CDM & IReF

Common Data Management for the ESCB / SSM

EUROPEAN CENTRAL BANK
EUROSYSTEM

Common Data Management

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Meeting agenda

1   Common Data Management Vision & Principles

2   Components of CDM

3   Metadata-driven collection & compilation platform

4   IReF as first use case

Common Data Management

Vision and principles

Current data platforms' drawbacks

1. **Diverse interfaces**
   not a one-stop shop for reporting institutions

2. **Multiple DQM pipelines**
   logic not uniform

3. **Restriction on data availability for ESCB/SSM users**
   timing and scope depends on institution

Common Data Management

CDM Platform - Principles

Accessibility

Ability to access and integrate data across various data sources (ESCB, local, SSM)

Innovative

Cloud-based infrastructure and tools for all users within ESCB/SSM, to keep up to date with innovations including AI

Multitenancy

Shared tooling and infrastructure while allowing for separation of concerns and independence

Self-service

Allows setup, operation and management of business processes (data flows) in a highly automated manner, improving separation of IT and business concerns, shortening time-to-market
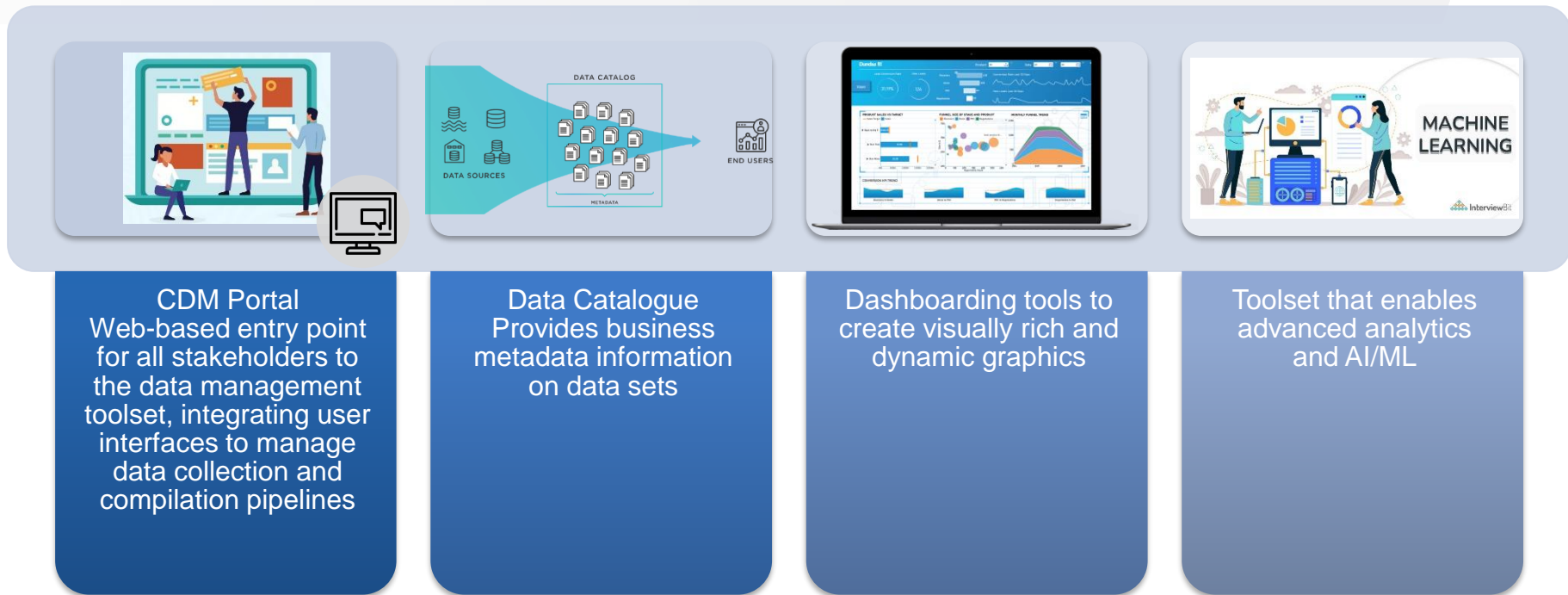
Efficient

High degree of automation, shared infrastructure and maintenance, gaining of cost efficiencies

Common Data Management

Common Data
Management

Components of CDM

CDM Platform – Frontend Tooling

CDM Portal
Web-based entry point for all stakeholders to the data management toolset, integrating user interfaces to manage data collection and compilation pipelines

Data Catalogue
Provides business metadata information on data sets

Dashboarding tools to create visually rich and dynamic graphics

Toolset that enables advanced analytics and AI/ML

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CDM Platform – Tooling for Data Producers

- Offers a reusable set of data pipelines for generic tasks like data ingestion, format validation or feedback sending
- Users define business processes (data flows) via configuration

Collection and compilation components

- Reusable component that executes validation & transformation rules expressed in a business rule language
- Comes with an IDE to support the rule development by business users

Validation & Transformation Engine

- Enables the management of structural metadata, business process metadata like calendars as well as access metadata
- Central component for all collection and compilation tasks

Metadata Management Service

- Allows application engineers to extend the reusable components by building custom source code in a development environment

CDM IT workbench

- Offers access to ESCB and SSM data along the data life cycle and across organisational boundaries
- Enables the management and sharing of source code

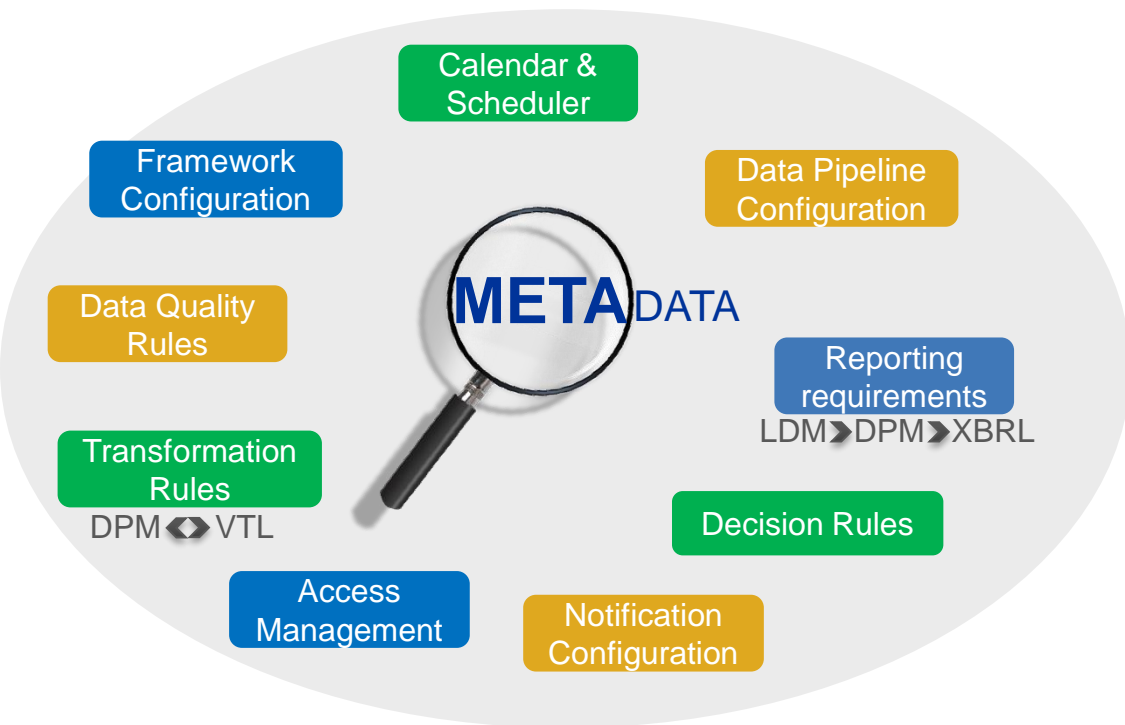**Common data store and source code repository**

Common Data Management

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Metadata-driven collection & compilation platform

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User self-service in CDM scope

Calendar & Scheduler

Framework Configuration

Data Pipeline Configuration

METADATA

Data Quality Rules

Reporting requirements
LDM➤DPM➤XBRL

Transformation Rules
DPM◆▶VTL

Decision Rules

Access Management

Notification Configuration

User empowerment & Flexibility

1. Configurations as metadata determine the behaviour of the platform

2. Offers business agility while responding faster to changes

3. Allows tailoring data flows or DQM changes on the fly

4. Embeds high security standards

5. Provides a consistent interface for all users

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Set up of a data flow

Simple ingestion pass-through pipeline
For example: Move of ESCB data into CDM

Define data product

Configure simple data flow

Simple pipelines as self service

Elaborated multi-step pipeline with DQM & transformations
For example: NCB decides to collect ITS data from banks.

Define data product

Define metadata & configure / code data pipeline steps

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1001010
0010001
0001100
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More complex data flow, development and IT skills needed by the tenant
Full access to cloud services within security guardrails
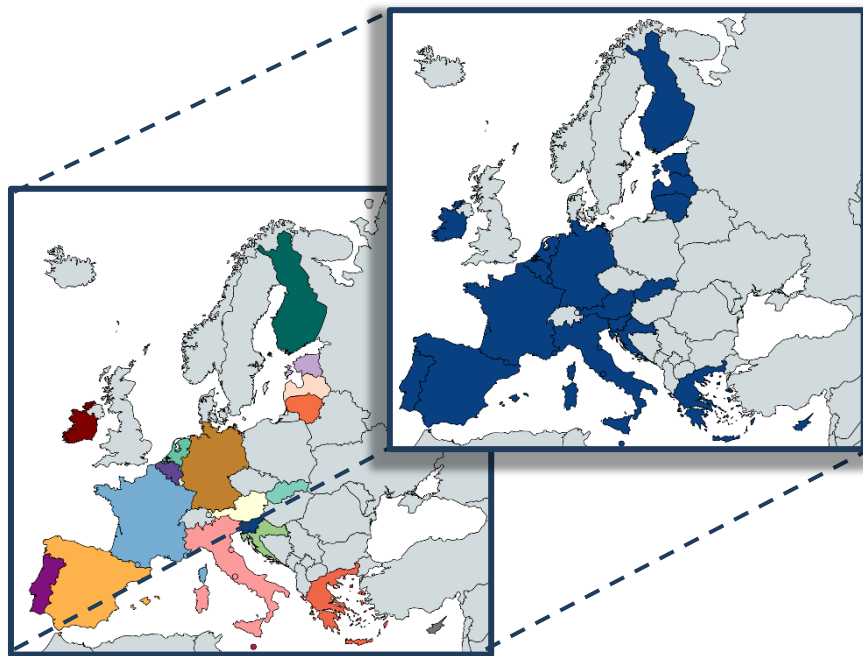
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IReF as use case

Uniform standardised statistical reporting
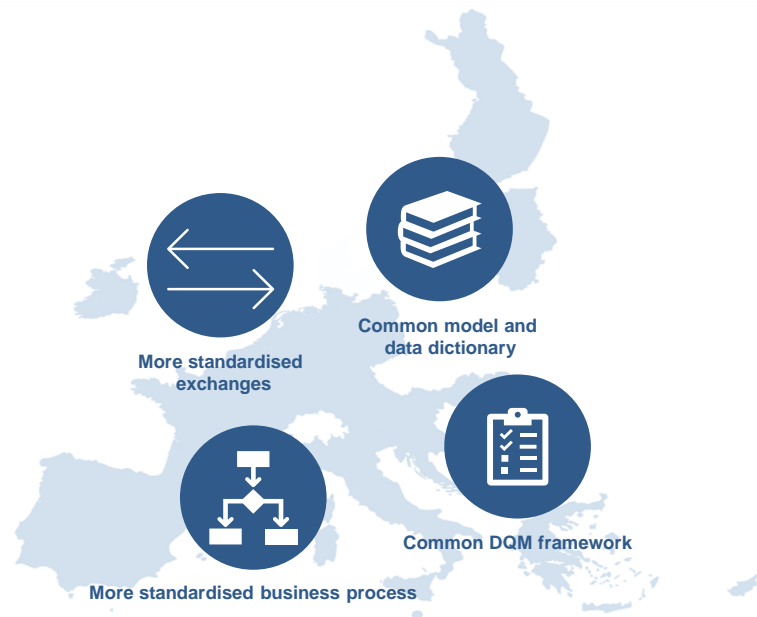

The aim of IReF is to integrate statistical reporting content in the euro area. These are currently implemented and described differently in each country. IReF is seen as first step towards a common statistical, prudential and resolution reporting with tangible steps already in this direction.
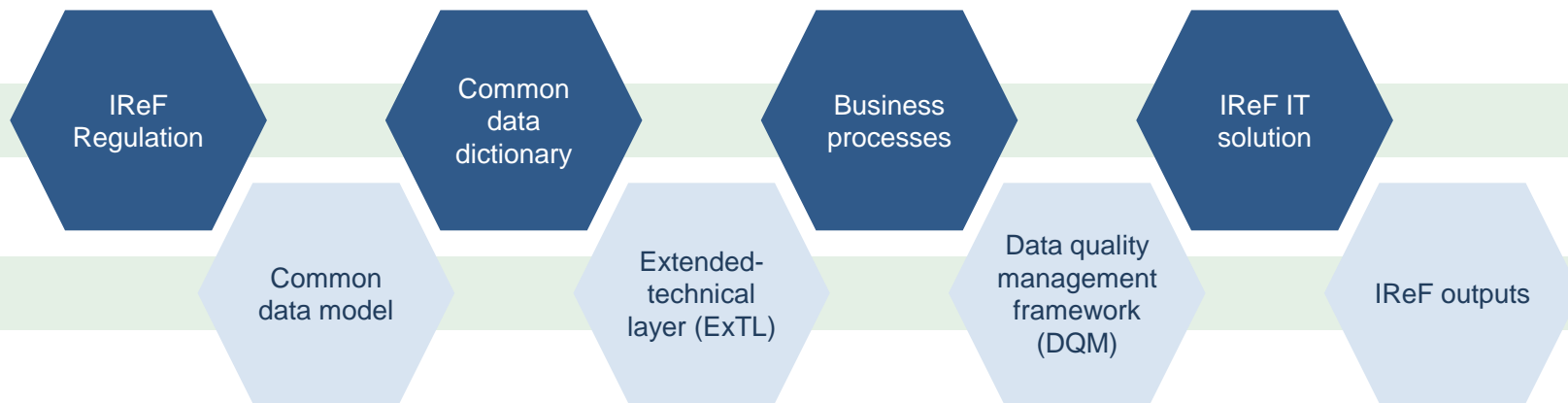

Define Once

Report Once

Regulate Once

Several broader initiatives in development

IReF focused initiatives

- Moving towards a more **standardised reporting system**

- New approach to **reporting from branches**

- Evaluation of a standardised "data exchange format(s)", "submission channels", etc.

- Working towards uniform **data quality management (DQM)**

- Implementation and **standardisation of business processes**

More standardised exchanges

Common model and data dictionary

More standardised business process

Common DQM framework

Common Data Management

IReF deliverables

IReF Regulation

Common data dictionary

Business processes

IReF IT solution

Common data model

Extended-technical layer (ExTL)

Data quality management framework (DQM)

IReF outputs

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Thank you!