Data architecture to steer: Metadata & lineage

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“AI can only be as good as the data behind it.”

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The everyday situation when looking at a report might be:

- → How is exactly this value derived?
- → How good is its quality?
- → How trustworthy is it?

How **much time** does this consume every day?

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The reality is a daily pursuit for the meaning of data

→ Data **hunting** instead of transparency

→ **Insecure** reports

→ high **manual** expense

This applies especially to **regulated industries** in which compliance is business-critical.

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The real challenge

1. Regulatory requirements rise
2. IT landscapes grow
3. Data flows are fragmented and include manual sub-steps

Three forces that rise the complexity.

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The missing piece is the ability to steer

→ No end-to-end transparency
→ Lack of trust in data
→ High risks of changes

Not the data are the problem, the transparency is.

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Classic Enterprise Architecture

→ Focus on applications
→ Systems instead of data
→ Rarely pointing out flowing data

The systems are clear, but what about:

→ Data origin
→ Transformations
→ Business context
→ Reports

There is often a gap between architecture and reality.

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For the missing pieces a pardigm change is due

→ Systems ≠ Level to steer
→ Data as the glue between the systems
→ Data flows from end-to-end

We need to know more if we want to steer.

→ Data flows instead of system landscapes
→ Business & technical view connected
→ Full transparency

The goal is an explainable and steerable architecture.

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The bridge are the hidden heros

Metadata

Metadata is *data about data.*

The data describe the **meaning, structure, context, usage**, and **ownership** of data assets.

Data Lineage

Data Lineage is the **complete, end-to-end tracing of data** throughout its lifecycle – from the **original source**, through all **transformations, systems, integrations, and business processes**, all the way to the **final reports, analytics, or AI models** that consume it.

Metadata describe the data. Data Lineage describes the journey of the data.

Together, they enable **data quality, compliance, transparency, and AI-ready data management.**

Elevated to the next level is to include also data quality in this picture

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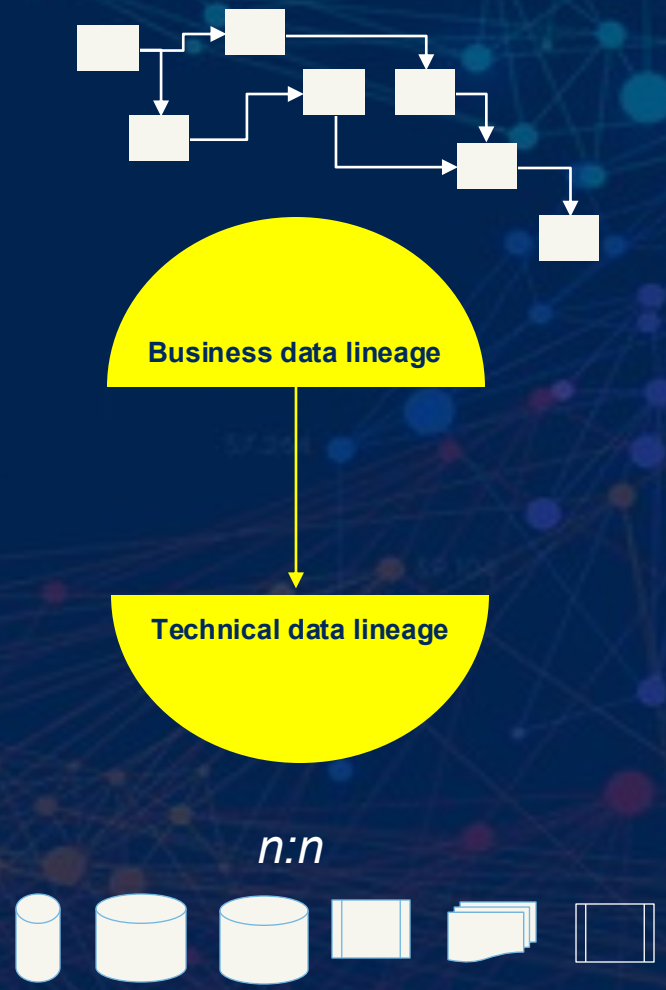
Data Lineage & Data Quality Management

Conceptual data linked

- → Business context links to the data items in the technology
- → Knowing where to find what and where duplicated are
- → Emphasizing on the concept of using the single source of truth

Data quality measures

- → Positioned on the data lineage
- → Giving technical data fields the business context
- → Traceable data flows enable to position quality measures on the critical paths to sharpen their quality



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Metadata Management & Data Lineage

Why This Matters

→ Growing data complexity

→ Increasing regulatory pressure

→ AI depends on trusted data

Business Risks

→ Reduced trust in reports

→ High audit effort

→ Manual reconciliations

→ Operational inefficiencies

Gernance Operating Model

→ Data Owners & Stewards

→ Business glossary

→ Governance workflows

→ Clear accountability

BCBS 239 as Trigger

→ Limited transparency of data flows

→ Inconsistent data quality controls

→ Fragmented definitions and ownership

Metadata Management

→ Common data language

→ Clear definitions & ownership

→ Context for data usage

→ Foundation for governance

Data Lineage

→ End-to-end visibility

→ Source → Transformation → Consumption

→ Impact analysis & change management

→ Regulatory traceability

Technical Implementation

→ Central data intelligence platform

→ Governance, lineage & quality combined

→ Business & IT alignment

→ Scalable and auditable

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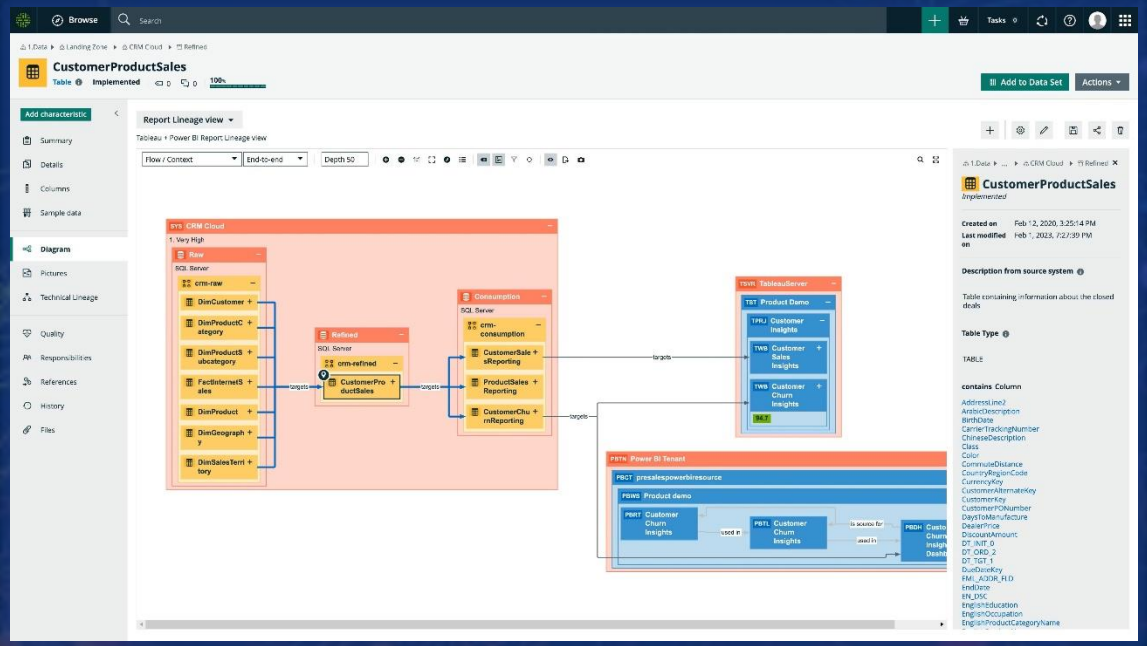
Introducing a *state-of-the-art* Data Governance Tool

Introducing Collibra

- → Central data intelligence platform
- → Governance, lineage & quality combined
- → Business & IT alignment
- → Scalable and auditable



Governance Operating Model

- → Data Owners & Stewards
- → Business glossary
- → Governance workflows
- → Clear accountability

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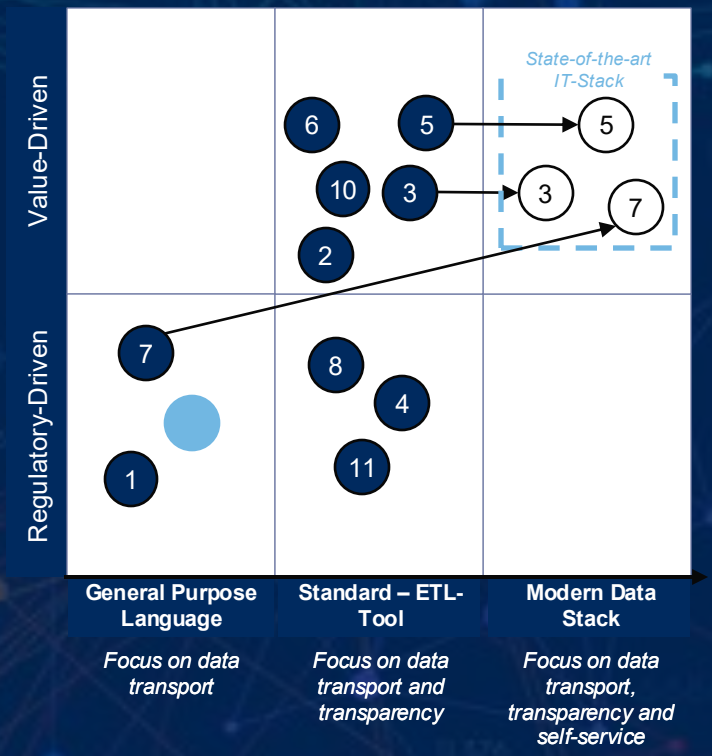
Impact on Data Quality & AI Enablement

“AI depends on trustworthy data, the path leads from data availability to AI-ready data.”



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Lessons learnt

- ✓ **1 – Governance** comes before tools.
- ✓ **2 –** Data lineage is a **journey**, not a one-time project.
- ✓ **3 – Organizational change** is harder than technical change.
- ✓ **4 –** Collibra scales – but only with clear **ownership**.
- ✓ **5 –** Regulation can be a **catalyst** for real innovation.

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Architecture principles

→ End-to-end transparency
→ Reusability
→ Decoupling

To become flexible and stable at the same time.

Takeaways

→ Data centered EA that can steer
→ Lineage to steercomplexity
→ Metadata builds contect and trust

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“Stop chasing data. Start steering with it.”

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Thank you

for your time.

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