The Essential Role of Enterprise Architecture Management for Data and AI Strategy & Governance

October 2025

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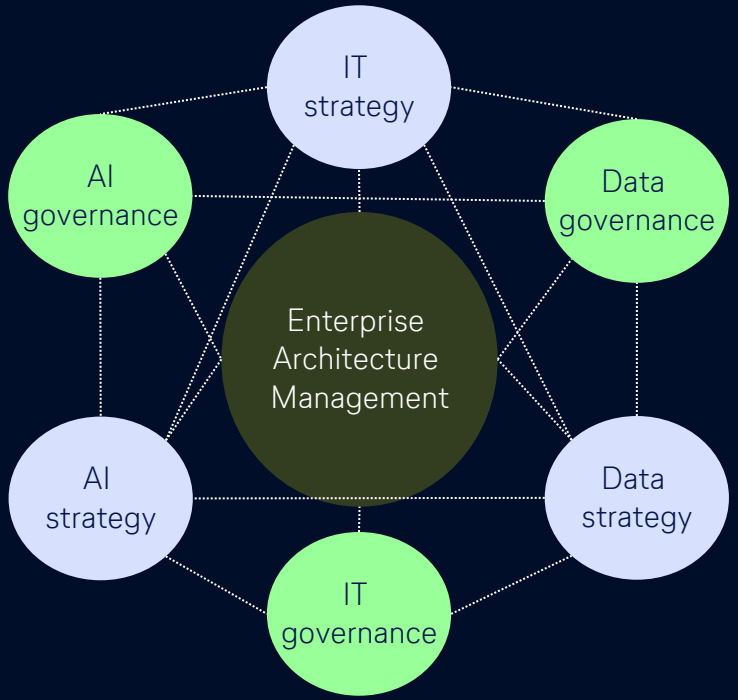
This is a variation of the presentation I held on the same topic on the IRMUK, Data & AI Conference Europe, October 2025, London

The challenge: Due to the stellar rise of Data and AI in the last years, enterprises are scrambling to calibrate their strategic Data & AI capabilities

Questions asked with high priority:

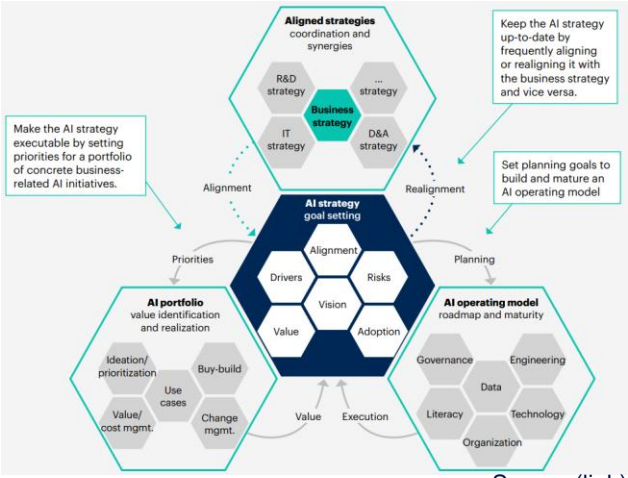
- How exactly does our Data strategy, AI strategy, AI governance look like?
- How do these relate to IT strategy and Enterprise Architecture Management?



Current existing guidance

is either highly generic

or in-complete



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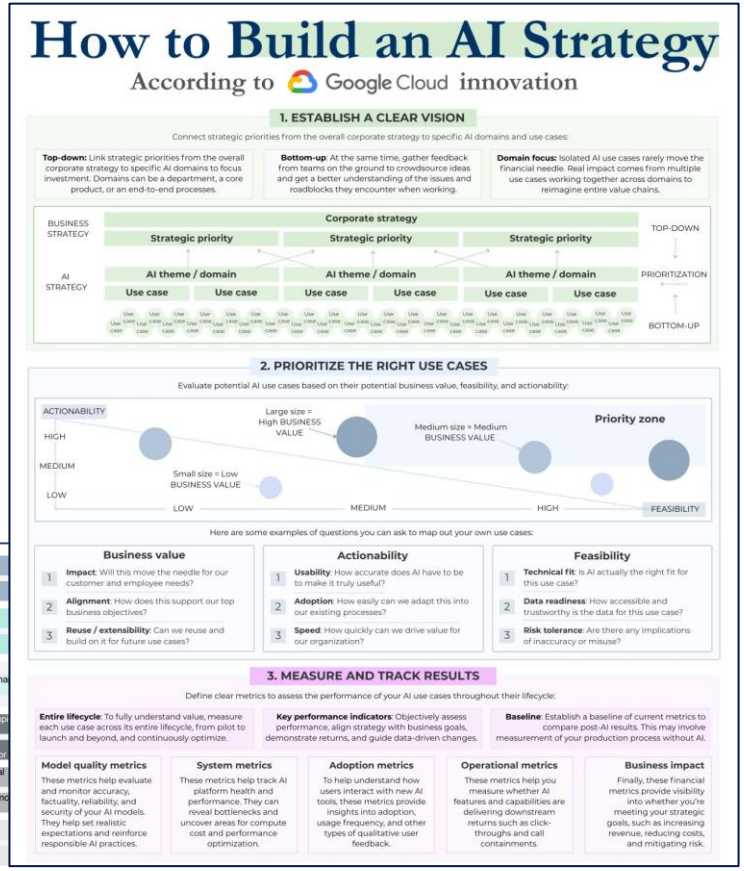

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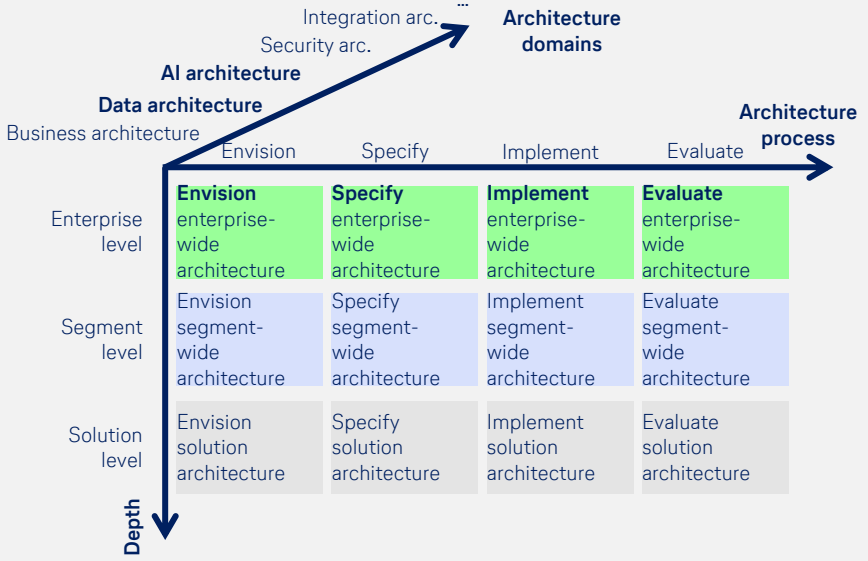
Enterprise Architecture
is the Cornerstone of
Digitalization Strategy

What is Enterprise Architecture Management (EAM)?

EAM manages and continuously optimizes the architecture of the enterprise-wide digital ecosystem

What are EAM's core capabilities and processes?

Capabilities for managing the enterprise architecture



Capabilities to enable and support enterprise architecture management

EAM request management	EAM content management	Management of the IT asset inventory	EAM communication and training
EAM case management	EAM collaboration and stakeholder management	EAM board and panel management	EAM coaching and project support

Strategy is generally understood as:
High-level, comprehensive target picture and a plan for reaching it

Referring to ancient Greek: Stratos (Legion), Agos (Leader)

- A **plan of action or policy** designed to achieve a major or **overall aim**
  Oxford Dictionary, June 2020
- Strategy can be defined as the determination of the basic long-term **goals** and objectives of an enterprise, and the adoption of **courses of action** and the **allocation of ressources** for carrying out the goals
  Chandler, 1962, Strategy and Structures: Chapters in the History of the Industrial Enterprise

→ Essential, long-term goal

→ Plan how to reach it

- **Basic, long-term behaviour** (combination of measures) of the company and relevant sub-sectors towards its environment in order to achieve the **long-term objectives** *Gablers Wirtschaftslexikon, 2016*
- Decision/game theory: **Set of rules**, whose compliance should increase the probability of the occurence of a desired event *Gablers Wirtschaftslexikon, 2016*

→ Long-term behavior, set of rules

Architecture and strategy are closely related - not only in nature

For digital ecosystems also applies:

- There is a **close relationship** between architecture and strategy
- There is **not “the one” perfect architecture**
- **Even with a defined environment**, it is hard to derive a good strategy and architecture

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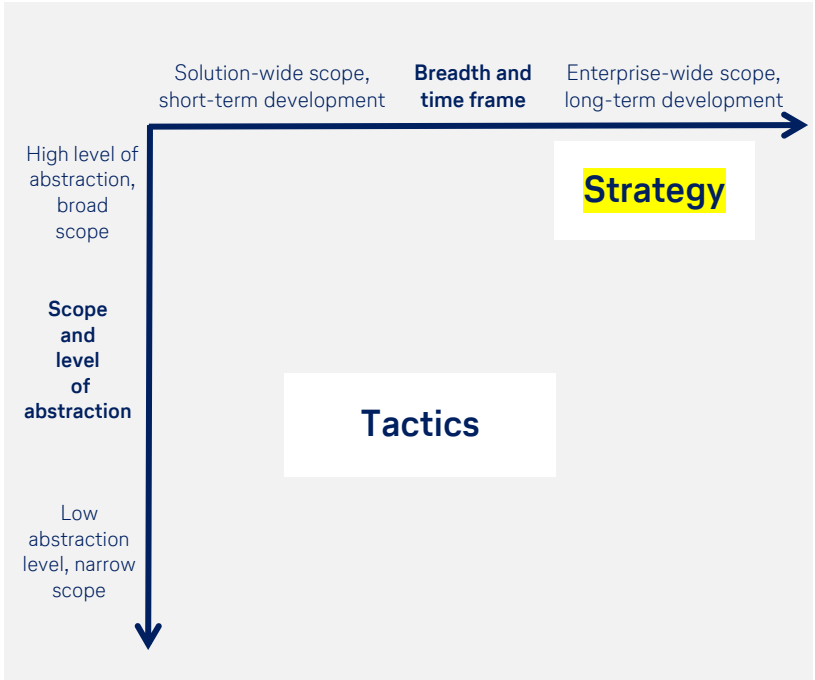
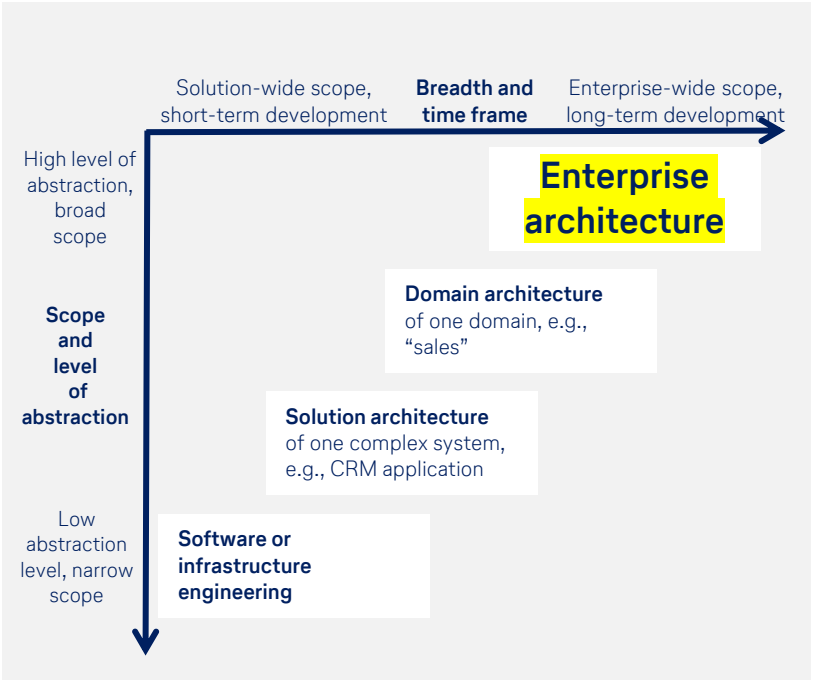
Beware of the “Eierlegende Wollmilchsau”

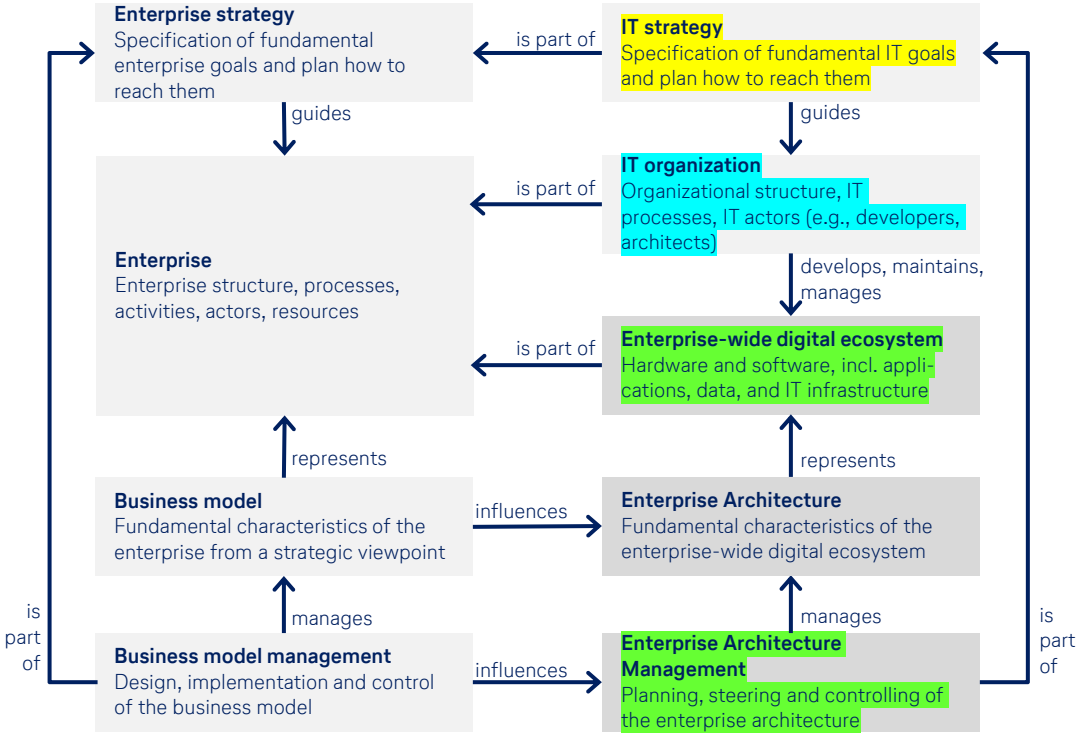
“We will excel at everything” is not a realistic goal and hence not a strategy

Strategy is long-term, has a broad, comprehensive scope and is high-level. Tactics are short term and have a narrower scope. *Sounds familiar?*



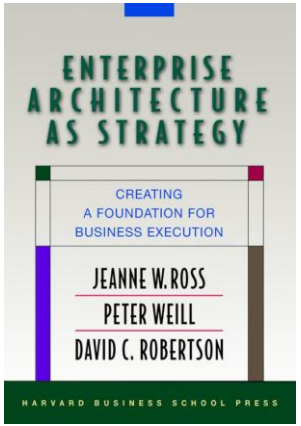


Summary: Enterprise Architecture Management steers the enterprise-wide digital ecosystem. Thus, it is an essential element of IT strategy



Based on @Springer, 2022, J. Ziemann: "Fundamentals of Enterprise Architecture Management"

This was nicely expressed already 2006 in a prominent EAM book:



Enterprise Architecture as cornerstone of **Data strategy and Data Governance**

Enterprise Architecture supports both **Data Governance and Data Strategy**

Recent examples from the aviation industry

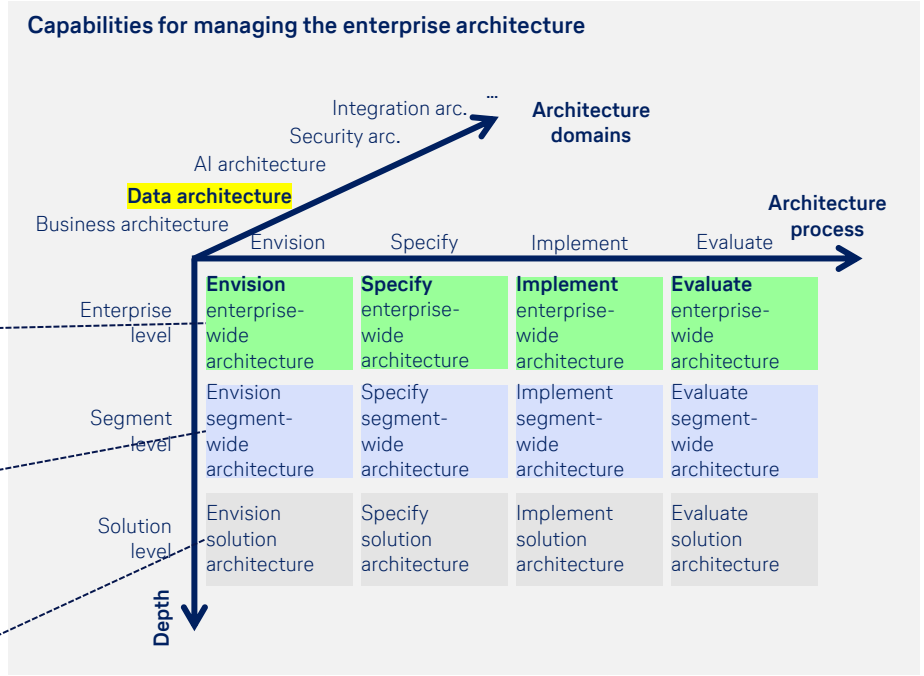
✈️ ✈️ ✈️ **Enterprise-wide target picture Data & Insights.**
E.g., laying out all Data & Insights capabilities, standards, applications for Lufthansa's Hub Airlines

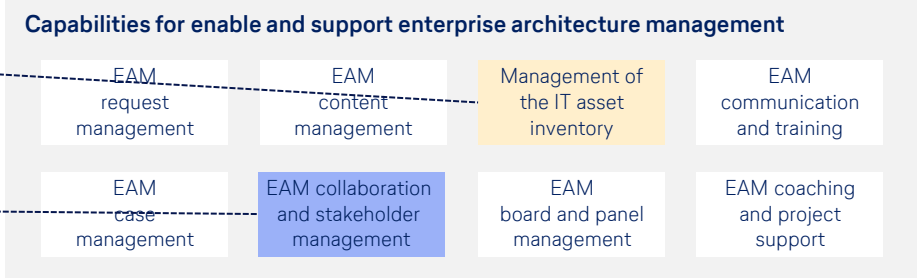
✈️ **Domain-specific data & insights architecture.**
E.g., specifying the data & insights ecosystem of the Flight Operations domain

🧠 **Support central data & insights platforms.**
E.g., support the central data platforms architects and ensure that architectural requirements are met

📚 📦 Manage **Enterprise-wide Catalog** of data & insights applications and related **data products**

🤝 **Enterprise-wide alignments** on strategic Data & Insights projects and activities





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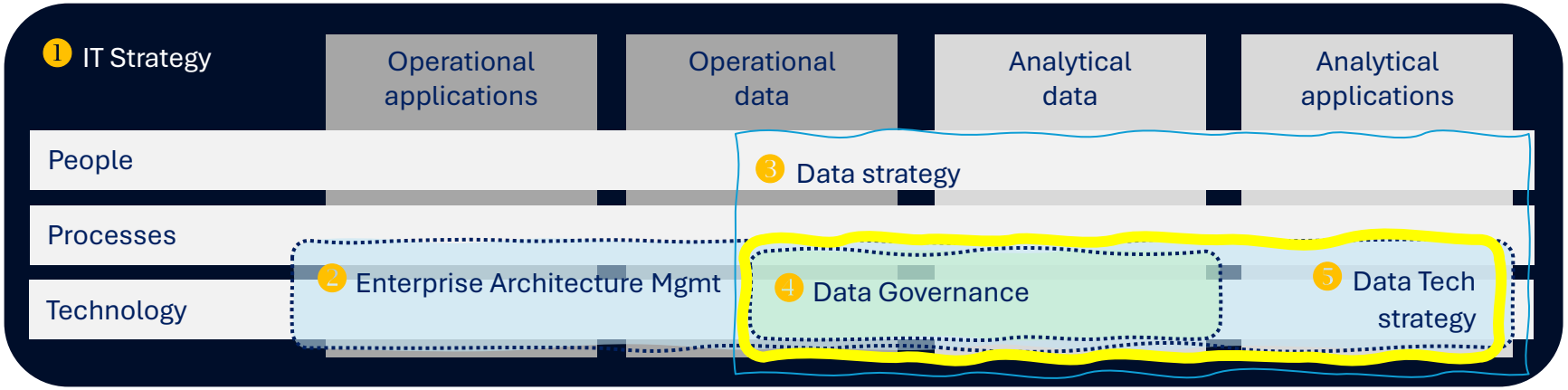
Data strategy can be divided into **people, processes and technology**. Different from IT strategy, it does rather focus on analytical applications



1. IT strategy provides the big picture for managing all digitalization capabilities of an enterprise

2. Enterprise Architecture Management defines the high-level picture of applications, data and infrastructure

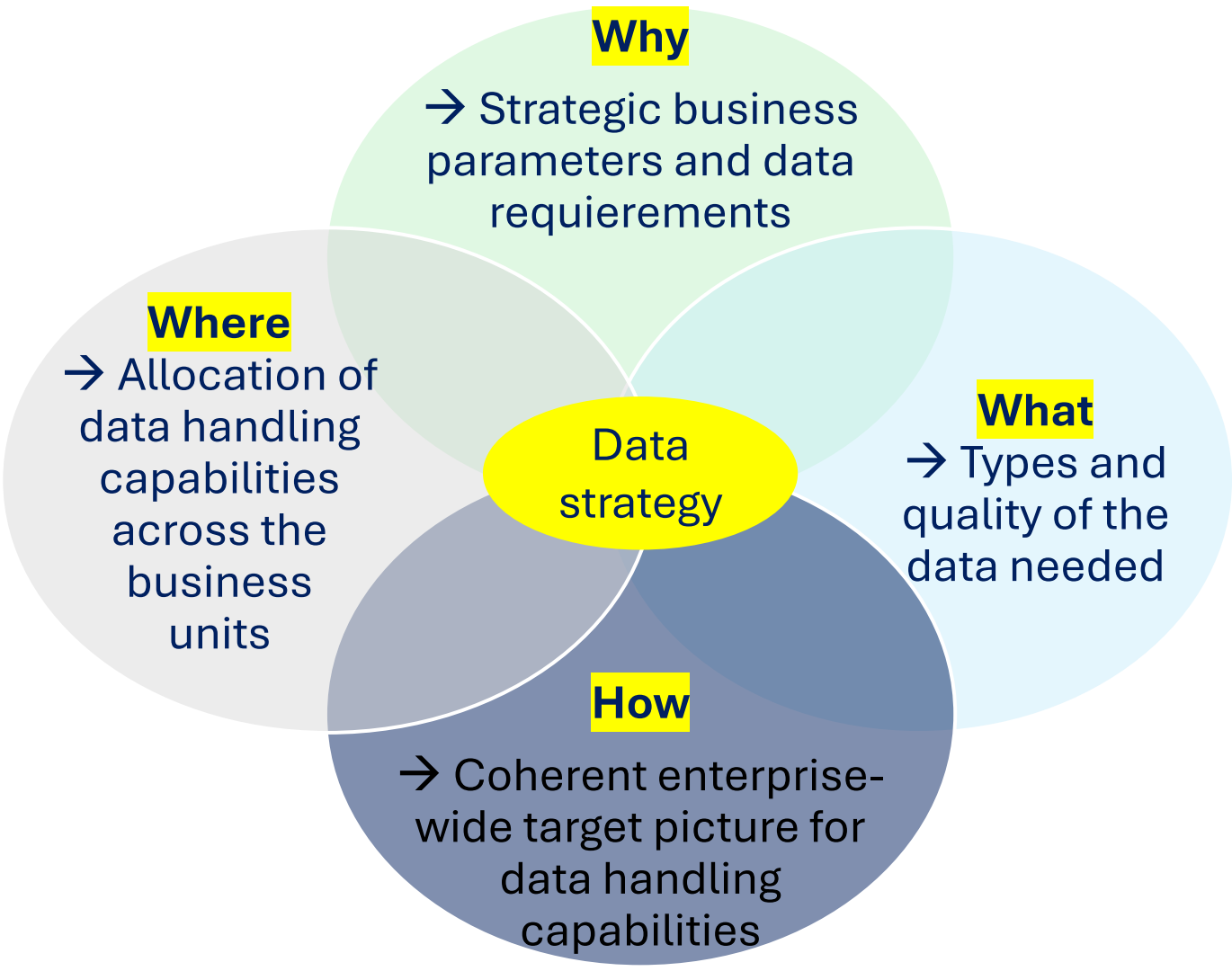
3. Data Governance ensures quality and compliance of data

4. Data strategy defines the big picture for managing and using data, including the general approach to data analytics in the enterprise

5. Data Tech strategy focuses on the technology part of data strategy

*EAM and Data Governance have their respective **processes and people**, but have a stronger technology focus, i.e., on digital applications and data, not on e.g. general data training*

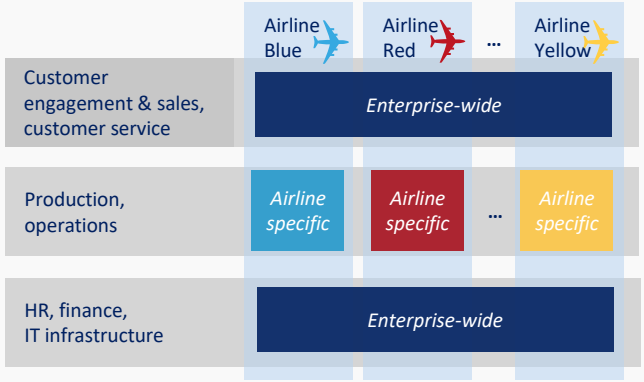
The tech data strategy should address the classic questions on a high level



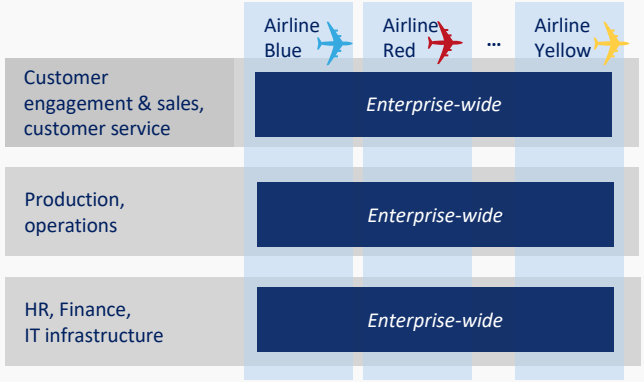
"Why" dimension

Here the Data Tech strategy derives strategic requirements from the business and the enterprise operating model

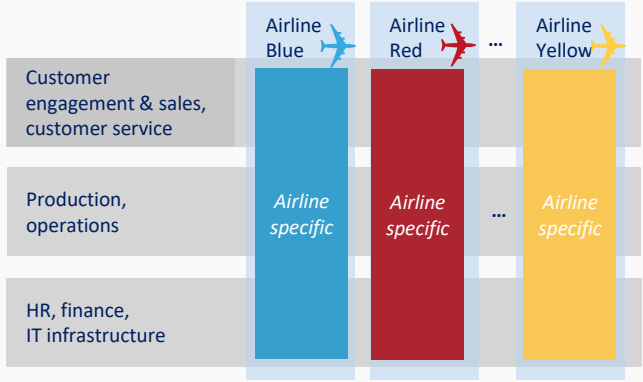
1. Decentralized operations (market-oriented)



2. Completely integrated airlines (function-oriented)



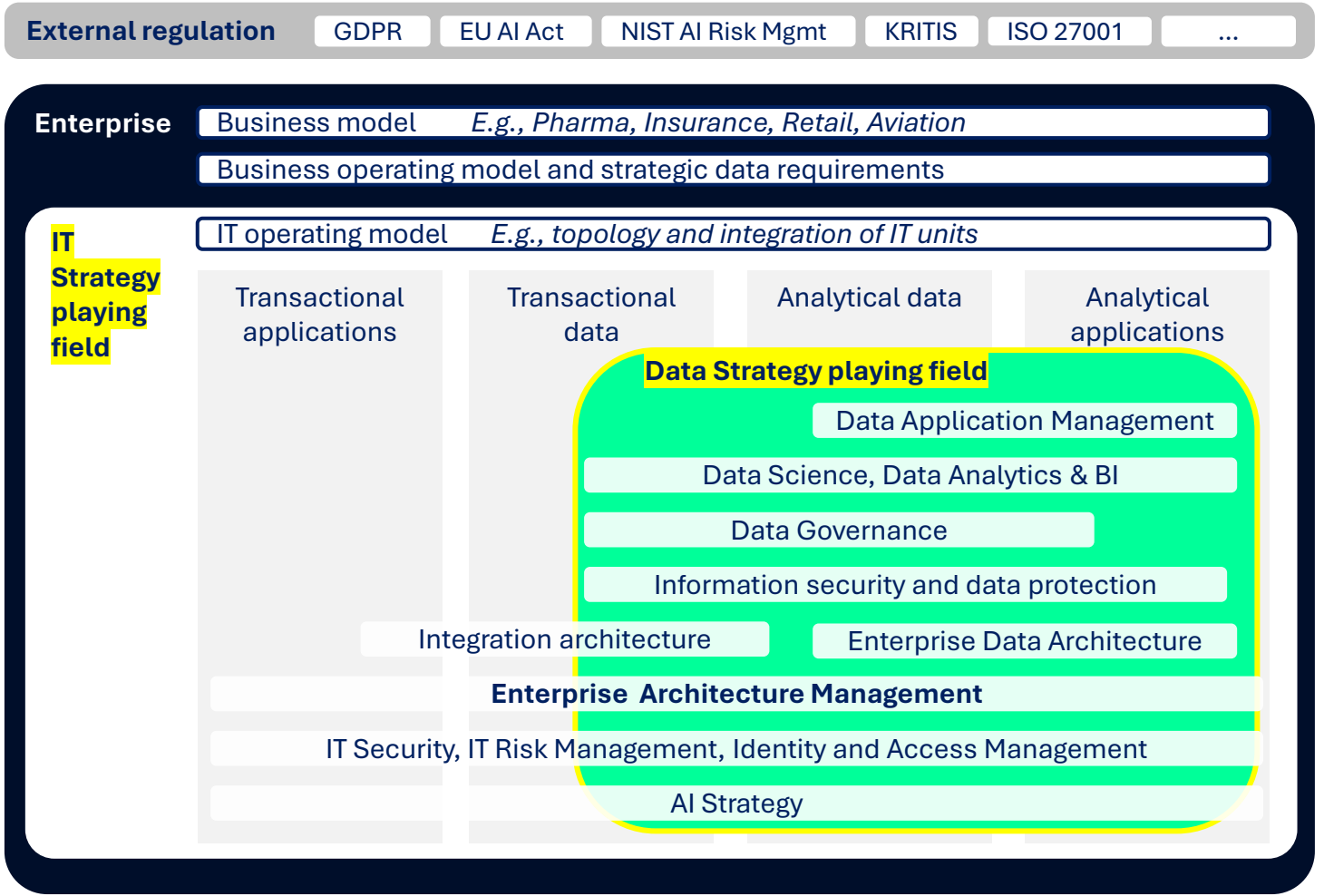
3. Completely decoupled airlines (product-oriented)



- *On a very high level:* Which type of data should be available, where, in which quality (inc. degree of harmonization), why, and for whom?
- THIS IS NOT a strategy: "We need all data everywhere in perfect quality, in real-time, available 24/7"

“How” dimension

The data strategy must ensure that the relevant capabilities are mutually exclusive and completely exhaustive

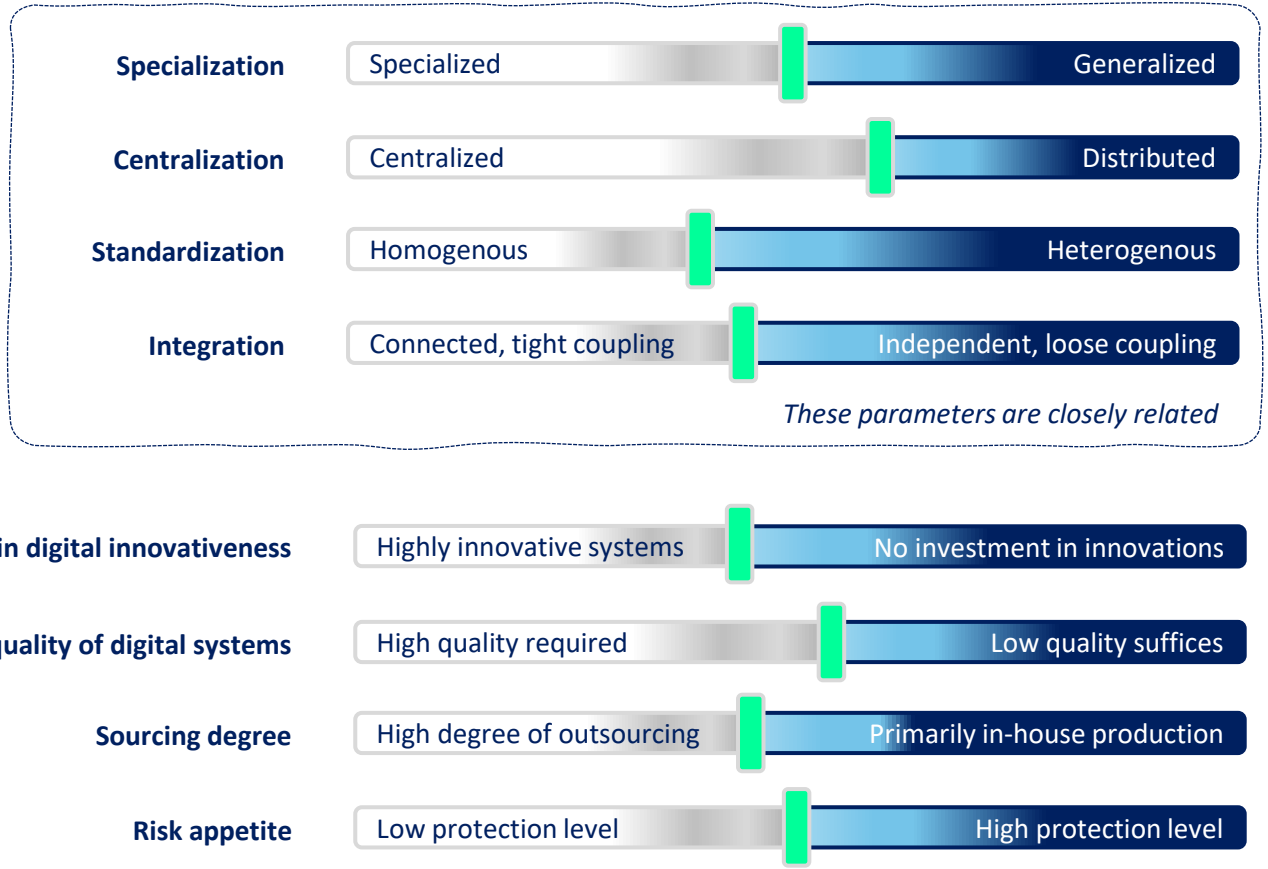


„What“ and „Where“ dimension

Strategic parameters of the enterprise-wide data strategy

General strategic parameters of the **enterprise-wide digital ecosystem**

i.e. the enterprise architecture



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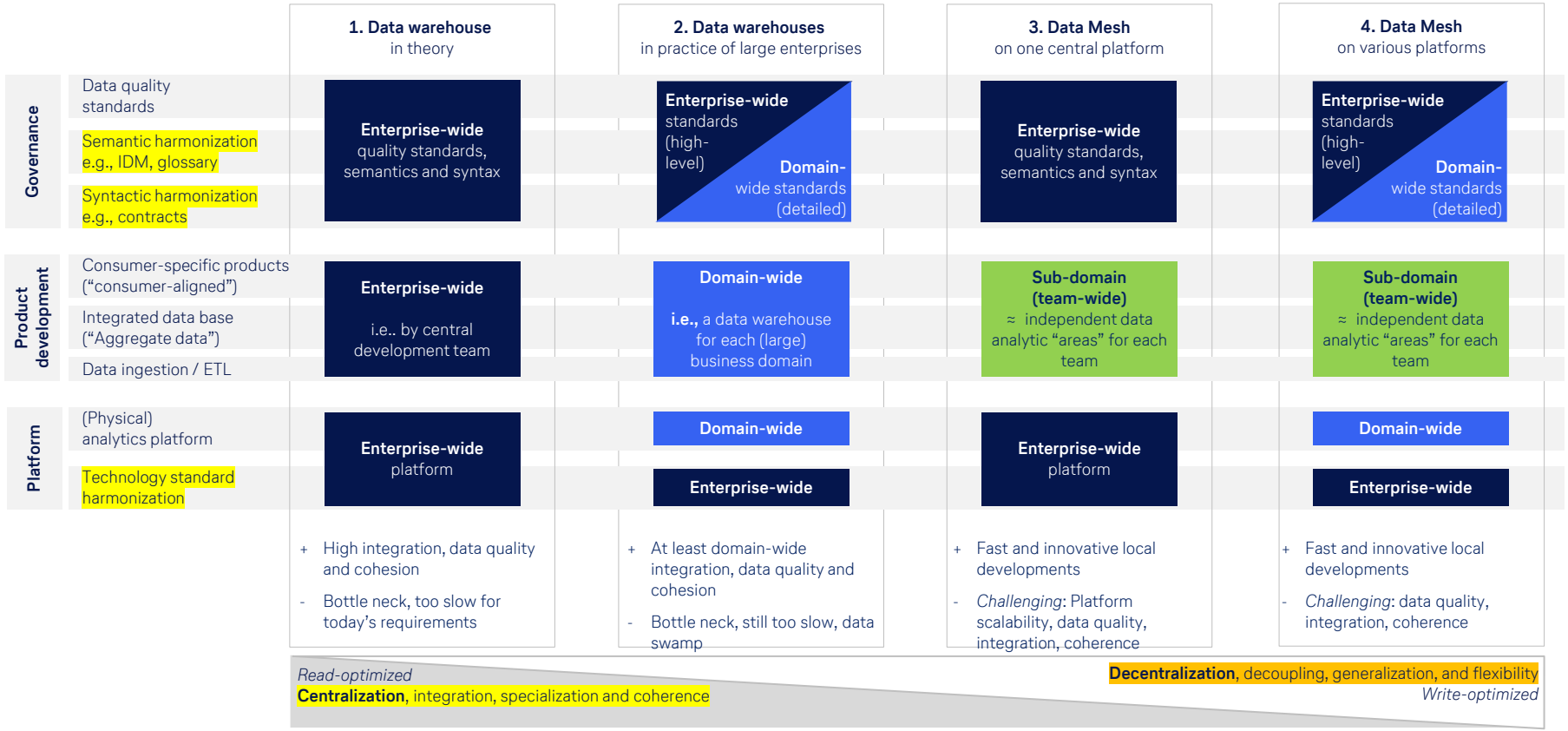
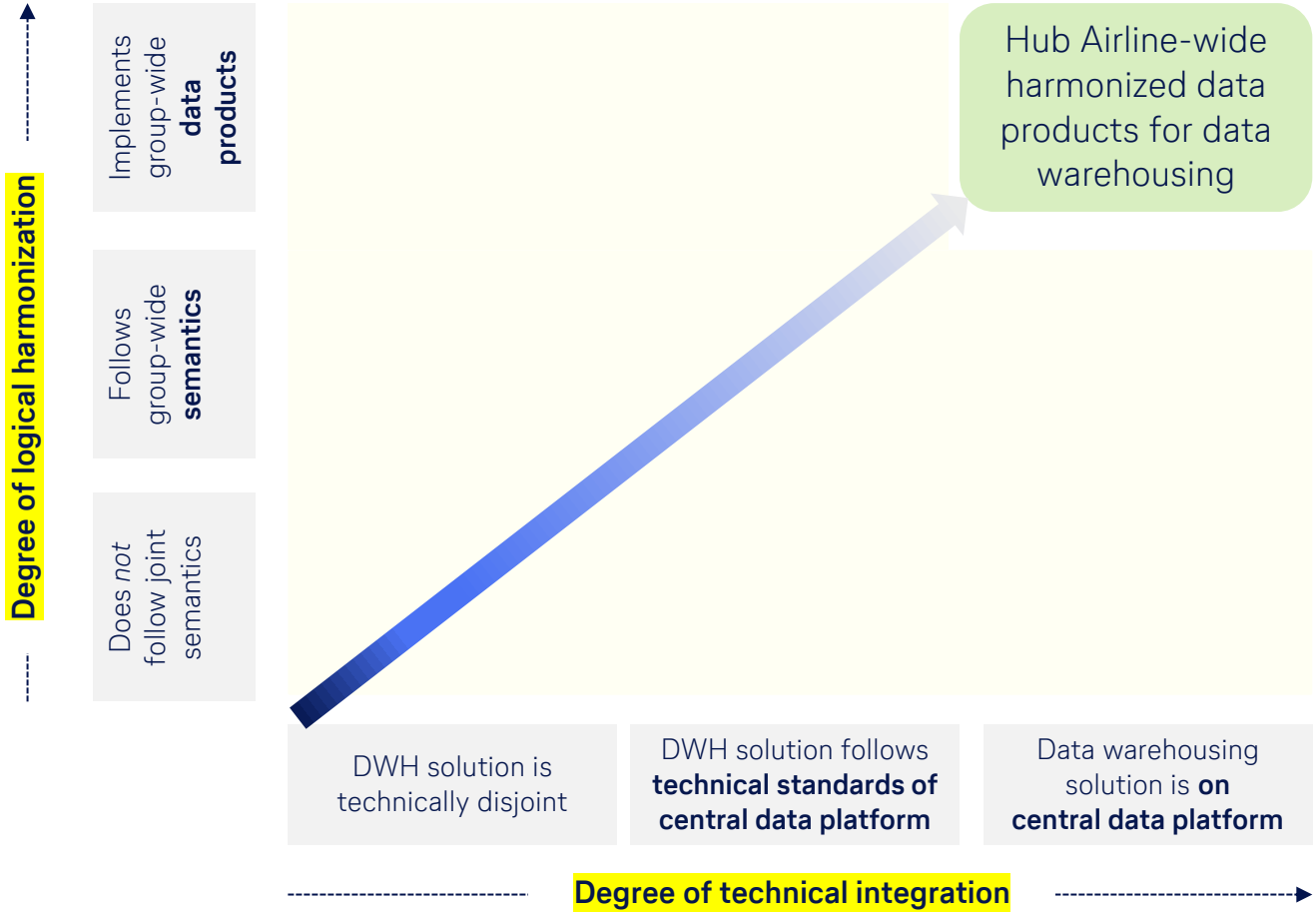
Parameters of the data mesh: Centralization, integration, specialization and coherence on various levels



The target picture data & insights for Lufthansa's hub airlines

highlights **two core metrics for data warehousing capabilities:**



Enterprise Architecture as cornerstone of **AI strategy and AI Governance**

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Recent examples from the aviation industry

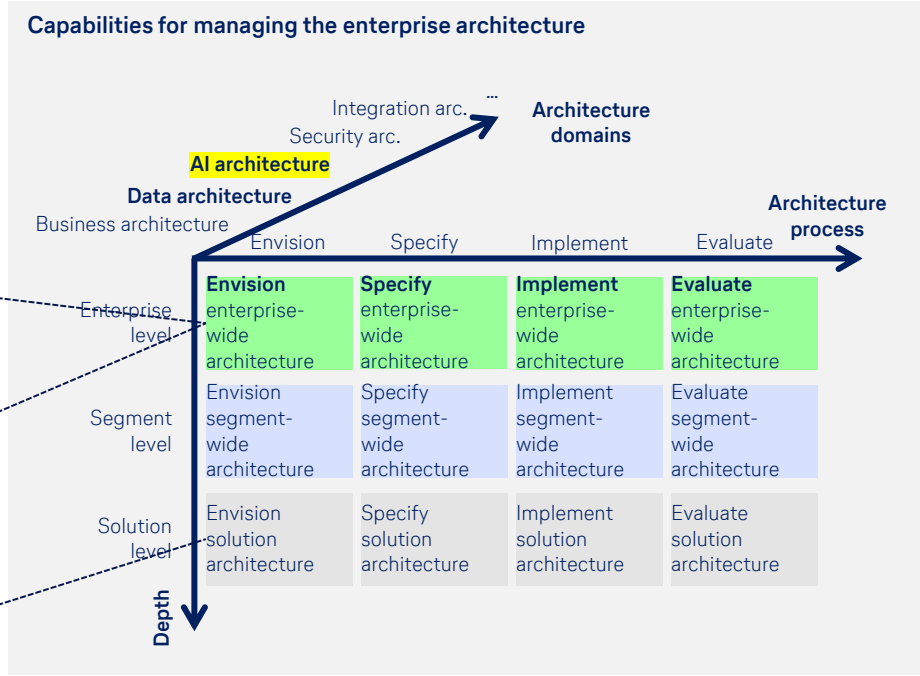
Target picture AI 🖼️ 🌐 E.g., laying out all AI capabilities, standards, applications for Lufthansa's Hub Airlines

Lufthansa's Group-wide GenAI landscape 🤖 Which logical and physical solutions blocks, platforms and resulting GenAI-based applications are in the target picture?

✅ **Architecture governance on solution level:** E.g., GenAI specific solution sketching and cross-domain expert councils

Enterprise-wide catalog 📚 of AI-based 🤖 solutions and risk ⚠️ classifications

AI architecture community 🤝 🗓️ E.g., bi-weekly Lufthansa group-wide exchanges on GenAI developments



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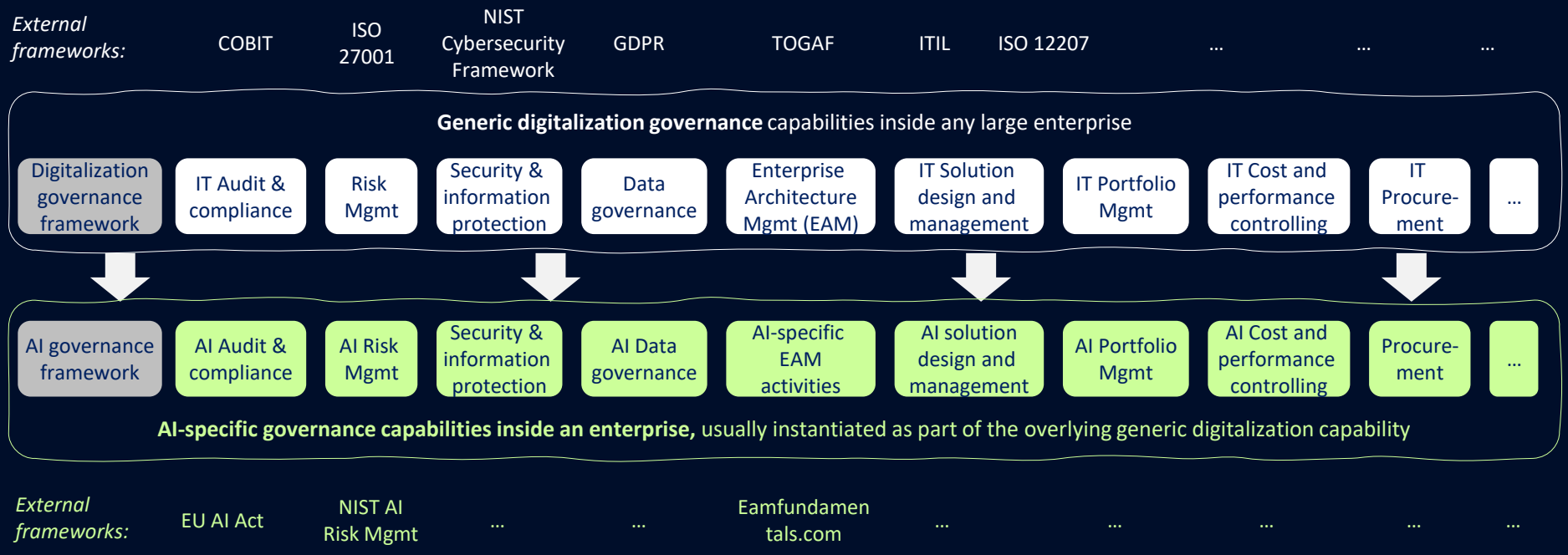
AI governance is always an interplay of various capabilities.

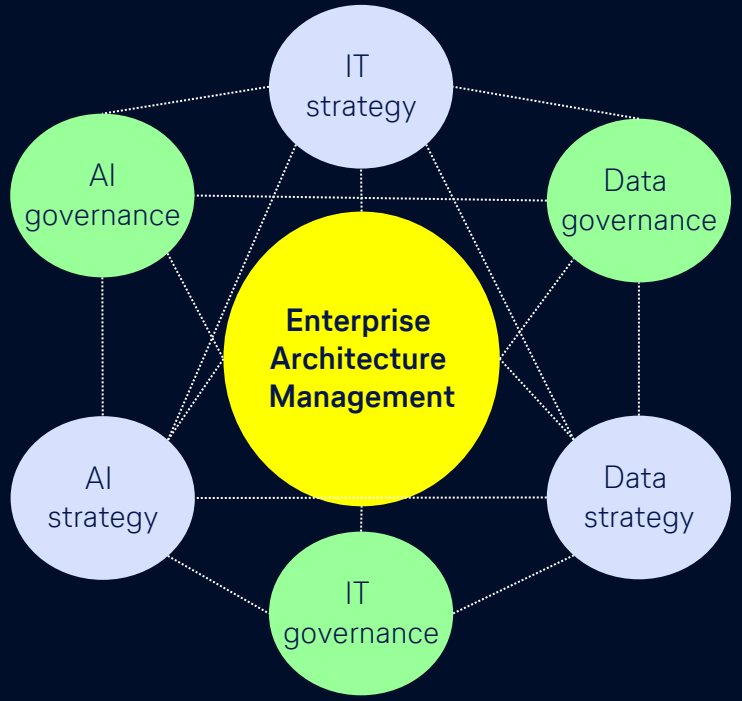
The generic digitalization governance capabilities are extended to address AI-specific features



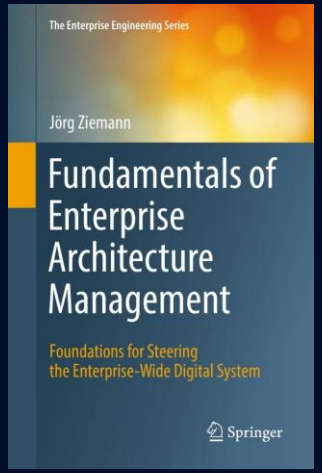
Summary

- Enterprise Architecture Management (EAM) not only provides the enterprise-wide context for data & AI governance & strategy, it also implements some core capabilities for Data & AI strategy and governance

- EAM has proven to be suitable also for shaping the enterprise-wide landscape with upcoming, fast-developing technologies like **GenAI**



- When enterprises **(re-)define their strategic Data & AI capabilities**, the substantial role of EAM in there must be clear



The book "Fundamentals of Enterprise Architecture Management" is available at Springer, Amazon or your favorite local bookstore.

Download the **graphics from the book,** e.g.:

1. Intro
2. EAM in a Nutshell
3. Enterprise Architecture in a Nutshell
4. Strategic and Tactical Context of EAM
5. Implementing EAM
6. Evaluating Enterprise Architecture Management

You can find complementary publications at eamfundamentals.com

Additional EAM Publications

•**Enterprise Architecture Lessons from Steve Jobs.** LinkedIn, July 2024. Link.

•**The Pig Cycle of Digitalization Governance: Navigating the Extremes of Decentralization and Overregulation.** Medium.com, June 2023. Link.

•**Central and Decentral Allocation of Enterprise Architecture Management Activities.** University of St. Gallen, guest lecture in Master Lecture "Managing Enterprise Architecture for Digital Transformation" from Professor Robert Winter. May 2023. Link.

•**A Capability Model for Enterprise Architecture Management – Introduction and Examples From the Aviation Industry.** SwitchON Europe / SOFA Summits, February 2023. Link.

•**Central and Decentral Allocation of Enterprise Architecture Management Activities – Introduction and Examples from the Aviation Industry.** Softwareforen Leipzig, EAM community days, November 2022. Link.

…

Data Analytics, GenAI and Enterprise Architecture

•**Isolated Data and AI Strategies Without Enterprise Architecture? Still a common Mistake.** August 2025, Medium.com

•**The Essential Role of Enterprise Architecture Management for Data and AI Strategy & Governance** EAMInsights Conference May 2025. Link.

•**Enterprise Architecture Management am Beispiel von Data Analytics.** Data Culture Podcast. July 2024. Link.

•**Do Large Enterprises Need a Dedicated "AI Governance" Department?** LinkedIn, June 2024. Link.

•**Gen AI in a large aviation group – How EAM helps introducing a disruptive technology**. Guest lecture, University of Lausanne, May 2024. Link

•**Data Analytics Topologies – Much Mesh About Nothing?** LinkedIn, March 2024. Link.

•**Portfolios of Generative AI Use Cases. A Brief Introduction and Examples from the Aviation Industry**. …

Process Digitalization and Interoperability

•**Prozessdigitalisierung in der Finanzindustrie – Den richtigen digitalen Prozess finden.** Business Technology Journal, January 2016, Heft 24. Link

•**Architecture of Interoperable Information Systems – An enterprise Model-based Approach for Describing and Enacting Collaborative Business Processes**. January 2010, Logos. *Note: Logos was so kind to permit the free download of a copy here; however, the official, printed version can be obtained here.*

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