Architecting trusted open data ecosystems: interoperability of data standards, technologies and methodologies

Risk management, interoperability and information standardization: XBRL, a commitment from the institutions and the financial sector

Interoperability and financial entities

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Michal Piechocki

Director at XBRL International Board of Directors
Chairman of Frankfurt Group Technical Workshop hosted by the ECB

Overview of EU initiatives and trends

- Solvency II
- AIFMD
- CRD IV (Basel II) / CRR
- EMIR
- ESEF
- MiFID II/MiFIR
- SHS
- MMSR
- AnaCredit
- SFT
- BSI-MIR
- AMLD IV
- IFRS
- Integrated reporting
- BCBS 239
- T2S
- ECB Statistical Data Dictionary & BIRD
- European Reporting Framework

Trends and directions:

- Dictionaries
- Identifiers and reference data
- Data ecosystems not siloses
- Granular data
- Accesibility to datA (OpenAPIs)
- Analysis (network, big data)
- Unstructured data combined with structured
- Trade repositories
- New technologies (blockchain, DLT)
- Combination of statistical and supervisory data

Data ecosystems components

Standards:

- ISO20022, FpML, FIX, MISMO, XBRL, DPM, RIXML, IFX, OFX, BPM6, SDMX, SDDS, MDDL, ACORD

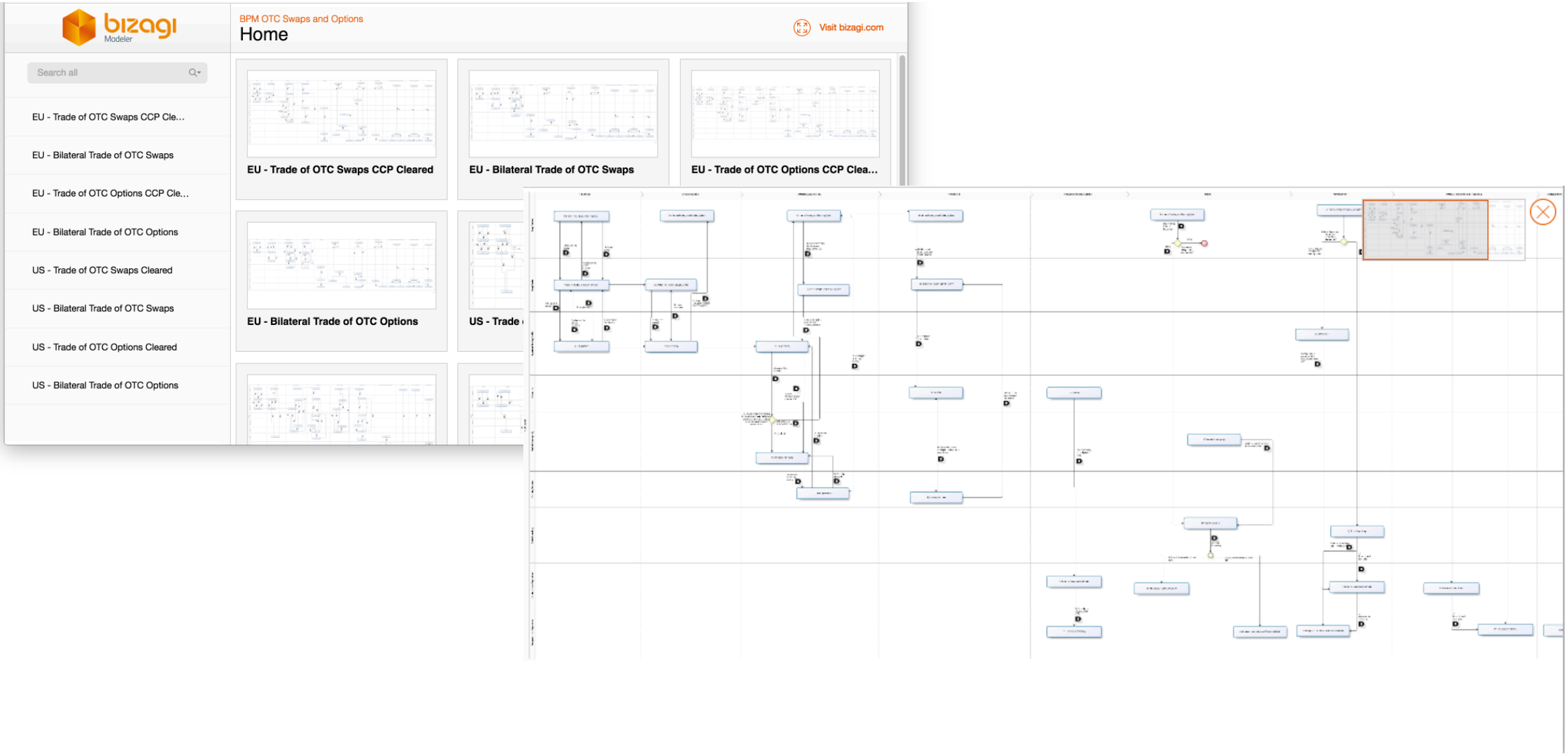
Projects:

- FIBO, ACTUS, DPM2ISO, SMCube

Identifiers:

- Product: UPI, ISIN (ISO 6166, ISO18774), Alternative Instrument Identifier, CUSIP, NSIN, FIGI (Bloomberg), RIC (Reuters)
- Entity: LEI (ISO 17442), MFI Code (ECB), IBAN (ISO 13616), BIC (ISO 9362), MIC (ISO 10383)
- Transaction: USI, UTI (CPMI-IOSCO, ISDA)

Financial institutions data flows



Levels and connections of financial data ecosystems

	Past	Present	Future
Law: (data in regulations)	Local regulations	International standards	Single approach?
Logic: (data description, semantics)	Forms	Dictionaries, taxonomies	Ontologies?
Technology: (data exchange and processing, syntax)	Programs	Data standards XML-derivatives	Open APIs?
Repository: (data storage and source of data for analysis)	Files	Databases	Distributed ledger?

Trusted Open Data Ecosystems

Regulations

XBRL, SDMX, ISO20022

DPM, SMCube, SDMX-IM

DLT/BLOCKCHAIN

Open data standards

Open data methodologies

Open data technologies

Open data

Open data identifiers

Open data architectures

Non/financial

UTI, UPI, LEI

OpenAPI, open repositories

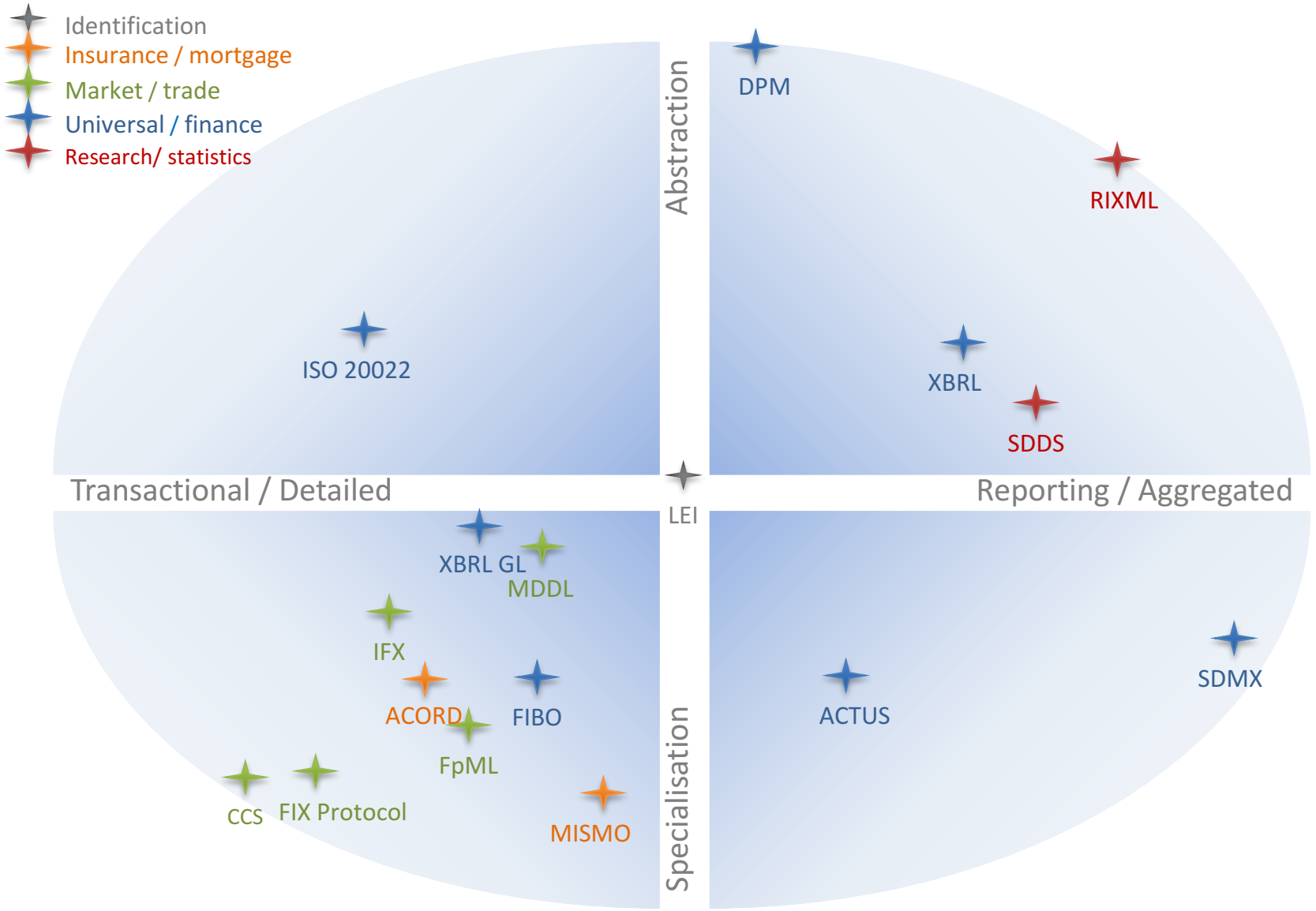
Mobile acquisition / dissemination

Social engagement

Platform/Data/Software as a Service

Agile distribution

Data Standards Map



Dictionaries (DPM) & interoperability with data technologies

XBRL

DPM is extensively used with XBRL Taxonomies for which a specific, corresponding taxonomy architecture has been developed.

Custom XML

DPM has been tested with custom XML Schemas for the purpose of ”flattening” of multidimensional metadata.

SDMX

DPM has been tested with SDMX schemas for alignment of variables.

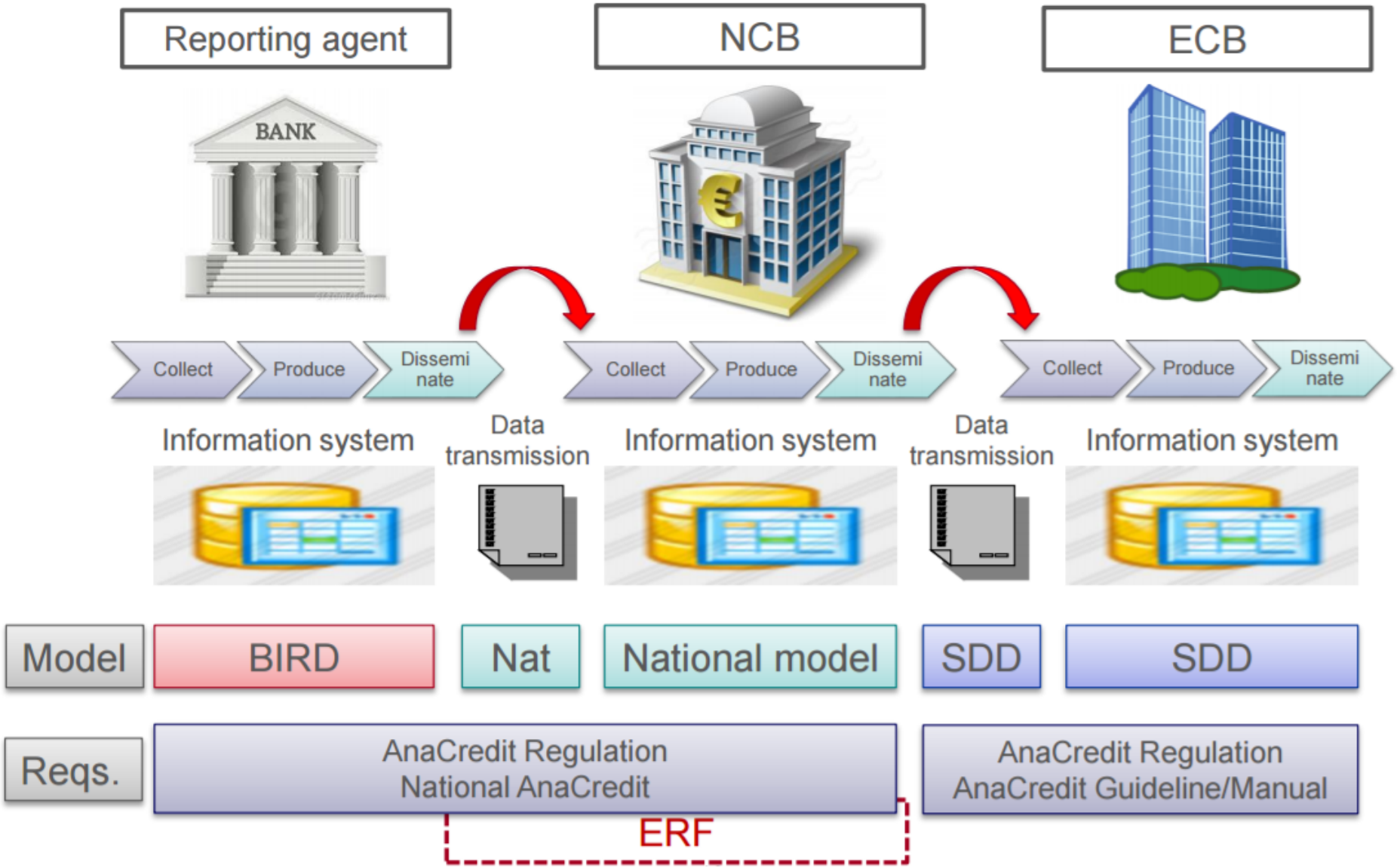
SQL

Dedicated relational database schemas exist for DPM-based metadata and data.

New

ISO 20022
FpML

Interactions between BIRD, ERF and SDD (AnaCredit example)



Source: ECB

Statistical Data Dictionary details

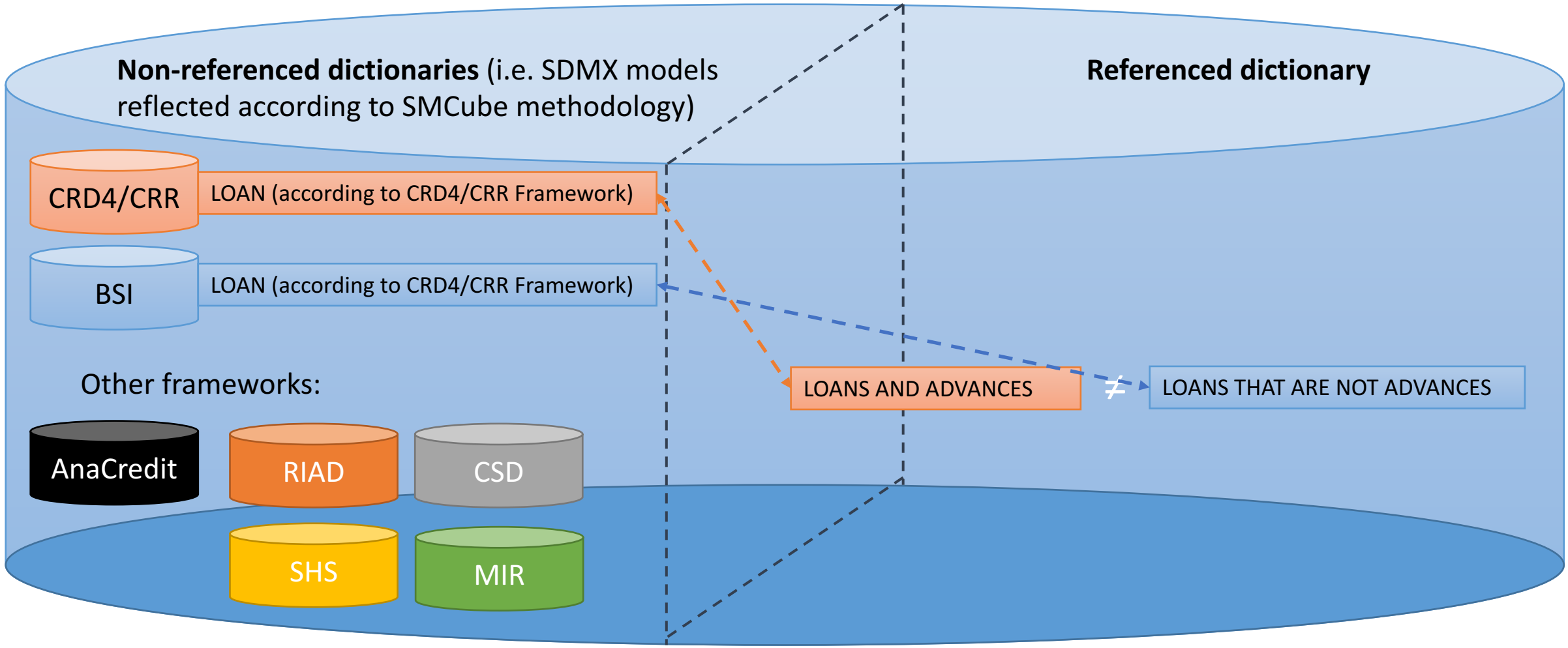
Methodological integration (common syntax for all the non-referenced dictionaries)

- Newly developed methodology (called SMCube) is in line with most material syntaxes used (DPM, SDMX)
- Relevant DPM and SDMX dictionaries are imported to SDD (constituting Non-referenced part od SDD)

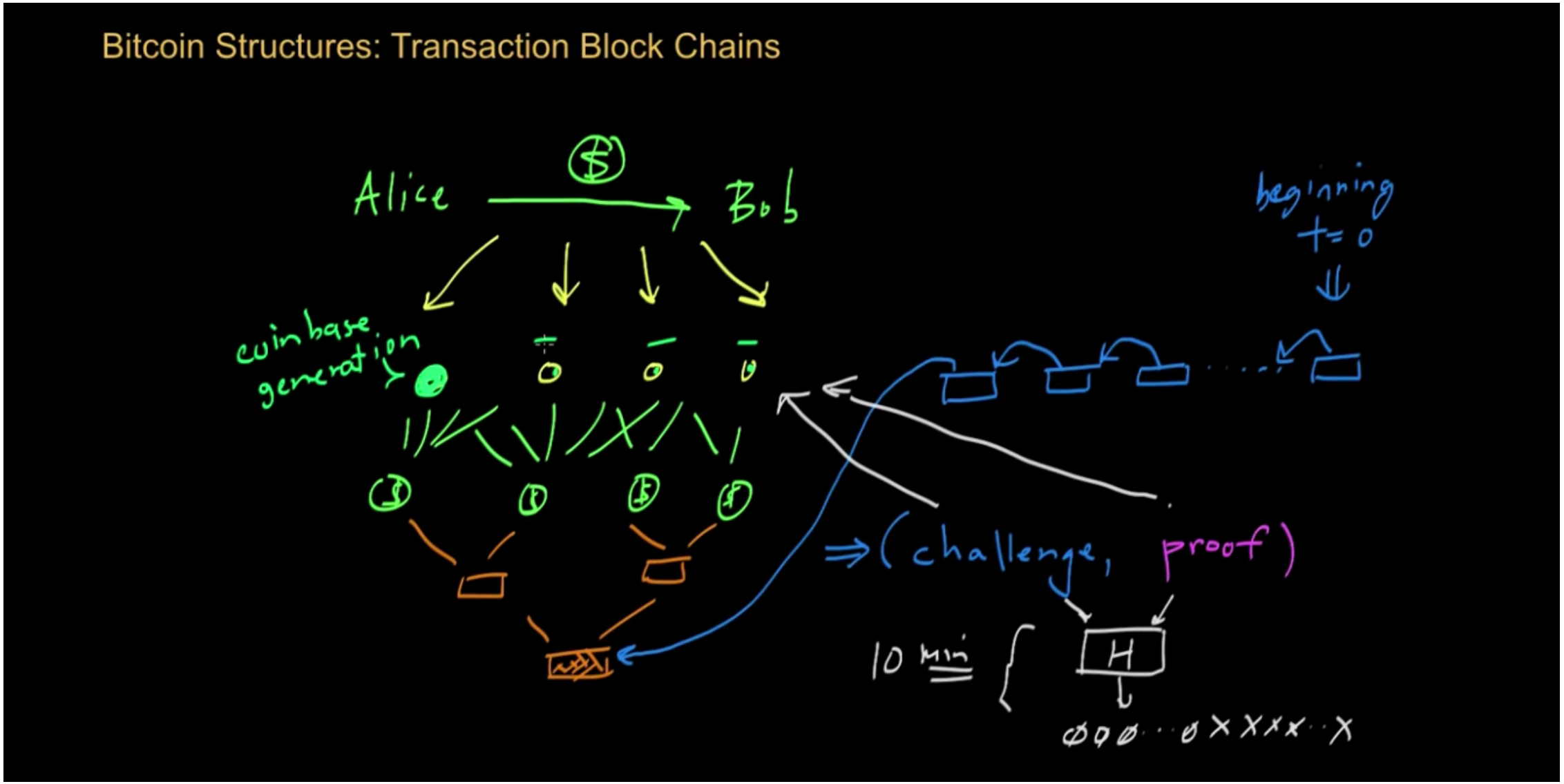
Semantic integration (is the definition of „loan" the same for statistical and prudential frameworks?)

- Creation of referenced part of SDD dictionary
- Mapping between existing concepts from Non-referenced dictionaries and newly created concepts in Referenced dictionary
- Single Referenced dictionary being able to (i) reflect all reporting requirements and (ii) work as a „mapping layer between concepts from Non-referenced dictionaries

SDD structure



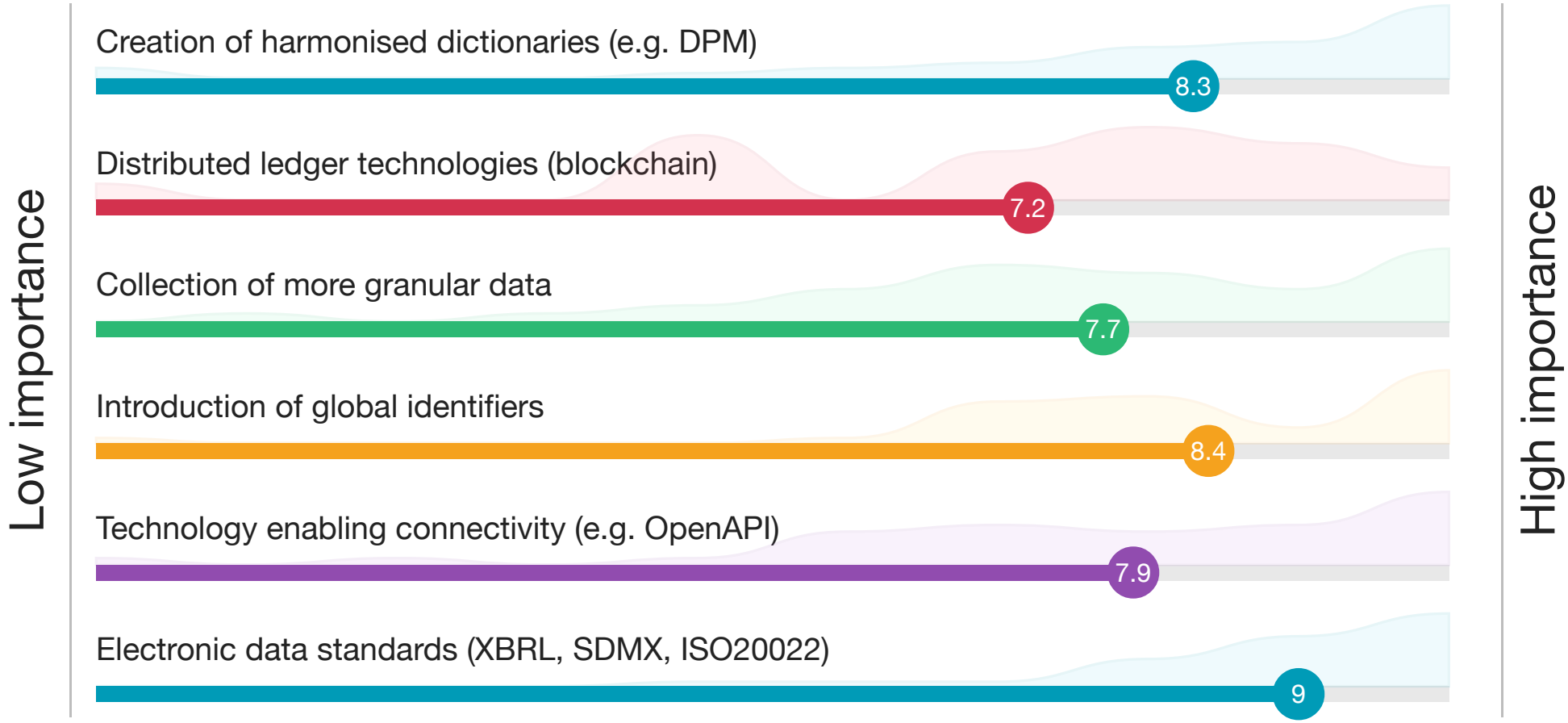
Technical introduction: blockchain & DLT



Thank you

Michał Piechocki

michal.piechocki@br-ag.eu

How important each area of interoperability will be in the next 5-10 years?

Mentimeter