



Data Quality and Interoperability: Addressing the Capability Gaps through Standardisation

EU-LISA INDUSTRY ROUNDTABLE 2020

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The world is how we shape it

sopra  steria
CONSULTING

Agenda

- **eu-LISA Context**
- **Information Lifecycle**
- **Principles**
- **Approach**
- **Tools**
- **Border Control of the Future**
- **Conclusions**



eu-LISA Context

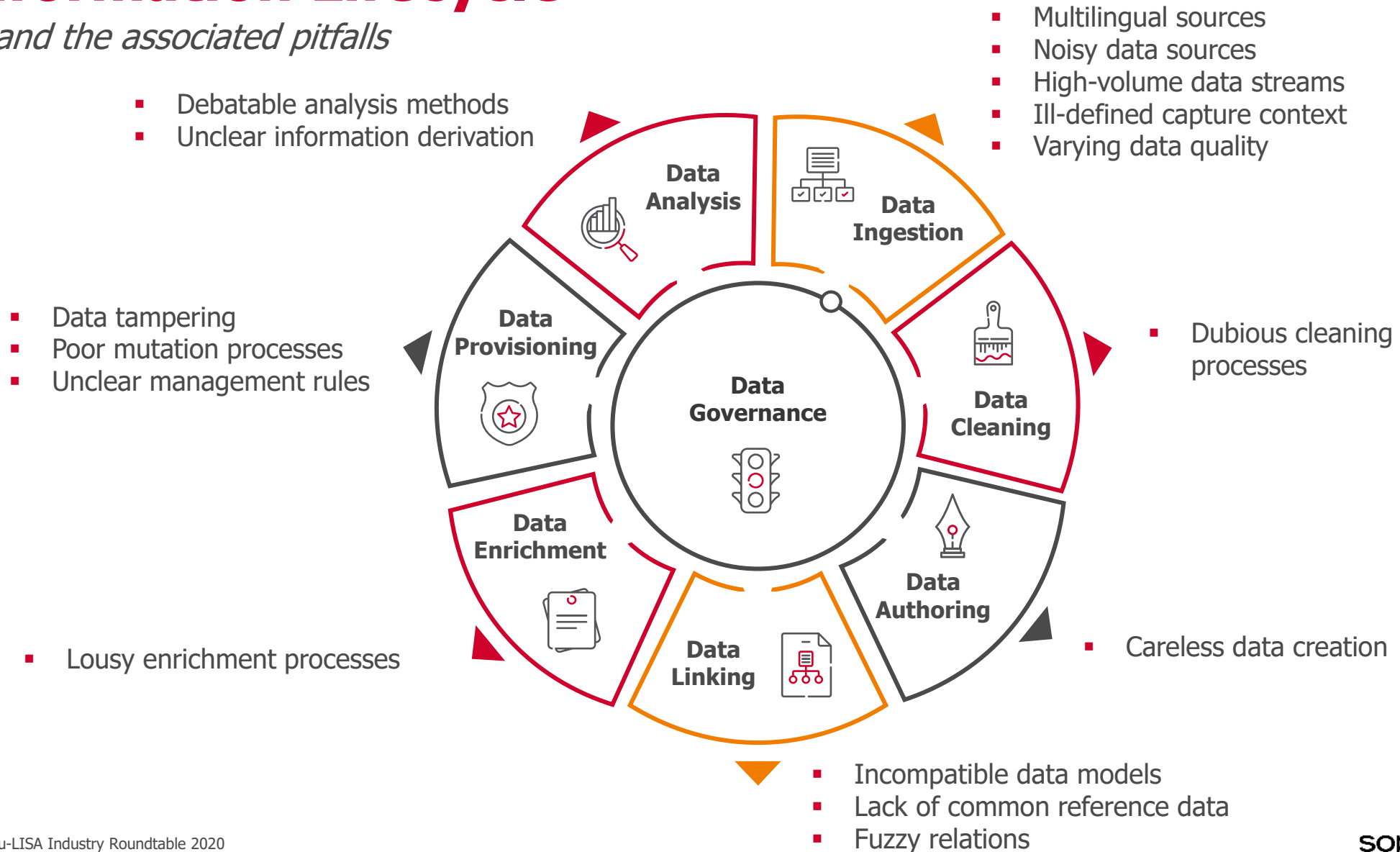
A challenging environment, to say the least

- **European landscape**
 - └ 24+ languages
 - └ Many variations in national regulations
 - └ Multiple data models & naming conventions
- **Sensitive and highly valuable data**
- **High volumes of data (text, images,...)**
- **Need for near real-time data exploitation**
- **Increasingly complex use case scenario's**



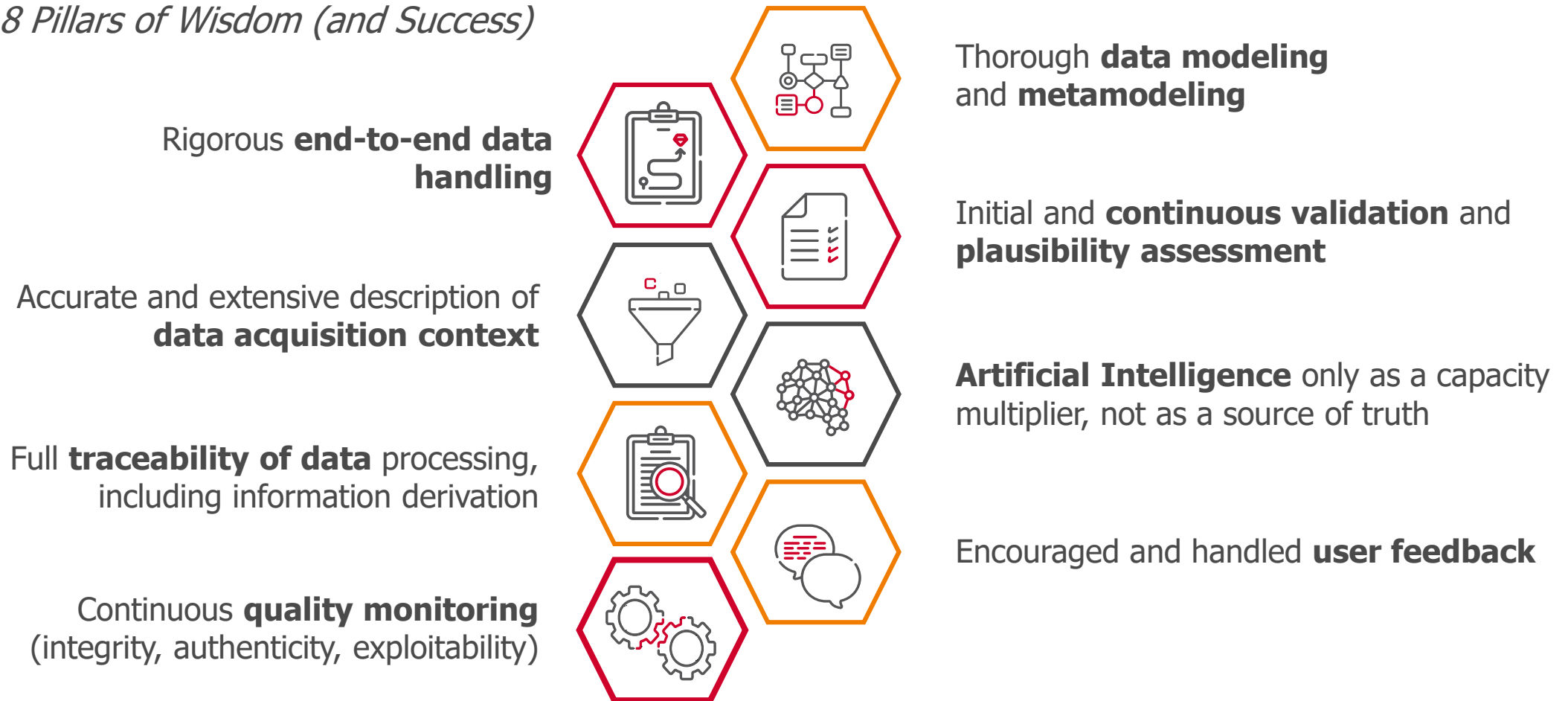
Information Lifecycle

.... and the associated pitfalls



Principles

The 8 Pillars of Wisdom (and Success)



Prerequisites for ethical use of data enabling trustworthy and explainable AI

Approach

Sopra Steria's approach to Data Valorisation

DATA THINKING

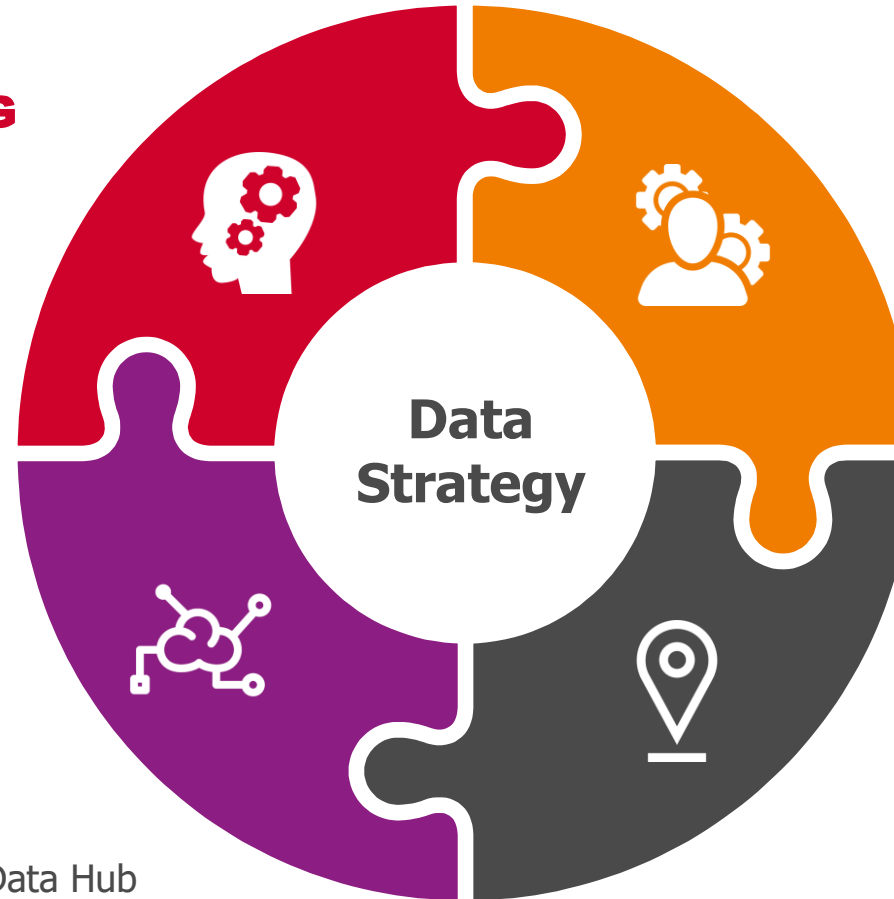
Data as valuable asset to accelerate innovation

- Maturity assessment
- Design Thinking
- Data Mining

DATA ARCHITECTURE

Standardisation of how to collect, store, transform, distribute, and use data.

- API Management
- ETL process
- Data Lake / Data Warehouse / Data Hub
- Infrastructure Management (Cloud)



DATA GOVERNANCE

Processes for managing data quality

- Metadata management
- Compliance
- Confidentiality & Security
- Accessibility
- Trust & Traceability

DATA VALORISATION

Data-driven approach to address business challenges and support decision-making process

- Big Data & Data Discovery
- Data Science & Machine Learning
- Business Intelligence & Data Visualisation

Tools

State-of-the-art (sample) palette

Graph Database



Data Ingestion



Data Cleaning



Data Authoring



Data Linking



Data Enrichment



Data Provisioning



Data Analytics



Border Control of the Future

Leveraging state-of-the-art technology for better border control



Front office

- ❑ Multi-channel border control process depending on travellers' digitisation level
- ❑ Sophisticated queue management via upfront interaction prior to border control points
- ❑ Automated speech-to-speech translation between travellers and border guards/eGates
- ❑ Adaptive questionnaire based on travellers' answers with assistance for border guards
- ❑ Language and voice analysis to check stress level for sentiment and vocabulary for plausibility
- ❑ Elevated scrutiny of tagged ID documents and travellers based on law enforcement developments and upfront verification

- ❑ Travellers monitoring by AI-assisted real-time video processing (body language & parameters)
- ❑ Real-time verifications from multiple public and private sources (hotel bookings, car rentals, local contacts, social medias, etc.)
- ❑ Voice matching and voice-based identification
- ❑ Automated rule-based routing of alerts and information



Back office

Sopra Steria's Expertise in information quality and Interoperability

Sopra Steria Group have a long track record regarding Information Quality



Swedish Social Security
Social Fraud Detection



DG SANTE
Automated Alerts on Tobacco T&T System



Spain's Ministry of Finance
VAT Fraud Detection



Belgium's Ministry of Interior
Next-Gen Law Enforcement System (Bid)



Conclusions

Data Quality and Interoperability is an epic quest ... with no room for improvisation

- ❑ **Vision and strategy** matter
- ❑ **Information** is your most strategic asset, but also a very sensitive one

- ❑ **Leverage AI** to support information quality but not to generate information
- ❑ **Rules > Heuristics > AI**

- ❑ **Data Quality and Interoperability** are the gateway to advanced data processing
- ❑ **Semantics** are key to quality and interoperability
- ❑ **Keep « entropy »** under control through strict data handling procedures
- ❑ Make full use of the many existing **data manipulation tools** to guarantee quality
- ❑ **Ensure traceability** of data manipulations



**Information Quality
and Interoperability by
Design!**

Questions

