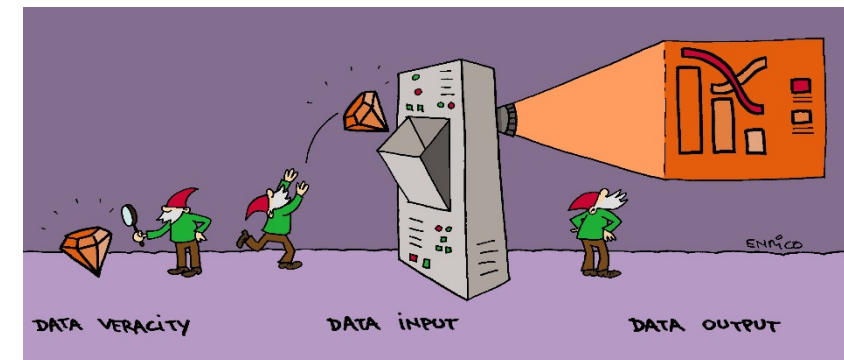




# SFSO Data Innovation Strategy

Swiss Days of Official Statistics 2017

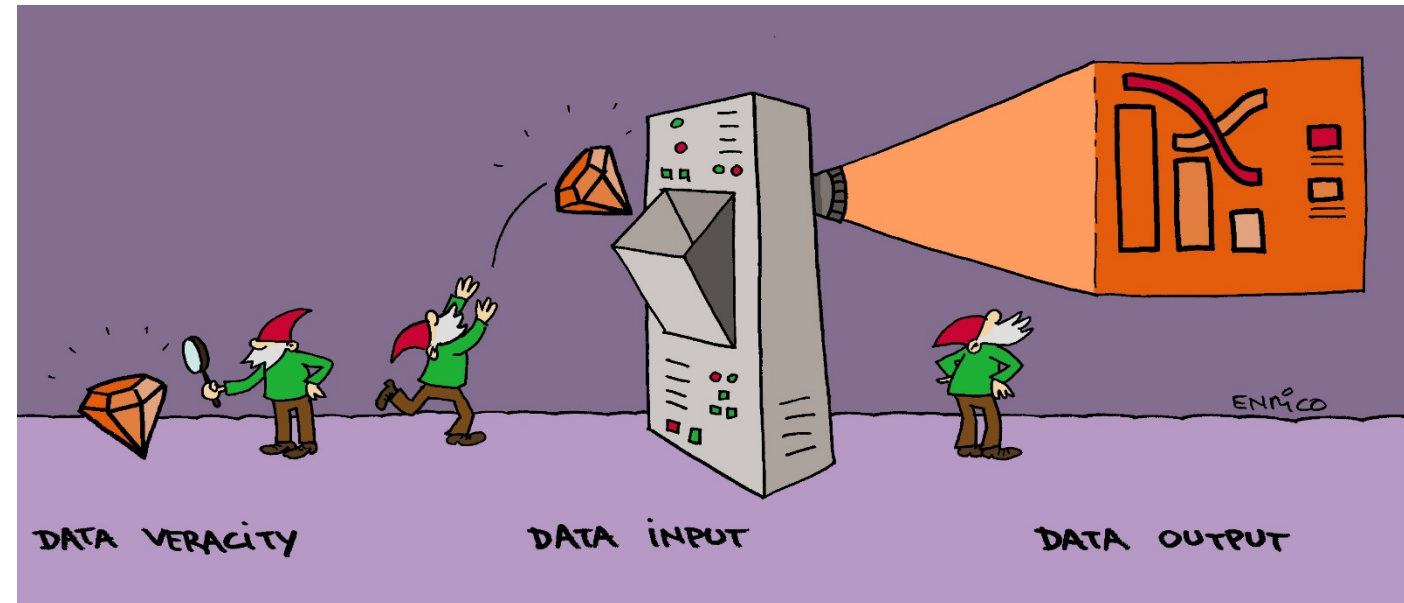
Bertrand Loison, Vice-Director





# Agenda

1. Purpose
2. Strategic objectives
3. Implementation steps
4. Questions & Answers





## Data Innovation

FSO defines **data innovation** as the application of **complementary analytics methods** (e.g. predictive analytics using approaches from advanced statistics, data science and/or machine learning) to **existing** (or traditional) and/or **new** (or non-traditional) **data sources** to sustain the role of official statistics in the democratic process in Switzerland by ensuring that the information we provide remains reliable, transparent and trustworthy.



## The current legal basis

To fulfil its mandate, the FSO already uses **different data sources**. According to the law, the FSO initially **has to check** whether register or administrative data of appropriate quality are already available from the Confederation, the cantons, the communes or other entities of public law. **Only if this is not the case**, and if the FSO is mandated to provide statistical information according to the multi-year programme, can the FSO collect data on its own through censuses and surveys. The number and type of surveys **are limited** to what is **strictly necessary**.



## The inductive-deductive reasoning cycle

It is important to note that **the two approaches of analytics** (i.e. inductive – “data first – and deductive – “idea first” – reasoning) **are complementary** and should proceed **iteratively** and **side by side** in order to enable continuous improvement and data-informed decision and policy making.

This implies that **the analytics methods currently used at the FSO will still be needed together with complementary analytics methods.**



## Primary and Secondary Data - #1

**Primary data** (“made” or “designed”) have been collected – and designed – by the FSO for statistical purposes to explain and check the validity of specific existing ideas, i.e. through the operationalisation of theoretical concepts.

Examples of primary data are **traditional data sources** like **censuses** and **surveys** that have been collected by the FSO for statistical purposes.



## Primary and Secondary Data - #2

**Secondary data** (observational or “found” or “organic”) have been collected – and designed – for **other reasons**, often **without FSO supervision**, and could be used to create new ideas or theories.

Examples of secondary data are **non-traditional data sources** such as FSO **internal and external register data**, **administrative data**, and other **digital data from devices**, machines, sensors, satellites, drones and social media.



## Primary and Secondary Data - #3

Secondary data can be further classified into **identifiable** and **non-identifiable** data.

**Identifiable data** can be meaningfully **associated with a single unit** at a given place and time, such as an individual, institution, product or geographical location. **Non-identifiable data** cannot be made identifiable at any such level (e.g. Google trends data, Twitter feeds and other forms of social media).





## Primary and Secondary Data - #4

**Identifiable secondary data** could be made fit for purpose for statistical inference if their veracity has been successfully assessed (as is the case with the FSO's current use of its internal register data), whereas **non-identifiable secondary** data are of limited use for statistical inference because it is not possible to assess their veracity.



# Agenda

1. Purpose
- 2. Strategic objectives**
3. Implementation steps
4. Questions & Answers



# Strategic objectives - #1

## Strategic objective 1

Develop data innovation guidelines and investigate the feasibility of the application of complementary analytics methods to existing (or traditional) and/or new (or non-traditional) data sources, along with the goal of **augmenting and/or complementing any existing basic statistical production** for which data innovation makes sense.



## Strategic objectives - #2

### Strategic objective 2

Develop and implement FSO **internal and external communication** measures to increase awareness of the added value of data innovation in official statistics and the related paradigm shift.



# Agenda

1. Purpose
2. Strategic objectives
- 3. Implementation steps**
4. Questions & Answers



## Implementation steps

1. The first step is the application through FSO internal pilot projects of **complementary analytical methods** to existing (or traditional) **FSO internal primary data sources and already matched identifiable secondary data sources** (if such exist). It is about augmenting and/or complementing existing learning from data.
2. If feasible, a subsequent second step could then be to **complement and/or augment existing statistical production** at the FSO with data innovation generated from the application of **complementary analytics methods to additional secondary data already in use at the FSO**.
3. A subsequent third step could be to apply complementary analytics methods to only new – **hitherto unused at the FSO – secondary data to investigate and produce new statistical information and statistics** in particular statistical domains.



## Realising our strategic objectives - #1

1. Evaluate the need to adapt and extend the current conceptual FSO **data quality frameworks** to include data innovation (e.g. with respect to complementary analytics methods, e.g. predictive analytics).
2. Evaluate **the requirement for new skills (including soft skills) in FSO staff** with respect to complementary analytics methods and to the (IT) technologies and tools needed to enable data innovation.
3. Investigate **the legal issues related to data innovation**, e.g. legal requirements and incentives for securing agreement on obtaining secondary data from the private sector (“data ownership”) without compromising the business interests of the data owners (see third step mentioned above).



## Realising our strategic objectives - #2

4. **Discuss and exchange information** with all FSO stakeholders **within** the FSO, the statistical systems and the research community.
5. The FSO regards effective and **sustained multidisciplinary partnerships** across the Confederation, industry, academia and the statistical community as a critical factor for assembling **the full portfolio of skills and experience** that will be needed to succeed with its data innovation strategy.





# Agenda

1. Purpose
2. Strategic objectives
3. Implementation steps
- 4. Questions & Answers**



# Questions & Answers

