The challenge of embracing the potential of multiple data sources for 2030 agenda
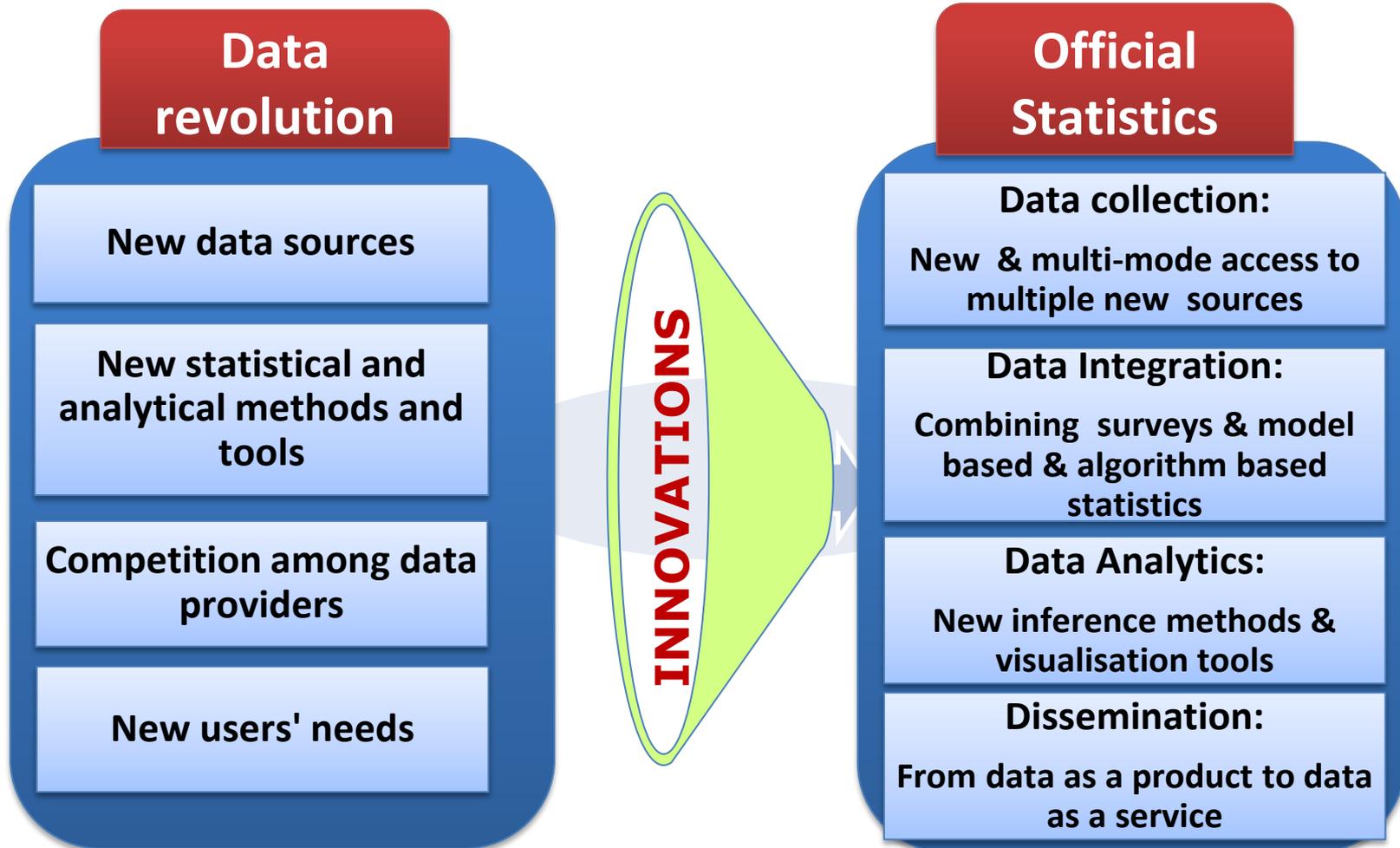
UN Friday seminar on emerging issues
4 Mar 2016, New York

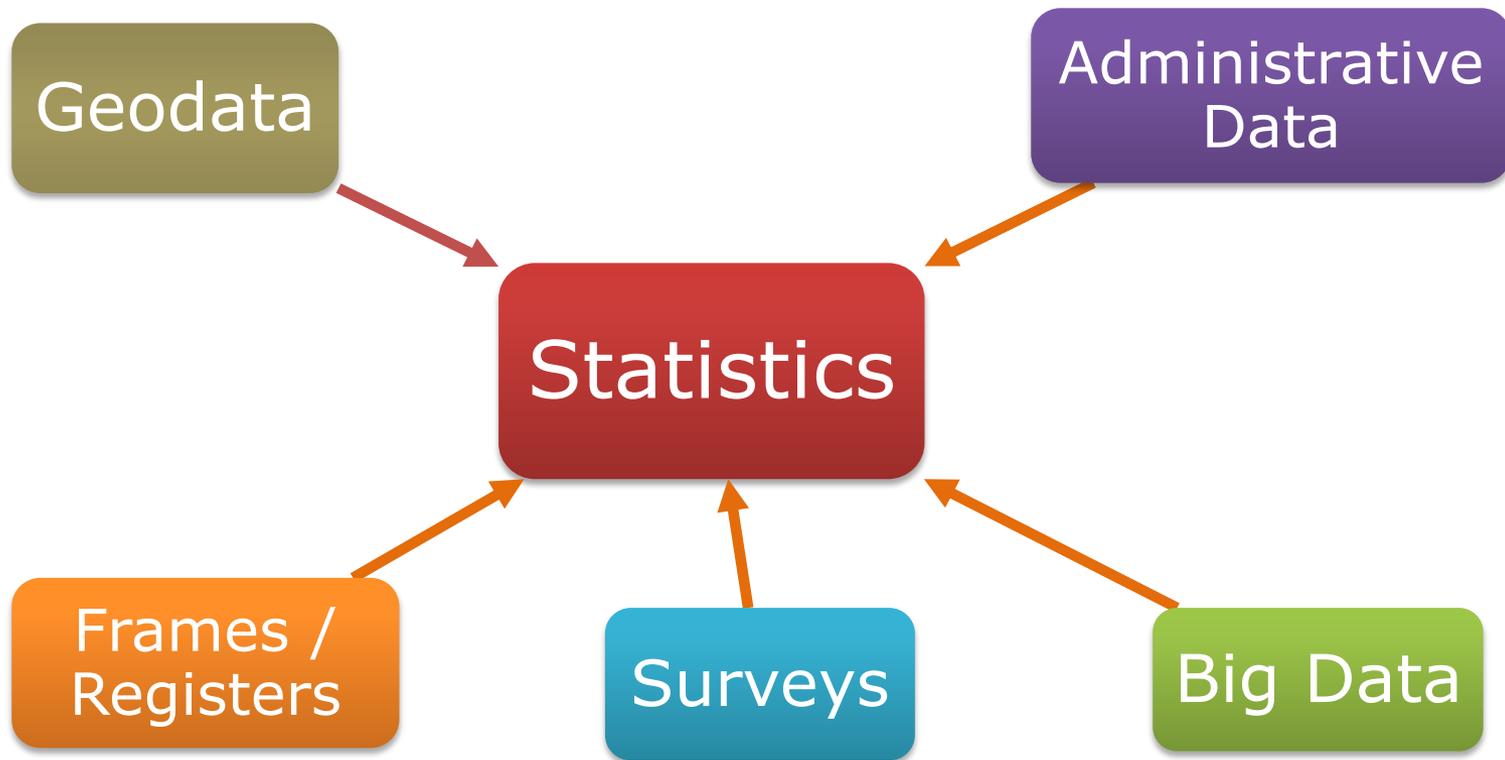## Mariana Kotzeva
Deputy Director General, Eurostat

Drivers for change

Data revolution

- New data sources
- New statistical and analytical methods and tools
- Competition among data providers
- New users' needs

INNOVATIONS

Official Statistics

- **Data collection:** New & multi-mode access to multiple new sources
- **Data Integration:** Combining surveys & model based & algorithm based statistics
- **Data Analytics:** New inference methods & visualisation tools
- **Dissemination:** From data as a product to data as a service

European Commission

Using Multiple Data Sources for monitoring of 2030 agenda

Geodata

Administrative Data

Statistics

Frames / Registers

Surveys

Big Data

Challenges in using multiple and new data sources in 2030 Agenda

1. Specific nature and challenges of:

- Big data;

- Administrative sources

- Business registers

2. Integration of multiple data sources for building registers and producing statistics

3. Concrete steps towards using multiple data sources

TAKE THE CHALLENGE

Meeting challenges: examples from European Statistical System (ESS)

**ESS Vision 2020
Key areas**
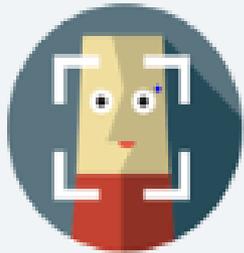
Focus on users

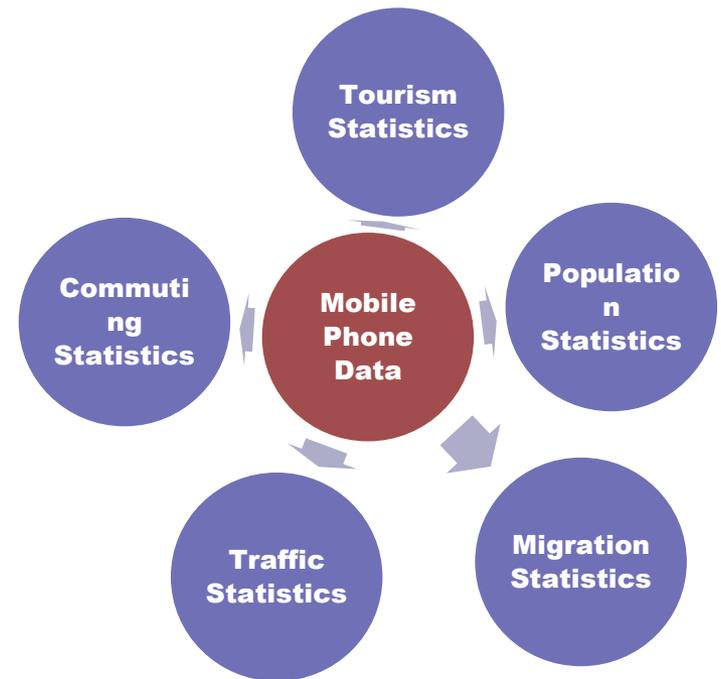Promote efficiency in production processes

Strive for quality

Harness new data sources

Improve dissemination and communication

Specific nature and challenges of big data

✓ One source could be used in various domains;
✓ Complement existing statistics and improve their quality rather than replace them;
✓ Conditions for using big data equally important to conducting pilots

Tourism Statistics

Population Statistics

Mobile Phone Data

Commuting Statistics

Migration Statistics

Traffic Statistics

ESS Big Data Action plan

PILOTS

- Policy
- Legislation
- Ethics / Communication
- Quality
- Skills
- Methodology
- IT Infrastructure
- Experience sharing
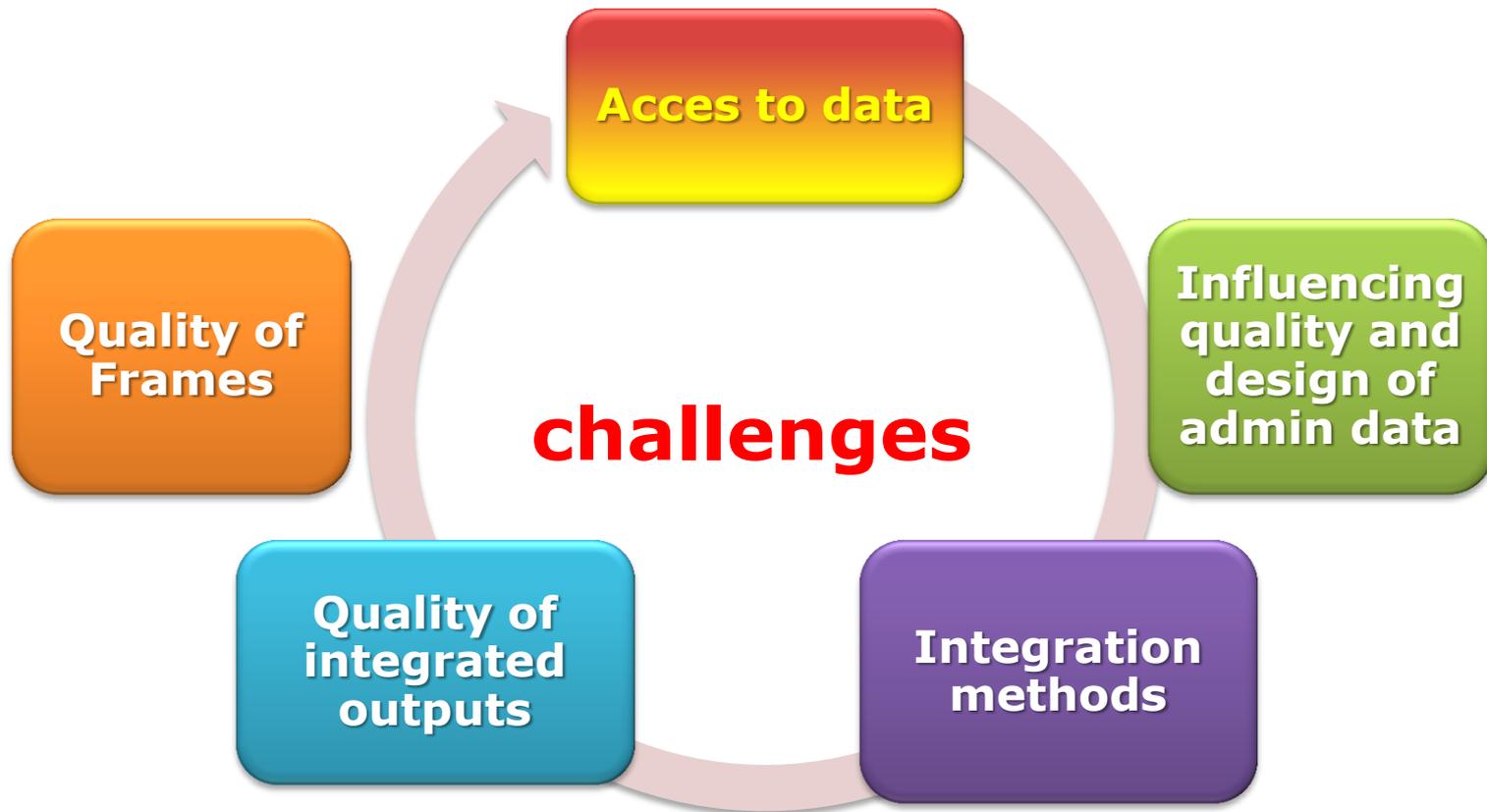
Looking for a job ?

kWh

Lesson learnt from ESS experience with administrative data

- Legal basis providing access to the administrative sources is a necessary but not sufficient condition;

- NSI involvement in establishment and changes of administrative sources;

- Strong political support and good permanent collaboration with data owners.

- Availability of unique identifier allowing for data linking

Administrative data: Emerging topics

- Coverage control of administrative data before use;

- Improving sample survey frames and design;

- Privacy and data protection issues associated with the use of administrative sources;

- Challenges to the comparability across countries;

- Measuring quality of statistical outputs based on multiple sources

ESS project on using Administrative Data

Acces to data

Influencing quality and design of admin data

Integration methods

Quality of integrated outputs

Quality of Frames

challenges

Sources to establish and update business registers in the ESS

Surveys

Administrative Registers

Big Data and other Sources

Profiling

Business Registers

European Network of Business Registers

- EGR= Euro group register of multinational enterprises;
- National BR =backbone of business statistics

Successful ESS projects linking data from business registers with other micro data
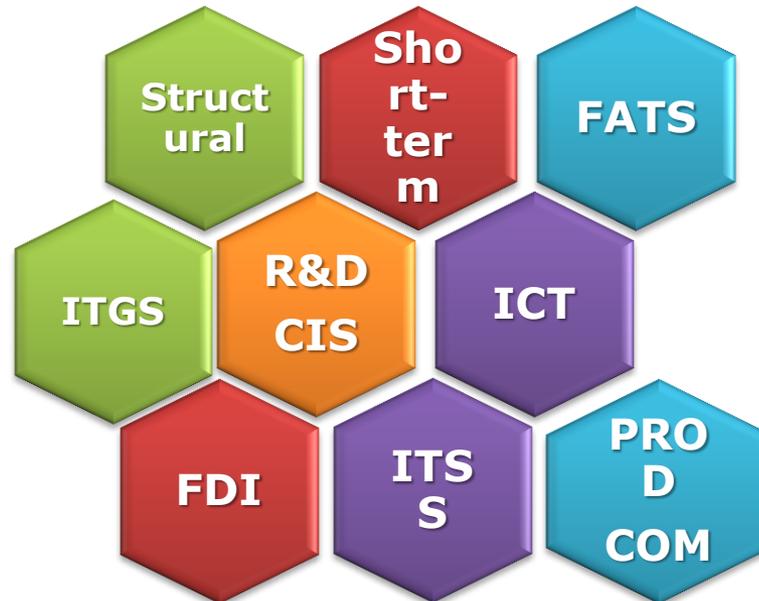
- International trade of goods by enterprise characteristics since 2009;
- In 2016, statistics on export performance of young (and/or small) enterprises;
- International trade of services by enterprise characteristics

A unique identifier a precondition for a successful linking
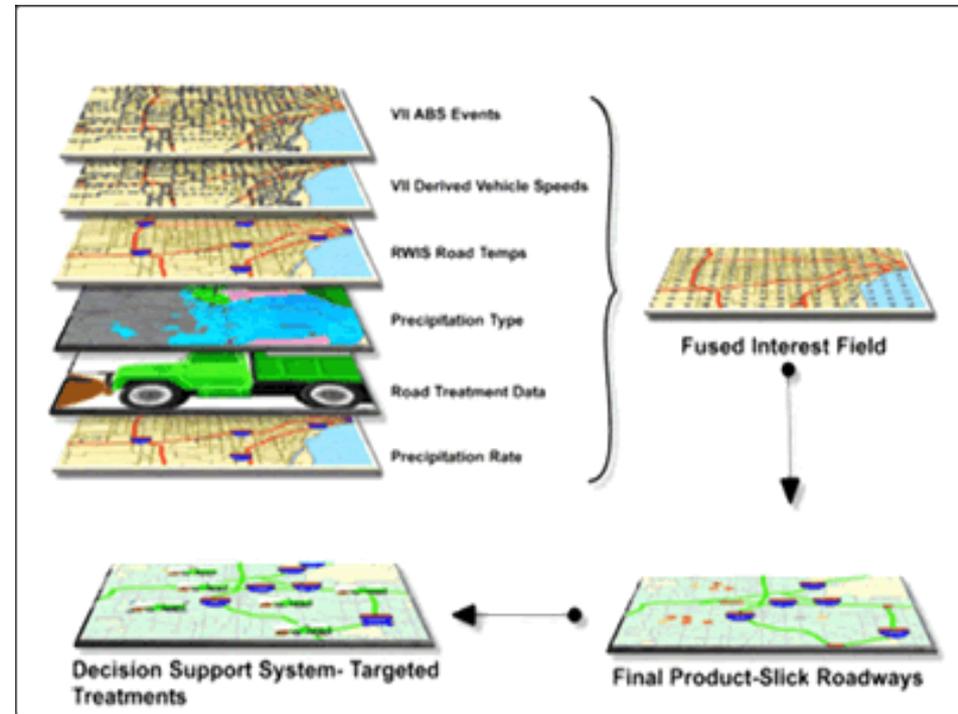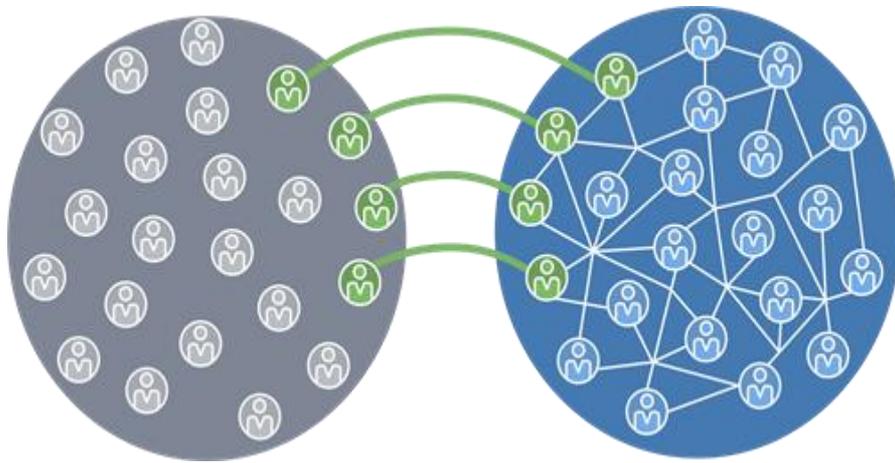
Integration of various sources
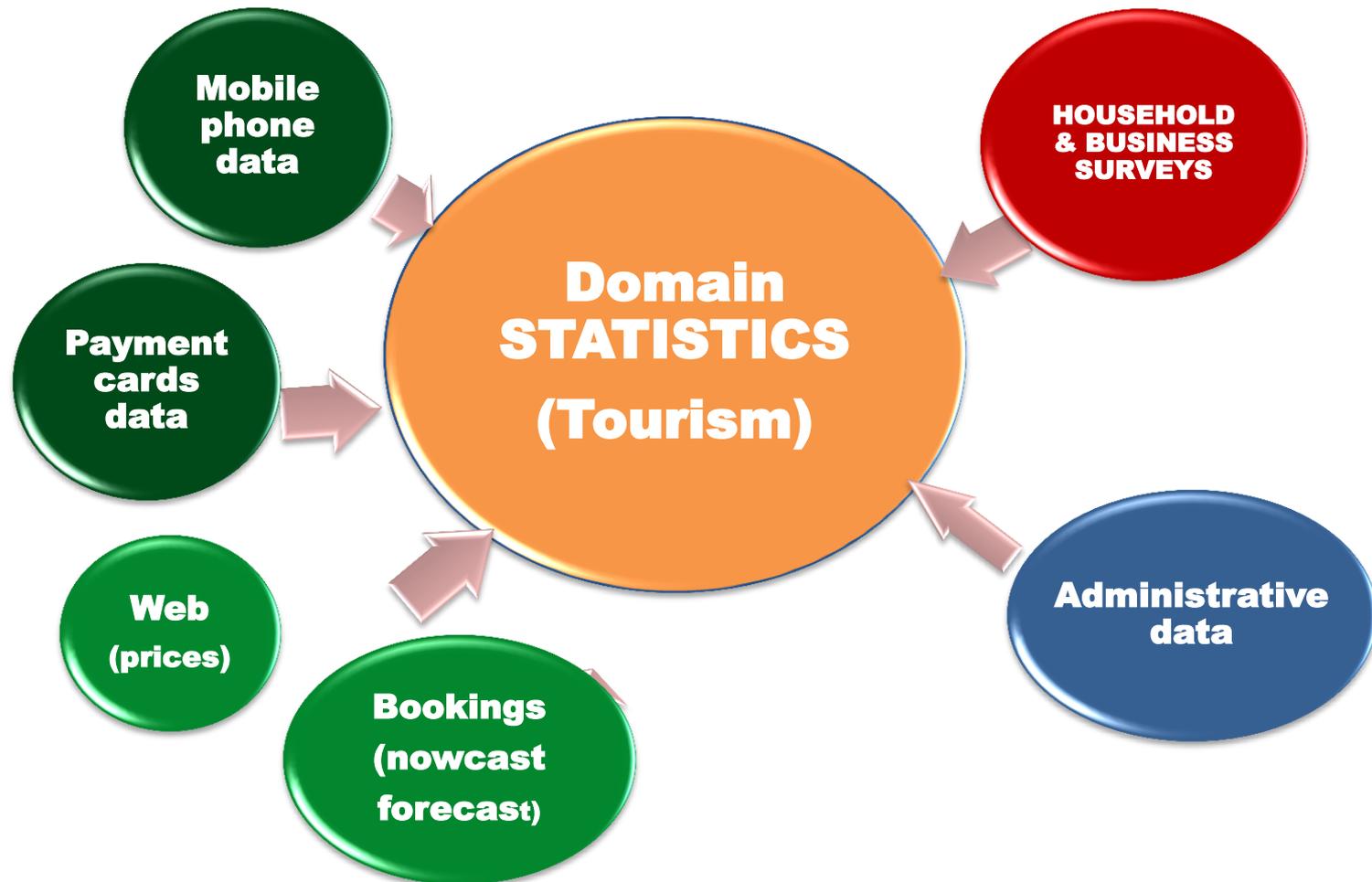
Integrated Business Statistics (FRIBS)

Improve our capabilities for statistical matching and data fusion

Smart Statistics: the emerging new data sources

o *Massive increase of data production and exchange*

- o **Not manageable by humans**

- o **Exchange of data without human intervention**

- o **Autonomous Agents**

  - o **Filtering, aggregation**
  - o **Decisions**

- o **Cognitive systems**

o *Can we use this new internet for producing statistics in an intelligent way?*

Conclusions – How to make it happen

- **Vision**
  e.g. ESS Vision: high level collective and individual commitment

- **Action**
  e.g. in the ESS: enabling projects and frameworks

- **Prepare for the next wave**
  e.g. Smart Statistics

- **Cannot be done by statistical community alone**
  Partnerships, strong political support and investment

Thank you for your attention

Eurostat