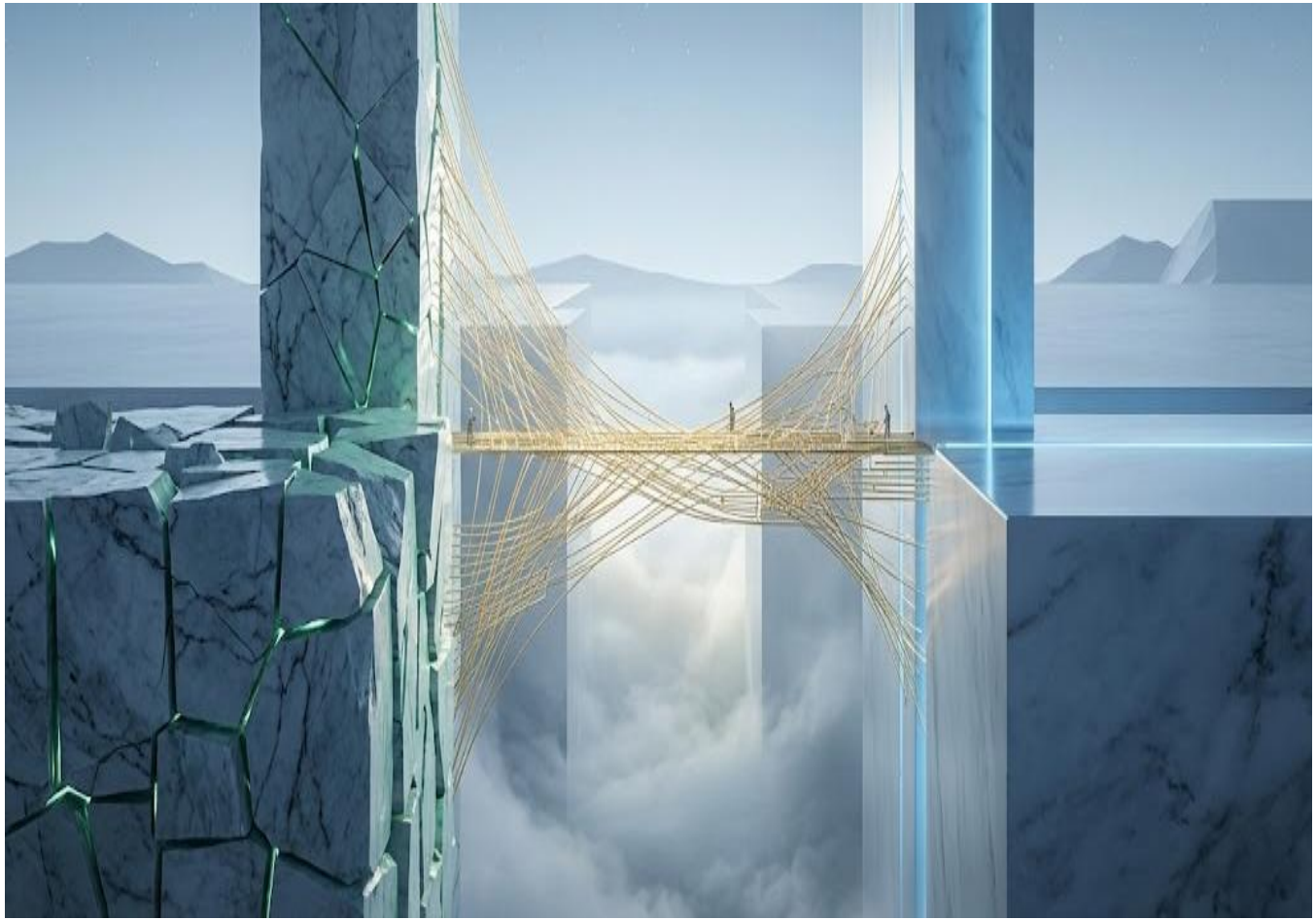
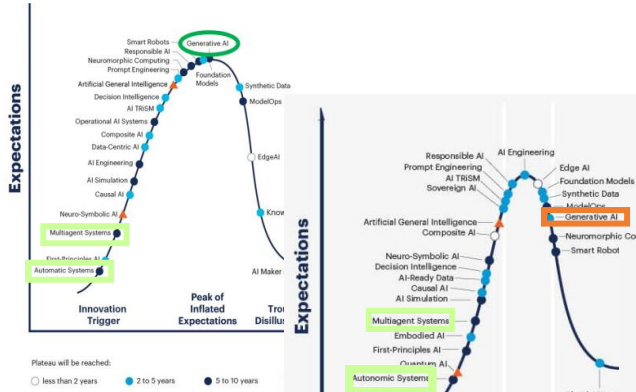
Gaps in Scaling GenAI and how EAM Serves as a Framework to Close them



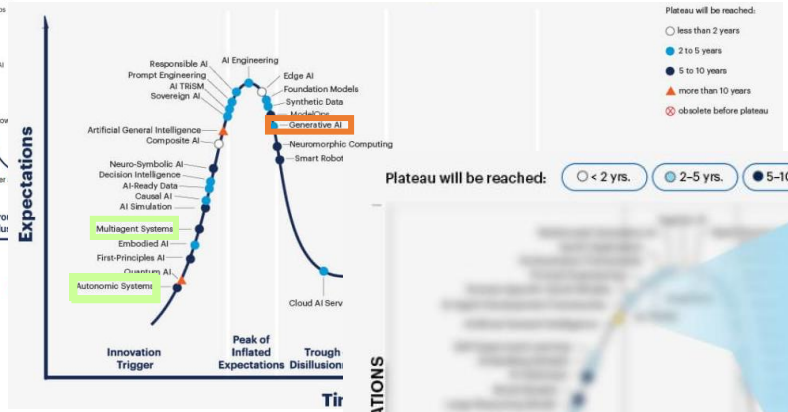
May 2026
Dr. Jörg Ziemann

Mind the gap: The Great Gen AI Divide

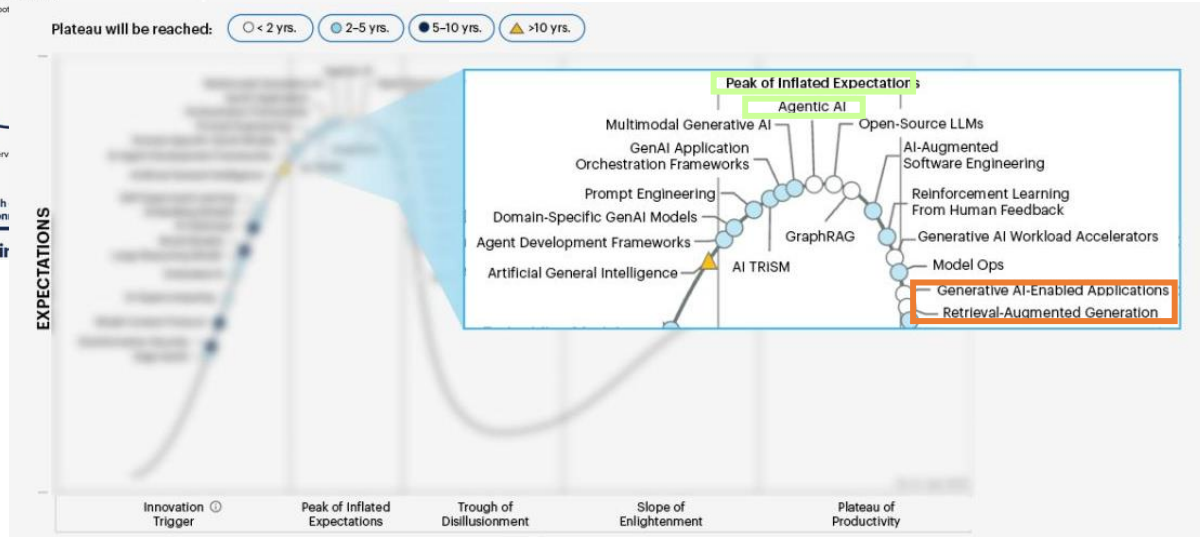
In 2023, GenAI was on the peak of inflated expectations.
In 2025 Agentic AI took this position.



Gartner Hype Cycle AI 2023



Gartner Hype Cycle AI 2024



Gartner Hype Cycle AI 2025

Also in 2025, MIT's Study "The GenAI Divide: State of AI in Business" confirmed the need to address GenAI development holistically:

Gaps Identified

Limited disruption:
Only 2 of 8 major sectors show meaningful structural change

Enterprise paradox:
Big firms lead in pilot volume but lag in scale-up

Investment bias:
Budgets favor visible, top-line functions over high-ROI back office

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Measures suggested by study:

Buy rather than build: External partnerships see twice the success rate of internal builds. Start partnering with vendors who offer custom systems

Decentralization: Empower line managers rather than **central labs**", "Success depends less on resources and more on **decentralizing** authority with clear ownership"

Integration: "Select tools that integrate deeply while adapting over time", "focus on **workflow integration** over flashy demos"

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Spoiler: These points are also addressed by EAM

🌐 Decentral development and budget, while maintaining a **coherent big picture**

⚖️ Professional **assessment of individual use cases**, incl. value-effort estimation, following classic architecture principles ("buy before build")

🔗 Comprehensive, cross-discipline **technical integration**

Gaps for scaling GenAI named in literature - EAM addresses many of them

	Bad State		Good State	Real-life relevance
🧠 Learning Gap	Most enterprise AI is "static" and fails to evolve with business changes.		Systems retain feedback, adapt to context, and improve over time, i.e.: **Application ownership.**	Medium
⚖️ Investment mismatch	70% of budgets favor visible top-line functions over ROI		**Balanced portfolio** of achievable and moon-shot use case	**High**
⚡ Strategic effect	“Only 2 of 8 major sectors show meaningful **structural change**”		Unclear; the possibilities of GenAI depend on the business model	Medium
🧪 Pilot-to-Prod	Many prototypes do not go live, because of underestimated effort and risks		Good **initial assessment** of use cases and efficient pipeline from MVP-to-Prod	**High**
🚀 Prod-to-scaling	“Big firms lead in pilot volume but lag in scale-up”		Have better success rates, based on better **initial assessment**	**High**

Gaps for scaling GenAI named in literature - EAM addresses many of them

	Bad State		Good State	Real-life relevance
📡 Outside-in innovation adoption	Innovations available in the market are not transferred to the enterprise		The enterprise has an **optimal degree of innovative technologies**, e.g., supported by EAM	Medium
👔 Management support	GenAI benefits are unclear on management level (whilst understood on working level)		The **management understands the benefits** of GenAI, e.g. communication from EAM	Medium
💎 Value (ROI) gap	Massive spend with **no measurable impact** on the balance sheet		Direct linkage between AI usage and reduced costs/new revenue	Medium
🏃 Change readiness	The **organization is not ready** to implement the feasible technology		Organization adapts the technology optimal for its business model	Medium
🧱 Infrastructure gap	The GenAI application works, but the underlying infrastructure is missing		E.g., **data, access management and integration architecture** are available; i.e., a good enterprise architecture	**High**

Existing approaches for scaling GenAI point out problems, name selected solutions or analyze the GenAI adoption in a black box approach.

Lacking: A comprehensive framework for the holistic development of GenAI to close the gaps.

E.g. McKinsey Framework for planning, measuring, and managing the value of AI investments

1. Financial impact:
Shows whether AI is delivering enterprise value
Tracks enterprise-level economic outcomes tied to the business case, such as revenue uplift (top-line growth), cost-to-serve reduction, margin improvement, and total cost of ownership (including cloud and token spend)

2. Strategic outcomes:
Shows whether AI is driving meaningful shifts in business performance
Captures progress against business-unit goals and customer outcomes, such as NPS, on-time delivery, customer satisfaction, retention, or compliance performance

3. Operational KPIs:
Shows whether AI is improving how the work actually gets done
Measures changes in core process performance, such as cycle times, defect or rework rates, abandonment, first-contact resolution, and cost per case or transaction

4. User adoption & engagement:
Shows whether people are using and trusting AI in their workflows
Tracks who is using the tool, how often, and with what level of reliance (eg, daily active users, workflow penetration, AI acceptance vs override rate)

5. Technical performance:
Shows whether the AI system is functioning reliably and efficiently
Monitors model health and guardrails, such as hallucination rates, latency, token cost per interaction, output quality, and performance drift over time

The Framework to close (most of) GenAI gaps

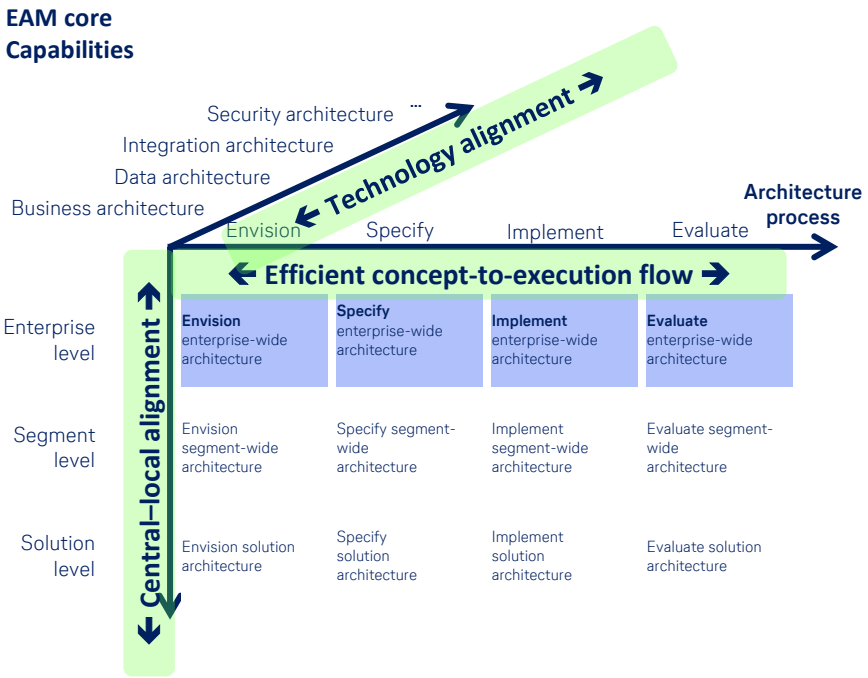
The Framework

EAM provides the capabilities to close “gaps” in the core dimensions of large digital ecosystems, also for developing the GenAI landscape:

Central–local alignment:
EAM synchronizes decentralized innovation by establishing enterprise-wide transparency. E.g. central catalogs, cross-functional communities.

Technology alignment:
technology coherence by defining unified technical target pictures, preventing a patchwork landscape of fragmented tools and ensures GenAI platforms integrate seamlessly with core data, security, and integration layers.

Concept-to-Execution flow:
E.g. Standardized solution sketches and specialized GenAI expert councils to provide 360° feedback on risks, value and compliance early in the lifecycle.



EAM supporting capabilities

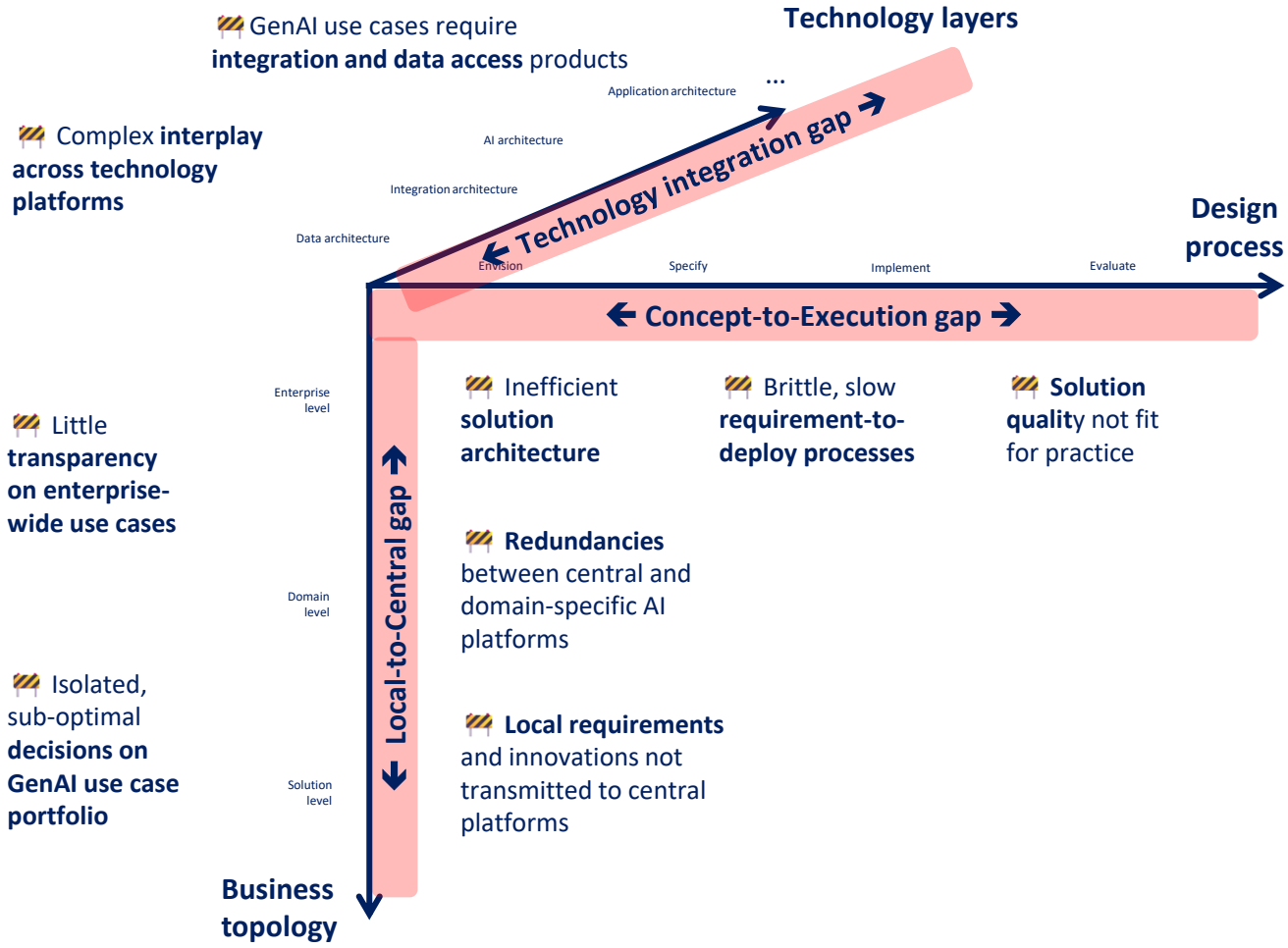
EAM request management	EAM content management	Management of the IT asset inventory	EAM communication and training
EAM case management	EAM collaboration and stakeholder management	EAM board and panel management	EAM coaching and project support

Source “Fundamentals of Enterprise Architecture Management” (Ziemann, 2022)

Gaps for scaling GenAI exist in multiple dimensions

EAM provides **integrated capabilities** to close the gaps

This results in tangible benefits



Gaps for scaling GenAI occur in multiple dimensions

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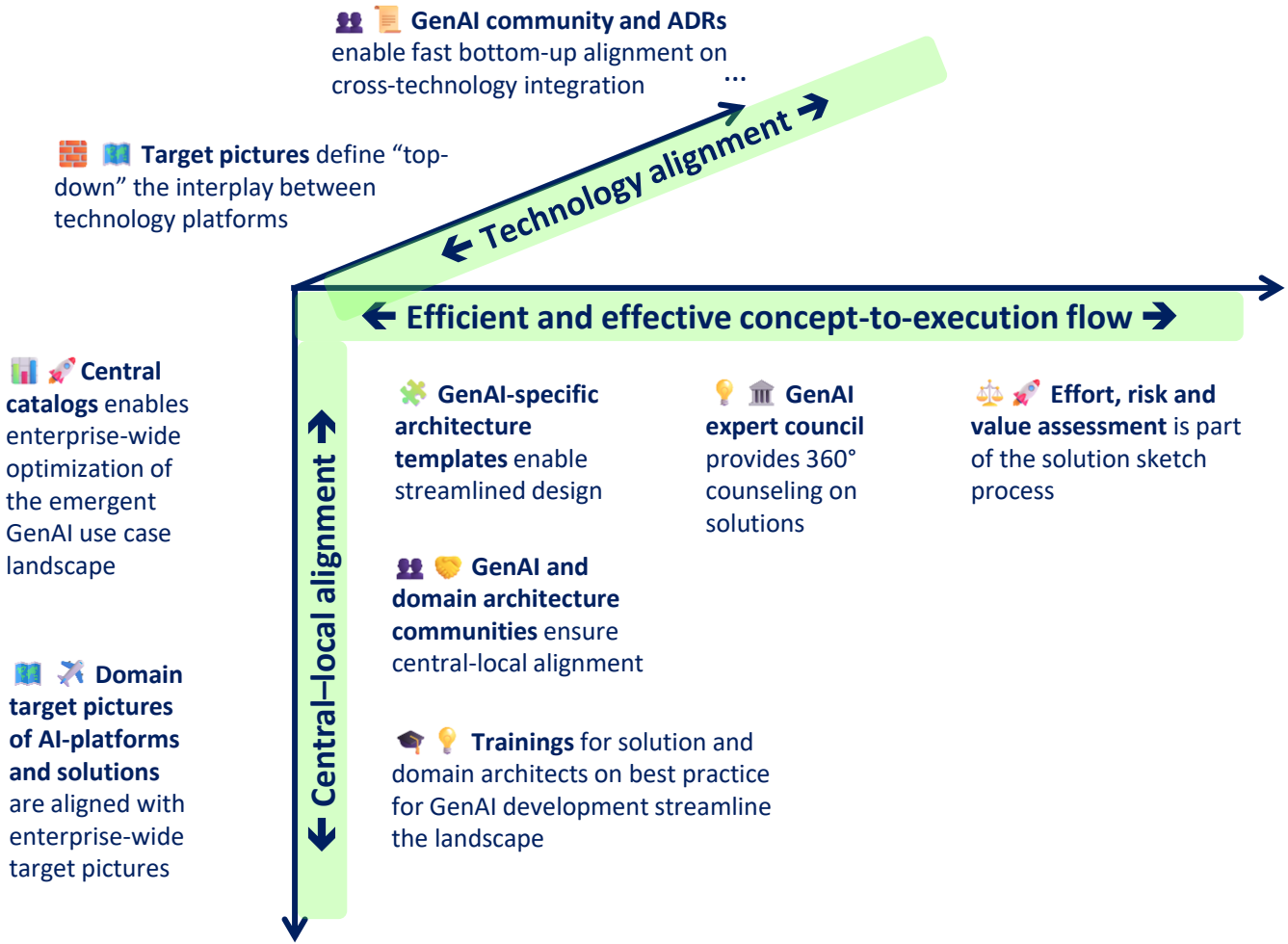


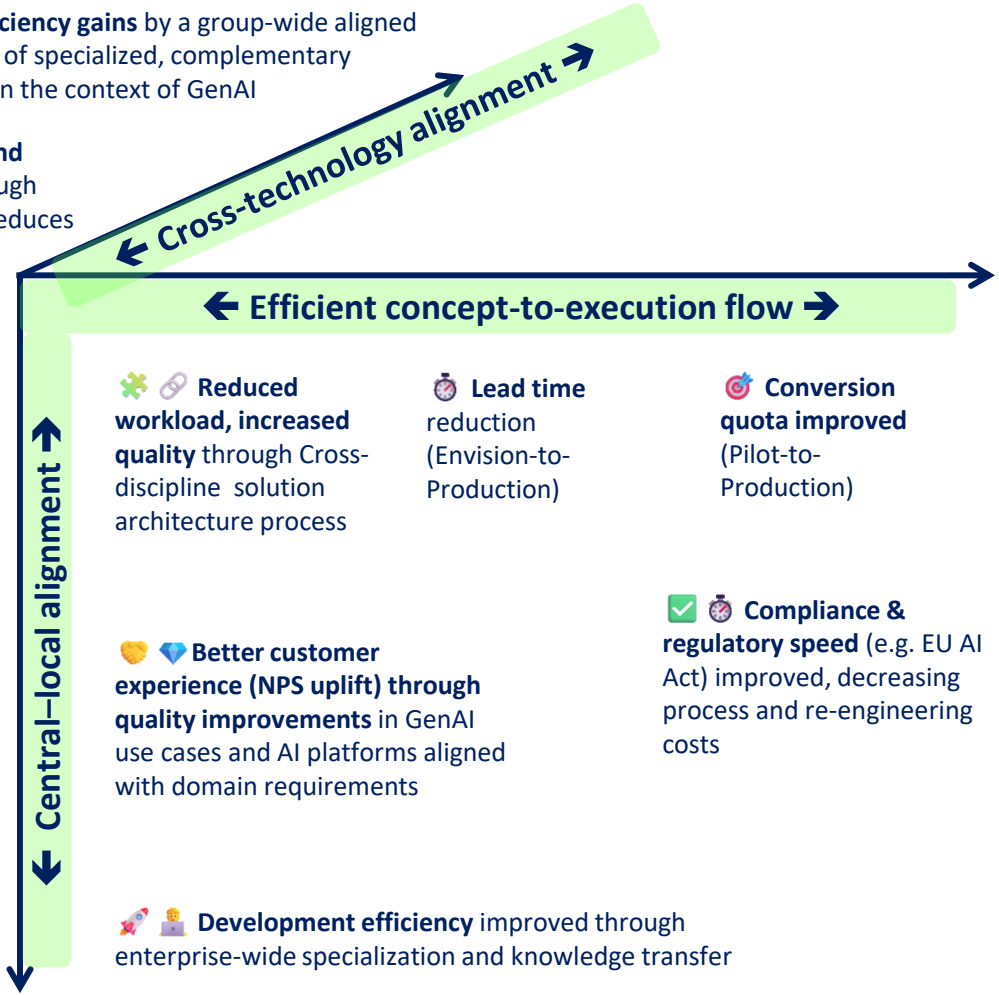
Gaps for scaling GenAI occur in multiple dimensions

EAM provides **integrated capabilities** to close the gaps

This results in tangible benefits

🌐 💎 **Efficiency gains** by a group-wide aligned ecosystem of specialized, complementary platforms in the context of GenAI

🔗 💰 ⏱️ **integration costs and time-to market** reduced through cross-technology alignment reduces



🎯 **Portfolio impact shift** by balancing core transformation and supporting GenAI use cases

🌐 💰 **Cost avoidance via de-duplication** by transforming airline-specific into group-wide (domain-specific) GenAI use cases and GenAI platforms

🧩 🔗 **Reduced workload, increased quality** through Cross-discipline solution architecture process

⏱️ **Lead time** reduction (Envision-to-Production)

🎯 **Conversion quota improved** (Pilot-to-Production)

✅ ⏱️ **Compliance & regulatory speed** (e.g. EU AI Act) improved, decreasing process and re-engineering costs

🤝 💎 **Better customer experience (NPS uplift) through quality improvements** in GenAI use cases and AI platforms aligned with domain requirements

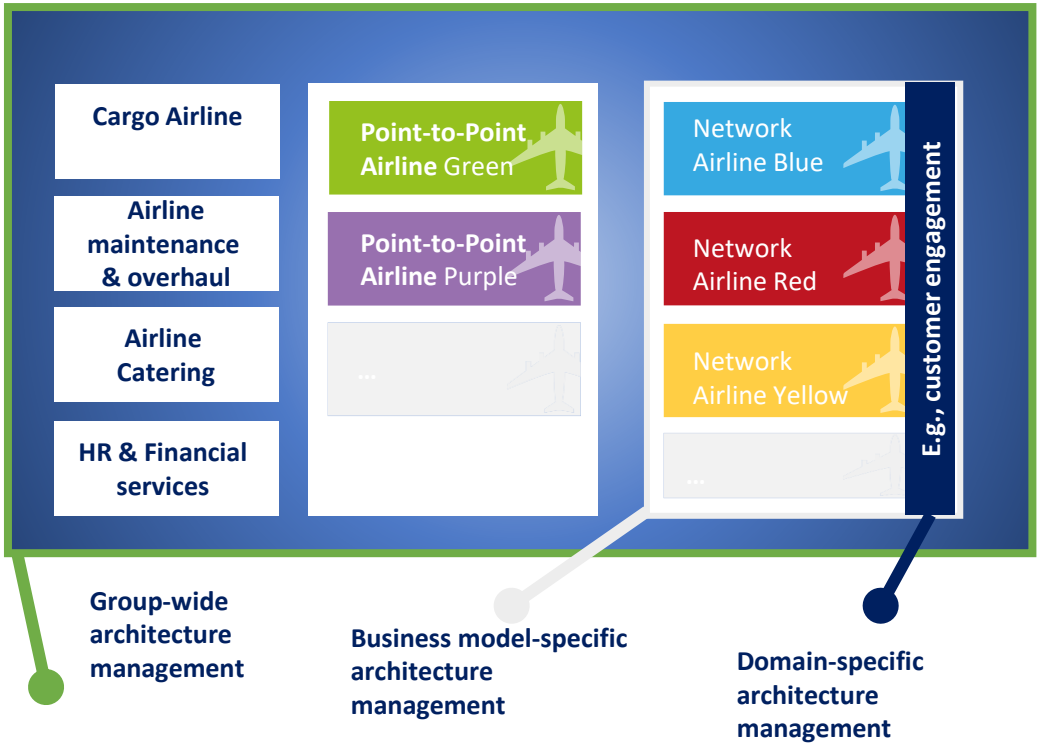
🚀 🧑‍💻 **Development efficiency** improved through enterprise-wide specialization and knowledge transfer

Closing the gaps results in significant cost reductions, revenue increases and faster time-to-market

Dimension	Benefit Category	**Exemplary** Quantitative Metric
Concept-to-Execution	Deployment speed	-40% average lead time (Envision-to-Production)
	Investment efficiency	+35% increase in Pilot-to-Production conversion
	Regulatory de-risking	3x faster compliance assessment (EU AI Act)
	Design Efficiency	-30% effort in initial solution specification
Local-to-Central	Redundancy reduction	-30% IT development costs -20% IT maintenance costs
	Strategic use case priorization	+ 2% gainings through costs savings and increased revenue
	Development efficiency	- 20% solution development costs
	Solution quality for end users	+10% NPS via unified AI-customer touchpoints
Technology-Alignement	Platform costs	-20% platform costs (Economies of Scale)
	Integration agility	-50% development effort for data integration

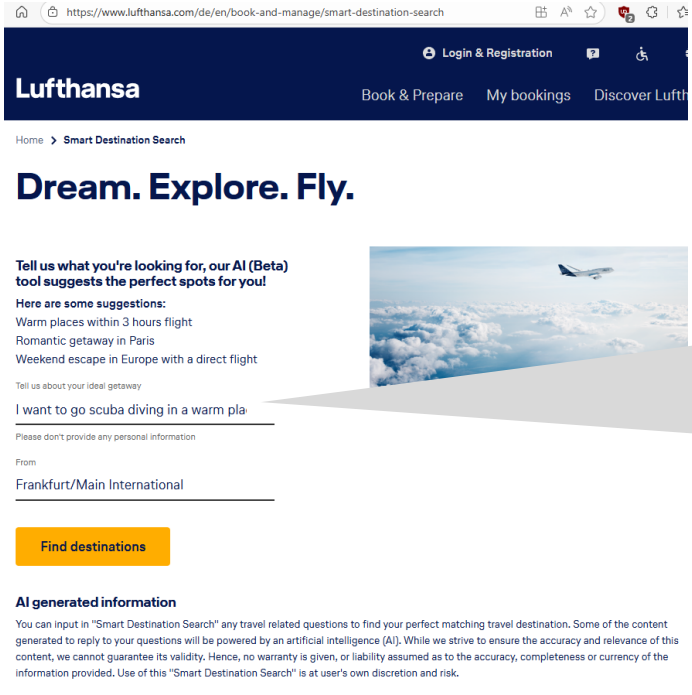
The application of the framework to a real-life scenario

Ca. 100.000 people work in the large aviation group; it is a federation of large business units, including both B2C and B2B business models

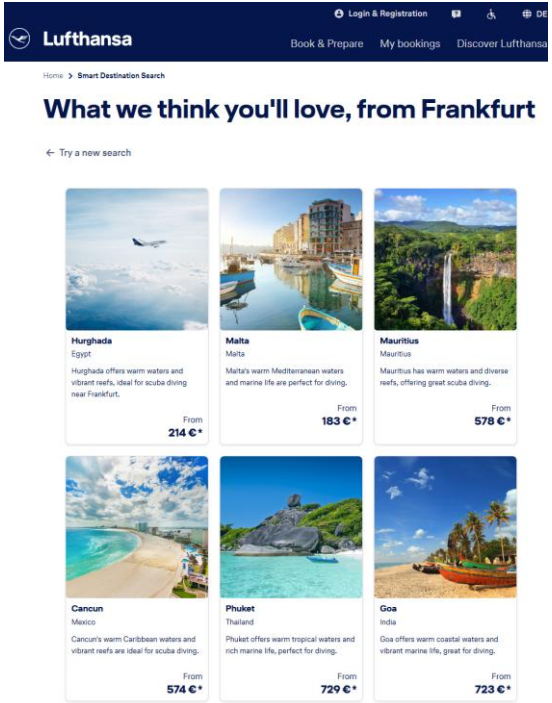


- **Bottom-up:** Since the beginning of 2023 basically every business unit and domain produced **GenAI-based solutions**
- **Fast, explorative innovation:** Many highly engaged GenAI-speedboats with steep learning curves. For some use cases: difficult to assess feasibility upfront, and/or technical debt.
- **Governance/Steering:** to optimize the overall GenAI landscape without slowing down the momentum, enterprise architecture must focus on collaboration; fine-grained target pictures are not adequate

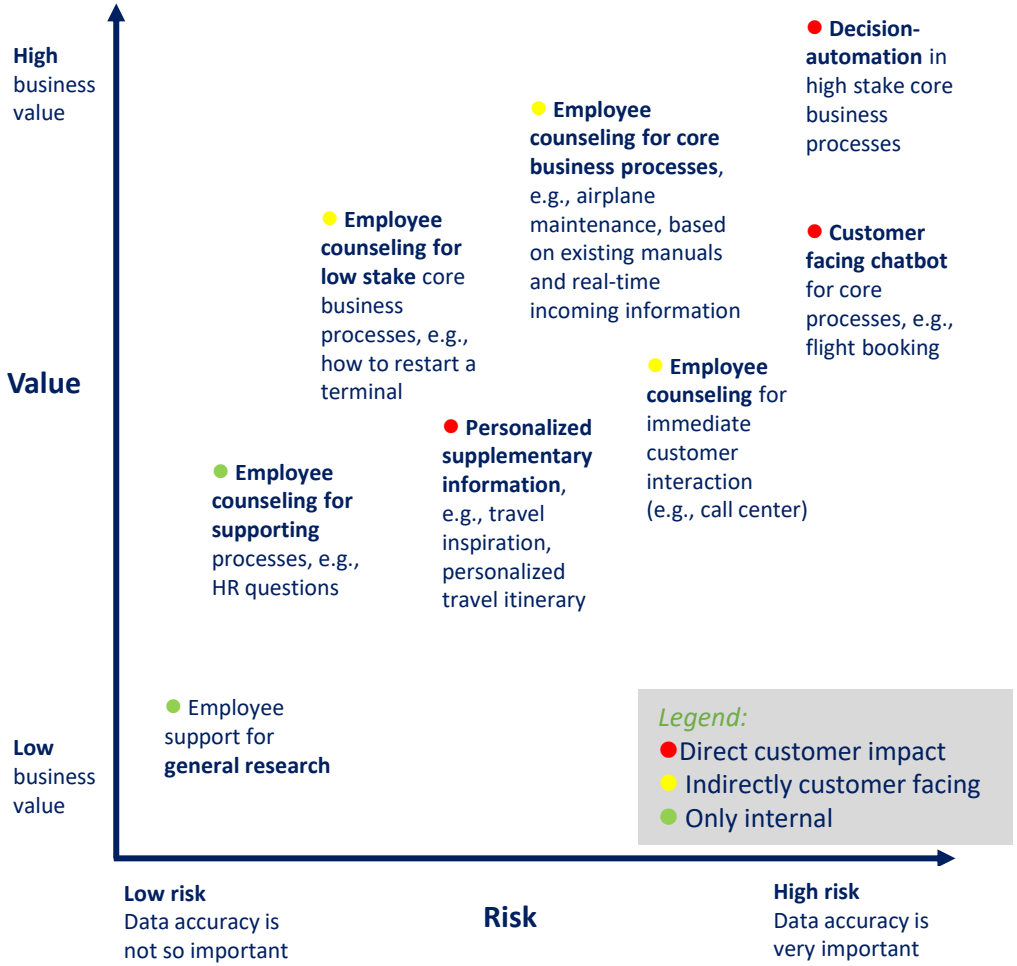
GenAI example from Lufthansa: Smart Destination Search



I want to go scuba diving in a warm place not too far from Frankfurt

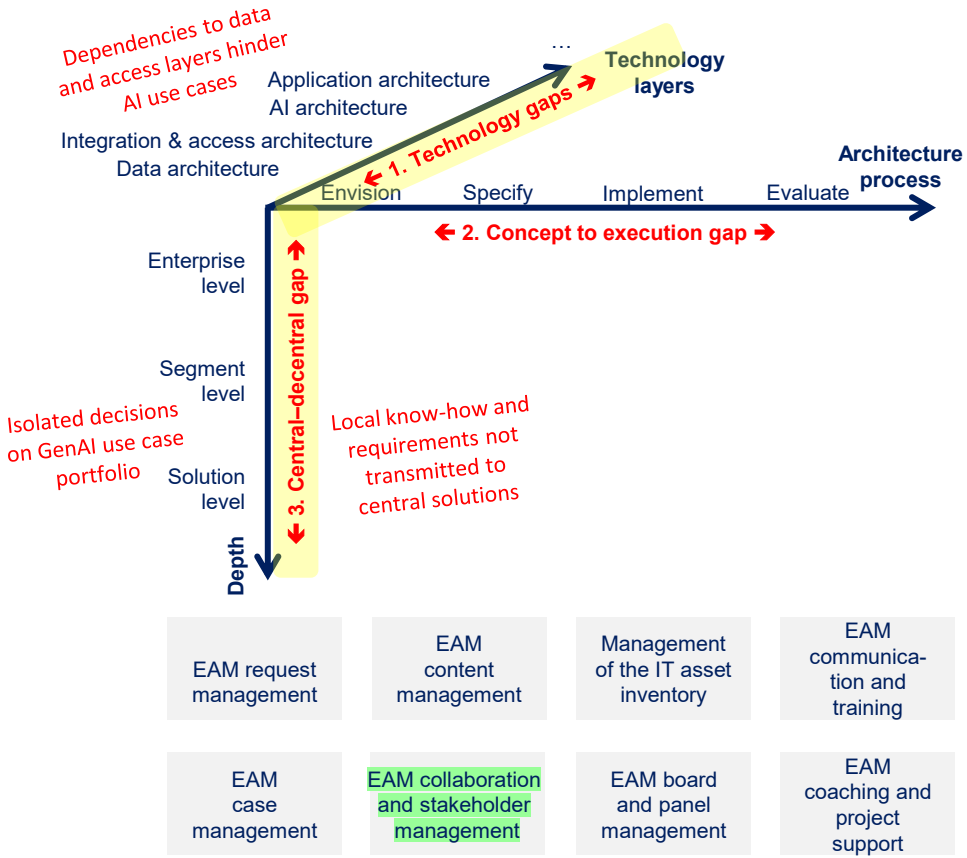


Exemplary GenAI solution types in a large aviation group



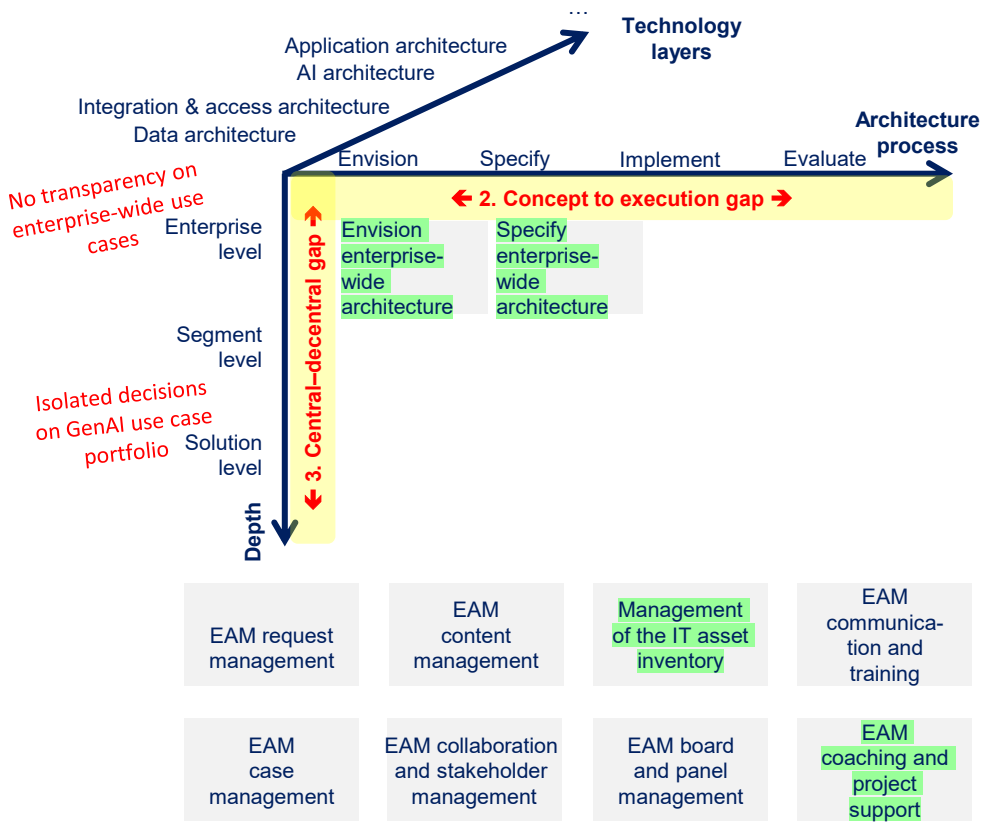
- More than 50 **GenAI use cases** are in production, their number has outgrown those based on traditional Machine Learning
- Use cases are spread **across all business domains**; directly customer facing use cases include travel inspiration and planning
- Due to the non-deterministic nature of GenAI, **most use cases are internal** employee-focused, with a "human-in-the loop"
- *WIP/exploratory phase*: GenAI and Agentic AI in **high-risk, core business processes**

Communities are key for aligning on highly innovative technologies



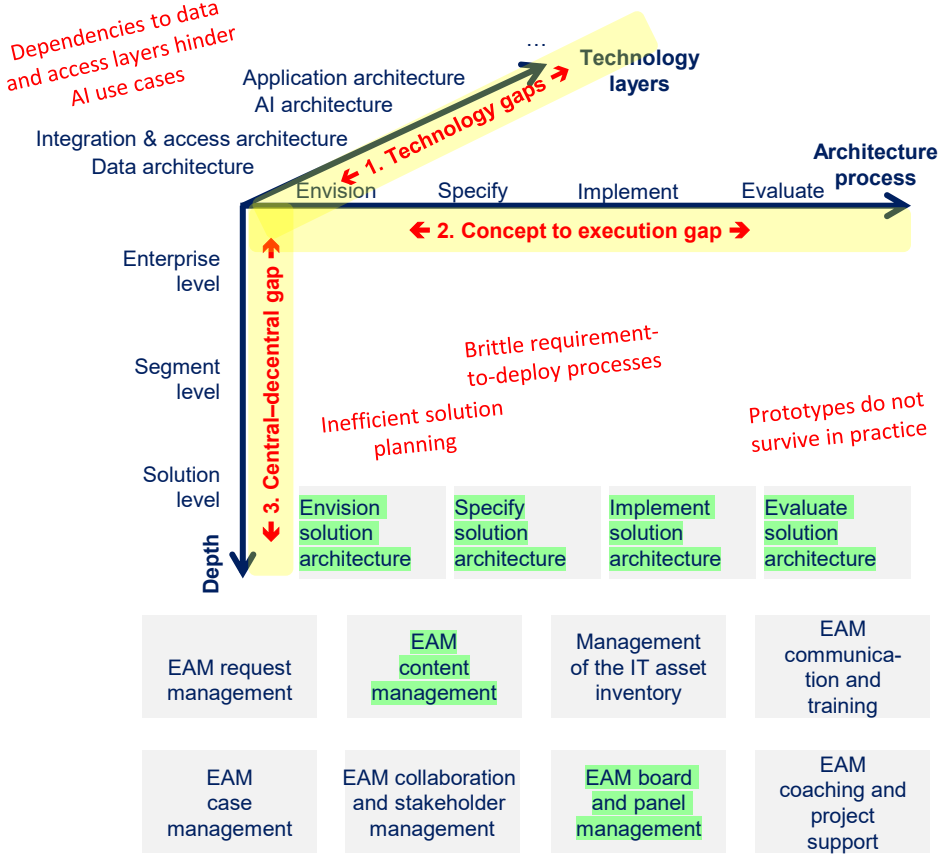
- To stay on top of GenAI business and technology developments across the organization, intense community work across technical and business domains is key
- This comprises a **dedicated GenAI community** as well as surrounding communities for **business domains** (e.g. CRM) and technology domains (e.g. data analytics)
- Generally, enterprise architects must understand and address cross-domain and **cross-technology interdependencies**

Catalogs and coaching streamline the emergent GenAI portfolio



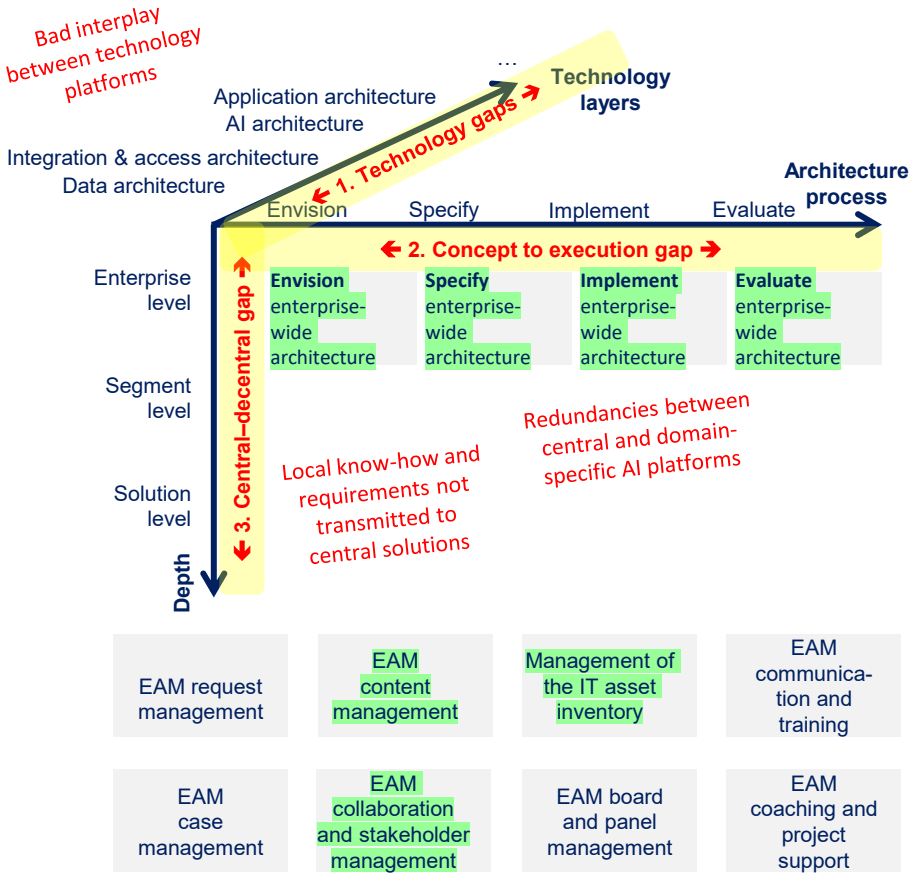
- Different business domains often require **similar GenAI solutions**, for instance generating recommendations from domain-specific documentation
- By embedding AI capabilities into the **enterprise application catalog**, the aviation group systematically tracks which applications use AI, their risk categories, and compliance requirements
- This transparency helps identifying **redundancies and gaps** in the rapidly expanding GenAI solutions landscape

360° GenAI solution reviews and specialized templates increase efficiency



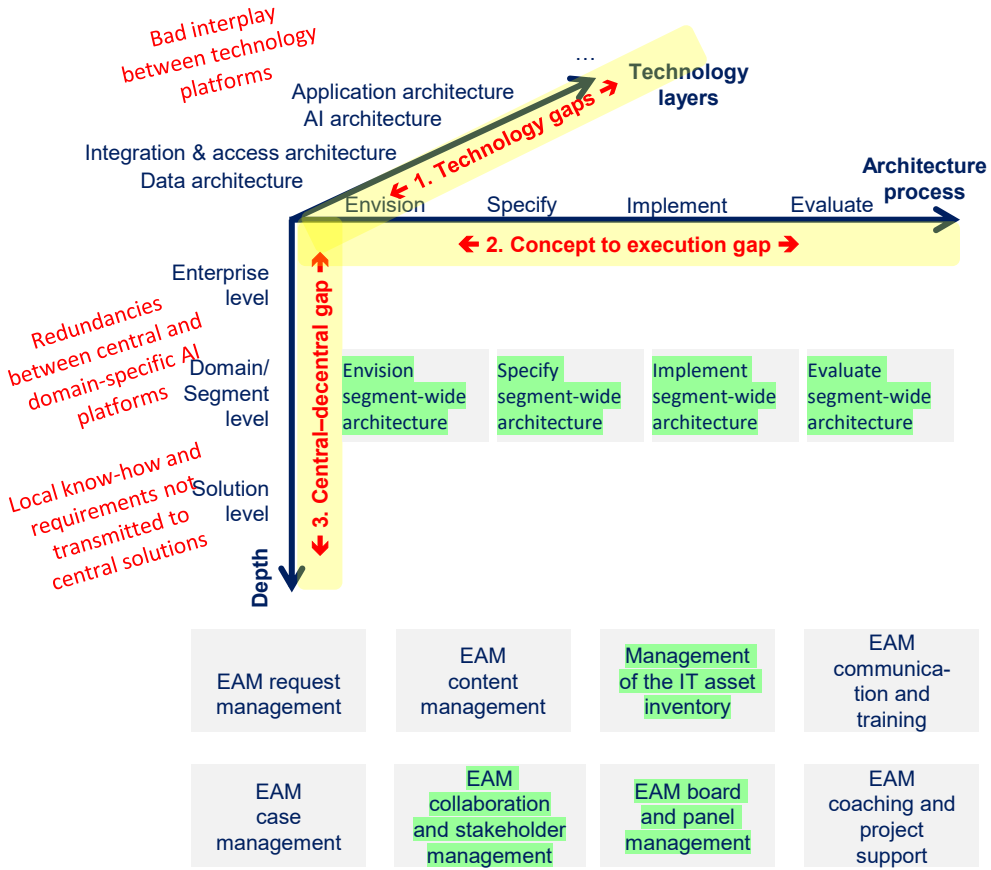
- To enable the efficient review and documentation of new GenAI use cases, the generic architecture boards and artifacts are specialized for GenAI
- GenAI-specific expert councils provide a 360° feedback and a “compliance stamp” on new solutions
- A template for GenAI solution sketches supports the efficient documentation of new use cases

Target pictures, guidelines and ADR shape the “breathing” ecosystem



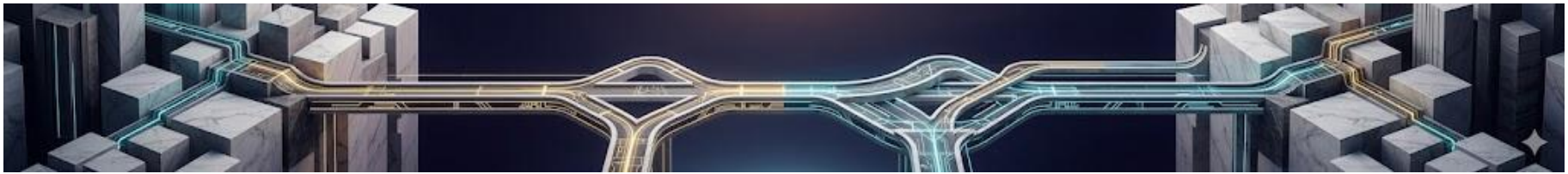
- The so-called target picture process define the group-wide landscape of standards and platforms. To implement the target picture, also a roadmap is specified.
- Guidelines provide guardrails e.g. on recommended models or data usage.
- Architecture decision records (ADR) play a similar role, and serve as guidelines for future developments.

Domain-specific and general target pictures are aligned



- The large business domains, e.g. “customer” or “flight operations”, have large, domain specific digital ecosystems and specific GenAI requirements
- The group-wide GenAI target picture must be synchronized with the various target pictures that define domain-specific applications and platforms
- Here the interplay between technical and business (domain) specific enterprise architecture supports the design of comprehensive target landscape

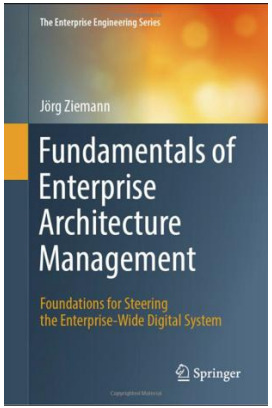
Summary



GenAI is immature but everywhere	GenAI capabilities are of strategic importance	GenAI use cases and platforms are created with high-speed everywhere in the group	GenAI technology is immature, and continuously developing in high-speed
Need for coherency	A way for continuously evolving the GenAI landscape into a coherent system while constantly adapting	An enterprise-wide target picture for GenAI-based business solutions	An enterprise-wide target picture for GenAI infrastructure, e.g., central platforms, access layers and CoEs
Minimum Viable Governance with EAM	Established processes, roles and architecture communities across all layers, to jointly create and streamline new technologies	Domain-specific (business) architecture, transparency of portfolio via application catalog	Target picture process, guidelines and standards; however: Focus on decentral, bottom-up developments

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