and dissemination purposes

It is the central hub connecting data production, sharing & dissemination processes

# Component Architecture Model

*Enforce Full SDMX & CSPA Compliance*
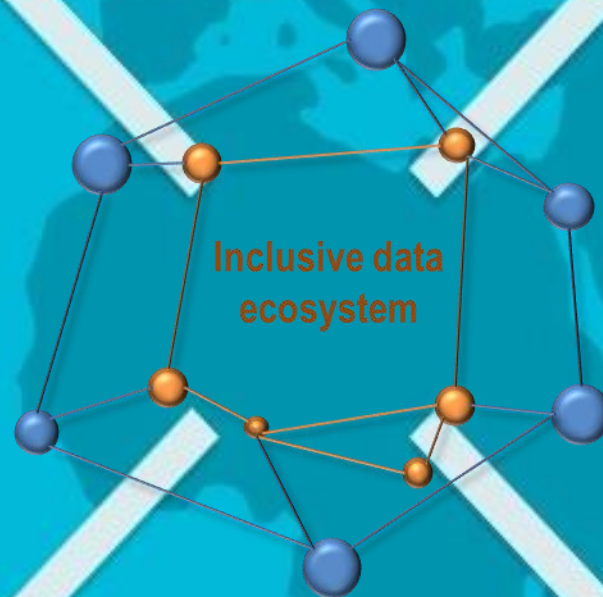*Ensure reusability and feasibility*

**Component Architecture Model**

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*

**Extended Community Support Model**

*Ensure long term capacity building*
*and federation of entities*

Inclusive data
ecosystem

**Extended Lifecycle Coverage**

*Design, Collect, Process & Disseminate*

**Open Source Model**

*Ensure long term financial sustainability*
*and affordability for countries*

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*

Common Statistical Production Architecture
"CSPA": built by the Statistical Community
for the Statistical Industry

SIS-CC
Statistical Information System
Collaboration Community

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*

Reusable
Components *for the*
Web

# Component Architecture Model

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*

**Reusability**
each (type of) piece can be reused

**Encapsulation**
no piece can modify another piece

**Interoperability**
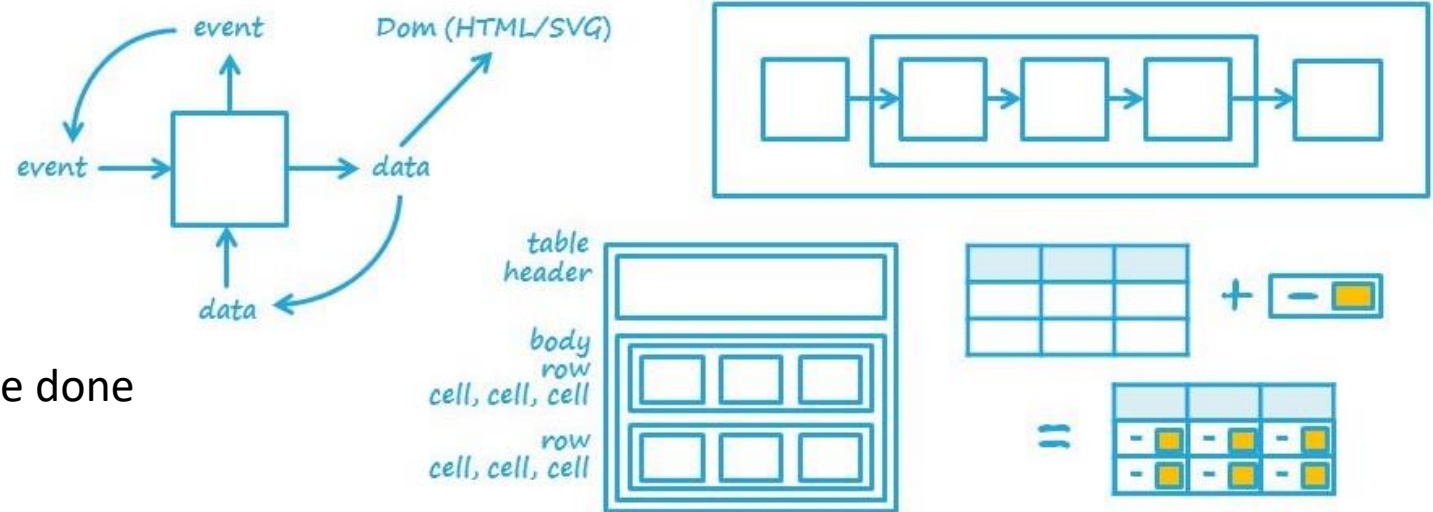each piece has a standard interface

**Composition (static)**
with simple pieces, more complex pieces can be done

**Chaining (dynamic)**
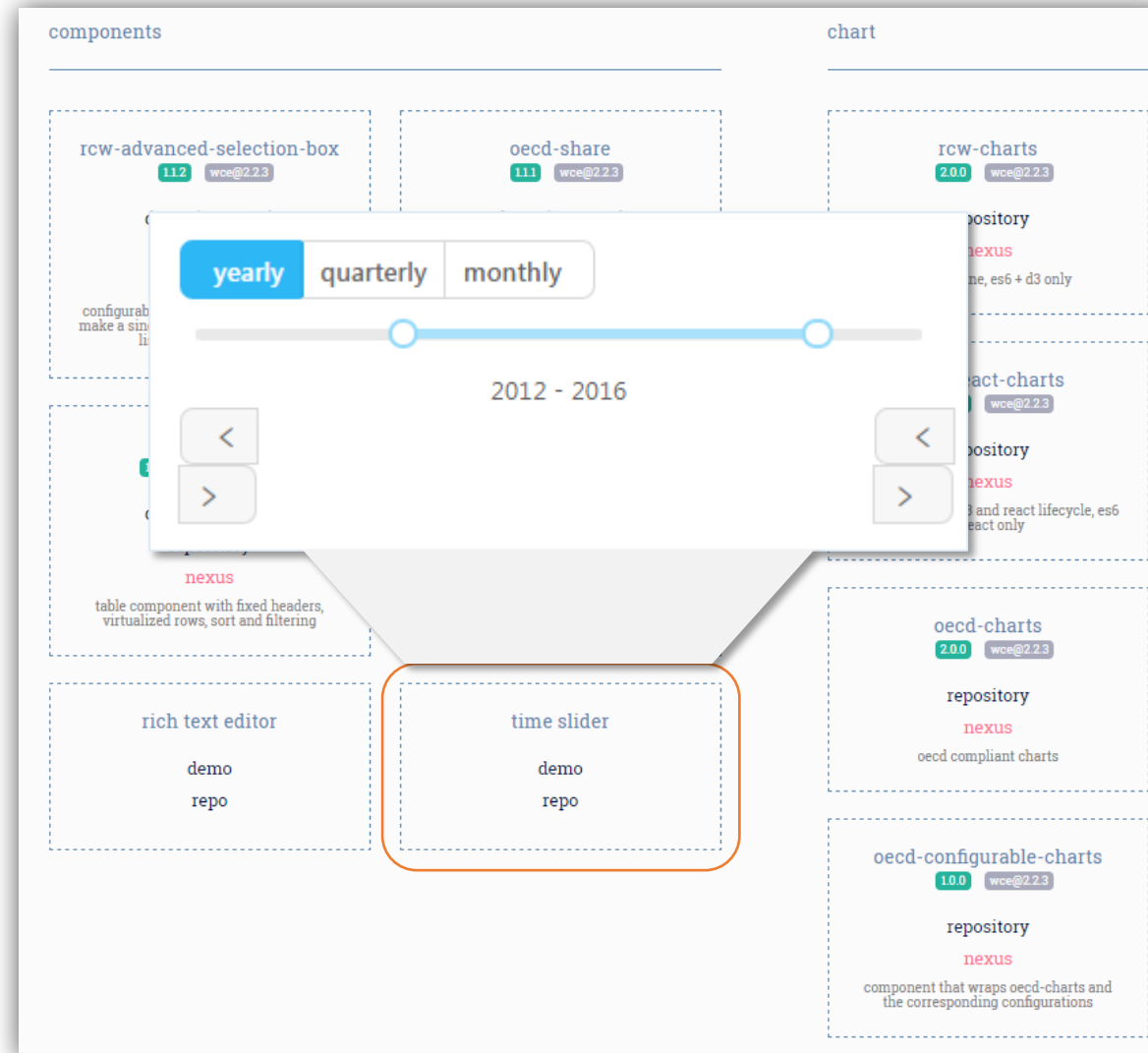with simple pieces, complex workflow can be done

What are Reusable Components for the Web?

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*

# **R**eusable
# **C**omponents for the
# **W**eb

# Component Architecture Model

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*

**R**eusable

**C**omponents for the

**W**eb



Chart Engine D3.js

React JS layer

Chart styling

Chart configuration

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Collaboration Community

# Component Architecture Model

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*



**R**eusable

**C**omponents for the

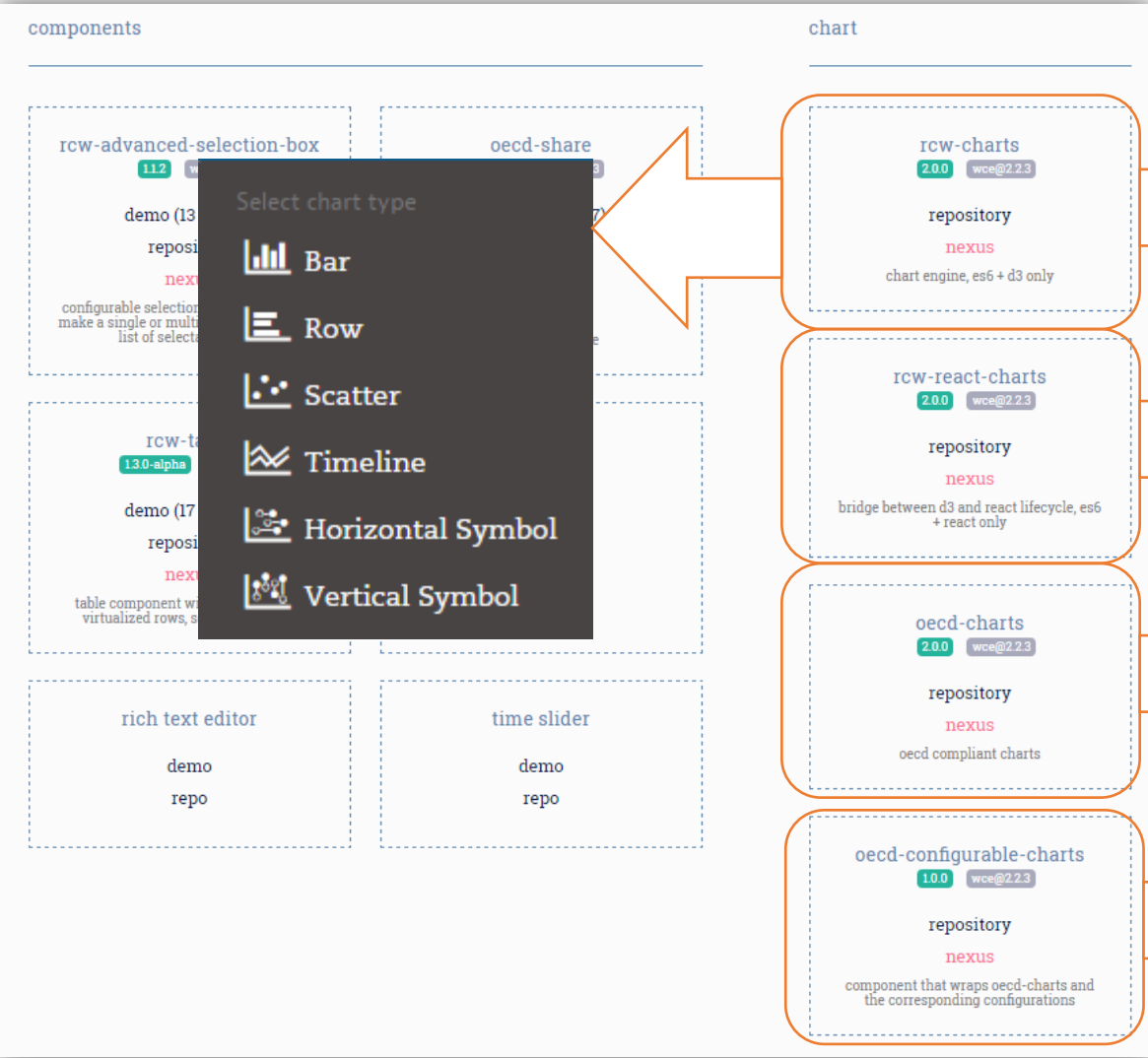**W**eb – Chart Generator

Chart Engine D3.js

React JS layer

Chart styling

Chart configuration

# Component Architecture Model

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*

**R**eusable
**C**omponents for the
**W**eb in Excel (PoC)
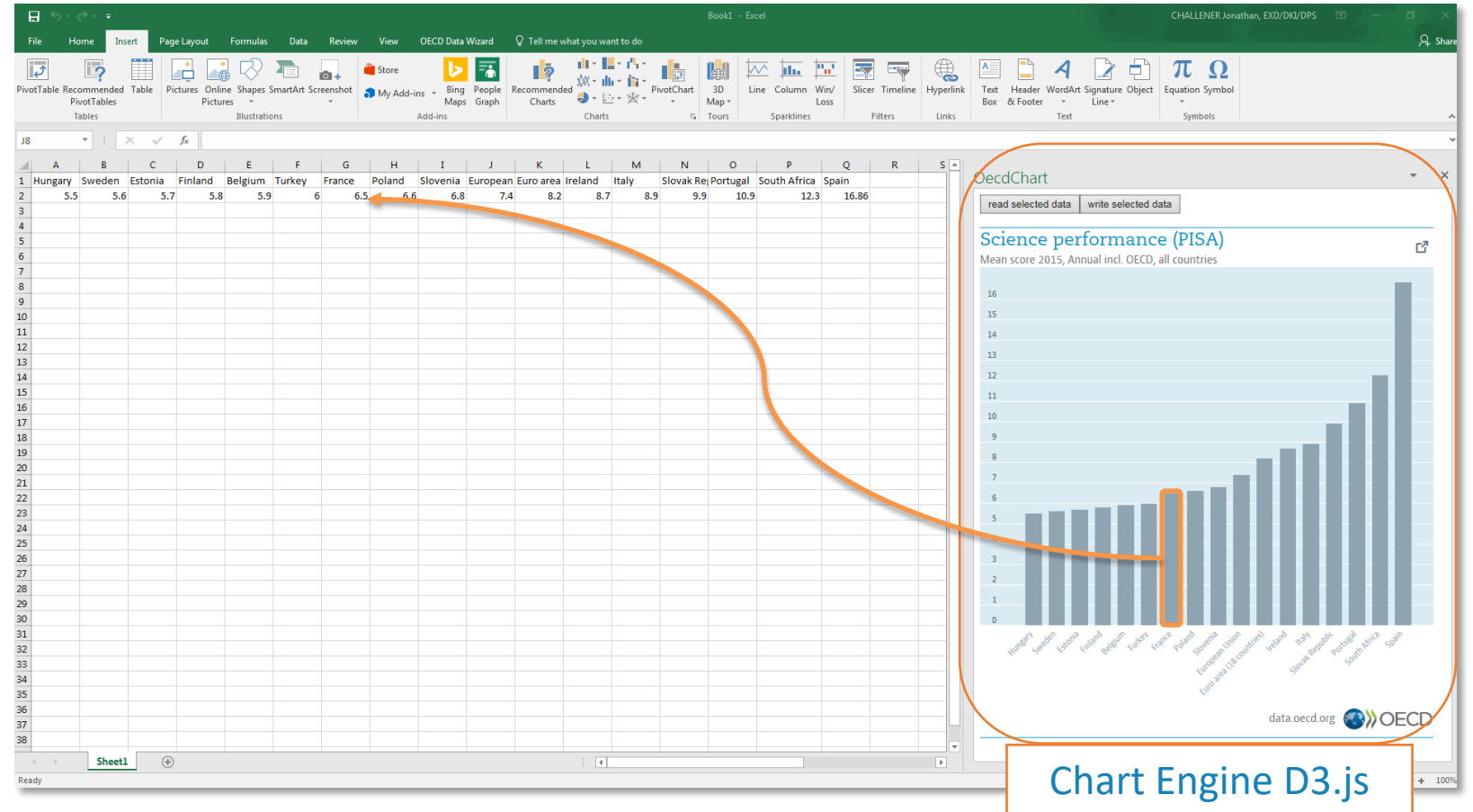


Chart Engine D3.js

# Component Architecture Model

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*
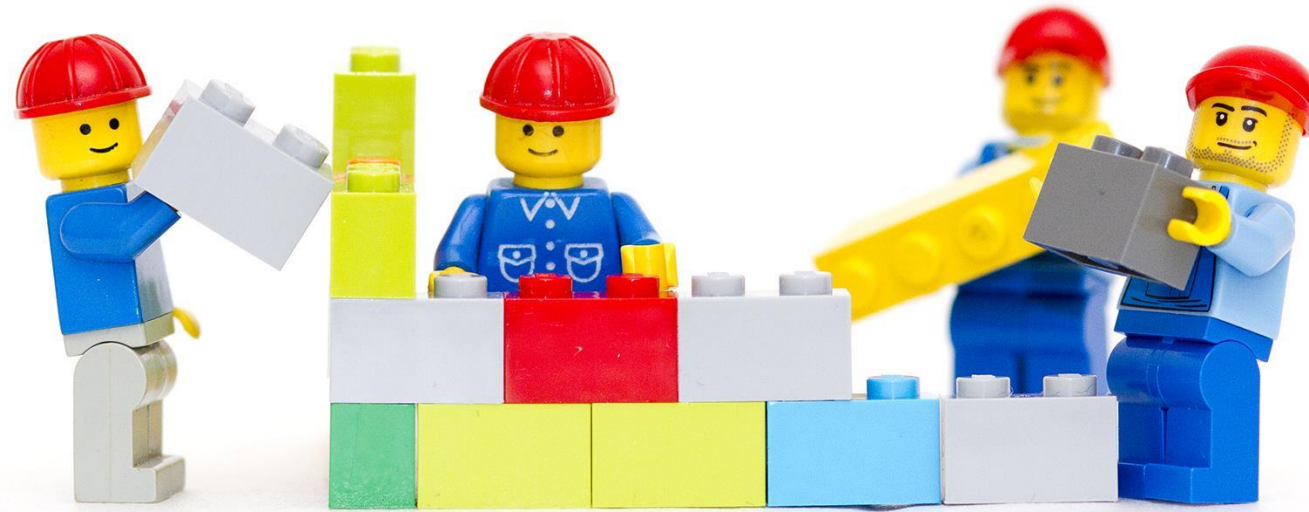


Eased creation of new products and user interfaces

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*

# 2017-18 delivery plan

2017 · January · February · March · April · May · June · July · August · September · October · November · December
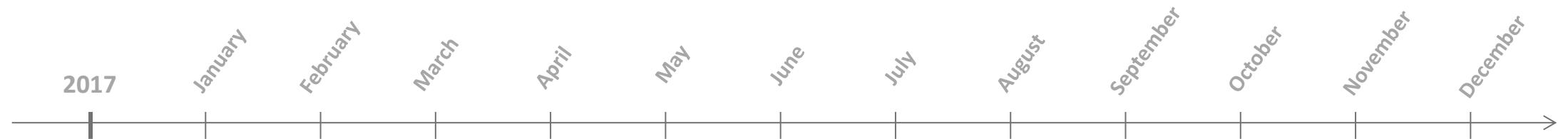
## The .Stat Suite

# Component Architecture Model

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*



**.Stat Data Explorer**
Reusable Components for the Web
Search | Visualise | Share

**.Stat Core**
Data Store
Mapping Store
SDMX Web Service
Share Web Service
Search Web Service
Configuration

**.Stat Data Lifecycle Management**
Reusable Components for the Web
Edit | Compare | Transfer

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# Component Architecture Model

*Enforce Full SDMX & CSPA Compliance*
*Ensure reusability and feasibility*

## .Stat Core
Data Store
Mapping Store
SDMX Web Service
Share Web Service
Search Web Service
Configuration

### Data Store
Storage of Observations, Attributes and Referential Metadata

Management of Constraints and Annotations

### Mapping Store
Storage of structural information

### SDMX Web Service
Retrievers and submitters for Data Store and Mapping Store
Readers and writers (SDMX-CSV)

### Share Web Service
Store and retrieve tables and chart configurations for sharing

### Search Web Service
Third-party open-source solution with indexing and storage

### Configuration
Allow the application to be configured for the context of INS

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# The international standards agenda

Strong contribution by SIS-CC to the HLG agenda
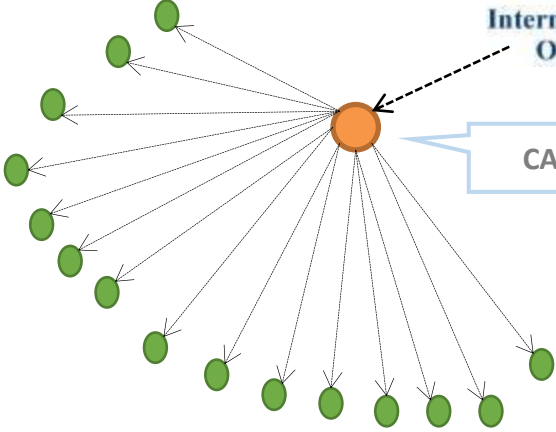
Increase the adoption of international standards

**CSPA**

sdmx

Statistical Data and Metadata eXchange

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# Use Cases

MENA Fund (Deauville partnership) to overhaul Tunisia's **INS** based on .Stat and SIS-CC support.

**ILO** project to develop Labour Statistics portal for CARICOM countries.

OECD
BETTER POLICIES FOR BETTER LIVES

SIS-CC
*Statistical Information System*
*Collaboration Community*

إحصائيات تونس
STATISTIQUES TUNISIE

International Labour Organization

CARICOM

SUSTAINABLE DEVELOPMENT GOALS

**THANK YOU!**

# Evolution of the .Stat architecture using CSPA

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