



Bank of Russia

The Central Bank of the Russian Federation



**Experience in data sharing at
national level**

Statistics Department

Bank of Russia



CENTRAL BANKS' DATA COLLECTION

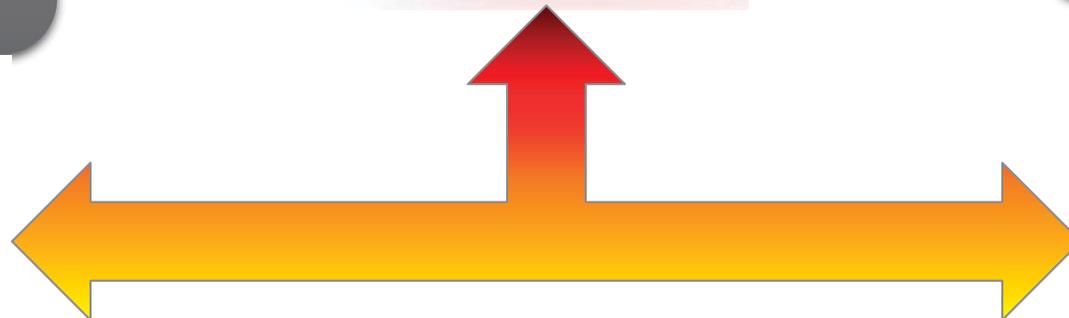
Different sources of regular reporting

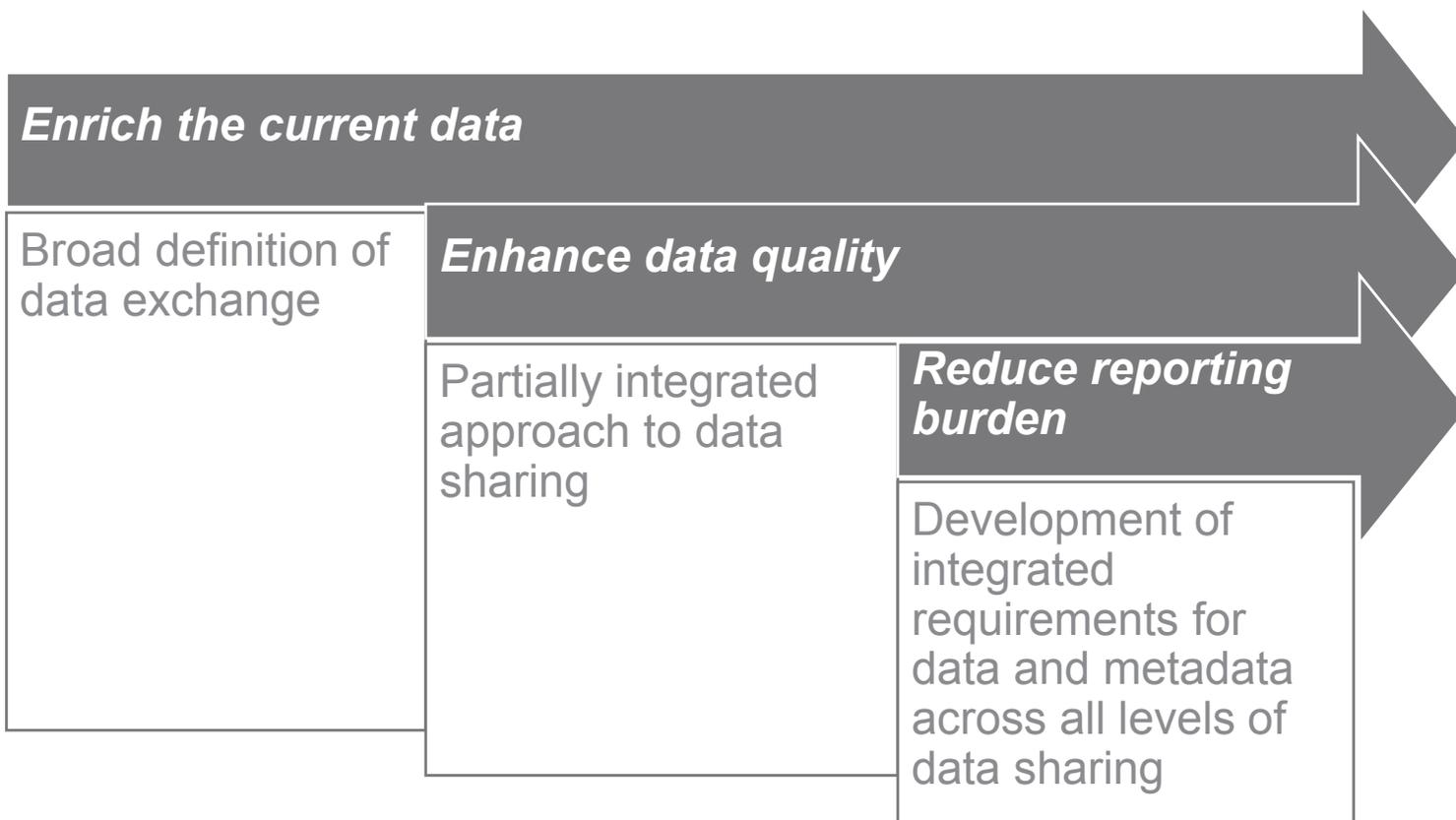
Commercial databases

On line access to operational systems of supervising organizations

Big data

Transactional data from financial infrastructure organizations







LEGAL ENVIRONMENT OF DATA-SHARING

Data sharing restrictions

- The Federal Law “On information, information technologies, and protection of information”
- The banking legislation
- The Law “On official statistical accounting and state statistics system”

Inside the Bank of Russia

- Primary statistical reporting data
- Primary supervision reporting data

At the national level

- Inter-agency data sharing



EXPERIENCE IN DATA SHARING AT NATIONAL LEVEL

THE PRACTICE OF INFORMATION EXCHANGE WITH NATIONAL STATISTICAL OFFICE (ROSSTAT)



Additional analyses of data quality



Preparatory work on both sides, given government approval



New annex with the list of primary statistical data shared since 2015



Study the process of statistical data collection and processing within Rosstat



Development the solutions for fine-tuning Rosstat IT system

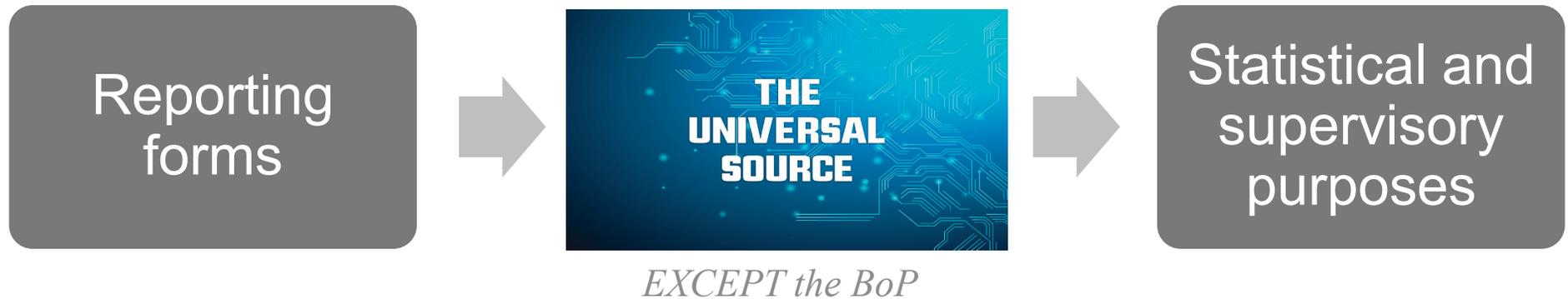


Since 1997 under Data sharing agreement



DATA SHARING WITH ROSSTAT (CONTINUED)





Ways to Resolve the Problems of Confidentiality and Duplication of Information in Data-sharing



Universal data sources without specified purposes of their use



Analytic reports with minimal aggregation



Primary (granular) data with prior banks' consent to using the data inside the Bank of Russia for other than statistical purposes





PUBLIC DATA-SHARING

*Prior consent of banks as good solution
in current context of legal constrains*

*Information is aimed at increasing the
market transparency*

*The main public channel - on the official
website of the Bank of Russia*





**Broadly defined
internal data
sharing**

**Unification of
reporting
requirements**

**Creation of
multipurpose
system of microdata
(**Credit register**)**



Internal level

- ***Re-engineering the procedures of data collection and processing*** and establishment of CDO function. ***The objective:*** to streamline data as an valuable Bank of Russia' asset incorporated in decision-making

External level

DGI-2 recommendation 20 (incl. securities holdings and metadata sharing)

Standard procedures for data-sharing as a prototype for countries in establishing bilateral co-operation

Centralized data management solutions in central banks and statistical authorities



Data Sharing at the National Level

Office for National Statistics UK

Frankie Kay: Director of Economic Statistics Transformation

Nick Vaughan: Director of National Accounts and Economic Statistics

Overview

1. Data sharing revolution
2. Challenges & obstacles
3. Existing framework & UK position
4. Digital Economy Bill (DEB)
5. *An example*
 - I. *Our data vision*
 - II. *Statistical data processing & management*
6. Supporting the DEB (our approach and consultation)
7. Impact and limitations
8. Benefits for UK plc?

What's inspiring the UK data sharing revolution?

- Better statistics, Better Decisions
- Better access to data for statistics and research

External drivers for change

- Data Revolution
- Collect once, use many times
- Admin Data Taskforce
- Independent review of UK economic statistics (Bean)
- EU Peer Review report
- European statistical system

Current obstacles & challenges

Structural

- Legislation
- Information Sharing Orders
- Respondent and administrative burden/costs
- Declining survey response rates

Cultural

- Risk-aversion
- Data sharing not always highest priority
- Privacy concerns

Current legal framework for sharing data

- The Statistics and Registration Service Act 2007 (SRSA).
- Has to secure *identifiable* data through information sharing orders (ISO)
- Requires Minister/Cabinet Office involvement
- Incompatible with meeting needs of statistics users across Government
- Experience shows it takes a minimum of 6 months to access data

Information sharing orders: examples

Information Sharing Orders under the Statistics and Registration Service Act 2007

Statutory Instrument	Information sources	Data owner	Purpose	Time taken
Statistics and Registration Service Act 2007 (Disclosure of Pupil Information)(England) 2009	School census, National student database	Department for Education	Population statistics; Census arrangements; Assessment of census returns	24 months
Statistics and Registration Service Act 2007 (Disclosure of Higher Education Student Data) 2009	Student demographic information	Higher Education Statistics Agency	Population statistics; Census arrangements; Assessment of census returns	22 months
Statistics and Registration Service Act 2007 (Disclosure of Pupil Information)(Wales) 2011	Pupil level school census for Wales	Welsh Government	Population statistics; Assessment of census returns	18 months
Statistics and Registration Service Act 2007 (Disclosure of Value Added Tax Information) 2011	VAT Information	HM Revenue and Customs	Economic and business statistics	20 months
Statistics and Registration Service Act 2007 (Disclosure of Social Security Information) 2012	Customer Information System data	HM Revenue and Customs/Department for Work and Pensions	Population statistics; Assessment of census returns	23 months
Statistics and Registration Service Act 2007 (Disclosure of Revenue Information) 2015	Physical characteristics of properties	Valuation Office Agency	Economic statistics	6 months

* Time taken is calculated as the length of time from the start of official-level feasibility discussions to the conclusion of the parliamentary process

Source: UK Statistics Authority

**Minimum 6 months
(this was an
exception)**

So what are we doing and why?

What

- Digital Economy Bill (includes new data sharing legislation giving UK Statistics Authority a 'right of access' to information held by government departments and bodies)
- Give UK Statistics Authority a right of access to data for statistical purposes only
- Duty on suppliers to consult statisticians on changes to data systems

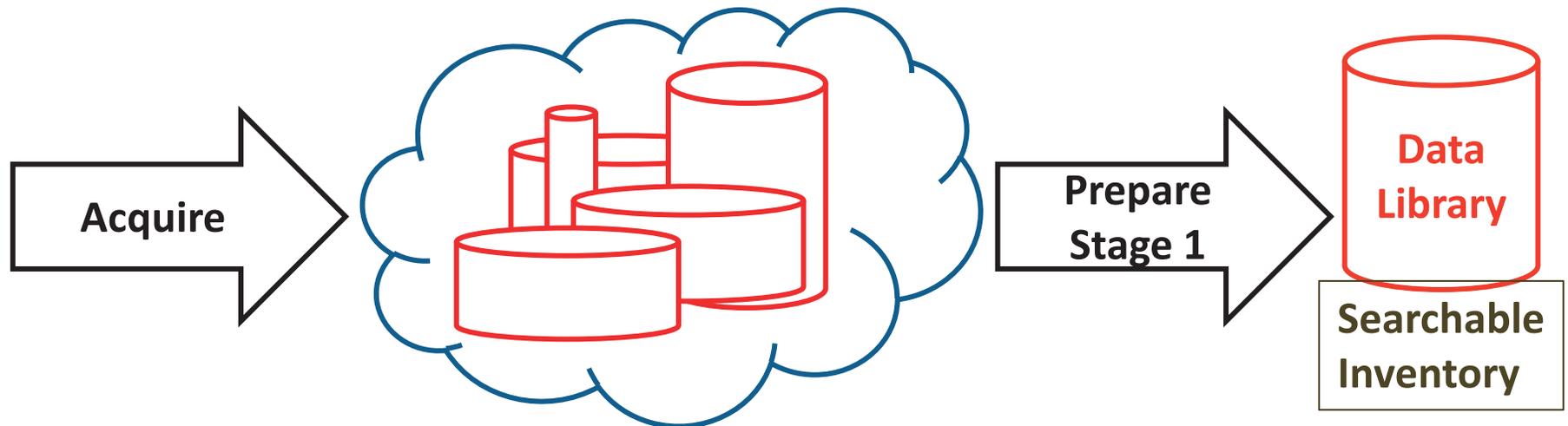
Why

- Enable secure data sharing with Devolved Administrations to support their statistical needs
- Protect privacy and security of data; reaffirm rigorous penalties for misuse
- Flexible linked datasets (an example to follow)

Our Data Vision

Acquire Data & Prepare Stage 1

Goal: Bring in many data sources



Principles:

- Data Partnership Agreements: data is for Statistics and Research Purposes
- Investigate content and format of 'raw' data sample
- Minimise burden on data supplier (ingest data 'as-is' wherever possible)

Processes:

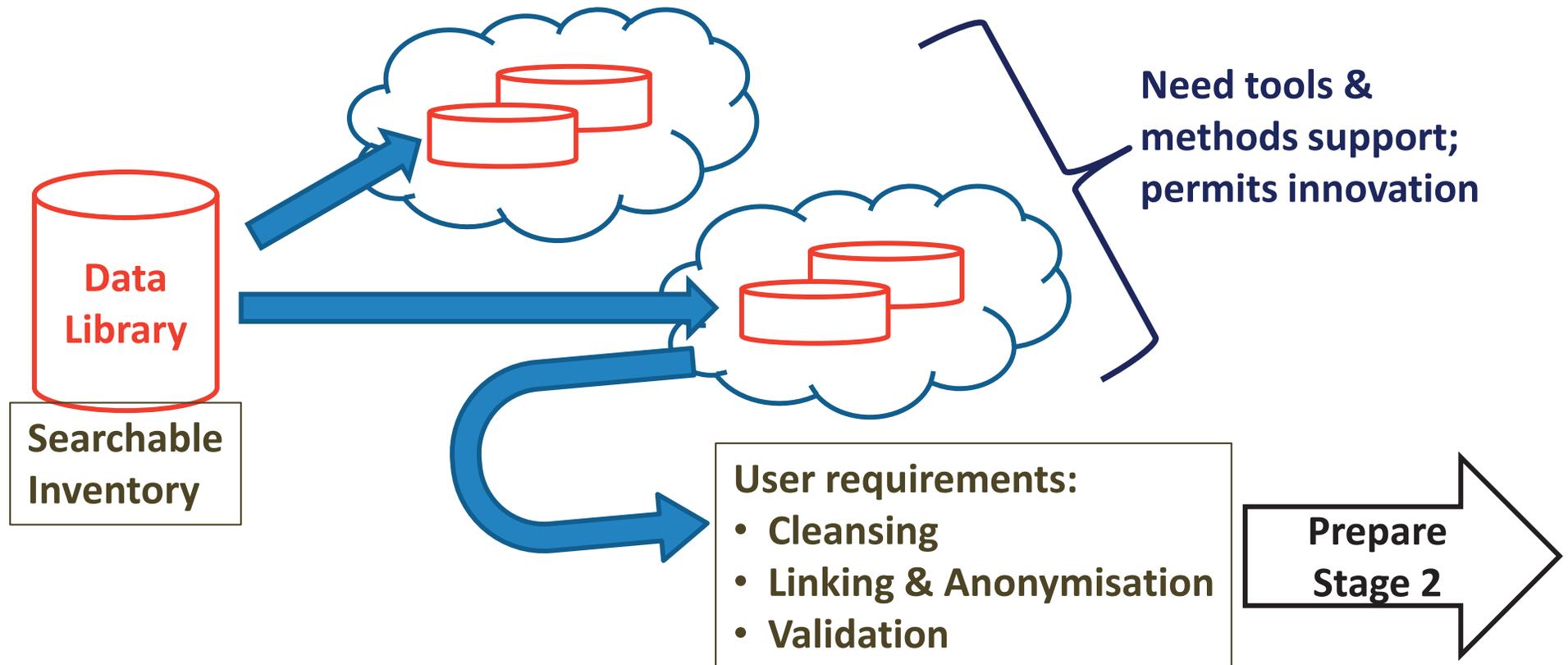
- Determine Content, Basic Quality, Security Classification
- Create Metadata

Outcome:

- An inventory of datasets, accessible inside ONS

Access to Data & Requirements

Goal: Maximise use of many data sources



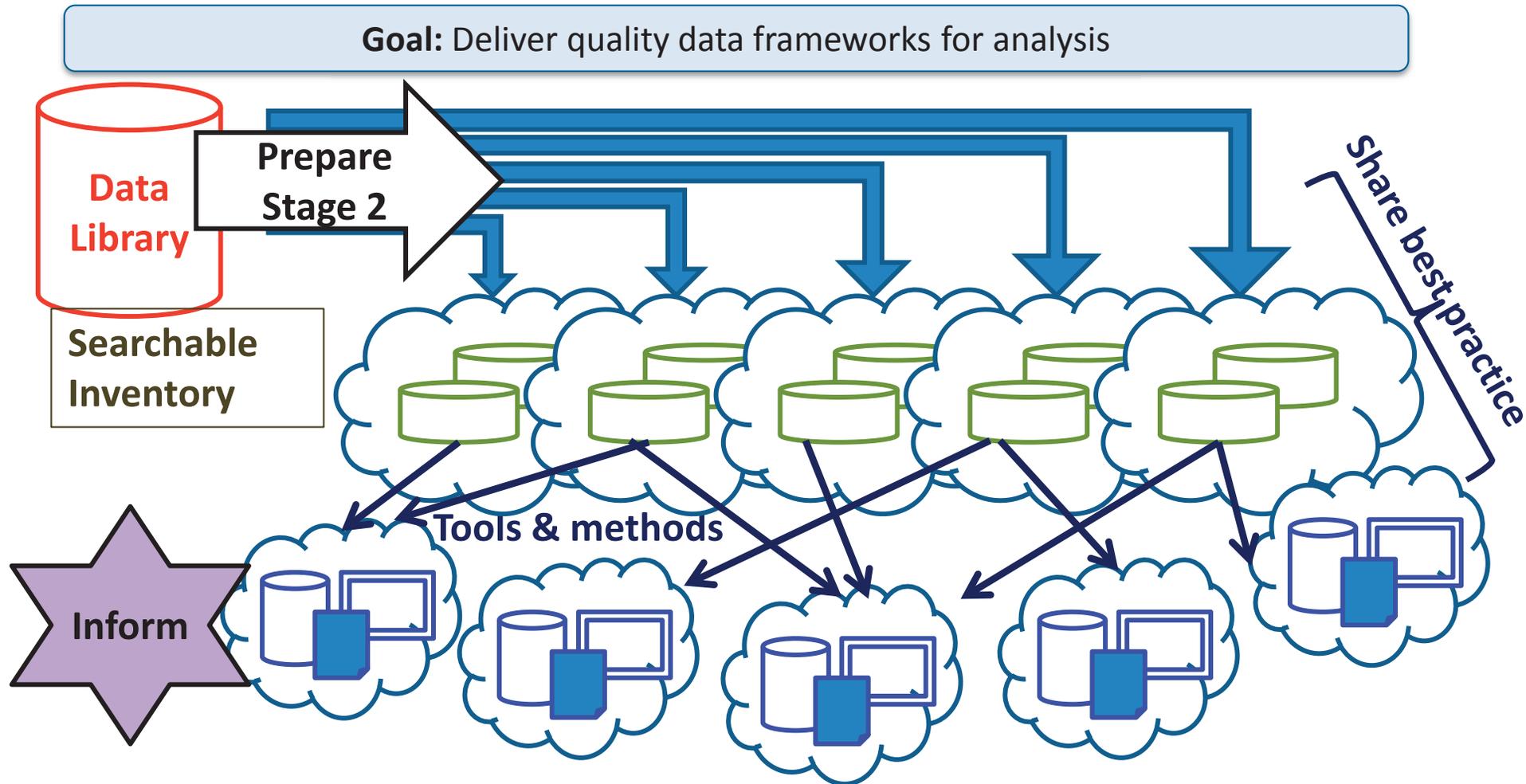
Principles/Process:

- All internal users access the data inventory to see how they might use data and use it 'as-is' if helpful to their work

Outcome:

- Requirements for further cleansing, linking & anonymisation (if required)

Prepare Stage 2, Analyse & Inform

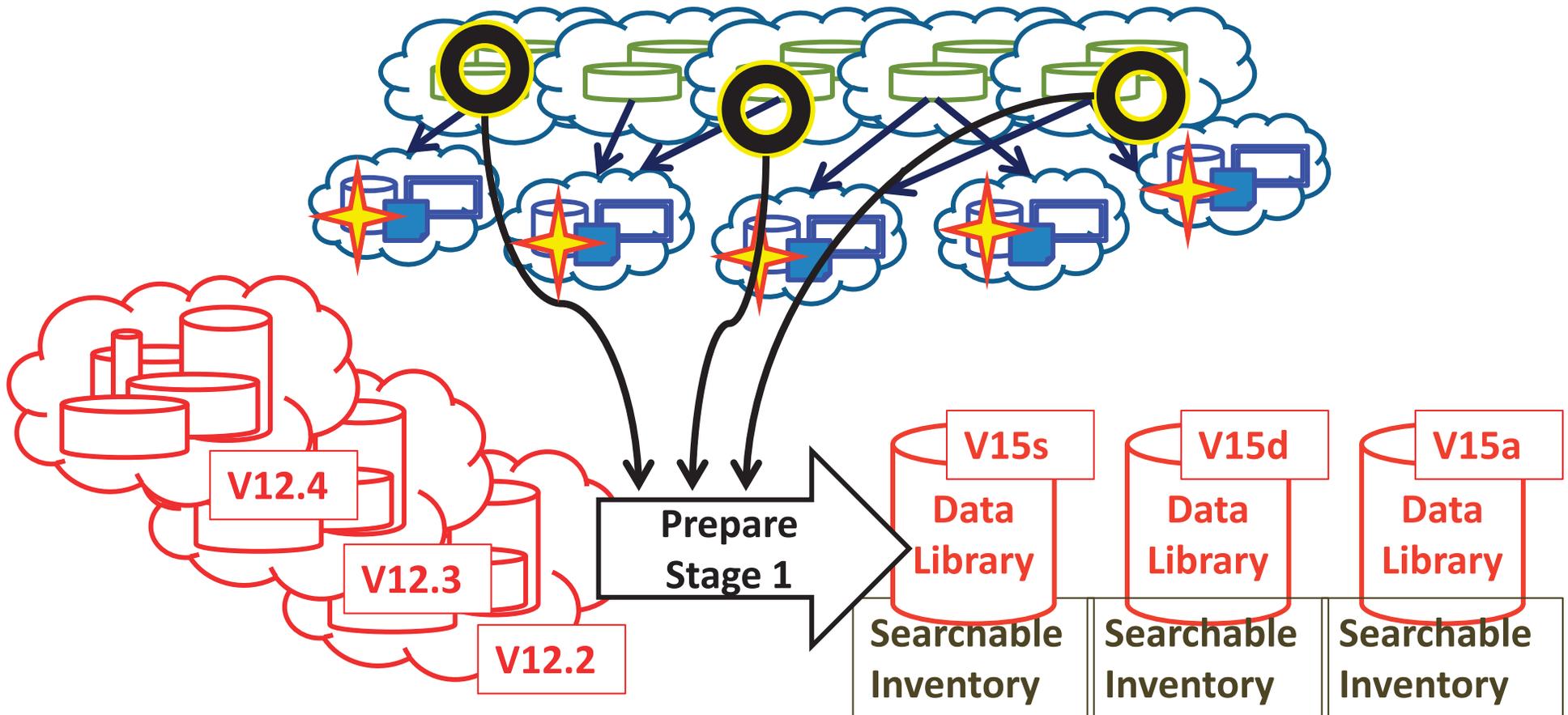


Outcome:

- Data for statistical analysis derived from the library cleaned/linked/imputed as required
- Some data has multiple applications; outputs can use one or more in combination

Data Management

Goal: Determine retention and update policies



Principles:

- Look for quality themes which are generic; feed back under version control
- Strict retention of underlying data for published outputs

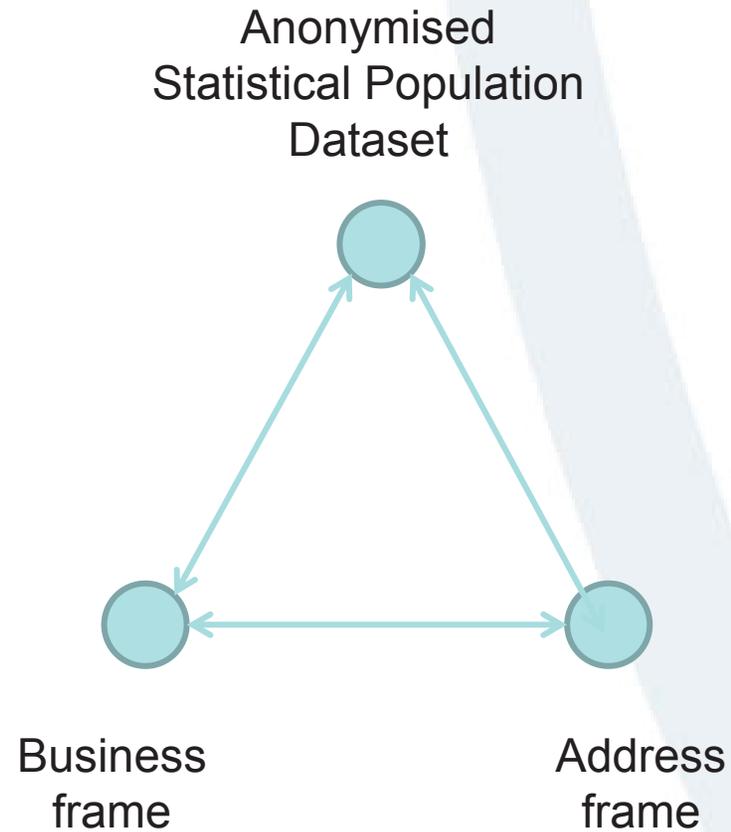


Statistical data management and processing

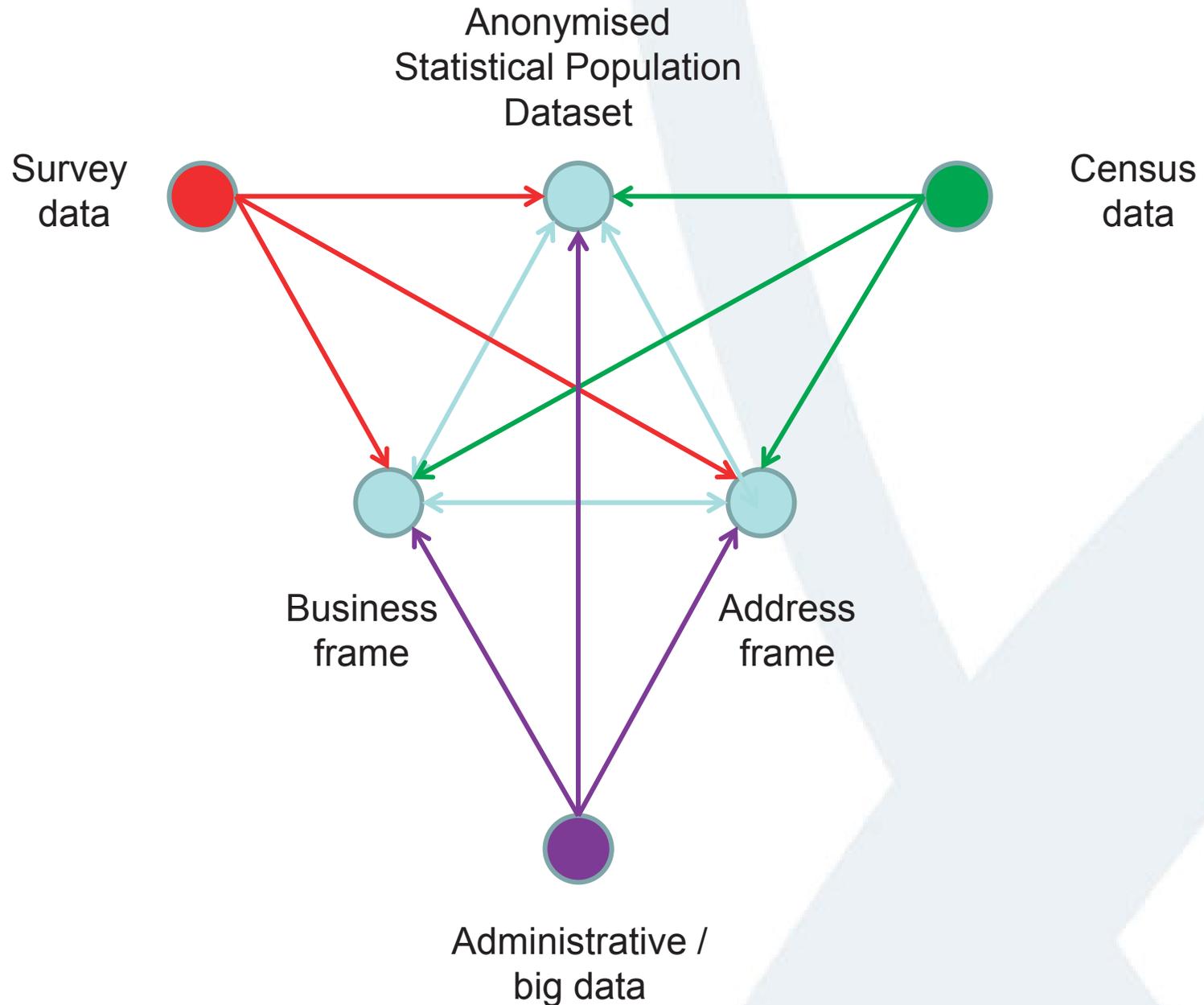
Problem

- many, many linked datasets will emerge
need a controlled way to manage them
- Topic models will span many datasets
E.g. migration, flow of funds
- Some datasets will span many topic models
E.g. LFS, PAYE
- So if we want consistent, unbiased statistics, we will need very structured data processing
- There is a (conceptually) simple solution ...

Cross-referenced 'frames' (registers)



“Frame-referenced” data sources



How did we support the legislation change?

- Carried out an Impact analysis & produced a Data Sharing Evidence Report (including cost benefit analysis)

Supporting business case analysis & metrics

- This analysis identifies the additional benefits and costs arising from the proposed legislation. Where possible the quantitative effects were calculated using established cost and benefit methodologies. Otherwise a qualitative assessment was undertaken to ensure all benefit and cost streams had been identified.

Focus on benefits

- The main benefits cover three areas:
 1. Reduced compliance costs for businesses from fewer and shorter surveys;
 2. Reduced administrative costs from collecting and processing survey data
 3. Improved statistics leading to better policy decisions, such as improved financial management reducing the risk of deep recessions.

How did we support the legislation change? (2)

Policy & consultation

- The proposed legislation has been developed as part of a two-year open policy making period with representatives across government and from civil society and business. The proposals were subject to an 8-week period of formal consultation

How did we support the legislation change? (3)

General Themes of the consultation

- The importance of including a wide range of stakeholders in consultation on models of implementation
- The importance of pro-active transparency, of ensuring data providers, data subjects and the general public are made aware of what data is being captured and shared, and the statistical purposes of doing so.
- The need to ensure definitional and procedural clarity, as well as legal clarity
- The importance of being proportionate and of making use of data access powers only where it is demonstrably necessary.
- The need to clearly demonstrate the value of increased data access powers, and the benefits derived
- The need to ensure safeguards and data security measures are future-proofed; that such measures are regularly reviewed and that mechanisms exist to ensure they remain fit for purpose;

Impact & limitations

Regional and National level

- Give UK Statistics Authority a right of access to data for statistical purposes only
- Enable secure data sharing with Devolved Administrations to support their statistical needs
- Reduced compliance costs for businesses from fewer and shorter surveys
- Reduced administrative costs on UK Statistics Authority from collecting and processing survey data
- Improved statistics leading to better policy decisions, such as improved financial management reducing the risk of deep recessions.

Internationally

- Challenge remains; legislation does not enable increased data sharing over and above existing framework; international limitations

Benefits for 'UK plc' and more globally?



Questions?





Exchange of micro-data in intra-EU trade in goods statistics

**Karo Nuortila, European Commission, DG Eurostat
Team Leader "Goods: Production and Trade Statistics"**



Exchange of data within ESS





ESS Vision 2020

- Challenge of staying relevant in a changing world
 - Elaboration and adoption of the **ESS Vision 2020** by the European Statistical System Committee in May 2014
- Specific statements of the ESS Vision 2020
 - We will develop novel ways to **share data** to do our job more efficiently and to reduce burden on our respondents
 - We will benefit from **exchange of (micro)data**, while fully respecting statistical confidentiality
 - The exchange of confidential micro data will proceed in domains **where there is a clear business case** for improving the quality or efficiency (...) and all pre-requisites have been satisfied



Core principles (1/2)

In order to elaborate the pre-requisites for exchanging confidential data, the ESSC adopted in February 2016 a set of core principles:

Principle 1: Access minimisation

Confidential data are only exchanged between statistical authorities that need the data to develop, produce and disseminate European statistics within their respective sphere of competence

Principle 2: Purpose limitation

Exchanged confidential data are only used for statistical purposes

Principle 3: Value added

Exchange of confidential data takes place only when there is a clear, verifiable and well-documented business case for improving the statistical quality and efficiency



Core principles (2/2)

Principle 4: Data protection

Exchange of confidential data takes place only when confidentiality and information security meet the highest standards

Principle 5: Clear responsibilities and rights

The responsibilities and rights concerning the exchanged confidential data (...) are explicitly specified, and a credible enforcement regime to address potential breaches is in place

Principle 6: Appropriate legal basis

An obligation to exchange confidential data is laid down in a Regulation of the European Parliament and of the Council

Principle 7: Transparency

The ESS is fully transparent about the exchange of confidential data



Why to engage into data exchange in intra-EU trade in goods statistics?



Trade in goods statistics in the EU

Extra-EU trade in goods statistics

- Trade with non EU countries
- Based on **customs declarations**



Intra-EU trade in goods statistics

- Single Market in 1993
- Customs declarations replaced by **business surveys (Intrastat)**



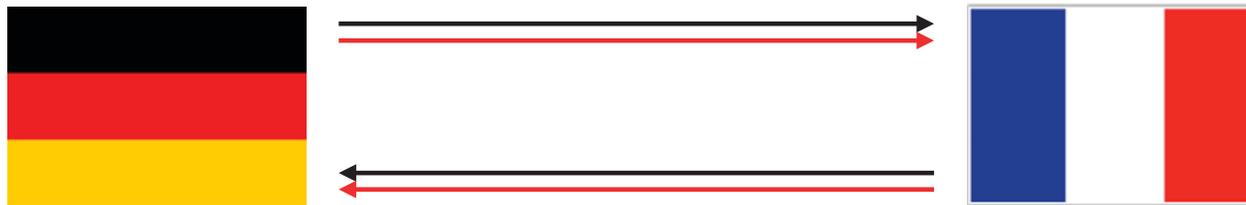


Intrastat system (1/2)

- **Direct data collection from traders**
 - Monthly reporting by businesses , >9000 product groups, full geographical breakdown, big number of respondents
- **Threshold system to exempt smallest traders**
 - Minimum coverage requirement to determine the levels of thresholds
- **Beneficial link with the VAT system on intra-EU trade**
 - Population of traders, total trade value
- **Both flows (exports and imports) collected and transmitted**

Intrastat system (2/2)

- **Expensive & heavy reporting burden** on businesses
 - Same information collected twice



- **November 2011 the Council: "ESS to take effective measures ensuring a substantial reduction of the response burden by redeveloping Intrastat, while maintaining at the same time, a sound level of quality"**
- **Traditional simplification ways may not be sufficient to meet both goals; new approaches should be sought**



New approach: Micro-data exchange





New concept to compile intra-EU trade statistics

- Make available already existing data by exchanging micro-data on intra-EU exports among EU MS
- Each transaction reported in one Member State will serve as a data source for two Member States
 - first, for compiling the Intra-EU exports of the exporting country and,
 - second, for verifying and/or compiling the Intra-EU imports of the importing country
- Not a Single Flow system
 - The use of exchanged data is voluntary



Setting up of a pilot project

- Goal: provide empirical evidence to two questions
 - Can the exchanged data be used as a substitute for the nationally collected data? (statistical feasibility for compilation)
 - Can a system be set up to exchange large volume of micro-data on a monthly basis in a timely and secure manner? (technical feasibility)
- Project launched in June 2012 with a 4-year timetable:
 - Phase 1: Feasibility study for the micro-data exchange (June 2012 – Q2 2013)
 - Phase 2: Development of the system (Q2 2013 – Q2 2015)
 - Phase 3: Pilot testing, evaluation and reporting (Q2 2015 – Q2 2016)



Defining the pilot data exchange – statistical aspects

- Content of the data sets to be exchanged
- Technical specifications, format
- Timetable for data exchange
- Data validation
- Data confidentiality
- Data analysis

Defining the pilot data exchange – IT aspects

- **Central Hub** (developed by and installed in Eurostat)
 - Central dispatch point, receives and send data from and to Member States
 - Carries out automated data processing (splitting, validation, currency conversion, encryption)
- **Transmission applet**
 - Installed in the Member States, submits data to the transmission network
- **Transmission network** (Eurostat and DG Taxud)
 - Common Communication Network (CCN)
 - High level of security



The largest pilot micro data exchange ever conducted in the ESS

- **20 Participating Member States**

AT, BG, CZ, DE, DK, EE, EL, FI, FR, HR, IT, LT, LU, LV, MT, PL, PT, RO, SI and SK (+UK)

- **Exchanged data**

Intra-EU exports of goods collected under Intrastat system

- **Data for the reference period**

January 2013 – August 2015, according to agreed timetable

- **Period of exchange**

April – October 2015



Main statistical results (1/2)

- ✓ The exchanged micro-data **covered well** the value of trade and to a lesser extent the number of traders
- ✓ The coverage is far better when **partner ID numbers** (VAT numbers of importers) are collected and exchanged
- ✓ **Match** between the collected imports and mirror exports were good with some minor exceptions
- ✓ "Small" MSs could benefit from the mirror data received from "big" MSs
- ✓ The comparability of data between neighbouring Member States is often considerably high

Main statistical results (2/2)

- ☑ Member States could **gain additional information** in terms of traders and product codes through the use of partner data
- ☑ Part of the gain relates to those traders which were below the national exemption threshold
- ☑ The **revision patterns** were similar for nationally collected data and the received mirror data
- ☑ The availability of mirror micro-data opens up the possibility to **analyse asymmetries** and improve data quality
- ☑ The existing asymmetries at product level in bilateral trade could be revealed and thus potentially treated



Main IT Results

- ✓ The system fulfilled its task to transfer large data files in a **secure way**
- ✓ Demonstrated **technical feasibility** of the IT infrastructure in exchanging micro-data
- ✓ Satisfactory **accessibility, availability and performance**
- ✓ **Timely** delivery of all files received
- ✓ Good **performance of the portal** with significant user-friendliness enhancements
- ✓ **Further improvements** of the system will be needed to fully automate the process in a production environment.



Lessons learnt from the pilot

- The mirror exports data could be used effectively as a **full or partial substitution** for collected imports data.
- The use of mirror data could consequently **reduce administrative burden** on Intrastat reporters on the imports side.
- **Existing asymmetries were easily identified** at detailed level.
- Pilot exercise fulfilled its purpose and proved clearly that from a **technical** point of view the exchange of micro-data is **feasible**.



Additional considerations

- **Quality enhancement potential**
 - Asymmetries noticed in intra-EU trade in goods statistics, impacting comparability and coherence of GDP and BoP
 - The availability of micro data at a very early stage in the process (i.e. before compilation) opens up the possibility to investigate at micro level the sources and consequently to reduce them or even prevent them from occurring
- **Neutral impact on users of trade in goods statistics**
 - No change in
 - trade in goods statistical output
 - product or country breakdown (Country of origin to be addressed!)
 - product details (CN8 level)
 - frequency or timeliness
 - Abrupt break in the time series avoided (due to voluntary use)



Way forward in micro-data exchange





ESSC conclusions (1/2)

- May 2016: ESSC decision on the future orientation of the intra-EU trade in goods statistics
- Results of two complementary projects reported to the ESSC
 - **Pilot data micro-data exchange project**
 - **Cost-benefit analysis and the administrative burden reduction potential of various alternative options**



ESSC conclusions (2/2)

The agreed key elements of the targeted system:

- a) Harmonised statistical output:** monthly statistics for both flows, by products and partners, as currently required
- b) Multiple data sources:** use of multiple data sources as far as strict minimum quality requirements are met
- c) An additional data source: Mandatory exchange of micro-data on intra-EU exports and their voluntary use**
- d) Innovative and flexible compilation methodologies:** subject to strict quality requirements
- e) Modernisation through evaluation:** foreseen in 3 to 5 years after entry into force of the relevant legislation



Building blocks of the future micro-data exchange

- Future micro-data exchange will take place in accordance with the ESS core principles
- Legislation to stipulate exchange of confidential data
 - **Framework Regulation Integrating Business Statistics (FRIBS)**
- Strict measures to protect data security need to be put in place
 - **Secure IT infrastructure**
 - **IT security framework**
- Common approach to confidentiality
- To make the exchanged data useful for the receiving MS, exports data should include data elements needed to compile imports statistics
 - **Partner ID code allows identifying the importer**
 - **Country of origin identifies where the goods originate**



Way forward

- New project "Intrastat modernisation" has been set up to deploy and implement the ESSC conclusions
- Exchange of micro-data on intra-EU exports is a key element of the future Intrastat system
- Regular data exchange to start when the new legislation becomes applicable ~2020



Thank you for your attention

