EUROPEAN CENTRAL BANK

EUROSYSTEM

Werner Bier

Deputy Director General

Statistics

A glimpse into the future

how might technology impact the needs and potential for measurement, both for businesses and for authorities?

Preparing supervisory reporting for the digital age

Brussels, 4 June 2018

The views expressed are those of the author and do not necessarily represent the views of the ECB or the ESCB.

Preliminary remarks

Focus on **data** (not on IT):

- on the process from industry operations to EU Institutions' databases
- in time and at quality

Under the pressure of

- continuing change in technology and globalisation
- evolving needs of the EU and EU institutions (after the crisis)

In simple words:

I will not discuss the "what" of regulatory reporting (e.g. "Regulation" vs. "Deregulation") but the "**how**" of data reporting

In designing the future, we need an open, broad dialogue with all stakeholders, both public and private

Post-crisis, two-pronged action

Driven by decisive leadership, the EU took historic steps **during the crisis**

- ESRB, ESAs, SSM, and the SRB were established
- Reporting moved to **granular data** in very large volumes and nearer time
- New regulatory means and tools were created, at EU- and global level
- **Standardisation** progressed, in the EU and globally:
  e.g. LEI, FIBO, ACTUS, ISO20022…
  but it is still at its rather infant stages

After the crisis, we are looking further ahead to

- deepen, improve and consolidate the new institutional setting and practices
- respond to **global tech-integration** while respecting local sovereignty
- try to find a shared understanding, theory, vision and strategies for the emerging **digital-age**

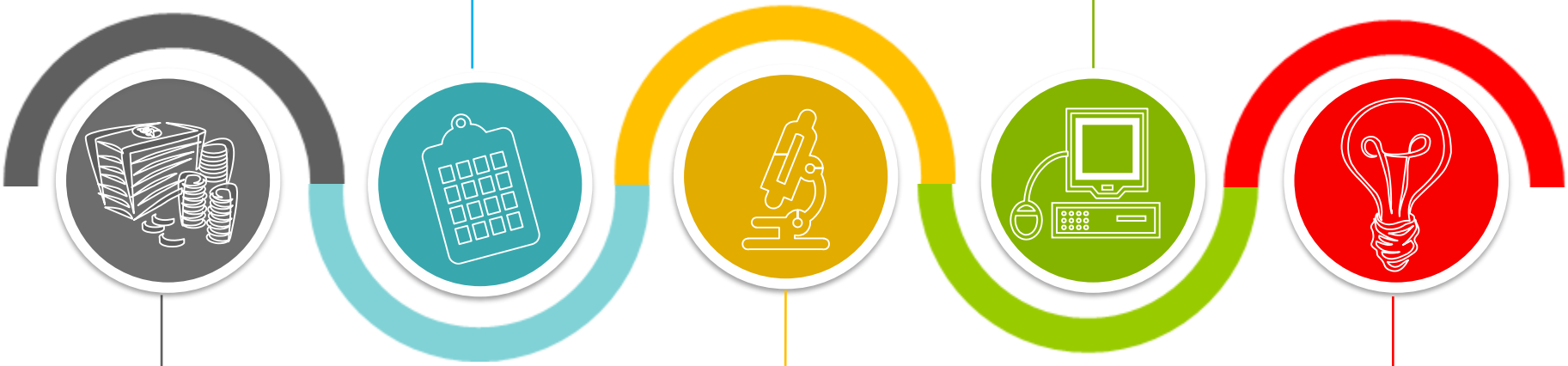
The (urgent) need to respond to the financial crisis

Aggregated statistics no longer sufficient

to serve policy needs, as they don't shed light on underlying turbulence

Available granular data inadequate

for a meaningful cross-country comparison: different concepts & definitions



Financial crisis

revealed a massive increase in fragmentation across countries, sectors, markets, etc.

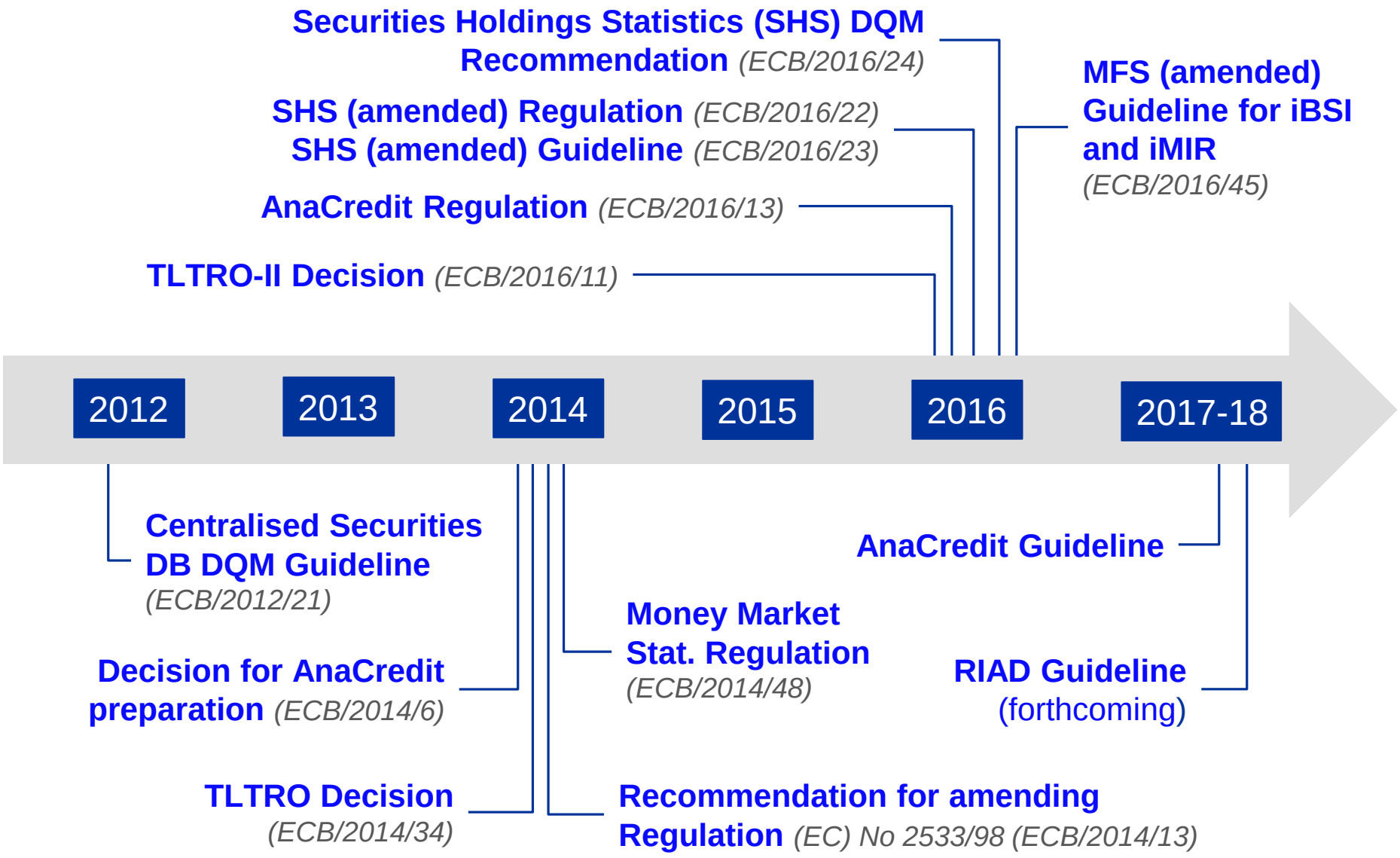
Policy makers

need to zoom in the data to design appropriate (unconventional) policy measures

ECB Statistics response

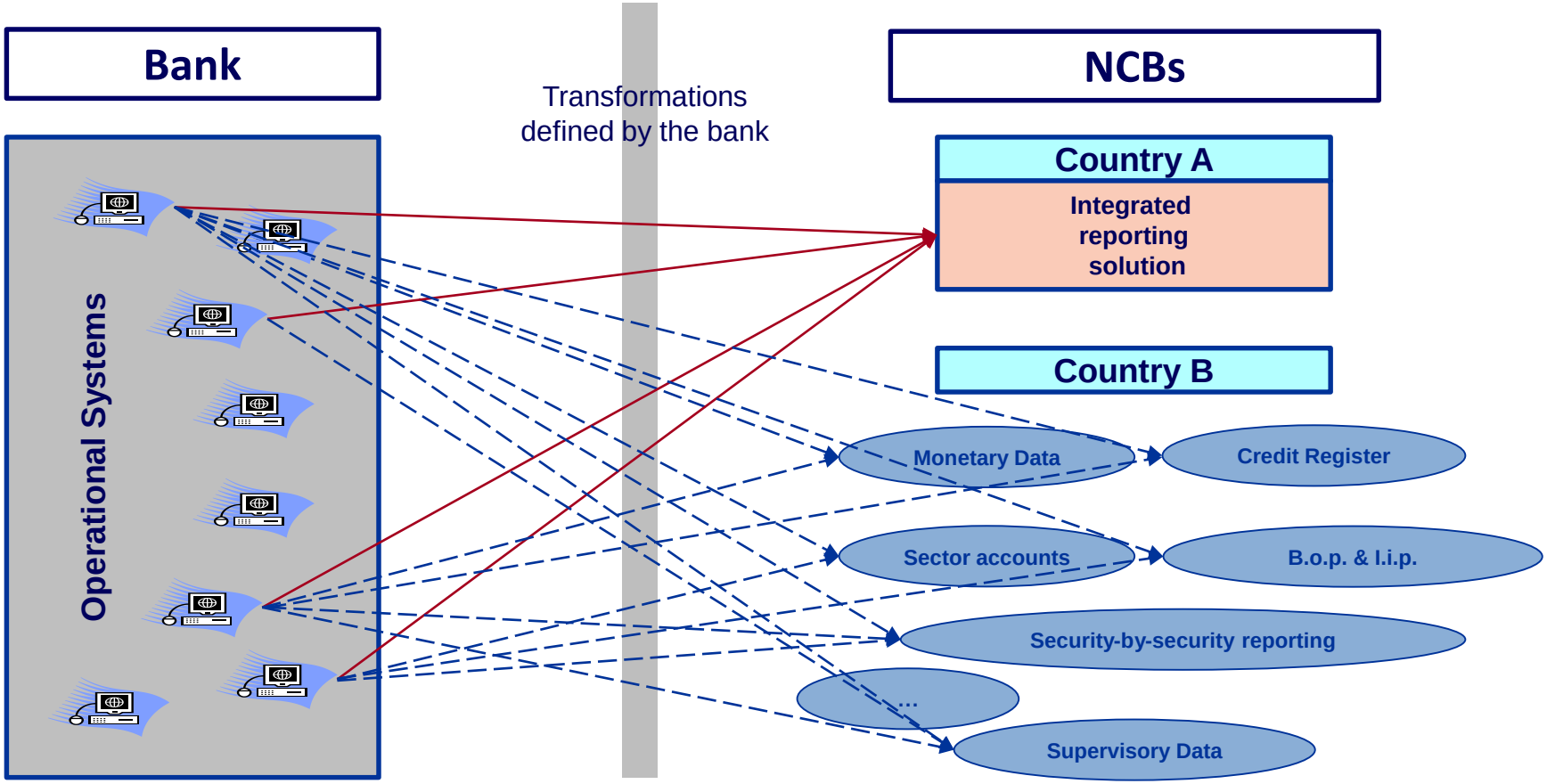
provide policy makers with more complete, timely and high-quality granular information

ECB legal acts on granular data collections



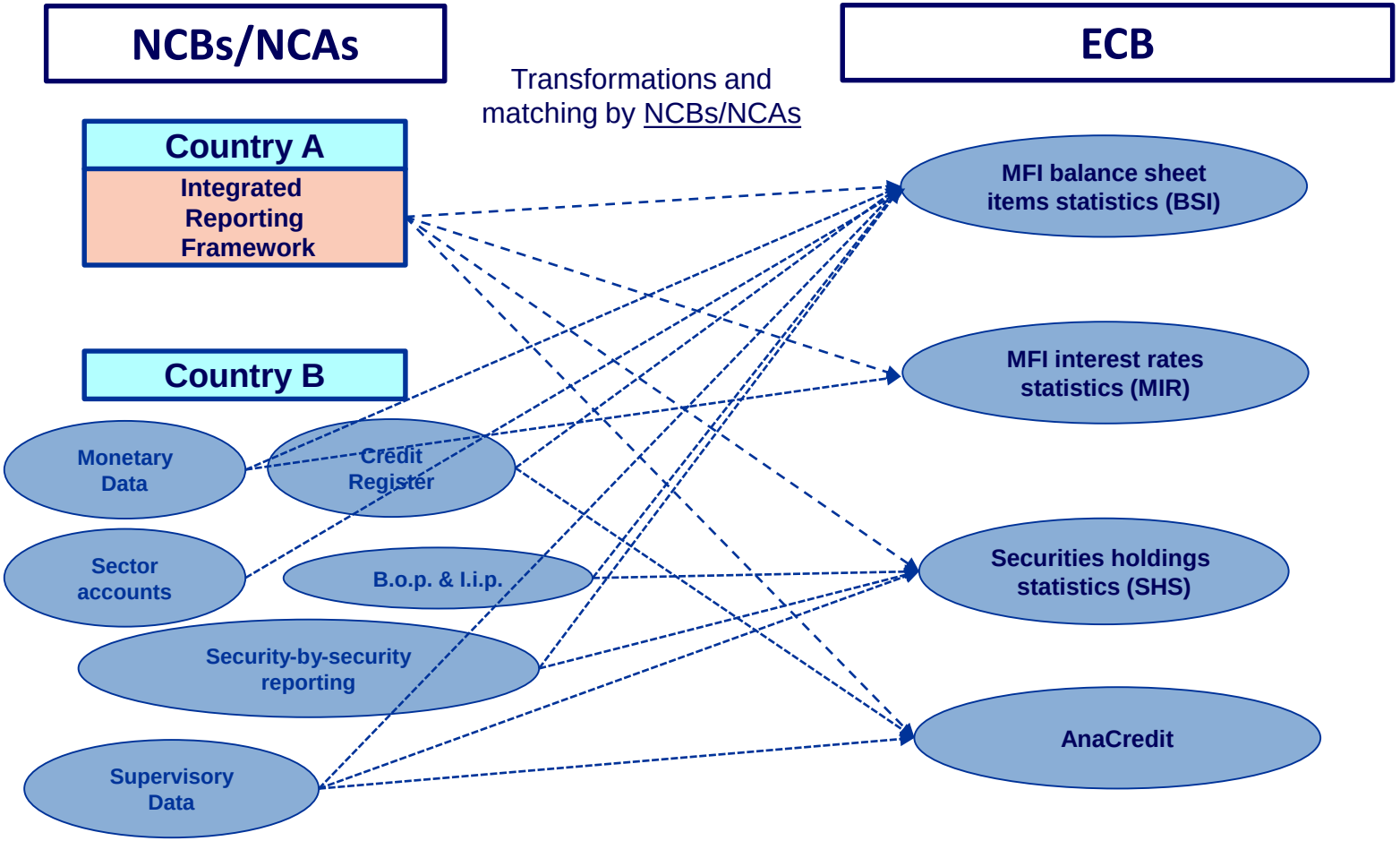
Current ESCB approach to data collection from banks (1/2)

- The same bank or banking group faces *different technical requirements in different euro area countries*:



Current ESCB approach to data collection from banks (2/2)

- Countries are implementing ECB datasets in heterogeneous ways:



ESCB strategy

- ESCB statistics aims at **reducing the reporting burden for banks** while improving policy support (change in **"how"** not in "what") via:
  - Engaging in a **regular *dialogue* with the banking industry**
  - **Standardising and integrating existing frameworks** for banks' reporting across *domains* and across *countries*

IReF

Integrated Reporting Framework

Collect the data only once, via integrated reporting scheme

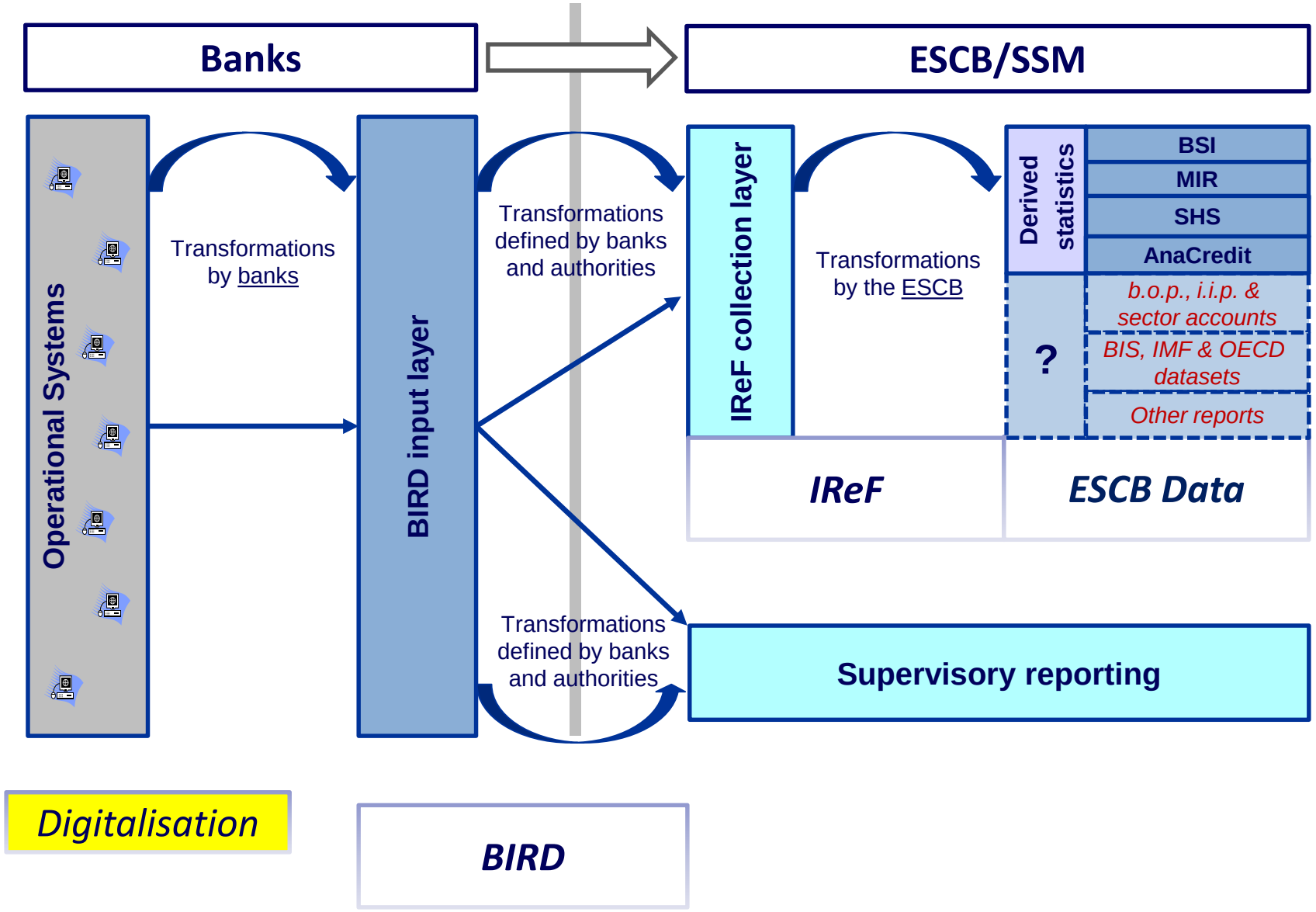
Focus on *ESCB statistical requirements*

BIRD

Banks' Integrated Reporting Dictionary

Support reporting agents to optimally organise the information available in their internal systems

Envisaged approach to data collection from banks



The data flow under the BIRD / IReF

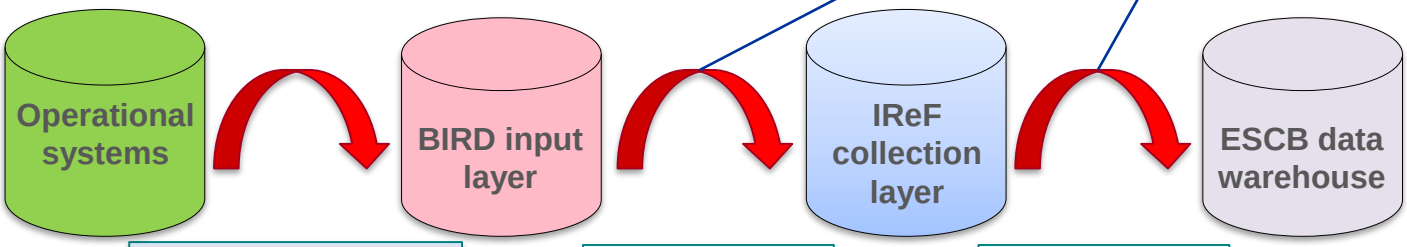
Reporting agent (reporting area)

ESCB

***Transformation rules*:**

- Defined with a *formal* language
- *Convertible* in any IT language
- *Neutral* to IT solution

BIRD | ***IReF***



human interpretation & implementation

machine executable

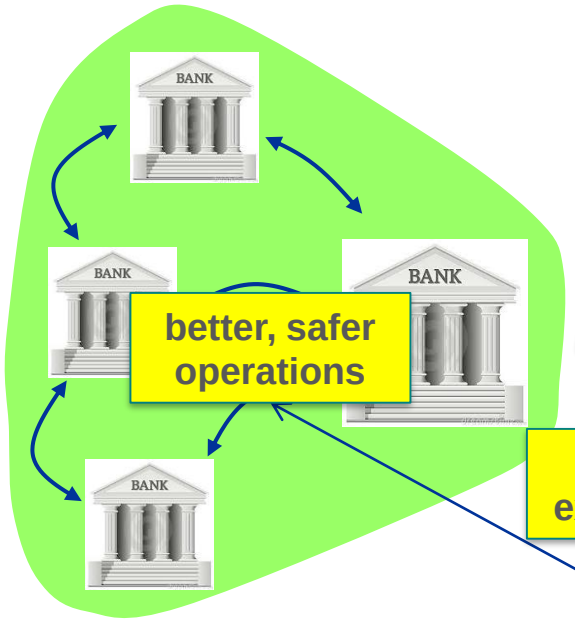
machine executable

Benefits of standardising identifiers and smart contracts

Ordnungspolitik *for* ***Data***

Reporting population

Sound data infrastructure *gives markets more freedom, industry lower costs and risks while enabling low-burden, automated reporting for near-time, flexible, system-scale measurement.*
Infrastructure is a public mission



BIRD | ***IReF***

ESCB

BIRD input layer

IReF collection layer

ESCB data warehouse

machine executable

machine executable

machine executable

Digitalisation
including by about 2025 (machine readable) Smart Contracts allowing straight through reporting

Stages in digitalisation, example of securities: Status Quo

- The prospectus is the contract
- The prospectus is partly translated into machine readable data by commercial data providers
  - Manual prospectus translation into data is individually variable and error-prone
  - Commercial data sets are diverse, standardised to a rather limited degree only
- Quality of the resulting data files is insufficient
- Users must do costly quality work e.g. by comparing data sets across vendors
  - Different users frequently come to different results
  - Different data sets on a same security collide when exchanged among users
- Automated, straight through processing across organisations suffers
  - Business processes require frequent and costly manual intervention to repair fails
  - Regulatory reporting of granular data is burdensome and data quality is often weak
  - Aggregation and analytical processes are less reliable than technology would allow

More IT can deliver value only if data quality improves

Stages in digitalisation, example of securities: possible first steps

- Public-private partnership to define a standardised data file per security
  - The data file would comprise identifiers and attributes, such as interest rate
  - E.g. compilation of accrued interest requires clarity on what interest rate is represented
- Identifiers, for instance, should be standardised and serve all purposes
  - E.g. the identifier of a given entity must be the same for all uses addressing that entity
  - Principle: „one object, one name, one standardised identifier“
  - That is a necessary condition e.g. for efficient, effective and reliable interoperability
- A standardisation initiative for (all) financial instruments
  - Identifiers and attributes requiring standardisation should be agreed
  - Standards should serve all processes, across all sectors, i.e. in business and reporting
  - A process and responsibilities for designing the standards should be agreed, as well as
  - A process and responsibilities for adoption and maintenance of the standards

The set of standards would be a pillar of the Ordnungspolitik for data

Stages in digitalisation, example of securities: possible final stage

- Standardised Smart Contracts
  - The data models, the algorithms and the data ARE the contract, not the prospectus
  - They are expressed in a standardised, rigorous, machine-compatible language, under
  - A general standard valid across a wide range of contract types
  - A prospectus would be an unofficial translation of the data models, algorithms and data but would not be legally binding
- Identifiers – example of the Legal Entity Identifier (LEI)
  - Universal coverage in the EU, real-time accuracy, mandated e.g. by EU legislation
  - Then, all users can trust the LEI for all their uses at all times, without further verification

Necessary consequence:

- Guarantee for all users, that „if it is in the LEI system, it is the official truth“
- Whereas identity continues to be conferred by the sovereign, the representation of that identity in the Global LEI System would become reference for official truth in the EU

Stages in digitalisation, example of securities: implied governance

- Data infrastructures take time to build and they must be built to last
  - Data infrastructures must be effective for the next generations of technology (e.g. 5G)
  - We must now think, plan and build data infrastructures viable into the 2030s

- Data infrastructure must be thought at the scale relevant for the digital age
  - Interoperability on a global scale is needed by industry and authorities alike
  - Data standards should ideally be global, even for a data infrastructure built for the EU

- Ordnungspolitik for data requires public sector leadership, even if privately run
  - Leadership in taking the initiative and in the public-private dialogue in the design phase
  - Public-private dialogue in the EU to agree on objectives and design for first steps
  - International dialogue to ensure global reach of data standards
  - Leadership in ensuring building, adoption and maintenance of the infrastructure

"*Each one of us needs it,*
There can only be one of it,
No one can do it for themselves,
Hence we must do it together"

Jean Claude Trichet, 2010

"*We must work together on a common system for identifying market participants. It is an area (…) which calls for global standards*"

Michel Barnier, 2011