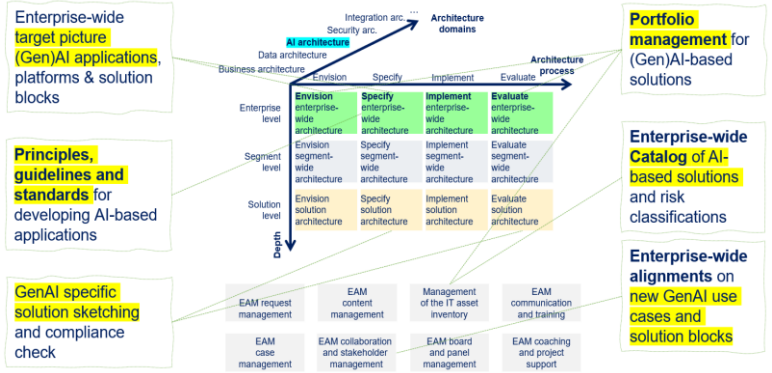
Defining and implementing Data and AI Strategies using Enterprise Architecture Management

12th Richmond IT Forum
Interlaken, March 2026

Dr. Jörg Ziemann

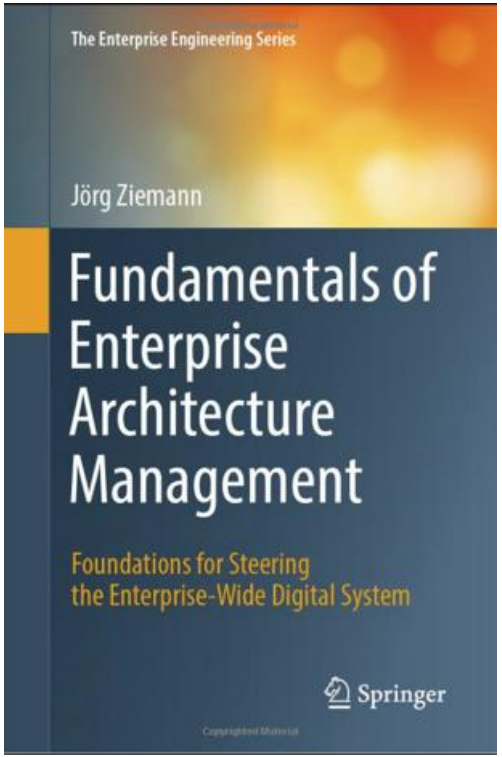


Background **Jörg Ziemann**: Enterprise Digitalization and Data Architecture for 20 years

Please find me on EAMfundamentals.com and LinkedIn

- Internships and **software engineering**, e.g. at Volkswagen de Mexico; study of **business information systems,** e.g., University of California (UCI)
- **Project lead and architect** @ DFKI – German Research Center for Artificial Intelligence *2004-2010*
- **Senior Enterprise Architect** and **project lead @ Talanx**

- **Author, reviewer, and speaker** on enterprise digitalization *2004-today*
- **Lecturer** on Enterprise Architecture and Enterprise Digitalization at University of Hannover *2016-today*
- **Global Lead Architect Data Analytics** Lufthansa, Senior Enterprise Architect *2018-today*



"Finally, a compact book that presents EAM consistently from a management perspective, …" *Robert Winter, Director of the Institute of Information Management, University of St. Gallen*

"A truly fundamental textbook […]. **It is equally useful for practitioners who need a concise state-of-the art overview of Enterprise Architecture Management."** *Jan Mendling, Einstein-Professor of Process Science, Humboldt-Universität zu Berlin*

"An extremely well rounded and comprehensive display of the current state of Enterprise Architecture Management. **A definitive must-read for anybody studying or working in this area."** *André Christ, CEO and Co-Founder at LeanIX*

Everybody wants a Data & AI strategy.
That is comprehensive.
And connects strategy with execution.

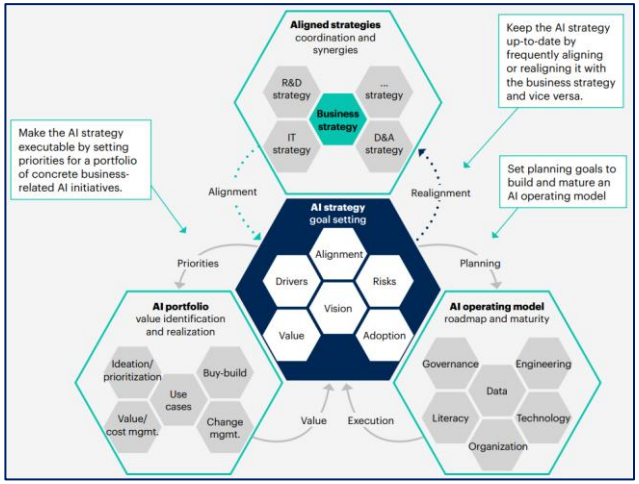
We are three years into Enterprise GenAI.

However, most enterprises are still clueless regarding their data & AI strategy.

Stakeholders are lost in an ocean of bubbles

Strategy guidance on social media …

is often highly generic and in-complete



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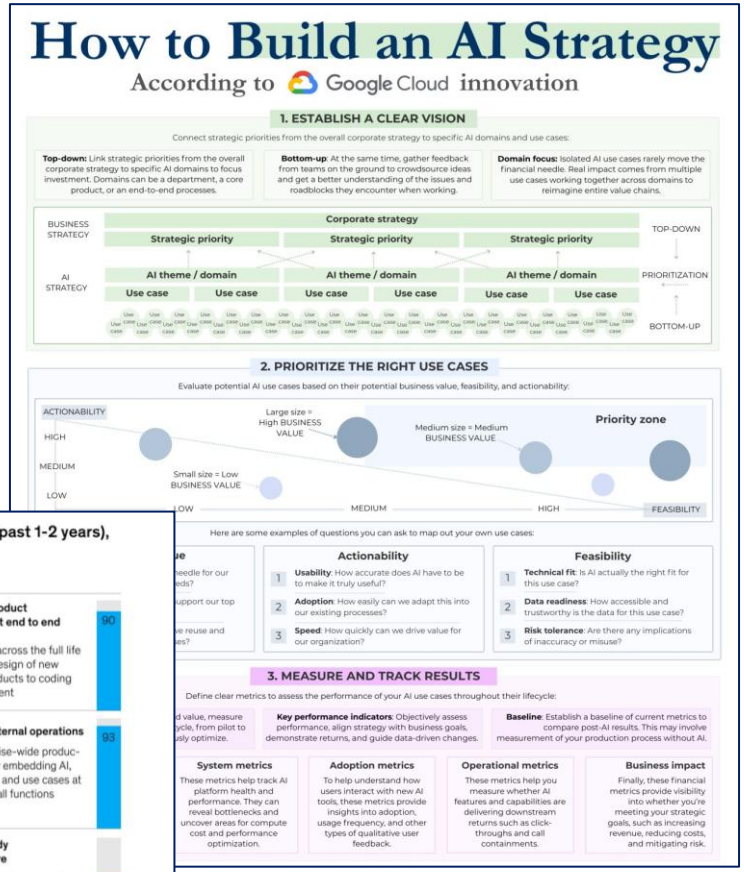

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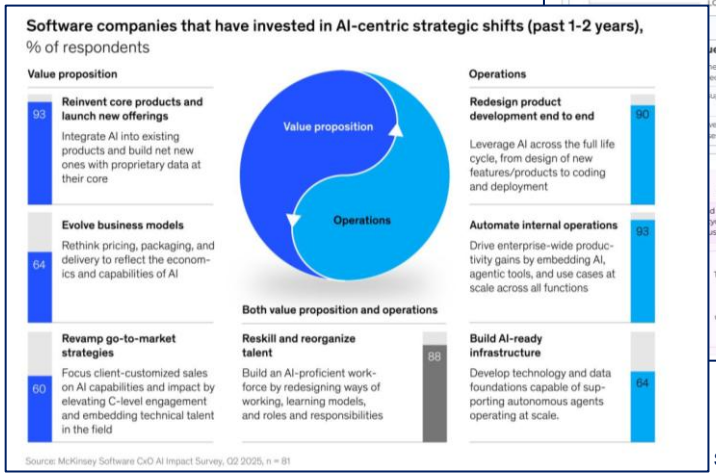

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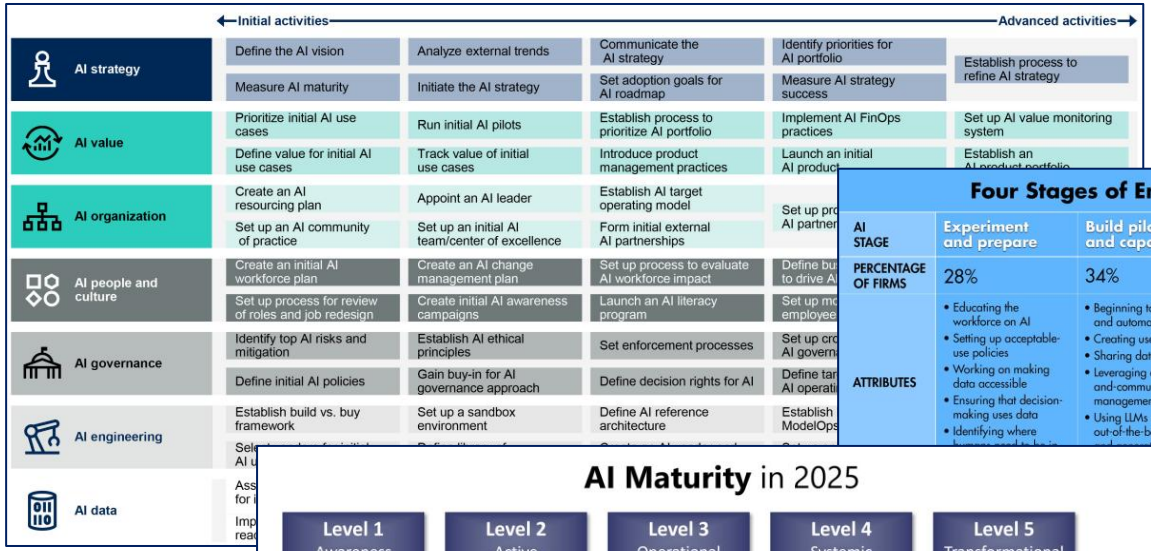
Enterprise **AI maturity models:** Inspiring, but not sufficient as strategy either



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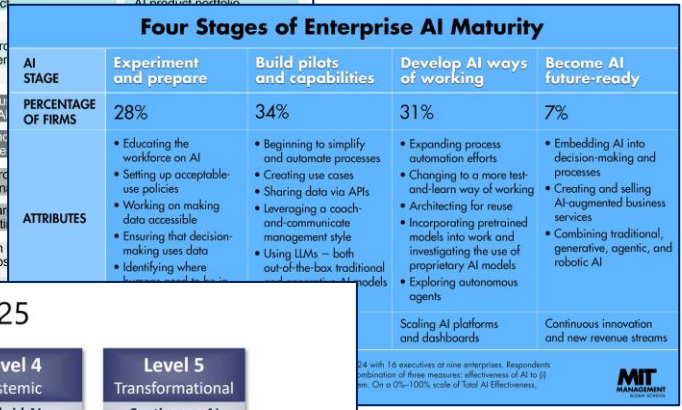

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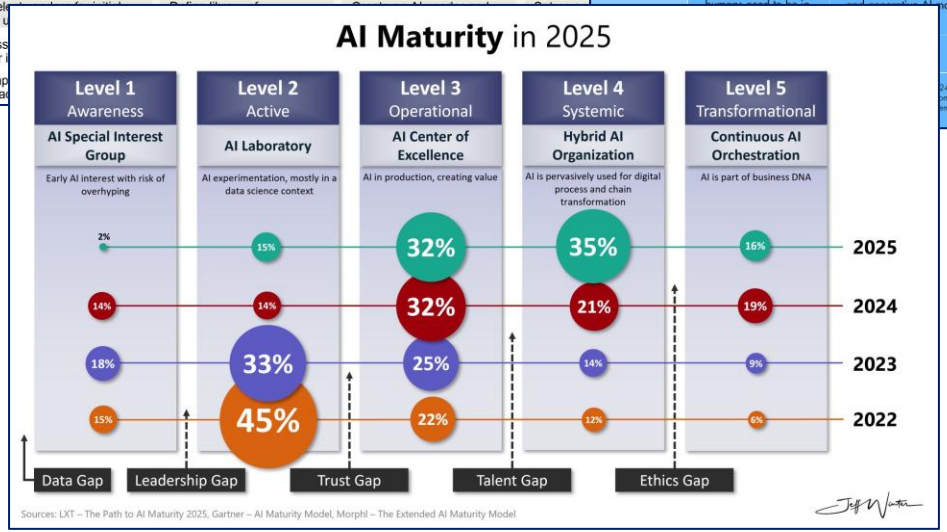

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Enterprise Architecture
is the Cornerstone of
Digitalization Strategy

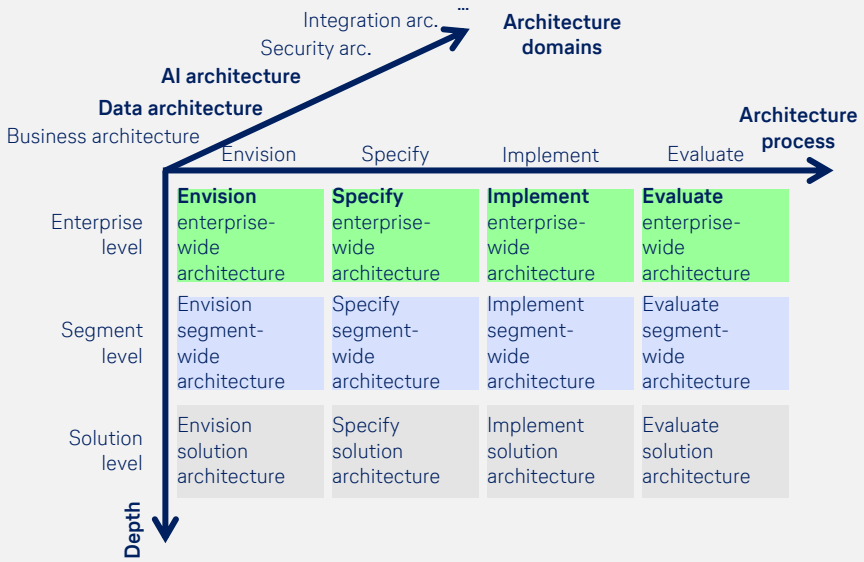
What is Enterprise Architecture Management (EAM)?

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

What are the core capabilities of Enterprise Architecture Management?

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

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

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

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 resources** for carrying out the goals
  Chandler, 1962, Strategy and Structures: Chapters in the History of the Industrial Enterprise

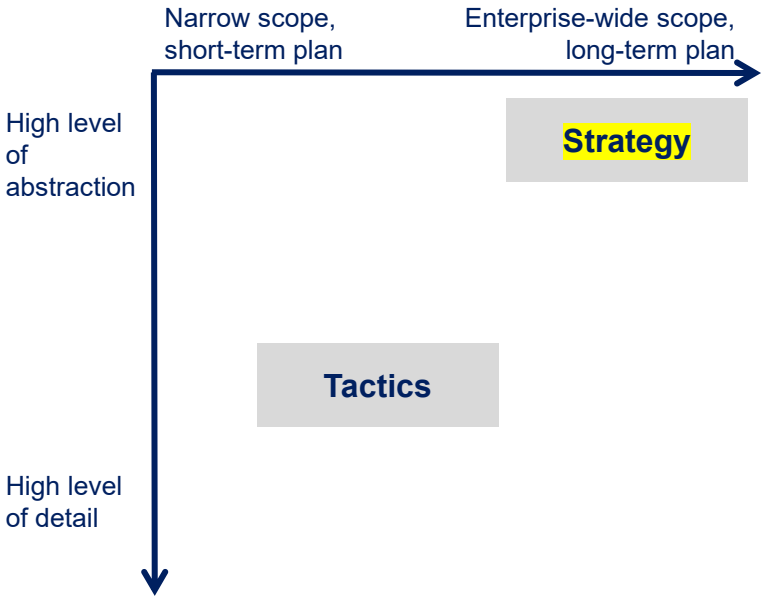
→ Essential, long-term goal

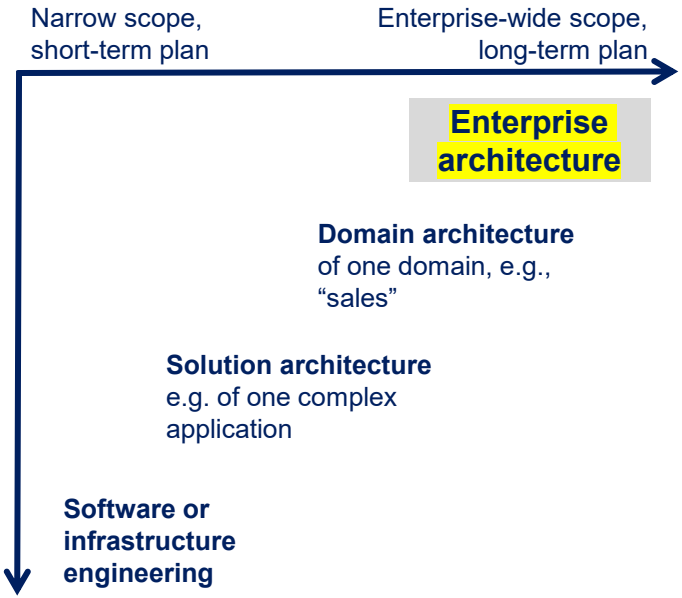
→ Plan how to reach it

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

→ Long-term behavior, set of rules

“Strategy” is long-term, has a broad, comprehensive scope and is high-level. *Sounds familiar?*





Architecture and strategy are closely related - not only in nature

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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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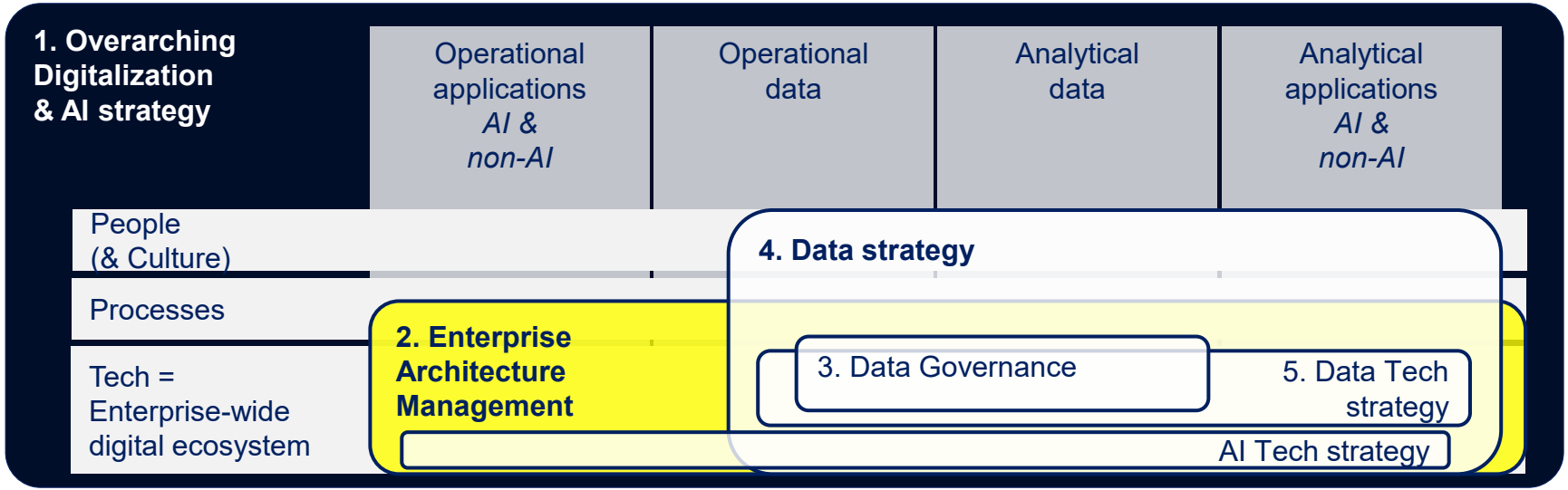
Beware of the "Eierlegende Wollmilchsau"

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

Enterprise Architecture Management addresses the **tech part of data & AI strategy**

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



1. Digital & AI strategy provides the big picture for managing all digitalization capabilities of an enterprise

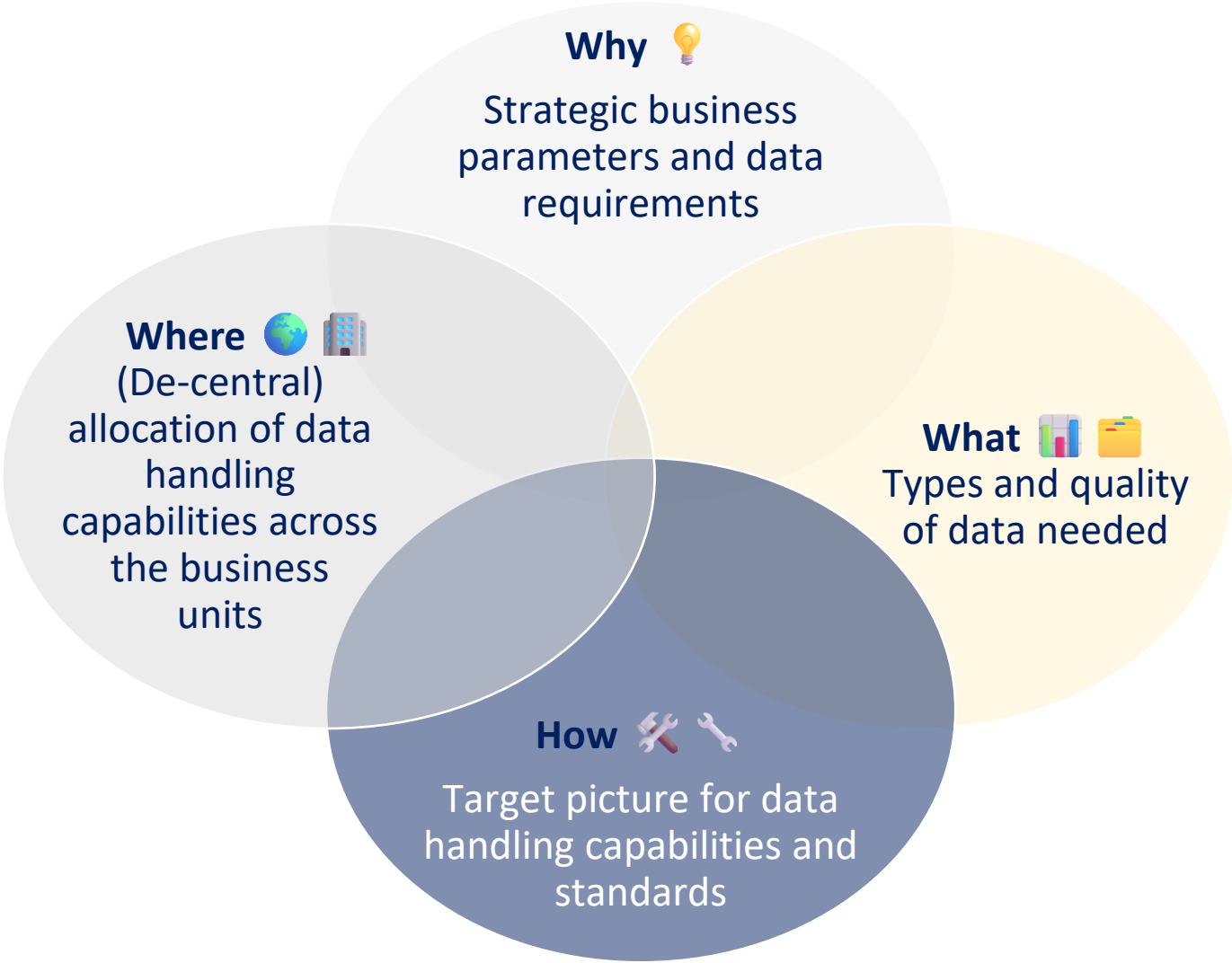
2. Enterprise Architecture Management defines the high-level picture of applications, data and infrastructure

3. Data Governance ensures high quality and compliance of data

4. Data strategy defines the big picture for managing data; traditionally focusing on central, analytical data

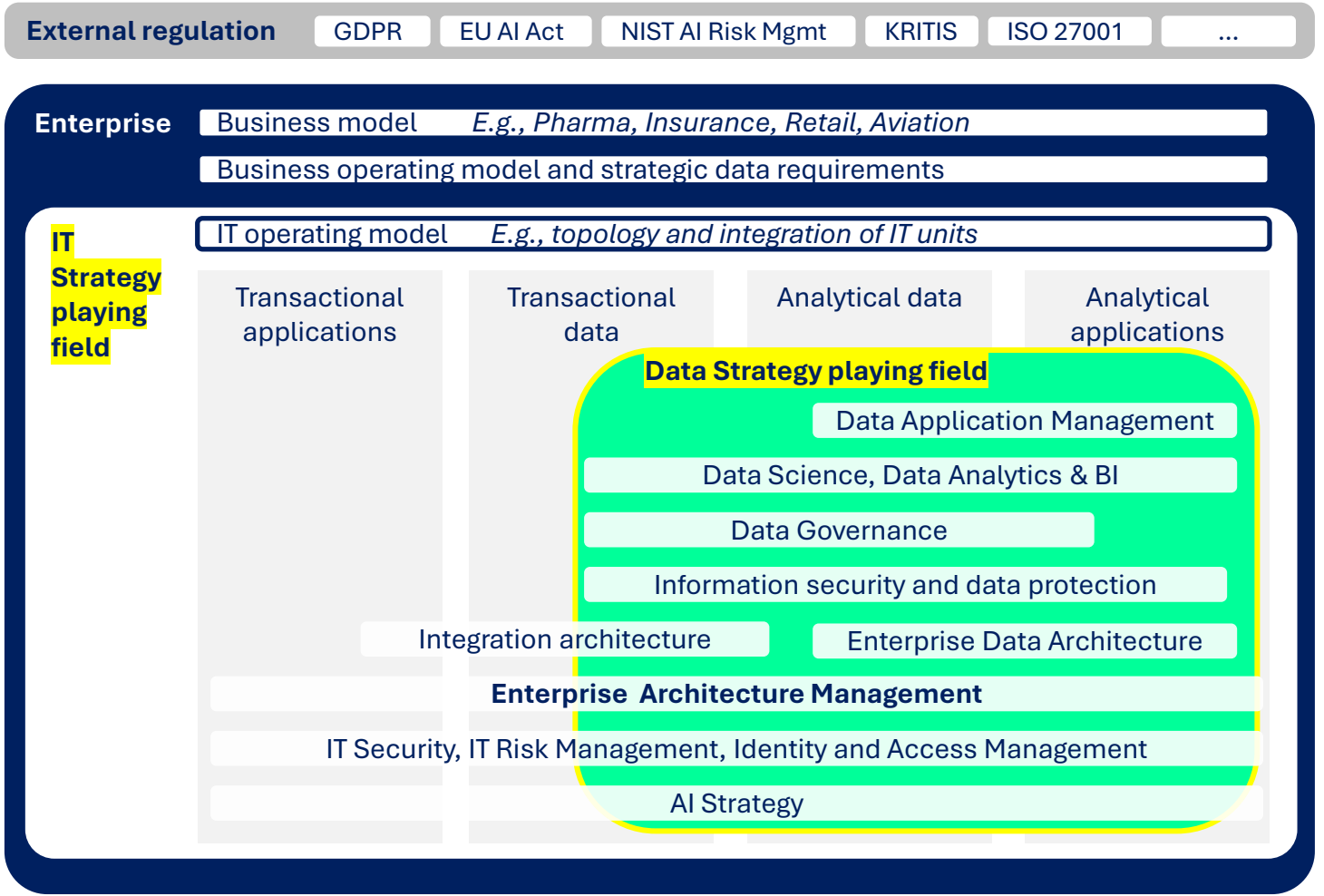
5. Data Tech strategy focuses on the "technology" part (and directly involved people & processes)

Somehow a (data) strategy should address the Sesame-Street questions



“How” dimension

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

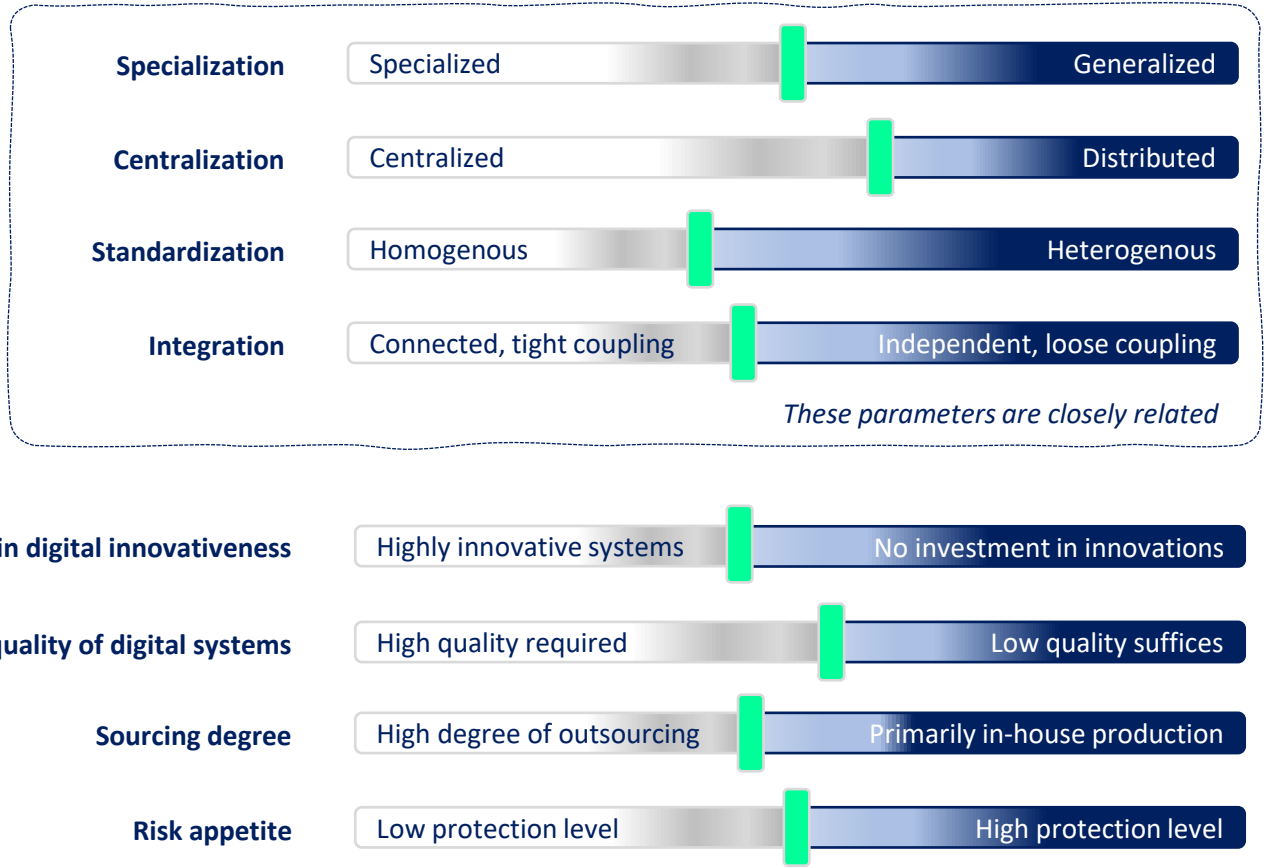


„What“ and „Where“ dimension

Strategic parameters of enterprise-wide data & AI strategies

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

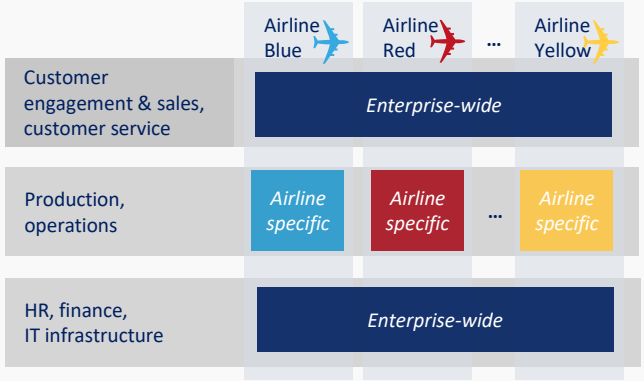
i.e. the enterprise architecture



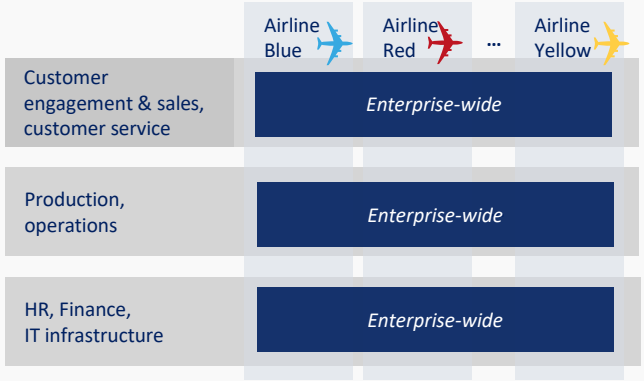
Based on @Springer, 2022, J. Ziemann: “Fundamentals of Enterprise Architecture Management”

The business and operating model defines the degree of central-ization and the “integration spheres”

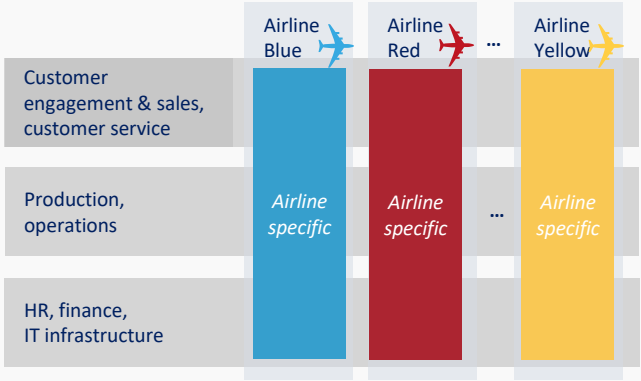
1. Decentralized operations (market-oriented)



2. Completely integrated airlines (function-oriented)

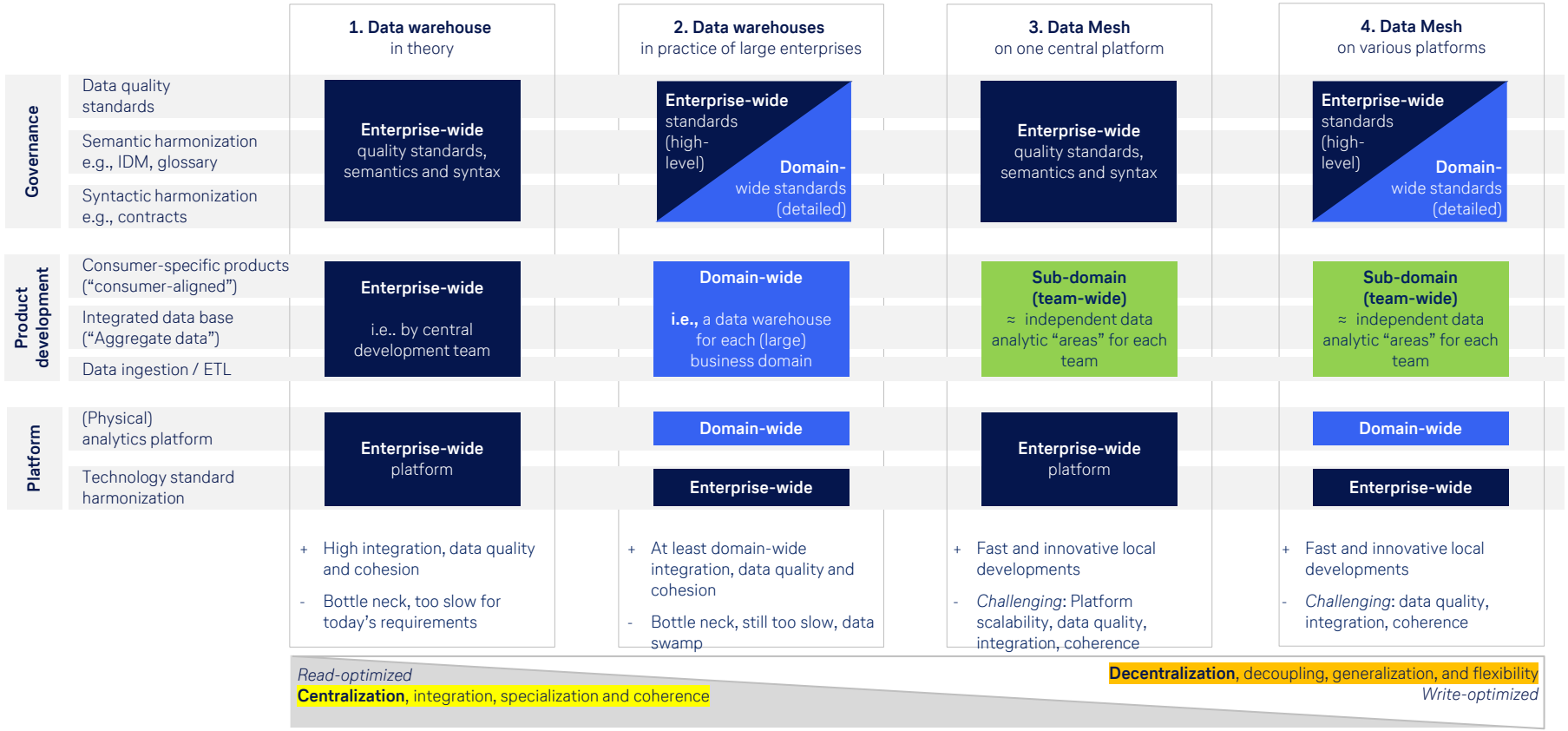


3. Completely decoupled airlines (product-oriented)

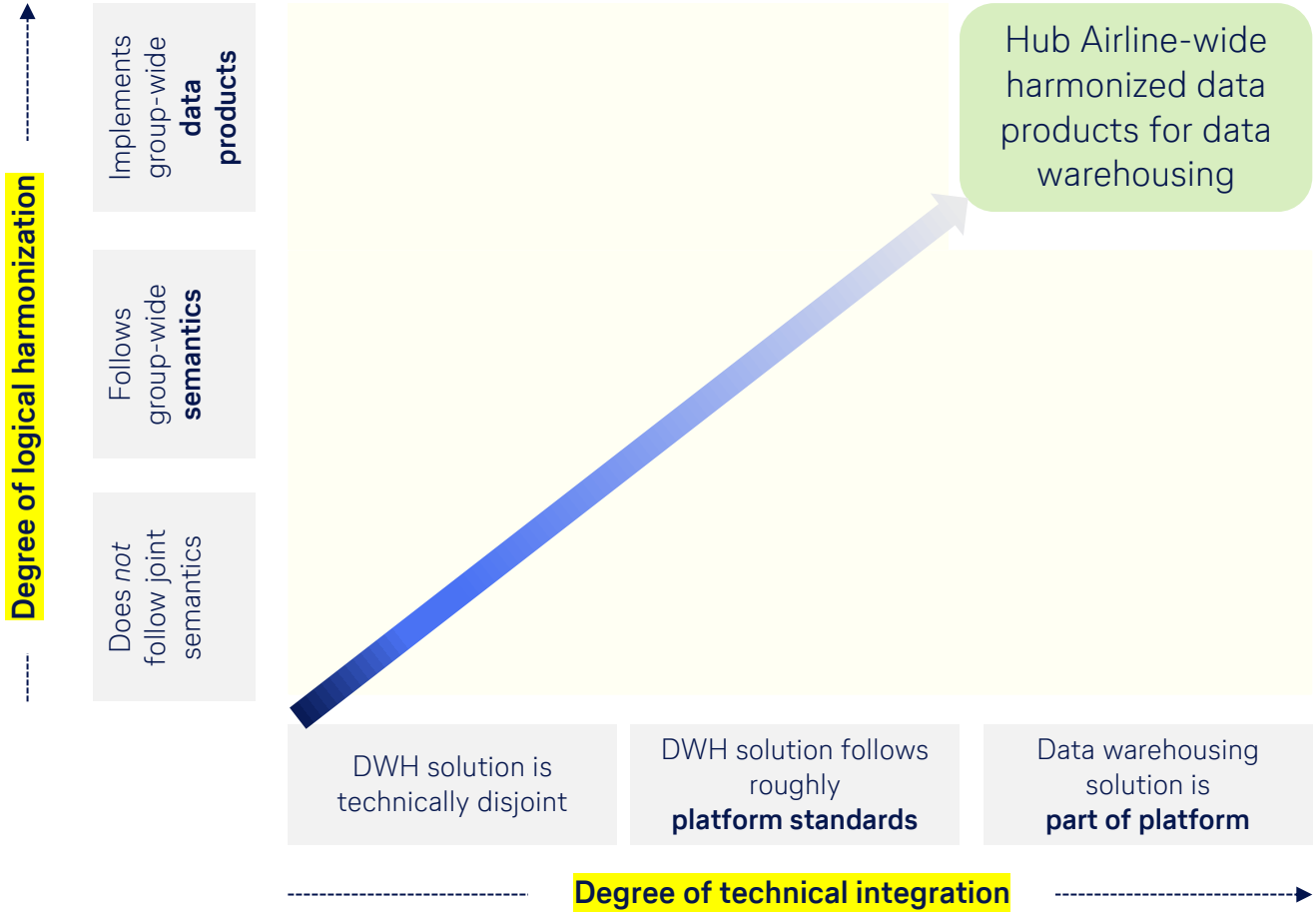


- *On a very high level:* Which type of data should be available, where, in which quality (inc. degree of harmonization), why, and for whom?
- **THIS IS NOT a strategy:** “We need all data everywhere in perfect quality, in real-time, available 24/7”

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

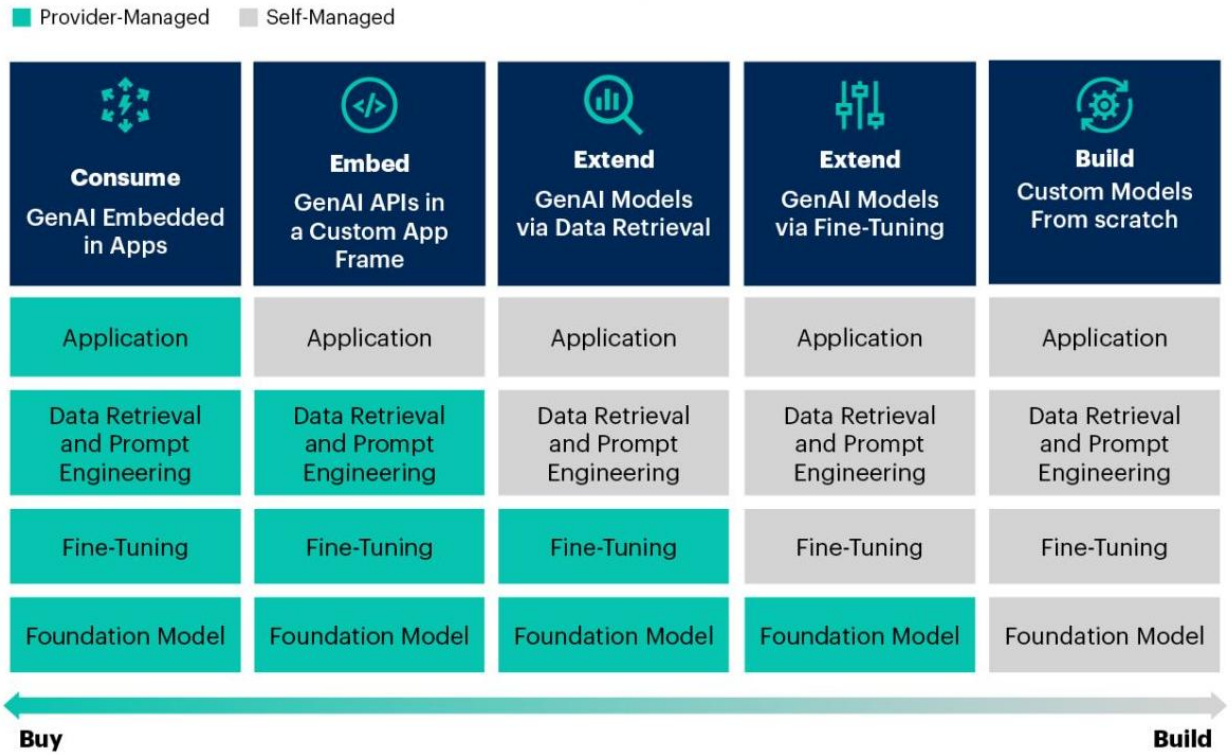


The target picture data & insights for Lufthansa's hub airlines highlights **two core metrics for data warehousing capabilities:**



Parameters of GenAI application development

Sourcing degree,
i.e.,
“Buy vs. Build”
of the
elements of
one GenAI-
based
application



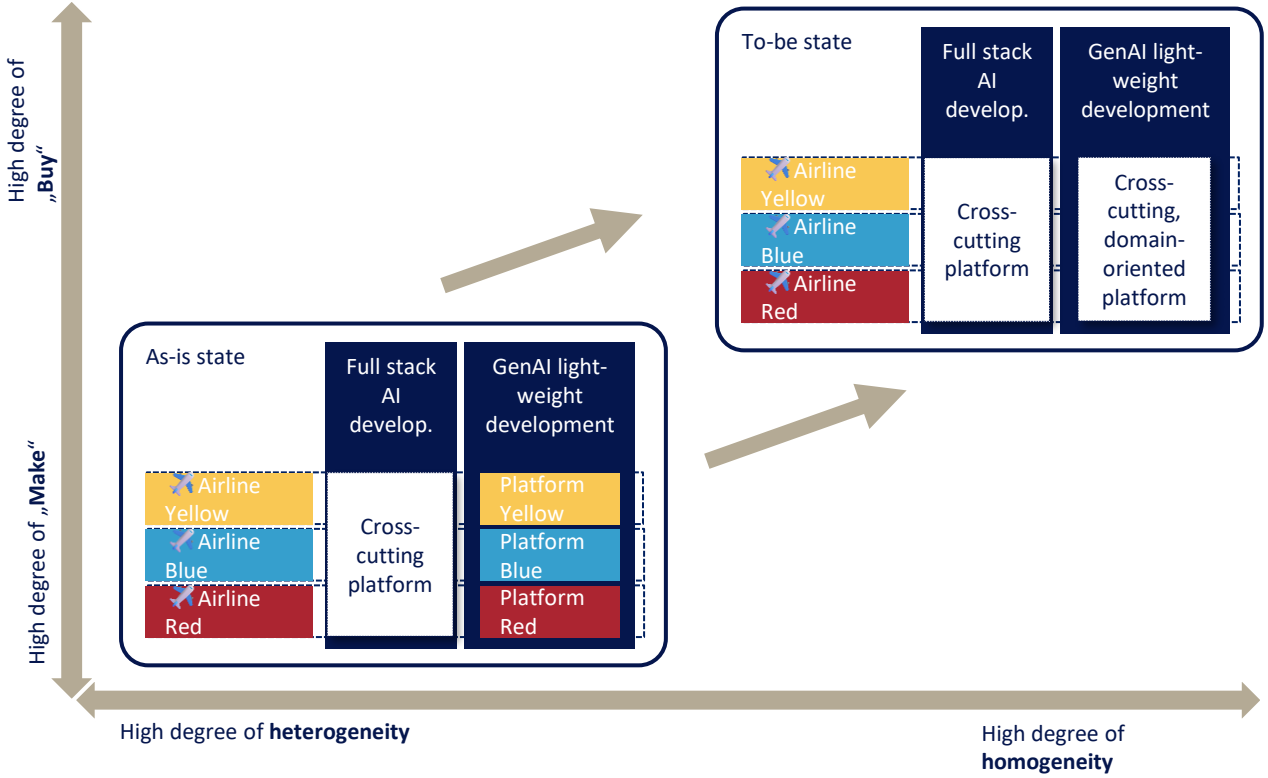
Picture: Gartner

A core question in the group-wide **target picture** for GenAI development:

Degree of buy (vs. make) and Degree of centralization and standardization

In the early GenAI rush, several AOC-specific GenAI platforms enabled fast development.

Based on more mature products from the market, today a stronger harmonization is sought for.



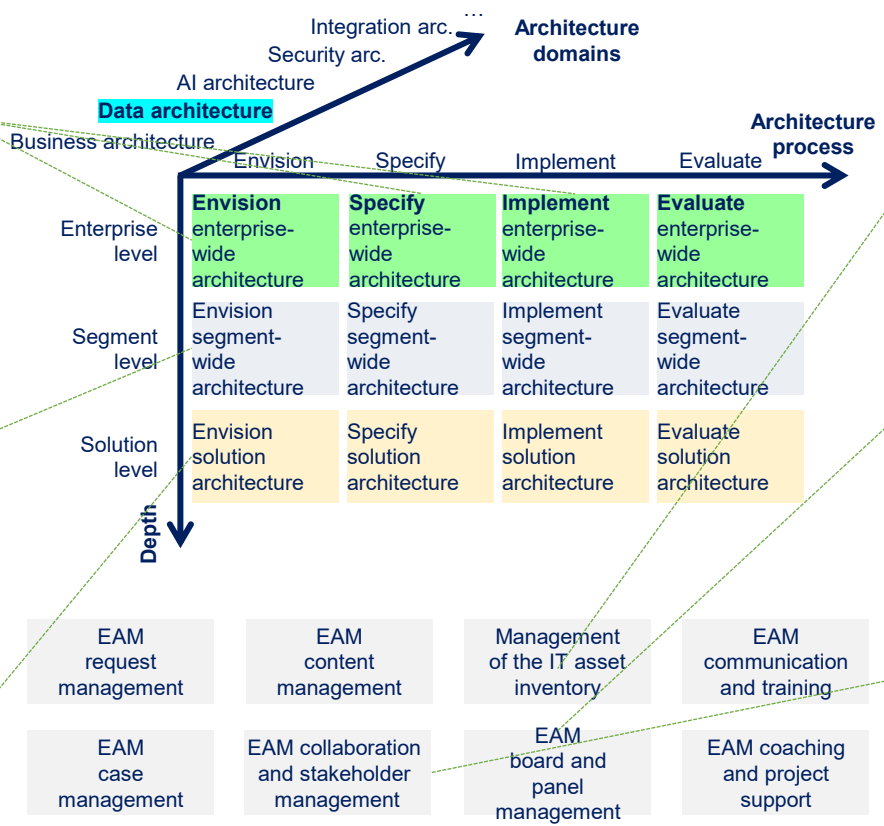
Enterprise Architecture Management connects strategy and execution
based on a set of battle-tested, coherent capabilities

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

Enterprise-wide target picture Data & Insights and a roadmap for reaching this

Support domain architects for creating a coherent **domain-specific** data & insights landscape

Envision capabilities of central data & insights platforms



Ensure enterprise-wide standardization and cataloging of **data products**

Ensure aligned, binding and high-quality **strategic decisions** on the data & insights landscape

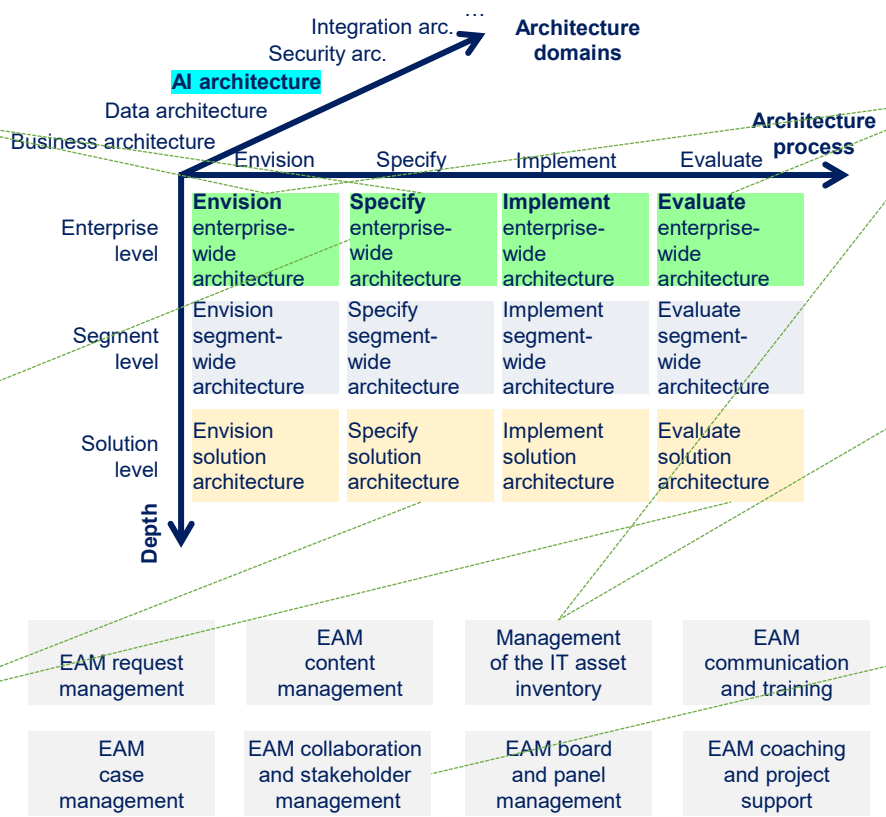
Ensure **enterprise-wide alignments** on current strategic Data & Insights initiatives

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

Enterprise-wide target picture (Gen)AI applications, platforms & solution blocks

Principles, guidelines and standards for developing AI-based applications

GenAI specific solution sketching and compliance check

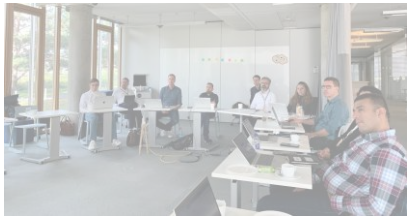


Portfolio management for (Gen)AI-based solutions

Enterprise-wide Catalog of AI-based solutions and risk classifications

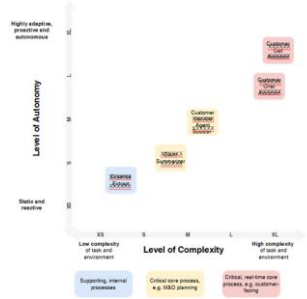
Enterprise-wide alignments on new GenAI use cases and solution blocks

Recent example:
EAM supports the introduction of Agentic AI in a large aviation group



Workshop on Agentic AI

- Including the Enterprise Architects responsible for each large business domain (e.g., Customer, OPS, Finance) as well as technology specific architects (data, AI, agentic)
- Potential for agentic AI use case in each domain



Joint understanding Agentic AI and use case analysis

- Clustering along the dimensions of *autonomy* and *complexity*
- Portfolio on the dimensions of *value* and *effort*

Platform capabilities: Agentic AI & GenAI data layer

- How to tame a crew of hallucinating agents?
- AI everywhere, also in transactional applications: Which capabilities are provided centrally?
- *Thorough architecture* for GenAI data access layer

Conclusion

The substantial role of EAM in designing and implement-ting enterprise-wide Data and AI capabilities must be clear

High-level strategy 🧭
Enterprise Architecture and digitalization strategy are two sides of the same coin. Enterprise Architecture Management (EAM) shapes the digitalization strategy.

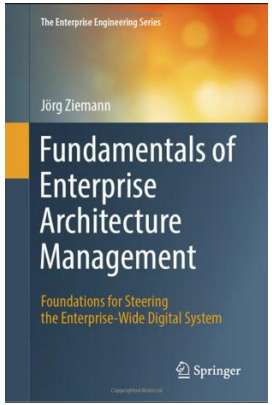
Connecting the layers 🔗
EAM provides a coherent set of capabilities for collaboratively developing the digital landscape on enterprise-, domain-, and solution-level.

Design parameters ⚖️
Enterprise Architecture in the large is shaped by a couple of core design parameters, e.g. centralization and standardization.

Fit for disruptive technologies 🚀
EAM successfully addresses disruptive technologies like GenAI and Agentic, combining top-down with bottom-up initiatives.

Thank you for your attention

Further reading:



- https://eamfundamentals.com/
- **Isolated Data and AI Strategies Without Enterprise Architecture? Still a Common Mistake– How to Build Scalable Data & AI Strategies with Enterprise Architecture.** Medium.com, June 2025, Link.
- **The Essential Role of Enterprise Architecture Management for Data and AI Strategy & Governance**. EAMInsights Conference, Bonn, May 2025. Link (full slide set).
- **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