
GenAI reshapes profitability in large scale plant engineering

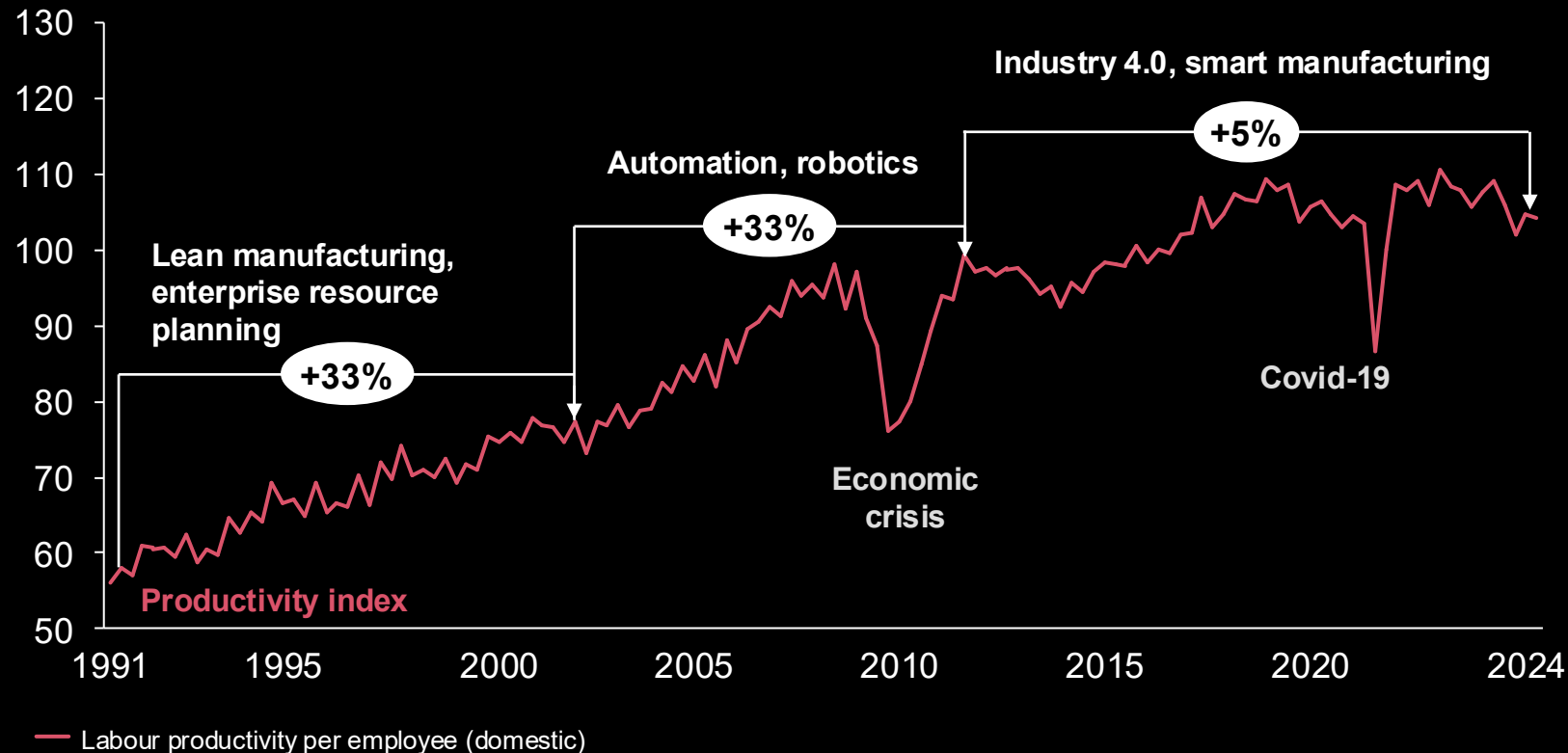
Leon Stadler | Senior Manager

April 16th, 2026



Two waves lifted productivity; marginal gains since 2010

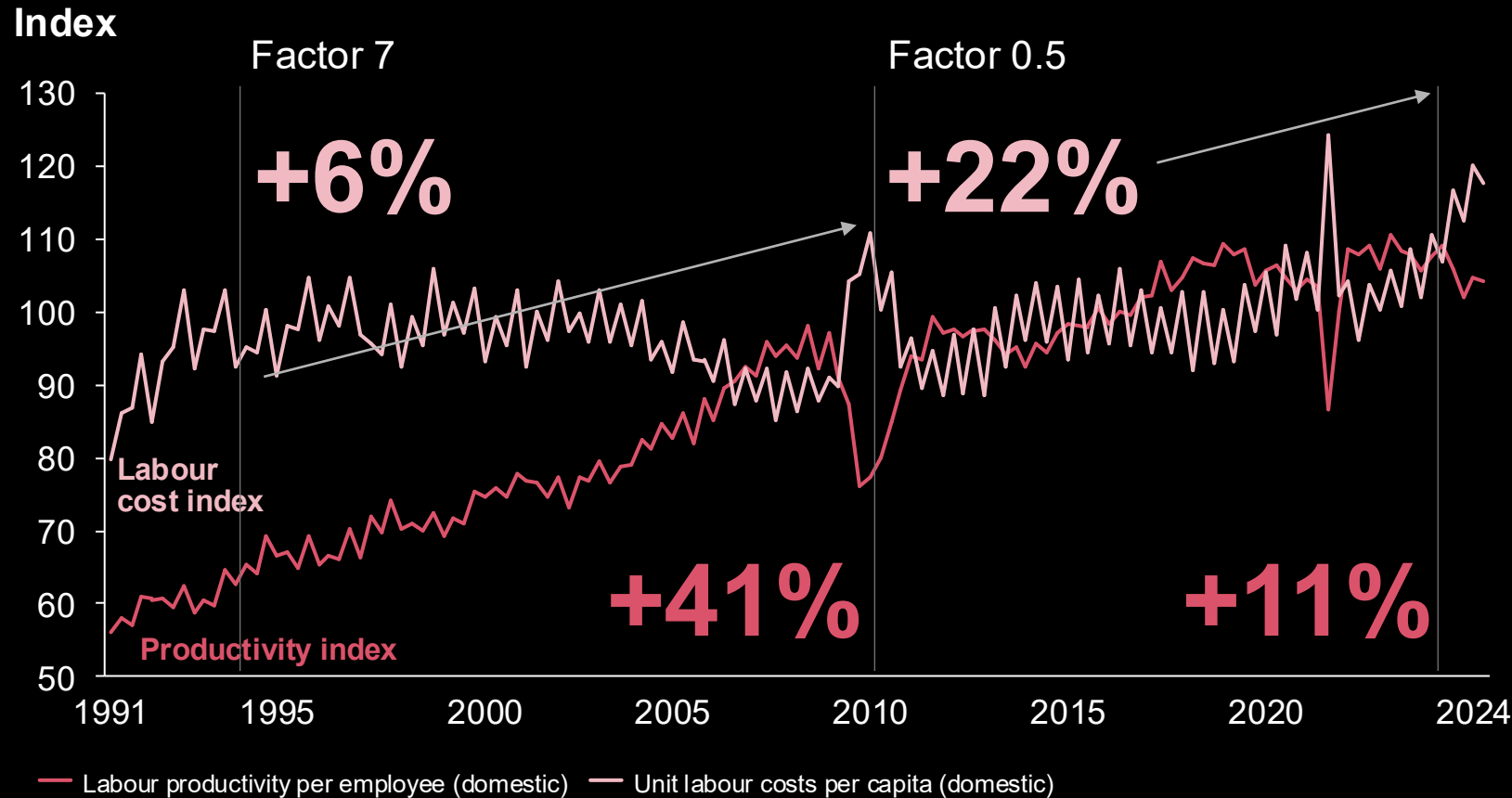
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Key takeaways

1. Lean/ERP and automation/robotics delivered two $\approx +30\%$ step-changes in the 1990s and 2000s
2. Crisis dips were temporary; productivity returned to trend within $\sim$ three years.
3. Since 2010, Industry 4.0 added only a fraction of prior waves

Rising labour costs outpace productivity – Hope in GenAI



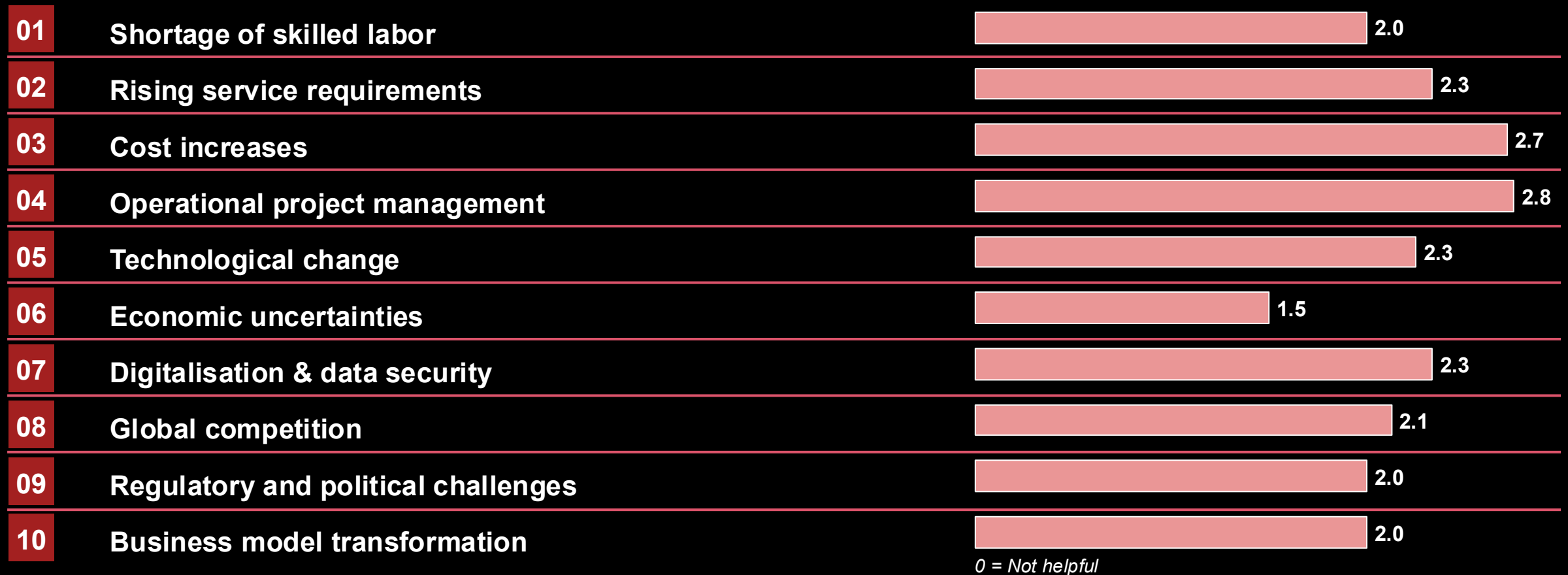
Key takeaways

- 1. 1995 – 2010:**
Productivity increase by 7x
- 2. 2010 – Today:**
Productivity gains only 0.5x of labor cost increase
- 3. Study result:**
88% of participant expect cost reductions through GenAI

GenAI is relevant for addressing top industry challenges

Top industry challenges

Relevance of GenAI to address them



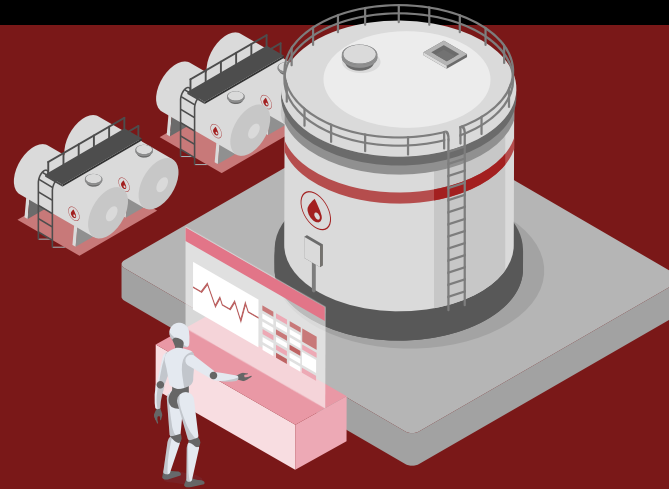
Plant engineering beats sector GenAI adoption rates

Large-scale plant engineering

Survey from July 2025¹

94%

are already using GenAI or planning to in 2025...



44%

... are already moving beyond initial pilot phases

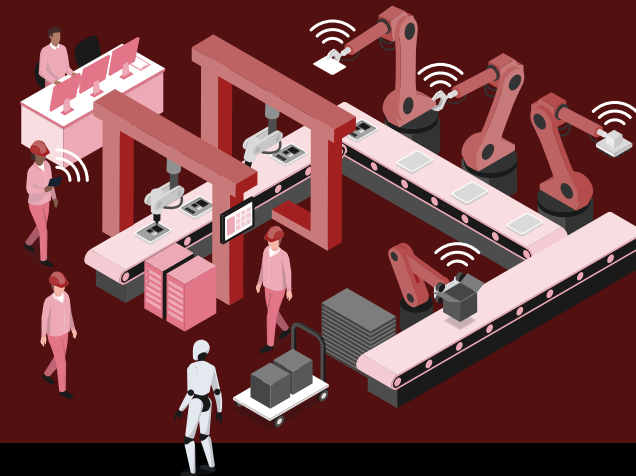
Compared to...

Industrial manufacturing companies

Survey from November 2024²

88%

are already using GenAI or planning to in 2025...



23%

...are only moving beyond initial pilot phases

Source: VDMA and Strategy& analysis

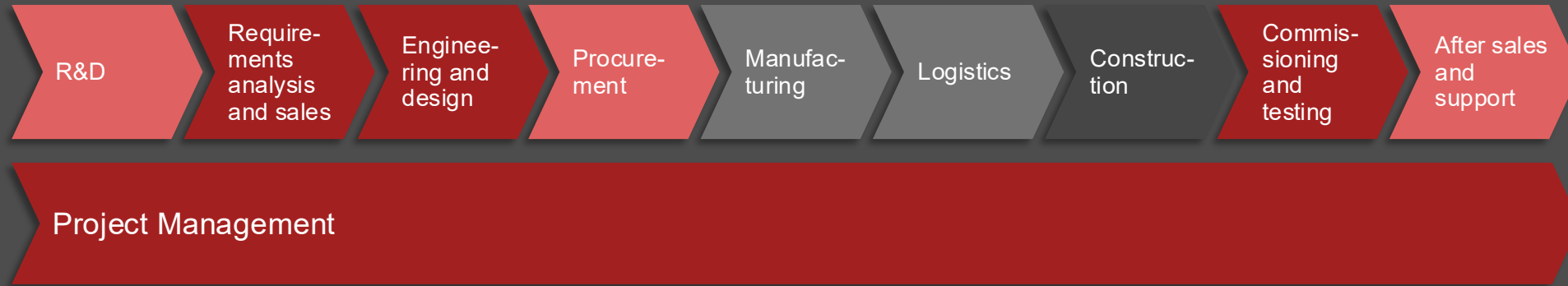
1) Survey among large-scale plant engineering executives in DACH

2) Survey among industrial manufacturing executives in DACH

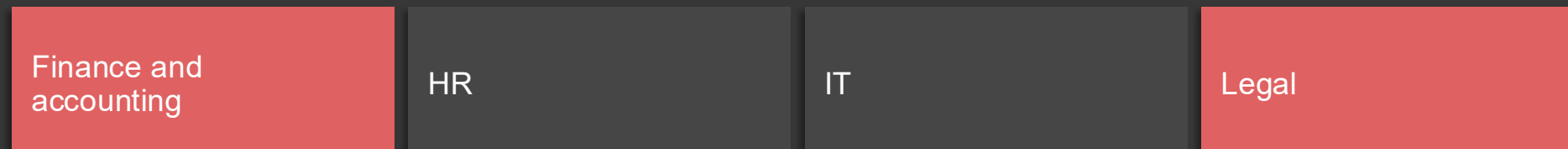
Where potential lies, action follows

GenAI implementation maturity and impact potentials

Operative



Supportive



Survey participants are increasingly investing in the value chain areas with higher potential expected

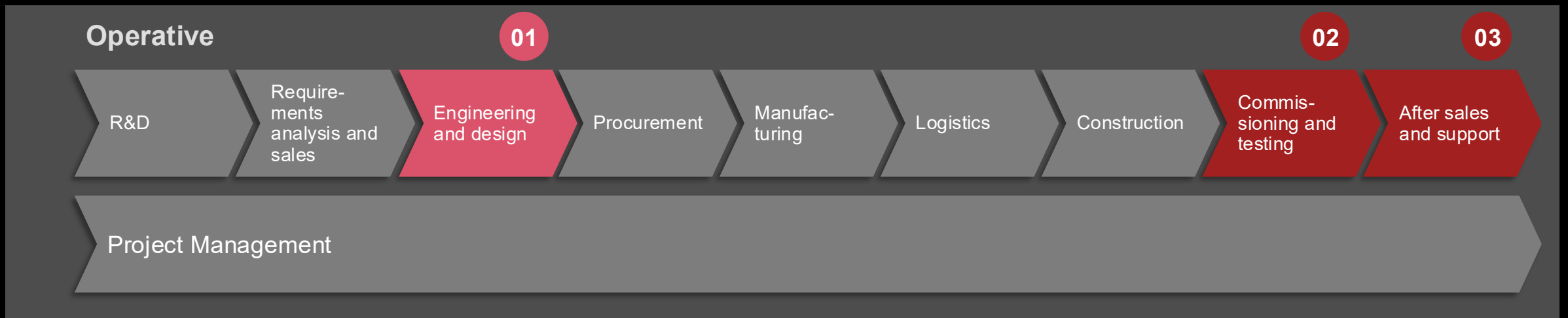
There are plenty of use cases in the right areas; SMS and Kuka will now introduce best practice implementation

Core functions	R&D	Requirements Analysis & Sales	Engineering & Design	Procurement	Manufacturing	Logistics	Construction	Commissioning & Testing	After sales & Support
GenAI use cases	Smart change documentation generating change descriptions and impact analysis	Voice-based quick simulation and layout generation based on project parameters	Compliance check of site-readiness against building codes and environmental constraints	Automated generation of RfQ-ready specifications incl. requirement documents	Generation & correction of NC programs based on CAD models and machining parameters	GenAI-driven on-site logistics planning (e.g., deliveries, storage) for construction site	Sticker scanner for verifying the presence and accuracy of stickers on the parts	Technical documentation generation incl. manuals, operating instructions, etc.	NLP-based error analysis with potential causes and recommended solutions
	On-demand technical know-how from database with data on existing projects and expertise	Automated individualized proposals and replies to RfPs based on input information	Chatbot for quality control of construction and enforcement of norms and regulations	Streamlined RfQ generation and bid mgmt. for evaluation of received proposals	Creation of work instructions and assembly plans from 3D models and BOMs	Creation of documents required for heavy-duty or hazardous cargo	Voice-based digital assistants for construction site supporting workers	Test case creation, master data identification, and master data maintenance coordination	Data-driven maintenance instructions bas on real-time machine dat, FMEAs, etc.
		Input-based generation of requirements and technical specification	Requirements-based generation of PLC-/DCS-programs and HMI-configurations	Extraction and comparison of relevant clauses in contracts (e.g., delivery terms and liability)	Process data analysis for dynamic adjustment of quality criteria on production conditions		Real-time construction site documentation (e.g., daily reports, defect records)	Creation of test and commission reports based on real process values	Spare part identification chatbot using descriptions, photos and system comparisons
		Creation and management of contracts/ claim-management	Variant design based on specific parameters, load cases and industry standards	Chatbot for automated individualized supplier communication			Video-based assistance for more safety on construction sites (HSE)	Chat bot for Enablement of client's employees to operate machine	
				Scouting: Supplier research worldwide				Standardized testing plans, specification and acceptance documentation	
Project Management									
	Resource and schedule plans via text input and historical project data	Creation and mgmt. of claims based on document comparison, contracts, etc.	GenAI-based project risk management for time, quality and cost	Status reporting from multiple data sources incl. MS Project, ERP and site reports	Work breakdown structure (WBS) based on project goals, plant types and experience	Optimisation of commercial project planning	Optimisation of operational project planning		

The risk of thinking in use-cases

GenAI use case only implementation impact

The management favourites use-case currently



- 01 Typical use case:** GitHub Copilot is used for coding of machine control; some parts not 100% understandable; saving of engineering hours celebrated
- 02 Challenge 1:** Is a product safety and warranty “given / ensured” if you can not 100% recognize your code; especially for Maschinenverordnung (EU) 2023/1230
- 03 Challenge 2:** How does a supplier ensure support, updates or product enhancements with code that is not 100% clear?

What winners do ...



1.

Top management support with focus on impact realization



2.

Continuous learning from pilots before scaling



3.

Co-create with partners to realize structural change

... and what blocks value

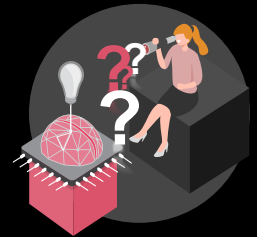
No value-backed strategy or ownership; pilots not tied to P&L outcomes or scale

1.



Talent and adoption gap; scarce product owners/SMEs and no systematic upskilling

2.



Weak data/tech foundation; siloed data, legacy IT, unclear security/compliance guardrails)

3.



Thank you

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