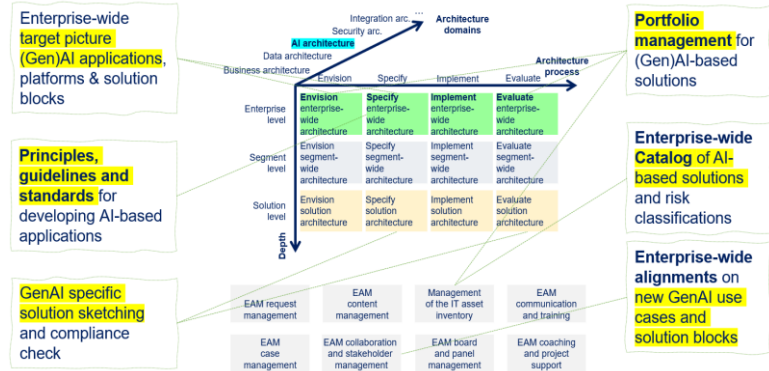


Defining and implementing Data and AI Strategies using Enterprise Architecture

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](https://www.eamfundamentals.com) and [LinkedIn](https://www.linkedin.com/in/joergziemann)

- 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



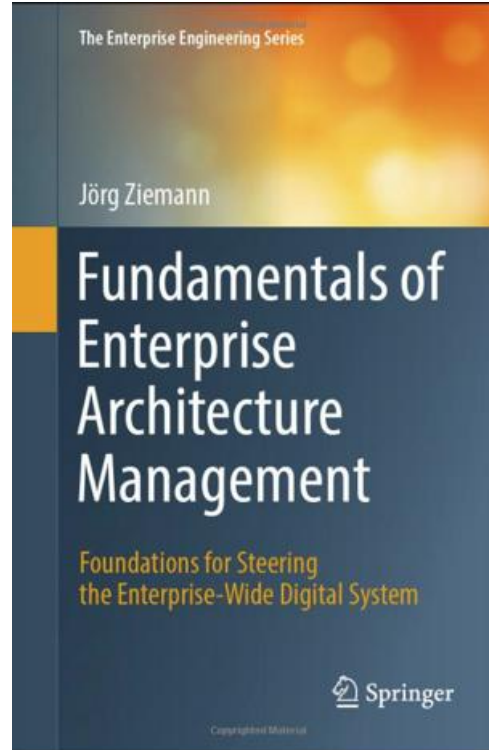
- **Author, reviewer, and speaker** on enterprise digitalization 2004-today



- **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.

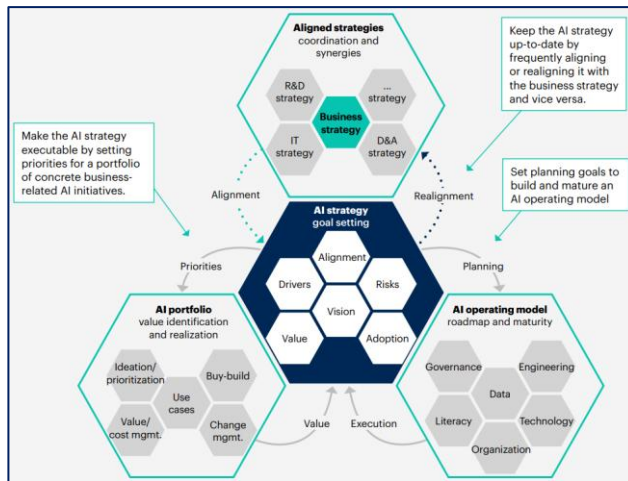
We are three years into Enterprise GenAI.

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

Stakeholders are lost in an ocean of bubbles



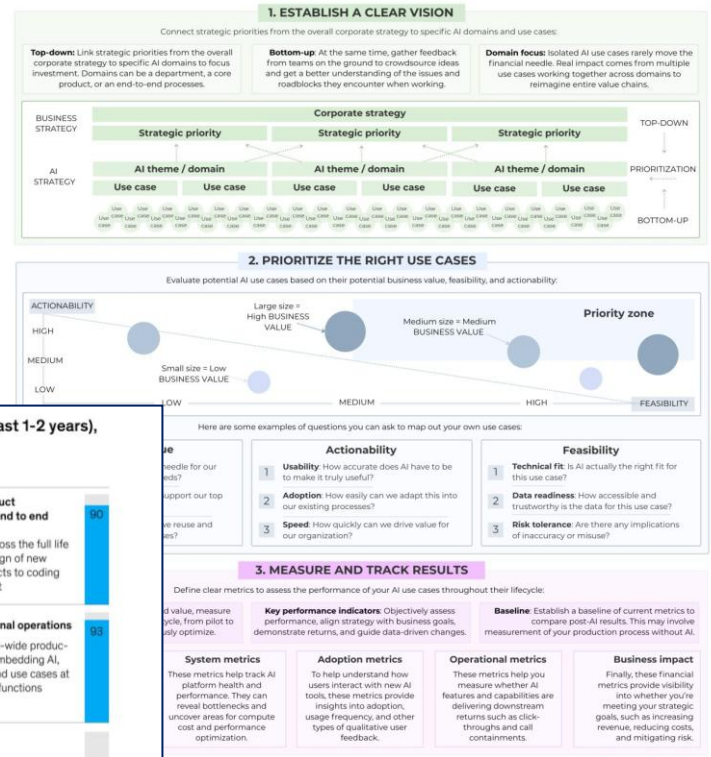
Strategy guidance on social media ... is often highly generic and incomplete



Source [\(link\)](#)

How to Build an AI Strategy

According to Google Cloud innovation



Source [\(link\)](#)



Source [\(link\)](#)

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

	← Initial activities				Advanced activities →
AI strategy	Define the AI vision	Analyze external trends	Communicate the AI strategy	Identify priorities for AI portfolio	Establish process to refine AI strategy
AI value	Measure AI maturity	Initiate the AI strategy	Set adoption goals for AI roadmap	Measure AI strategy success	Set up AI value monitoring system
AI organization	Prioritize initial AI use cases	Run initial AI pilots	Establish process to prioritize AI portfolio	Implement AI FinOps practices	Set up AI value monitoring system
AI people and culture	Define value for initial AI use cases	Track value of initial use cases	Introduce product management practices	Launch an initial AI product portfolio	Establish an AI product portfolio
AI governance	Create an AI resourcing plan	Appoint an AI leader	Establish AI target operating model	Set up pro AI partner	
AI engineering	Set up an AI community of practice	Set up an initial AI team/center of excellence	Form initial external AI partnerships		
AI data	Create an initial AI workforce plan	Create an AI change management plan	Set up process to evaluate AI workforce impact	Define bus to drive AI	
	Set up process for review of roles and job redesign	Create initial AI awareness campaigns	Launch an AI literacy program	Set up mc employees	
	Identify top AI risks and mitigation	Establish AI ethical principles	Set enforcement processes	Set up crd AI govern	
	Define initial AI policies	Gain buy-in for AI governance approach	Define decision rights for AI	Define tar AI operati	
	Establish build vs. buy framework	Set up a sandbox environment	Define AI reference architecture	Establish ModelOps	
	Set up AI U				
	Ass for i				
	Imp reat				

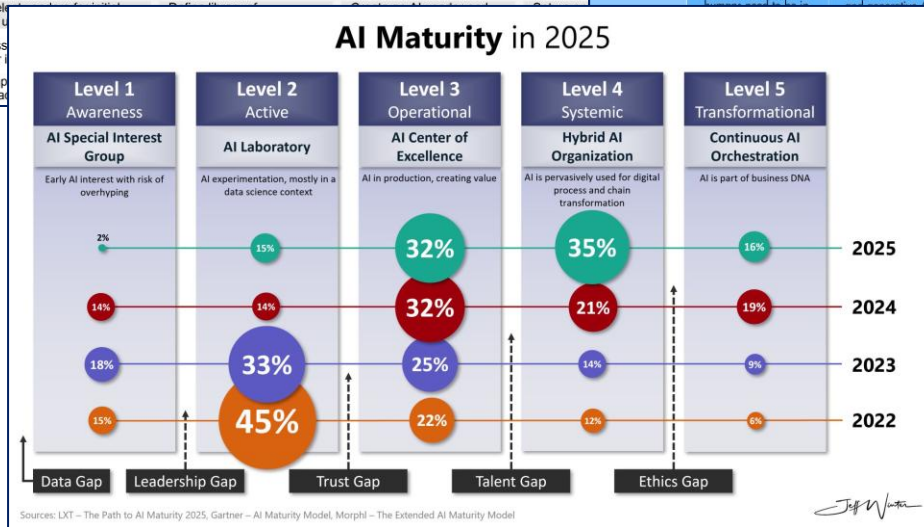
Source ([link](#))

AI STAGE	Experiment and prepare	Build pilots and capabilities	Develop AI ways of working	Become AI future-ready
PERCENTAGE OF FIRMS	28%	34%	31%	7%
ATTRIBUTES	<ul style="list-style-type: none"> Educating the workforce on AI Setting up acceptable-use policies Working on making data accessible Ensuring that decision-making uses data Identifying where 	<ul style="list-style-type: none"> Beginning to simplify and automate processes Creating use cases Sharing data via APIs Leveraging a coach-and-communicate management style Using LLMs – both out-of-the-box traditional models 	<ul style="list-style-type: none"> Expanding process automation efforts Changing to a more test-and-learn way of working Architecting for reuse Incorporating pretrained models into work and investigating the use of proprietary AI models Exploring autonomous agents 	<ul style="list-style-type: none"> Embedding AI into decision-making and processes Creating and selling AI-augmented business services Combining traditional, generative, agentic, and robotic AI
		Scaling AI platforms and dashboards		Continuous innovation and new revenue streams

24 with 16 executives at nine enterprises. Respondents' combination of three measures: effectiveness of AI to (i) ... On a 0%–100% scale of Total AI Effectiveness.



Source ([link](#))



Enterprise Architecture
is the Cornerstone of
Digitalization Strategy

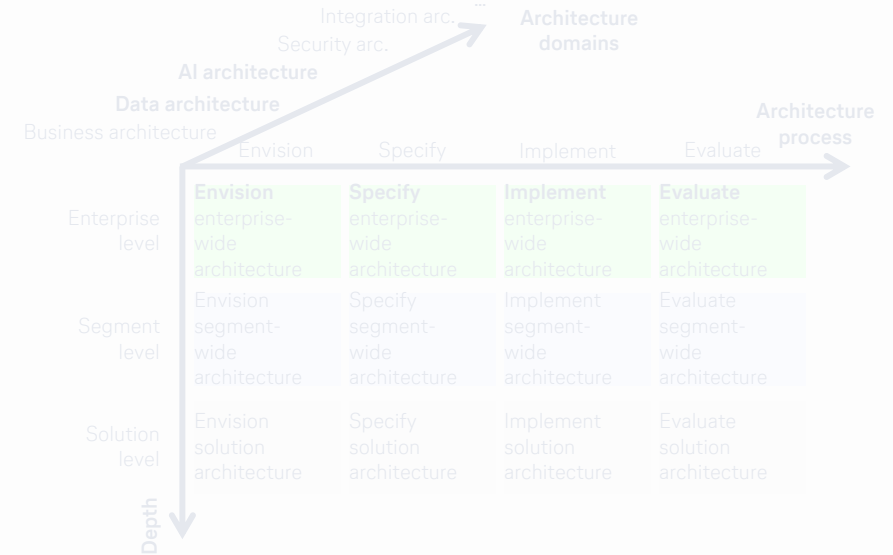
What is Enterprise Architecture Management (EAM)?

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



© Pictures from top: Shutterstock/Ink Drop, Tim Reckmann/Public Domain CC-BY-SA-3.0

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"

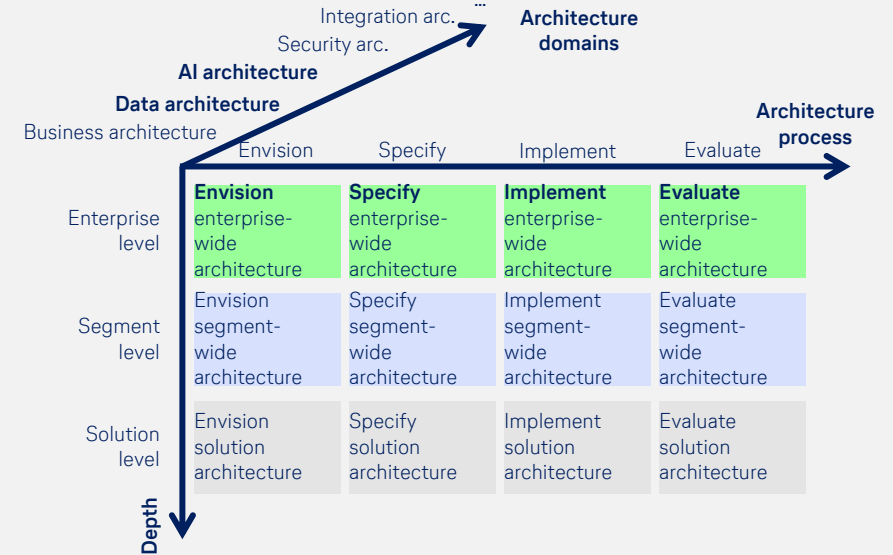
What are the core capabilities of Enterprise Architecture Management?

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



© Pictures from top: Shutterstock/Ink Drop, Tim Reckmann/Public Domain CC-BY-SA-3.0

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**

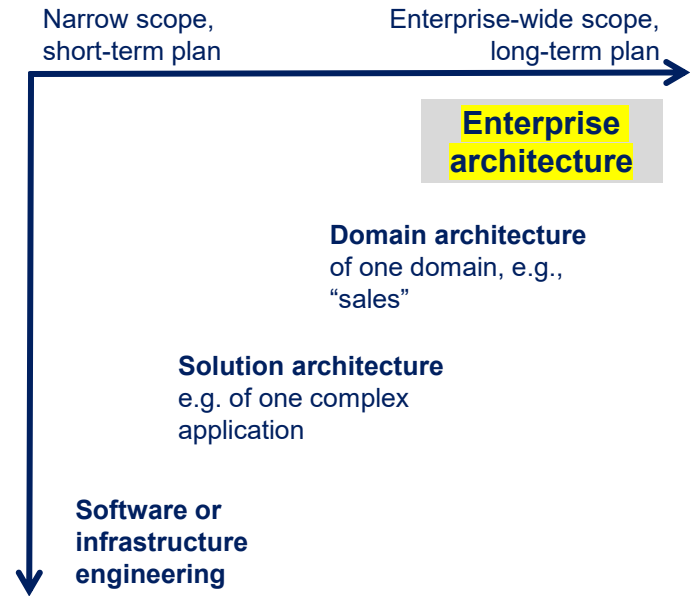
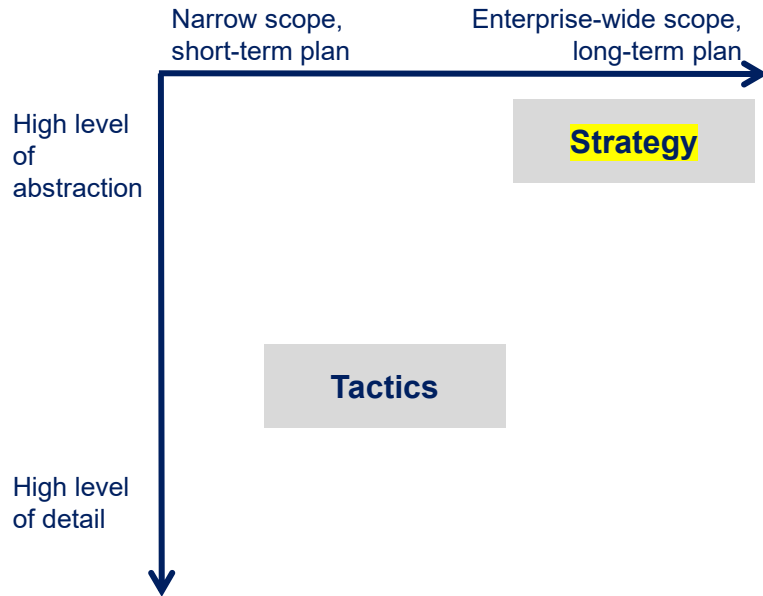
Gablers Wirtschaftslexikon, 2016

- 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



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

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

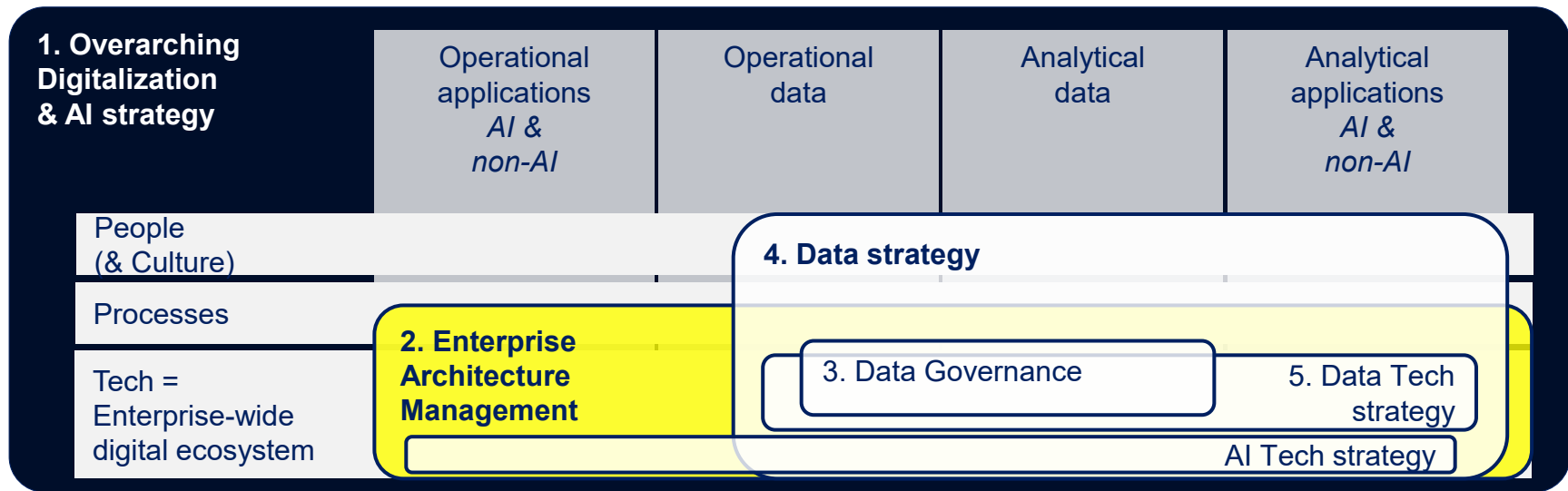
*Beware of the
“Eierlegende
Wollmilchsau”*

“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

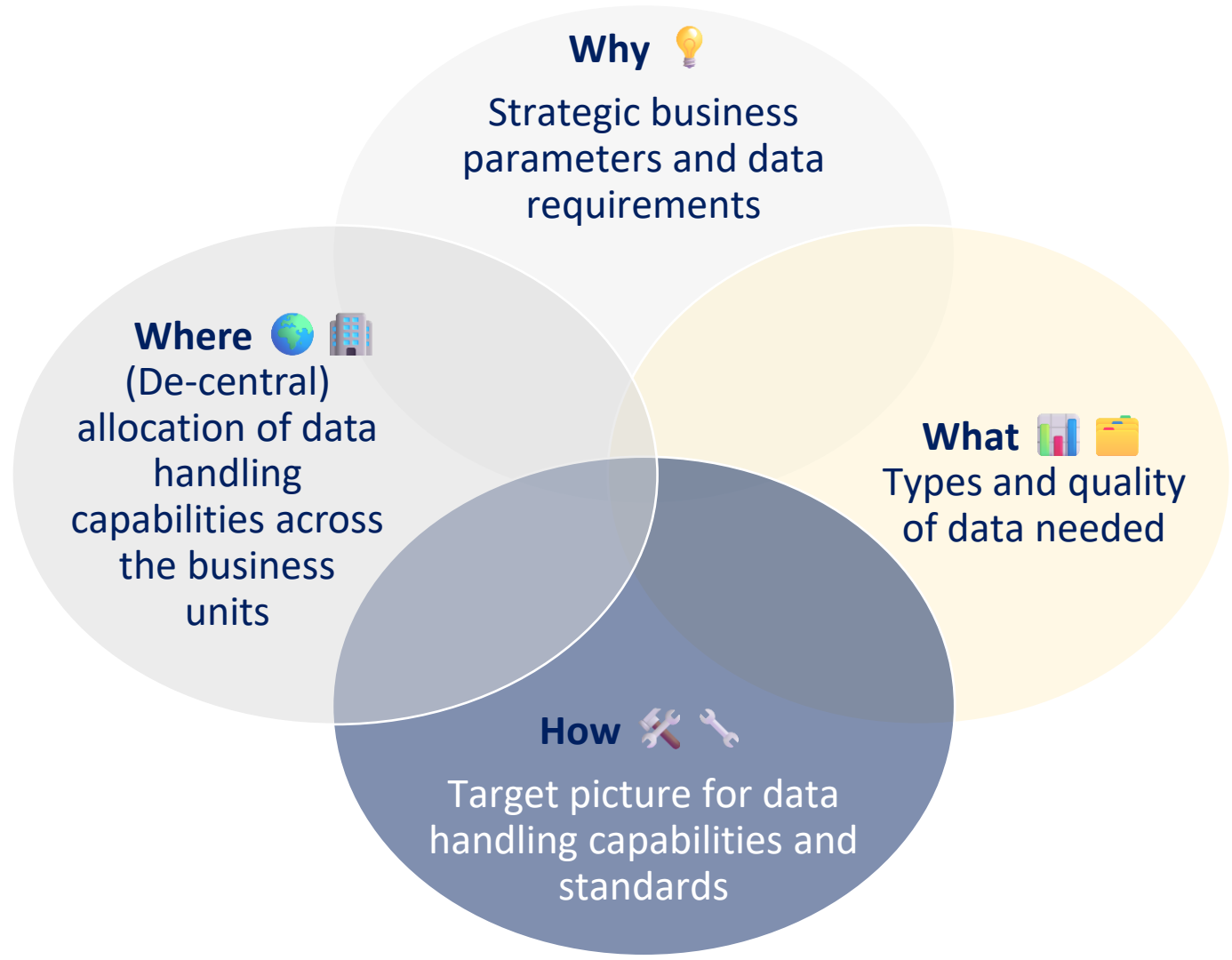
2. Enterprise Architecture Management defines the high-level picture of applications, data and infrastructure

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

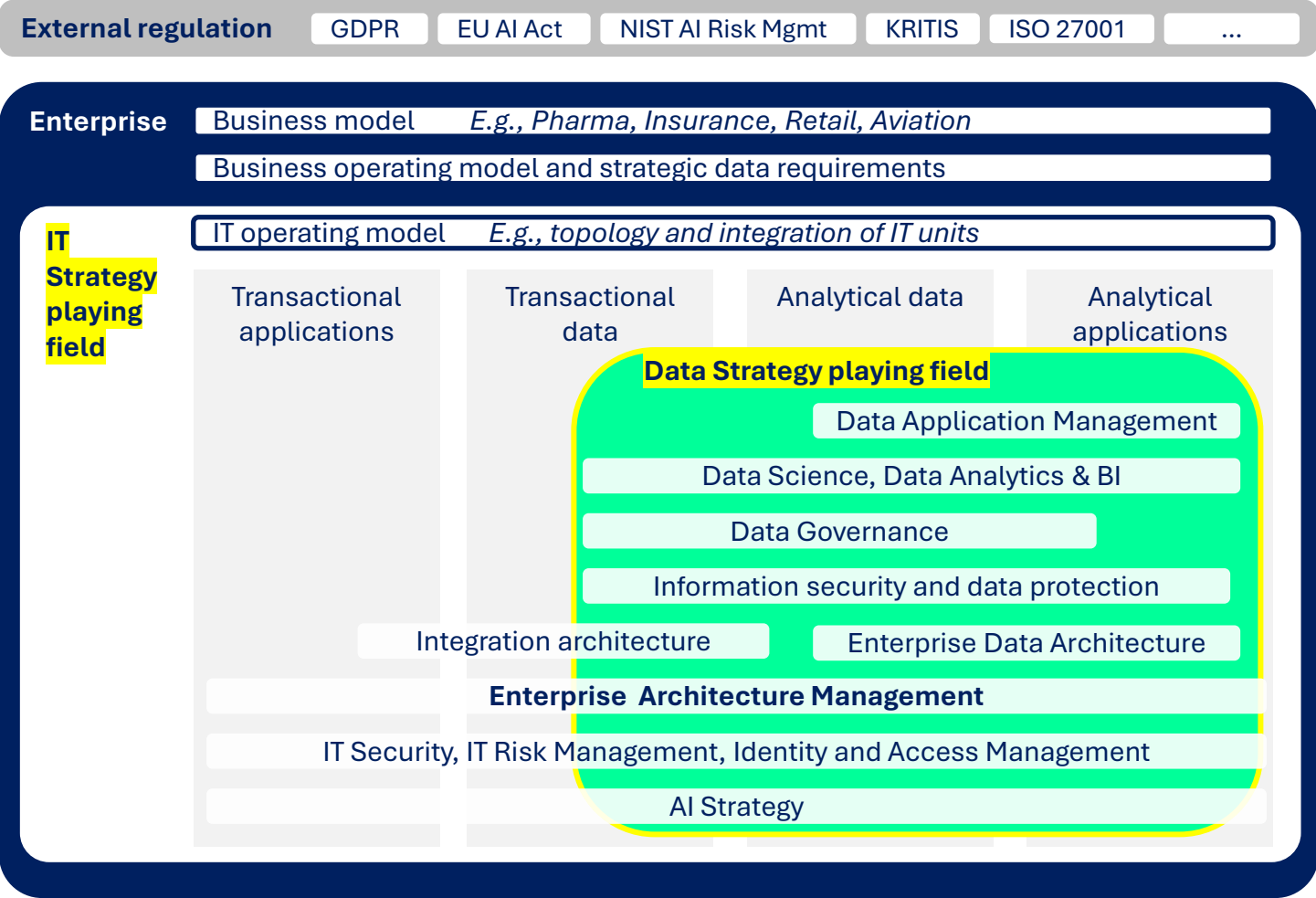
5. Data Tech strategy focuses on the “technology” part (and directly involved people & processes)

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

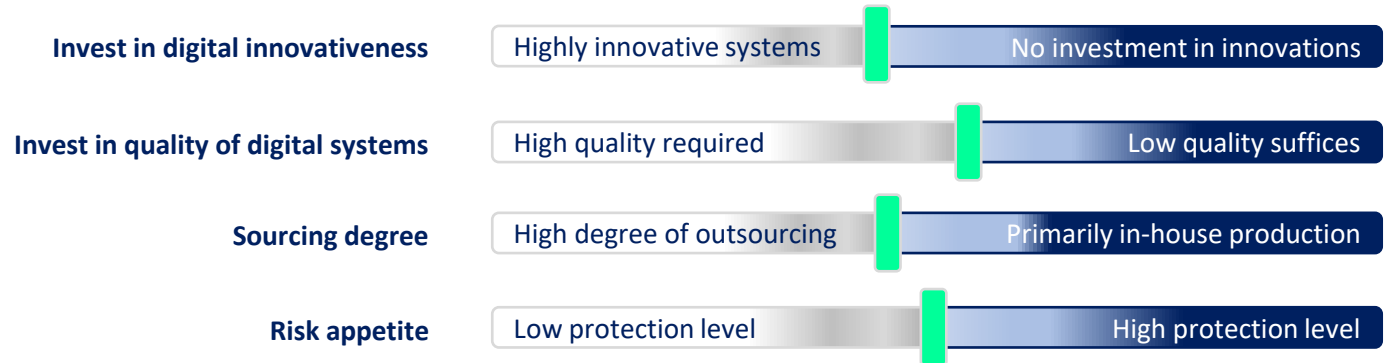
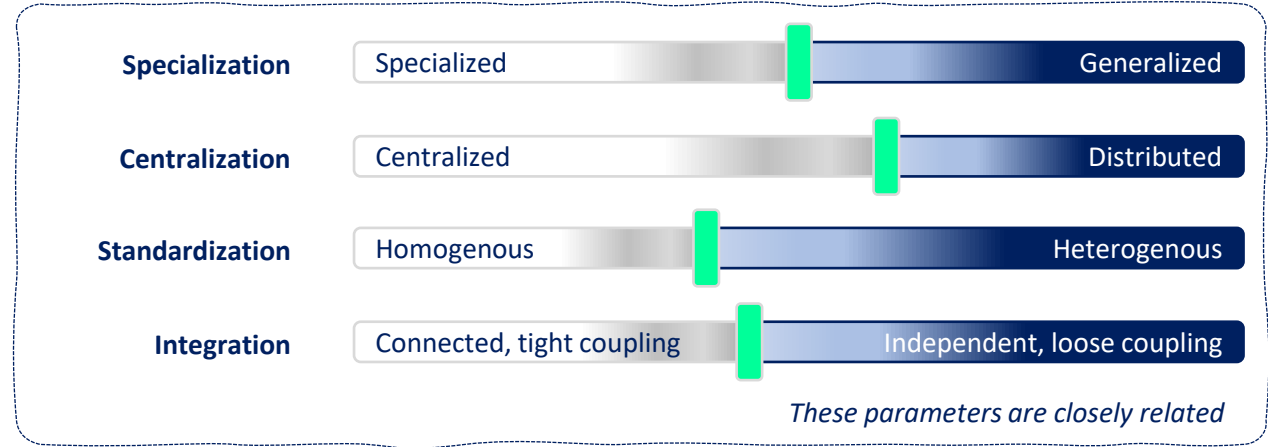


„What“ and „Where“ dimension

Strategic parameters of enterprise-
wide data & AI strategies

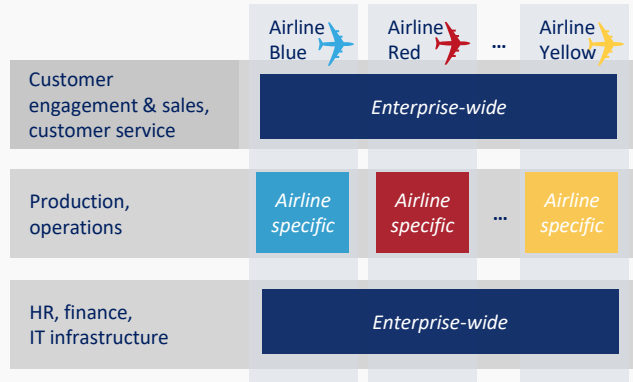
General, strategic parameters of the enterprise-wide digital ecosystem

i.e. the enterprise architecture

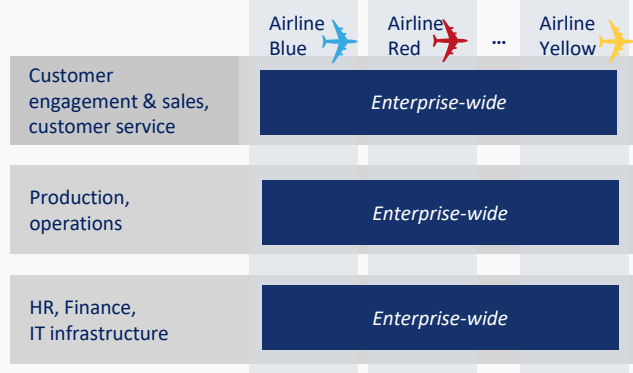


The business and operating model defines the degree of centralization and the “integration spheres”

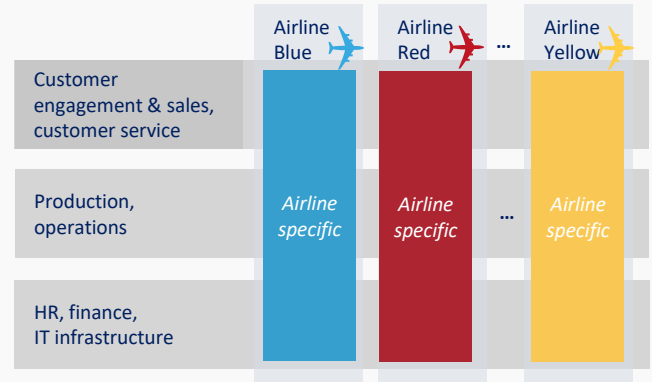
1. Decentralized operations (market-oriented)



2. Completely integrated airlines (function-oriented)



3. Completely decoupled airlines (product-oriented)

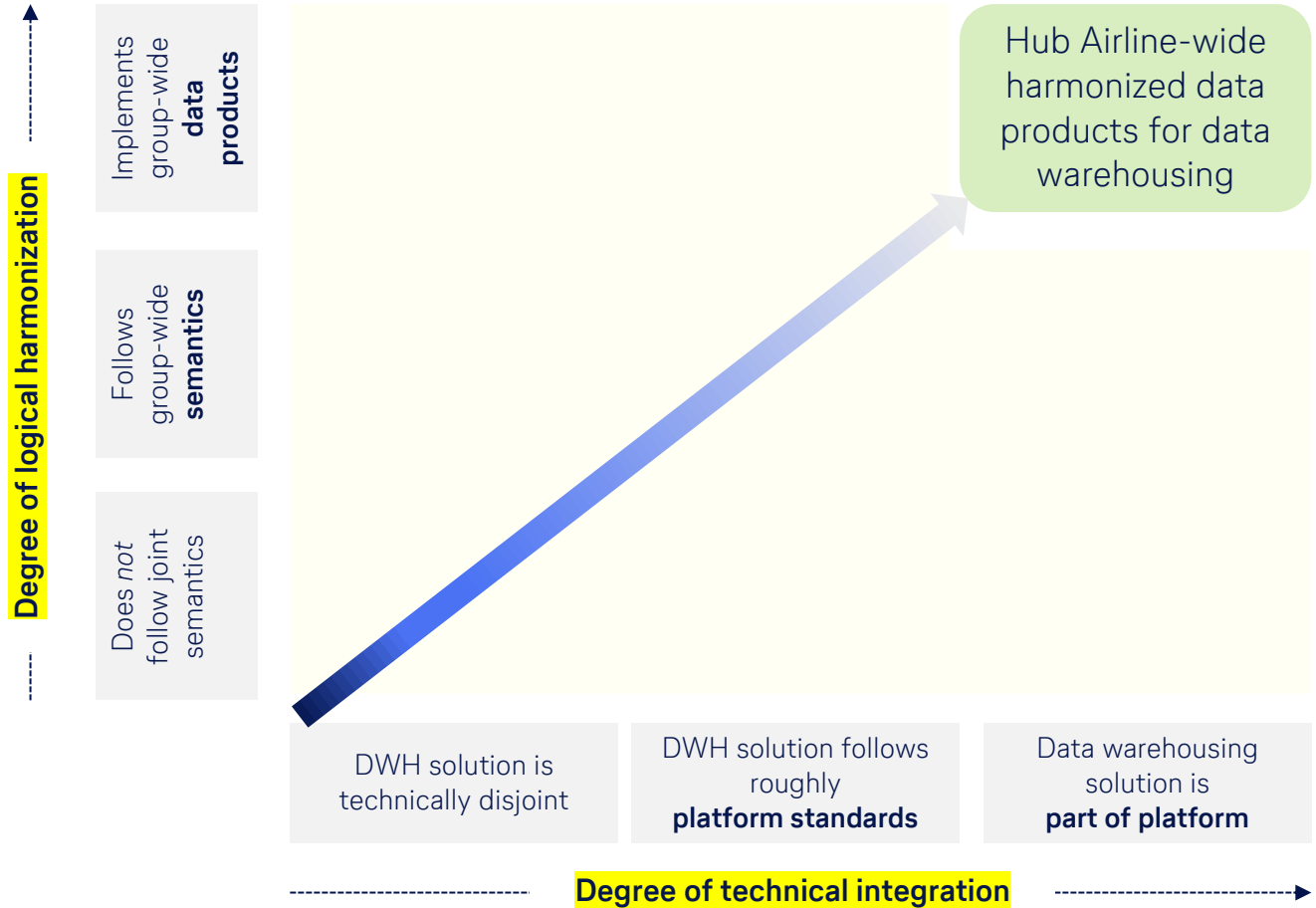


- *On a very high level:* Which type of data should be available, where, in which quality (inc. degree of harmonization), why, and for whom?
- **THIS IS NOT a strategy:** “We need all data everywhere in perfect quality, in real-time, available 24/7”

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

		1. Data warehouse in theory	2. Data warehouses in practice of large enterprises	3. Data Mesh on one central platform	4. Data Mesh on various platforms	
Governance	Data quality standards	Enterprise-wide quality standards, semantics and syntax	Enterprise-wide standards (high-level) Domain-wide standards (detailed)	Enterprise-wide quality standards, semantics and syntax	Enterprise-wide standards (high-level) Domain-wide standards (detailed)	
	Semantic harmonization e.g., IDM, glossary					
	Syntactic harmonization e.g., contracts					
Product development	Consumer-specific products ("consumer-aligned")	Enterprise-wide i.e., by central development team	Domain-wide i.e., a data warehouse for each (large) business domain	Sub-domain (team-wide) ≈ independent data analytic "areas" for each team	Sub-domain (team-wide) ≈ independent data analytic "areas" for each team	
	Integrated data base ("Aggregate data")					
	Data ingestion / ETL					
Platform	(Physical) analytics platform	Enterprise-wide platform	Domain-wide	Enterprise-wide platform	Domain-wide	
	Technology standard harmonization		Enterprise-wide		Enterprise-wide	
		<ul style="list-style-type: none"> + High integration, data quality and cohesion - Bottle neck, too slow for today's requirements 	<ul style="list-style-type: none"> + At least domain-wide integration, data quality and cohesion - Bottle neck, still too slow, data swamp 	<ul style="list-style-type: none"> + Fast and innovative local developments - <i>Challenging</i>: Platform scalability, data quality, integration, coherence 	<ul style="list-style-type: none"> + Fast and innovative local developments - <i>Challenging</i>: data quality, integration, coherence 	
		<p>Read-optimized</p> <p>Centralization, integration, specialization and coherence</p>			<p>Decentralization, decoupling, generalization, and flexibility</p> <p>Write-optimized</p>	

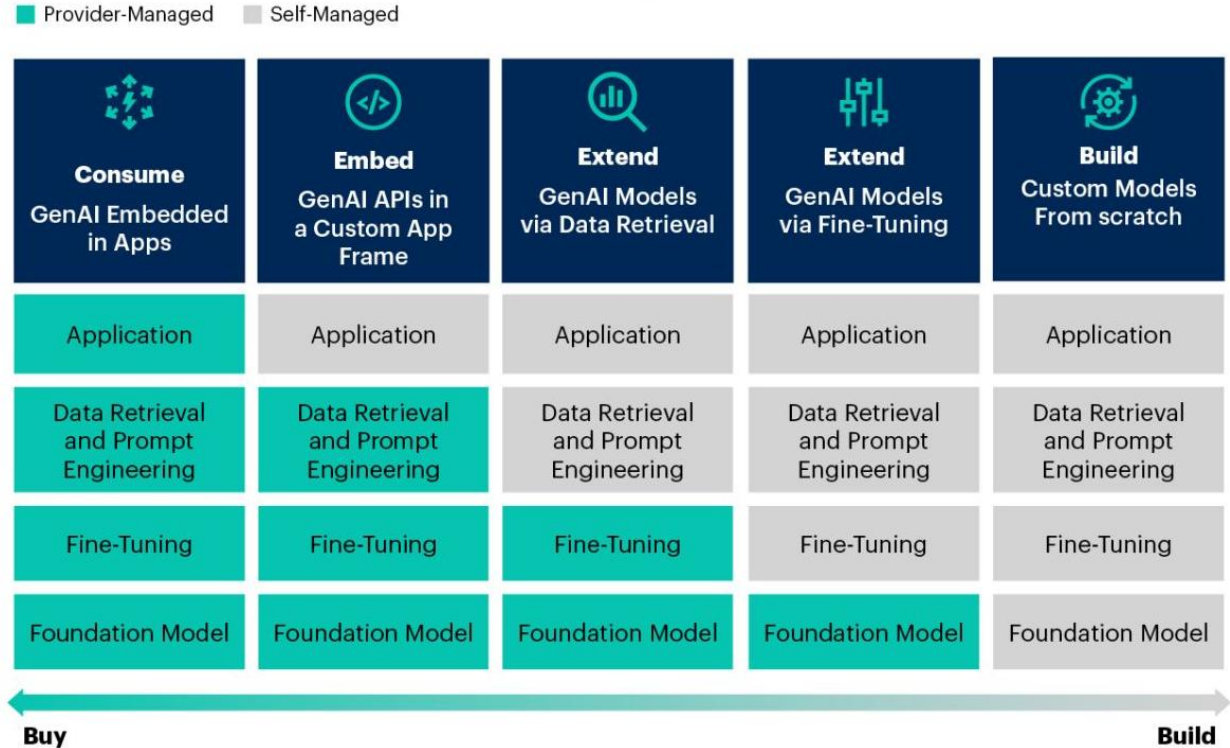
The target picture data & insights for Lufthansa's hub airlines highlights **two core metrics for data warehousing capabilities:**



Parameters of GenAI application development

Sourcing degree,

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



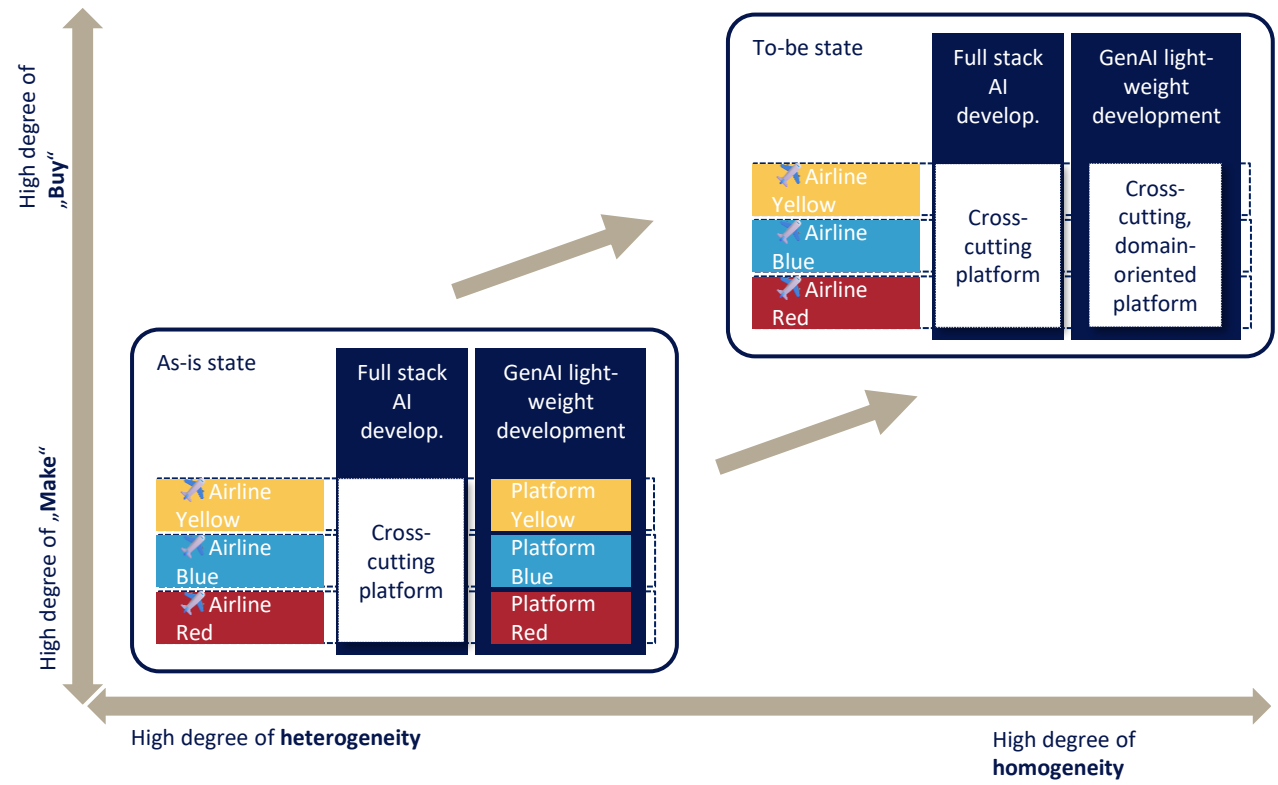
Picture: Gartner

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

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

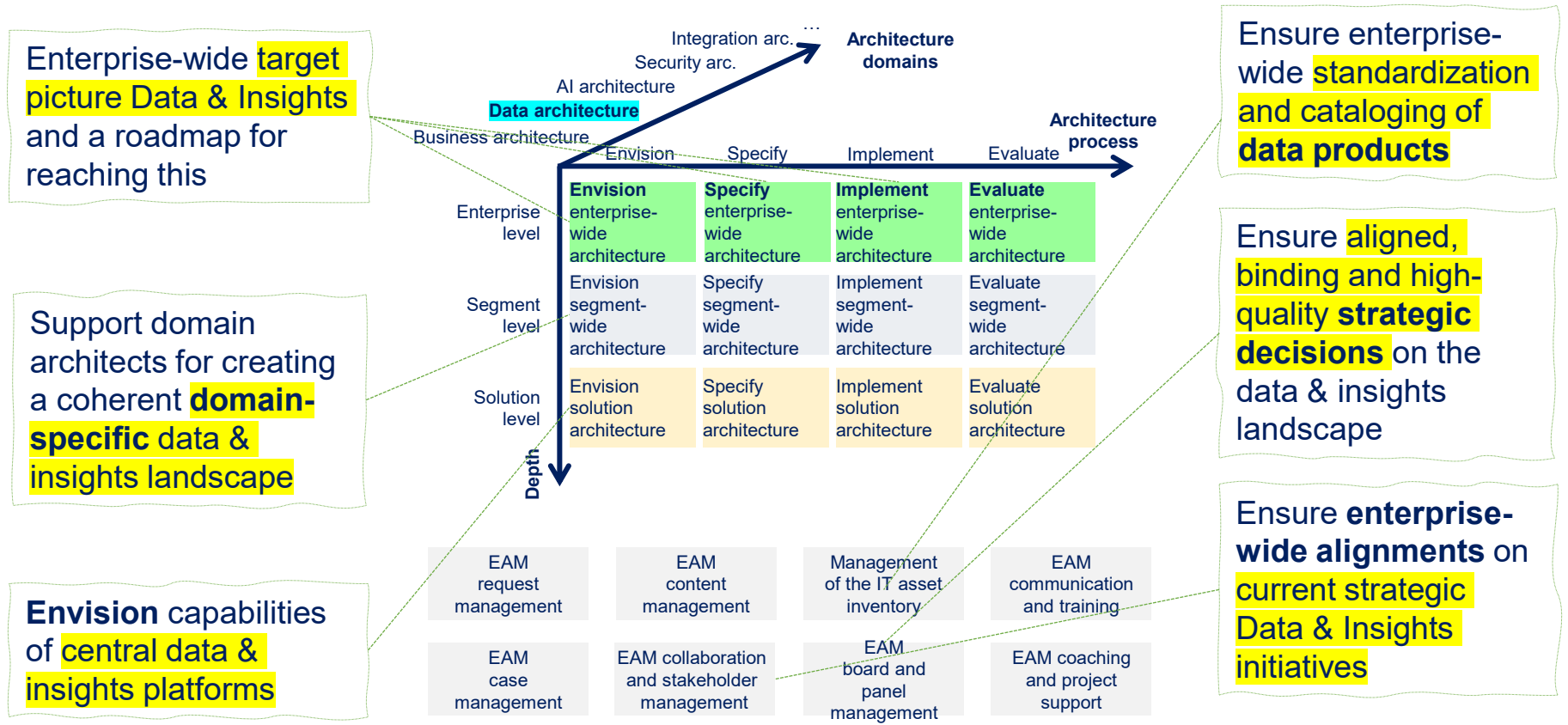
In the early GenAI rush, several AOC-specific GenAI platforms enabled fast development.

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

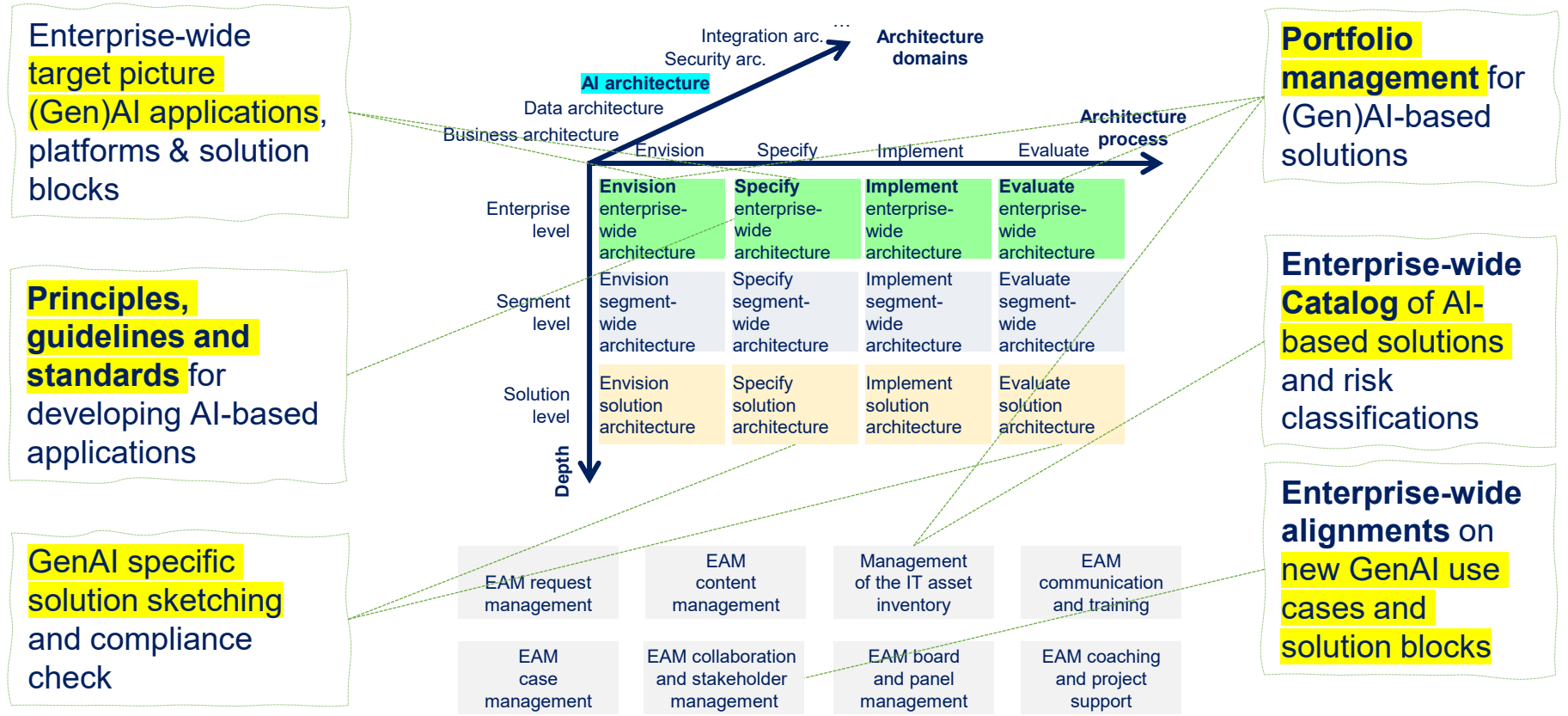


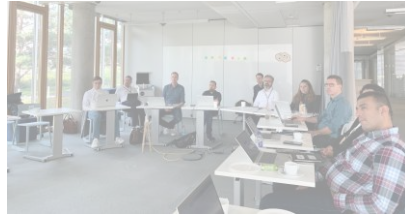
Enterprise Architecture Management
connects strategy and execution
based on a set of battle-tested,
coherent capabilities

Enterprise Architecture supports both Data Governance and Data Strategy



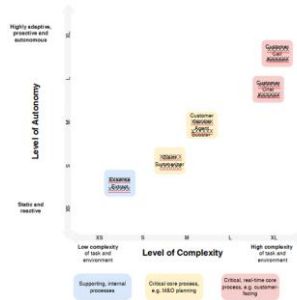
Enterprise Architecture supports both AI Governance and AI Strategy





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

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

Conclusion

The substantial role of EAM in designing and implementing 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.

Design parameters

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

Connecting the layers

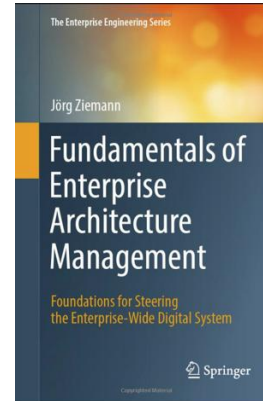
EAM provides a coherent set of capabilities for collaboratively developing the digital landscape on enterprise-, domain-, and solution-level.

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](#)