Christian Doppler Forschungsgesellschaft

Josef Ressel Centre for Data-Driven Business Model Innovation

SMART PRODUCTION Center of Excellence

JRC DDBMI

Beyond Production – KI als Erfolgsfaktor für das Geschäftsmodell

Themen

- KI – völlig klar, was das bedeutet! Oder nicht?
- Das Wertschöpfungsnetzwerk bis ans Ende denken
- Ausnutzen der Möglichkeiten
- Kompetenzen aufbauen
- Quellen und weitere Informationen

KI – völlig klar, was das bedeutet! Oder nicht?

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Kategorie	Beschreibung	Beispiel
Schwache (narrow) KI	Auf eine spezifische Aufgabe spezialisiert; kann keine allgemeinen Denkprozesse durchführen	Chatbots, Sprachassistenten, Empfehlungssysteme
Starke (general) KI	Würde wie ein Mensch denken, lernen und entscheiden können (existiert noch nicht)	(theoretisch)
Superintelligenz	Übertrifft menschliche Intelligenz in allen Bereichen	(hypothetisch)

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Methode	Beschreibung	Typische Anwendungen
Maschinelles Lernen (ML)	Systeme lernen aus Daten – supervised und unsupervised	Prognosen, Klassifikation, Mustererkennung
Neuronale Netze (NN)	Rechenmodelle, die an das menschliche Gehirn angelehnt sind	Optimierung, Klassifikation
Deep Learning (DL)	Mehrschichtige neuronale Netze mit automatischer Merkmalsextraktion	ChatGPT, Bildanalyse, Übersetzungen
Natural Language Processing (NLP)	Verarbeitung und Verständnis natürlicher Sprache	Chatbots, Textanalyse
Computer Vision	Verarbeitung und Interpretation visueller Informationen	Objekterkennung, Qualitätsprüfung
Reinforcement Learning (RL)	Lernen durch Versuch und Irrtum mit Belohnungssystem	Robotik, Spielstrategien, autonomes Fahren
Symbolische KI (Good Old-Fashioned AI)	Logik- und Regel-basierte Systeme	Expertensysteme, Entscheidungsbäume
Hybridansätze	Kombination aus symbolischer KI und ML/DL	Wissensbasierte Assistenzsysteme

KI – völlig klar, was das bedeutet! Oder nicht?

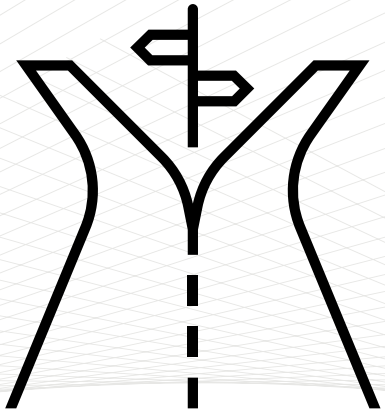
Ideenfindung, ausprobieren, Vorschläge generieren, Entwürfe erstellen,…

Black-box ist ausreichend

Kreativität

Entscheidungsunterstützung, Erklärung, Ergebnisse,…

Erklär- und Nachvollziehbarkeit



Entscheidung

Das Wertschöpfungsnetzwerk bis ans Ende denken

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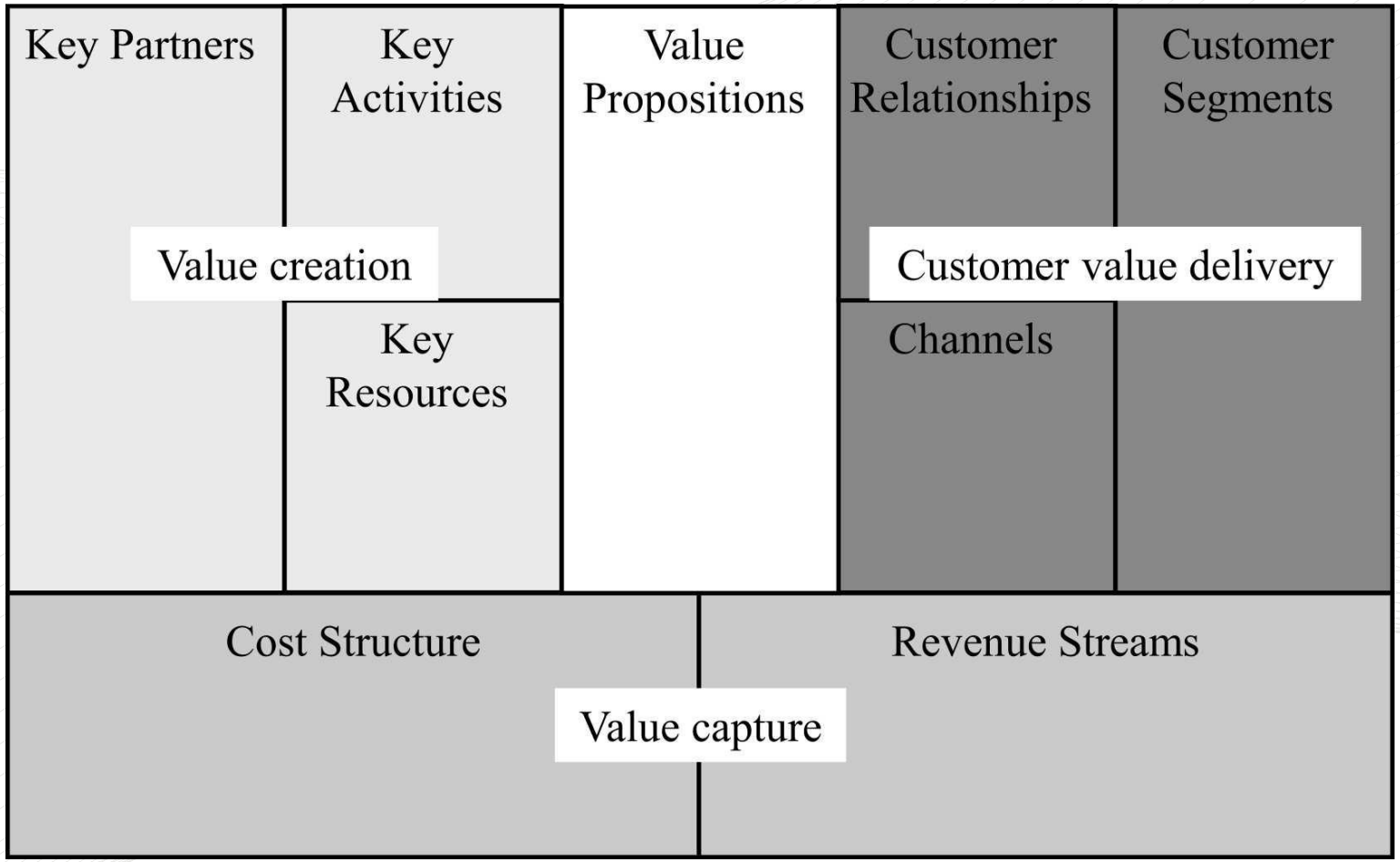

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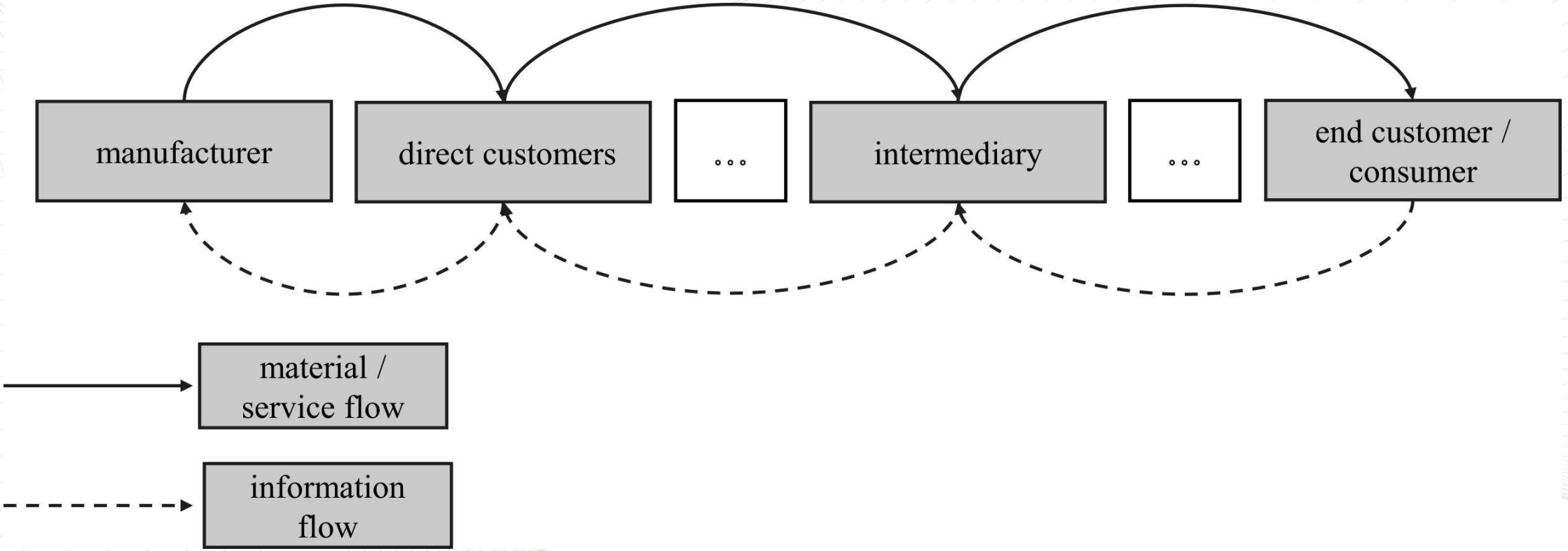
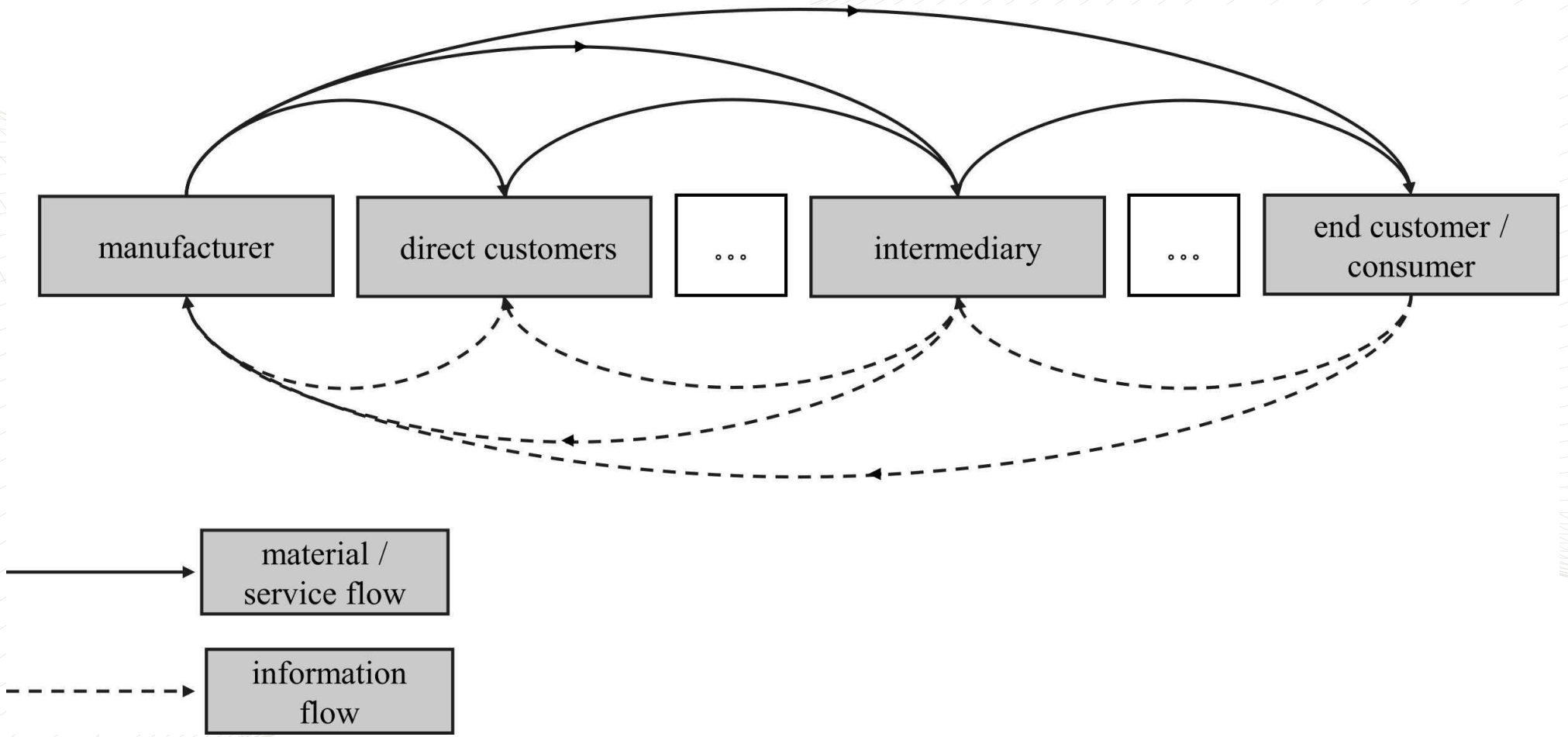


Das Wertschöpfungsnetzwerk bis ans Ende denken



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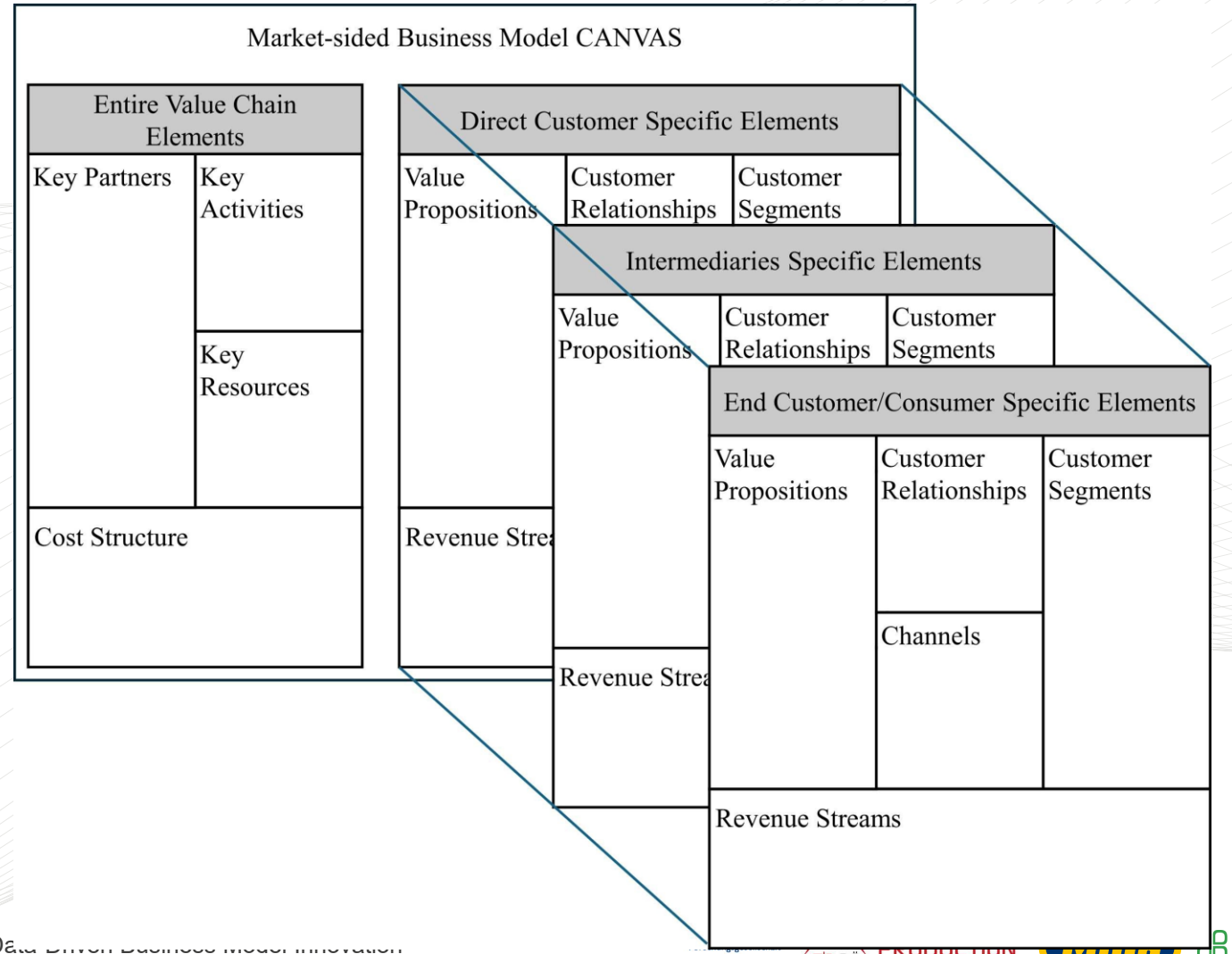
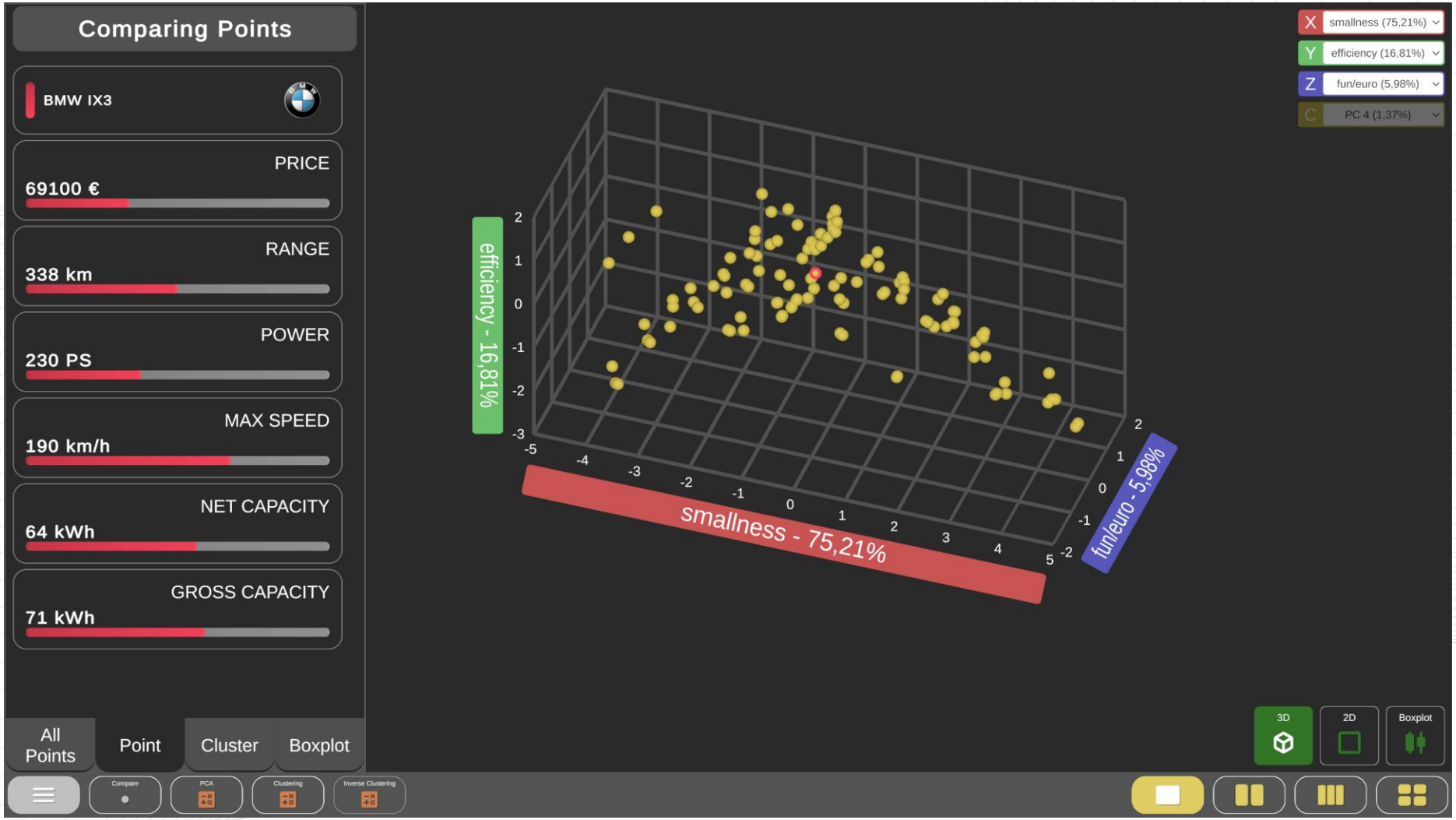
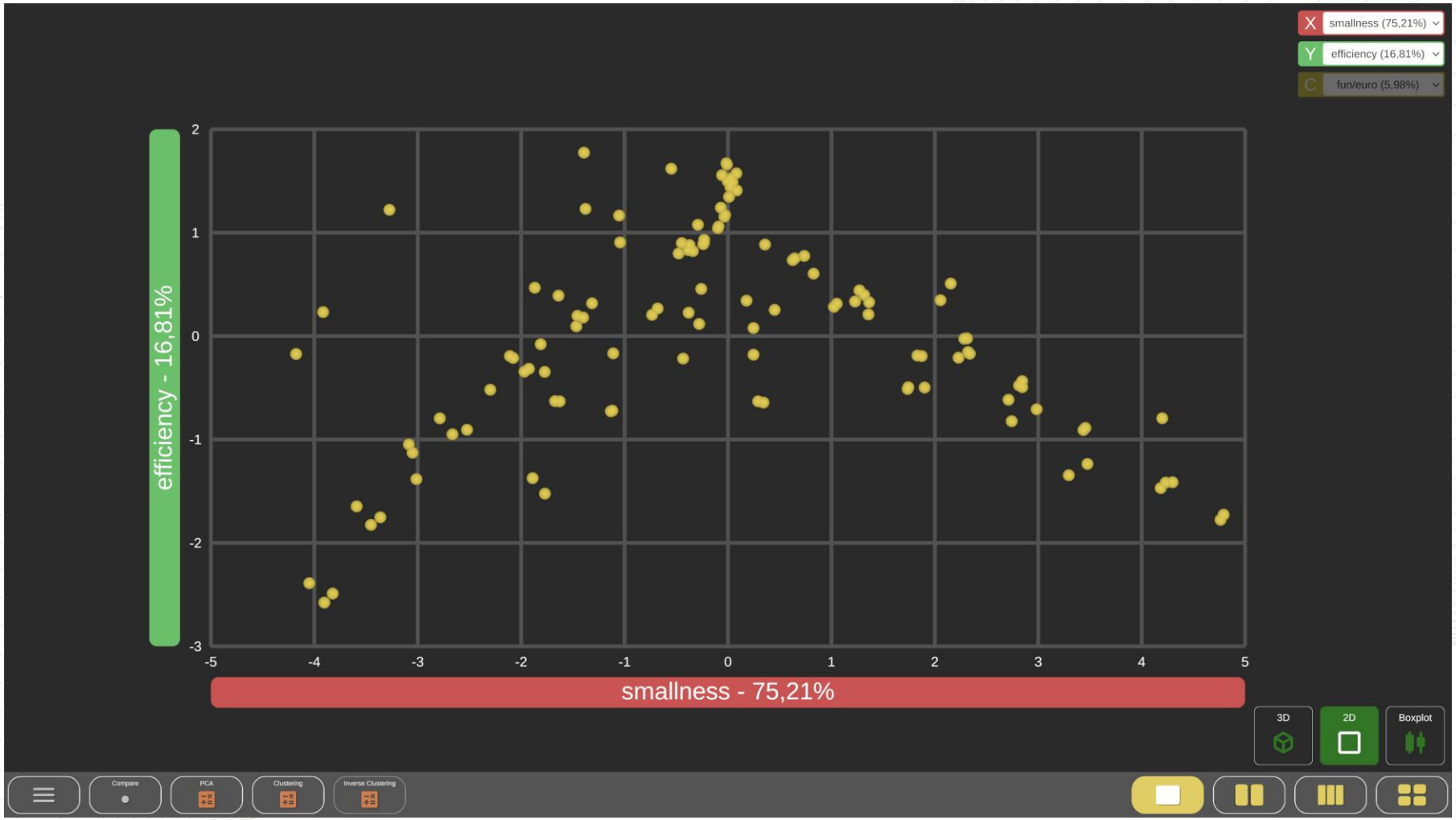


Ausnutzen der Möglichkeiten

Anwendungsfall Marktanalyse



Anwendungsfall Marktanalyse



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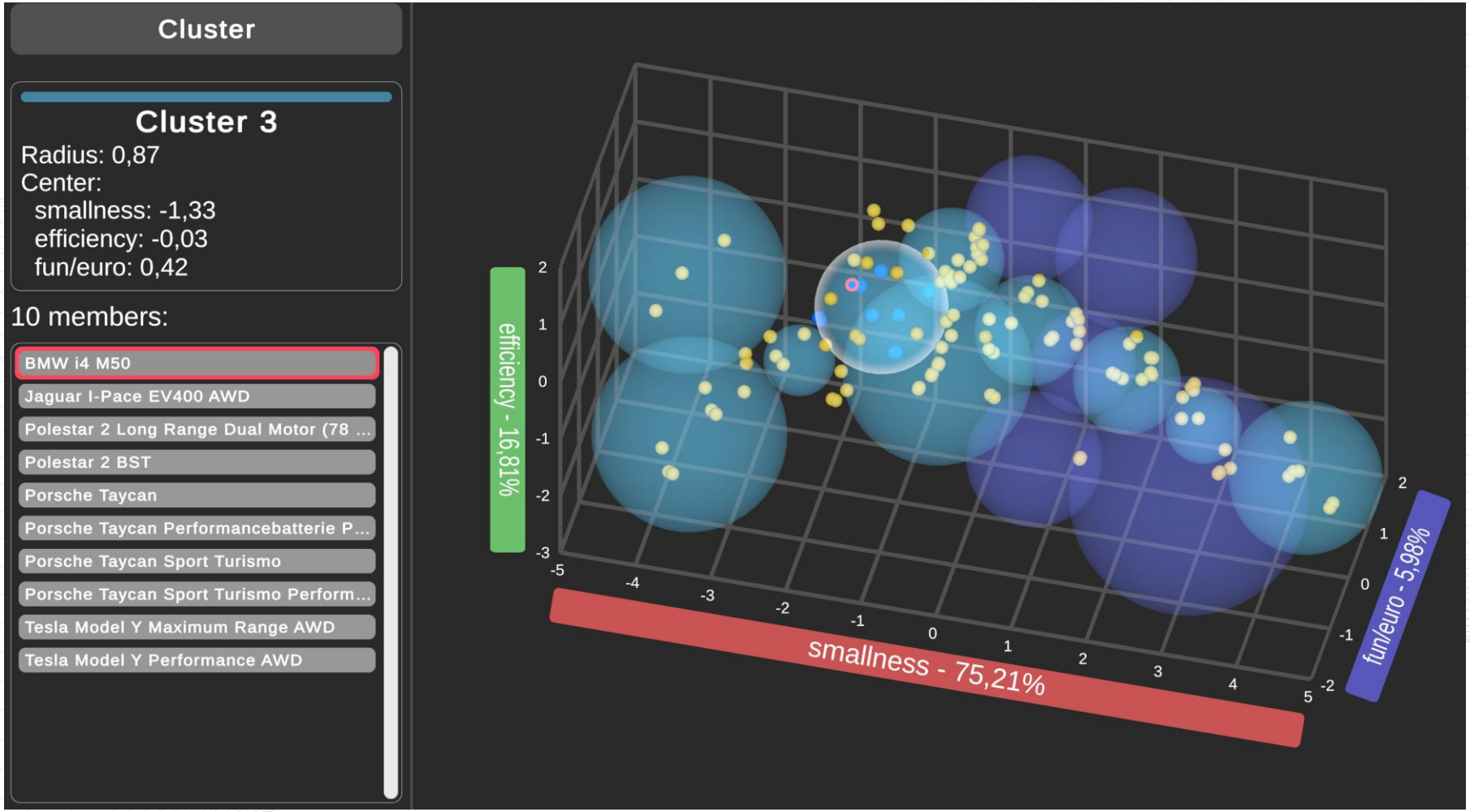
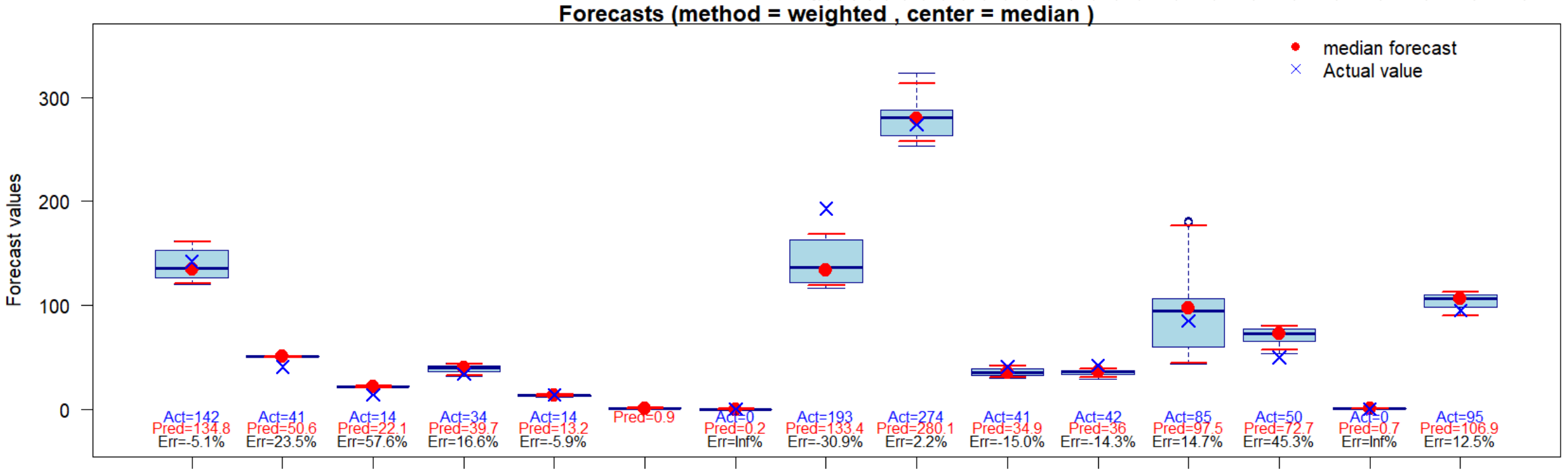
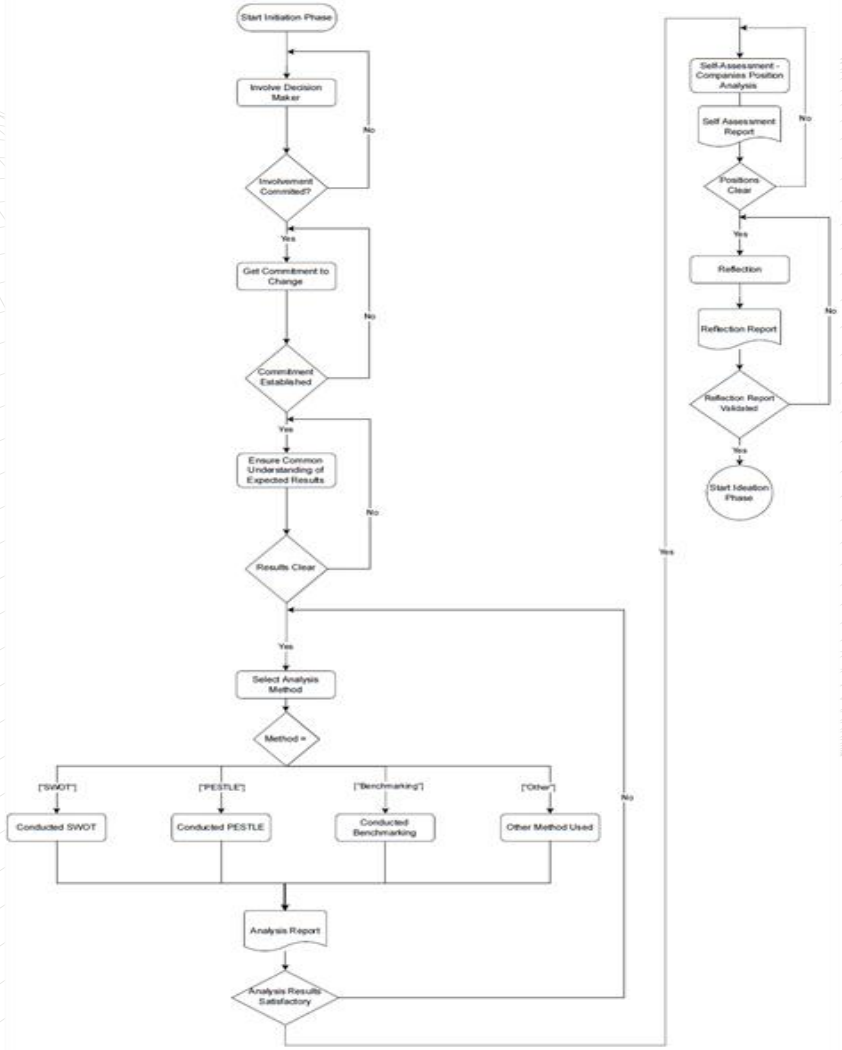


Anwendungsfall Absatzvorhersage

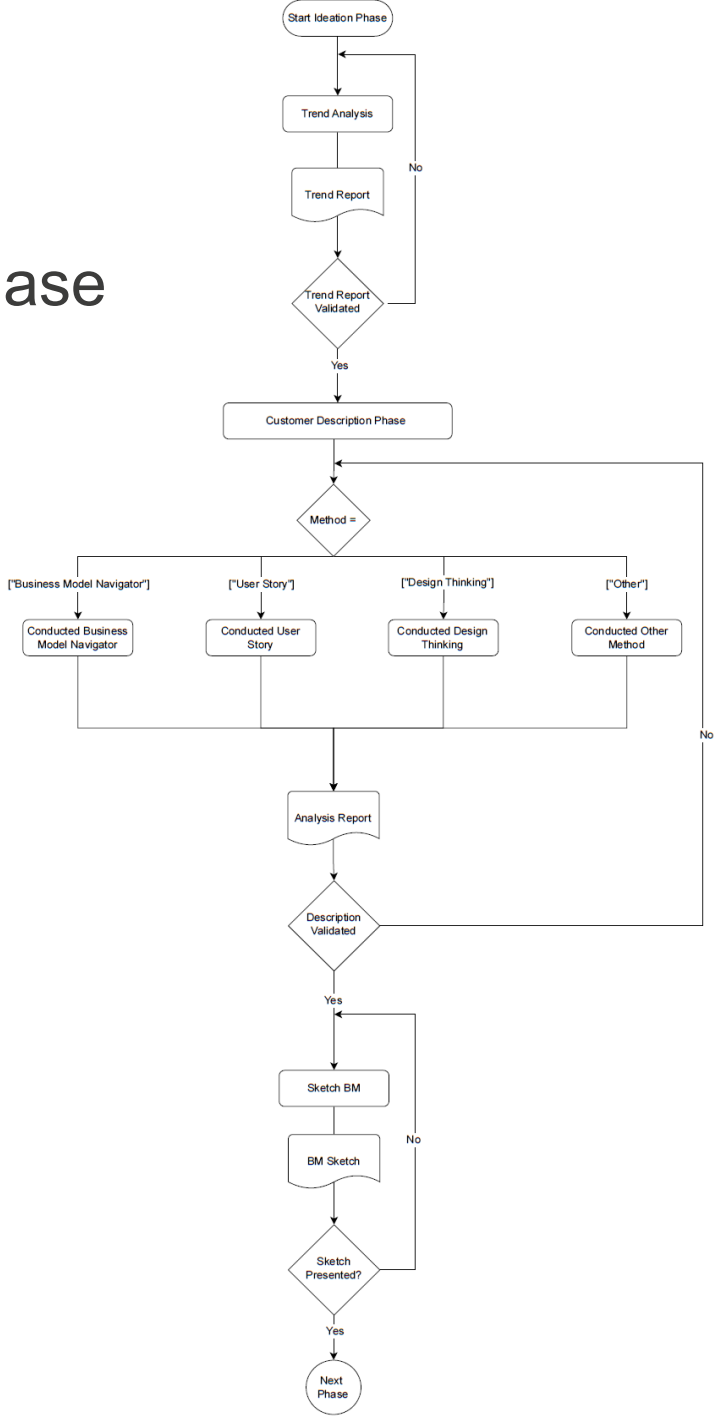


Anwendungsfall Kundensimulation

- Initiation Phase



- Idiation Phase



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Anwendungsfall Kundensimulation

👤 **Persona: “Matthias Schröder” – The Eco-Savvy Grassland Farmer**

Profile
Matthias is a 52-year-old owner-operator of a 40-hectare grassland farm near Munich. He practices mixed livestock grazing and hay production. He holds vocational qualifications in agriculture, inherited the farm from his father, and is cautious about adopting new systems—yet increasingly motivated by compliance demands and consumer expectations for environmental stewardship.

Goals & Motivations
Matthias wants to stay ahead of regulations and secure eco-schemes and biodiversity premiums under CAP. He strives to maintain high-quality pastures to support livestock health and yield. Long-term, he aims to elevate his public brand as an environmentally responsible farmer, which could enhance his market access.

Challenges & Pain Points
He finds current digital tools cumbersome, lacks clarity on data ownership, and struggles to use proprietary platforms that force him into single-brand ecosystems. Wildlife incidents (e.g., wildlife hiding in grass before mowing) lead to guilt and regulatory friction. The growing administrative load of eco-schemes and fertilization documentation consumes time and mental bandwidth.

Technology Attitude
Matthias is wary of excessive complexity and expects tools to be plug-and-play. He values sensors that automate detection (e.g., fawns, wolf proximity) and seamlessly feed into regulatory reporting. He appreciates reliable local support and strong user privacy assurances.

Decision Criteria
He will choose solutions that:
1. Simplify compliance (GAEC (good agricultural and environmental conditions), eco-schemes)
2. Provide cost-benefit clarity (ROI from tech investments)
3. Support mixed machinery fleets
4. Are backed by local service partners (dealers, research networks)

How X Can Help
- Play to your sensor innovation strength by delivering wildlife detection integrated with compliance documentation tools.
- Position your open-platform farm management solution as *trusted, independent, and farmer-first*, enabling mixed-brand compatibility.
- Leverage research ties to develop science-backed modules for biodiversity and carbon footprint tracking.
- Empower dealer partners to offer turnkey digital-service bundles with local support and data privacy assurances.

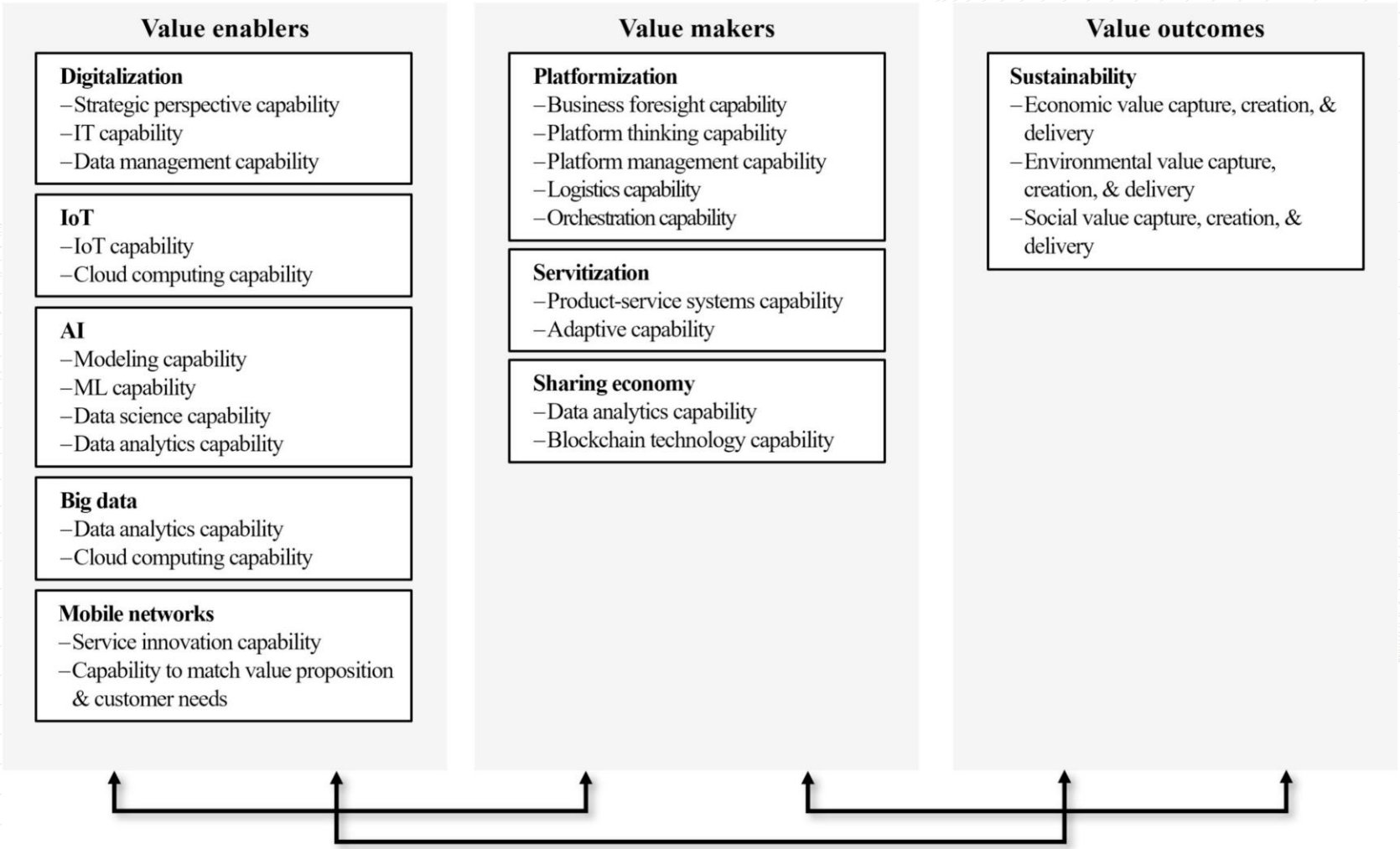
Anwendungsfall Kundensimulation

Purpose	Phase	Steps	Initial Question(s), Task(s) or input for the LLMs	Rating	
				Microsoft Copilot	ChatGPT
Model Briefing	Information	Company information	Input: Provided company description with additional information	very good	very good
		Process information	Input: Process information, background information, flow charts, tables and text	very good	fair
Model Exploitation	Initiation	Involve decision makers	Question: Prepare a presentation to foster involvement and propose a workshop agenda.	fair	very good
		Commitment to change	No explicit further tasks	good	good
		Common understanding of expected results	No explicit further tasks	good	good
		Environment analysis	Input: Commitment of the management secured Task: Make a PESTLE and A SWOT analysis based on all given information	fair	good
		Self assessment	Task: Analyze the company's position and provide a reflection report.	very good	very good
		Reflection	Task: Analyze the company's position and provide a reflection report.	very good	very good
Model Exploitation	Ideation	Trend analysis	Task: Report on new technologies, regulatory developments, and market movements.	fair	good
		Customer description phase	Task: Create a persona that could be a potential customer for Company "X"	good	very good
		Sketching of a Business Model	Task: Present possible business model archetypes and make a business model sketch according to the business model CANVAS	fair	good

Kompetenzen aufbauen – competentia ædificare

Für die Latein-Profs unter uns 😉

Technologien, Konzepte, Wirkung

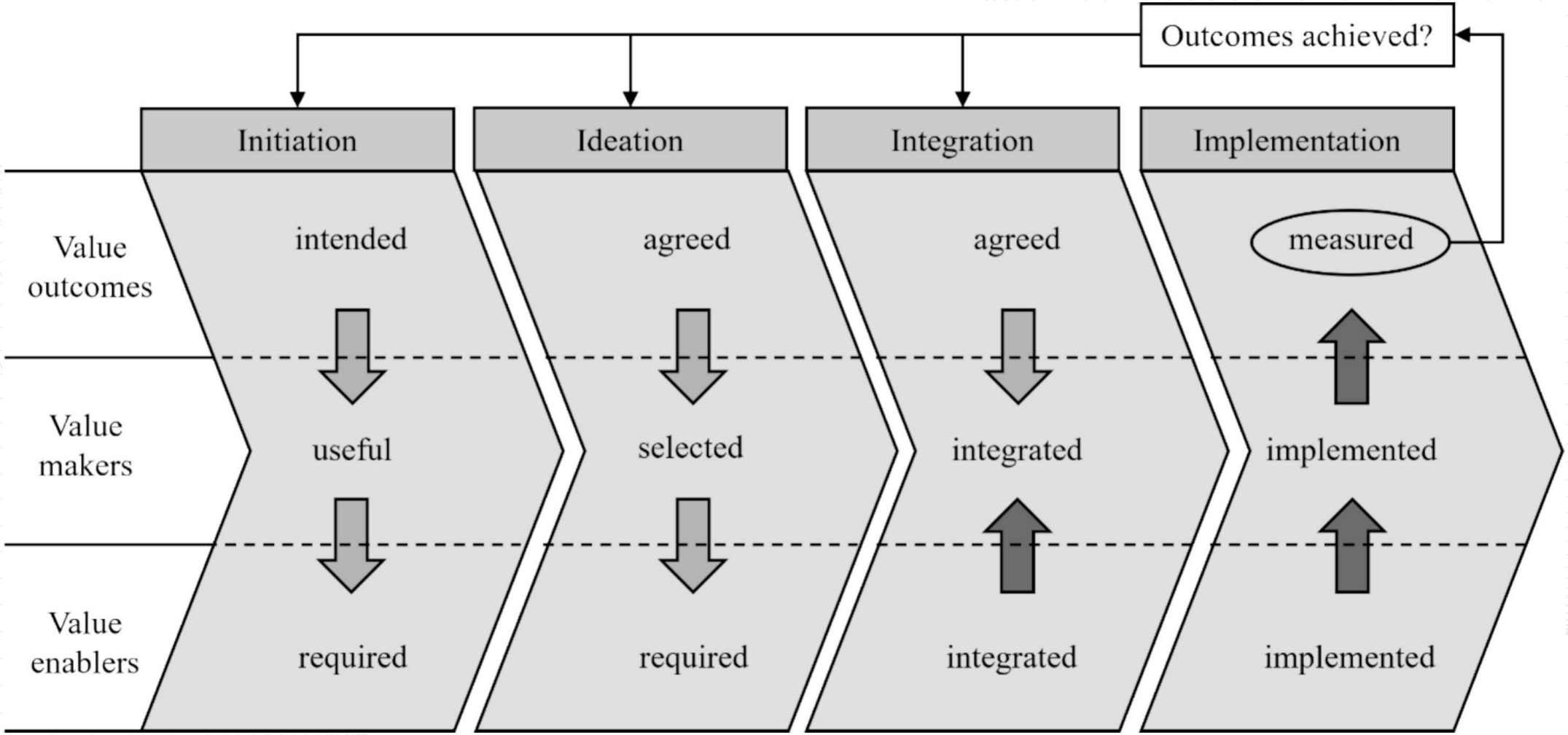


Technologien, Konzepte, Wirkung

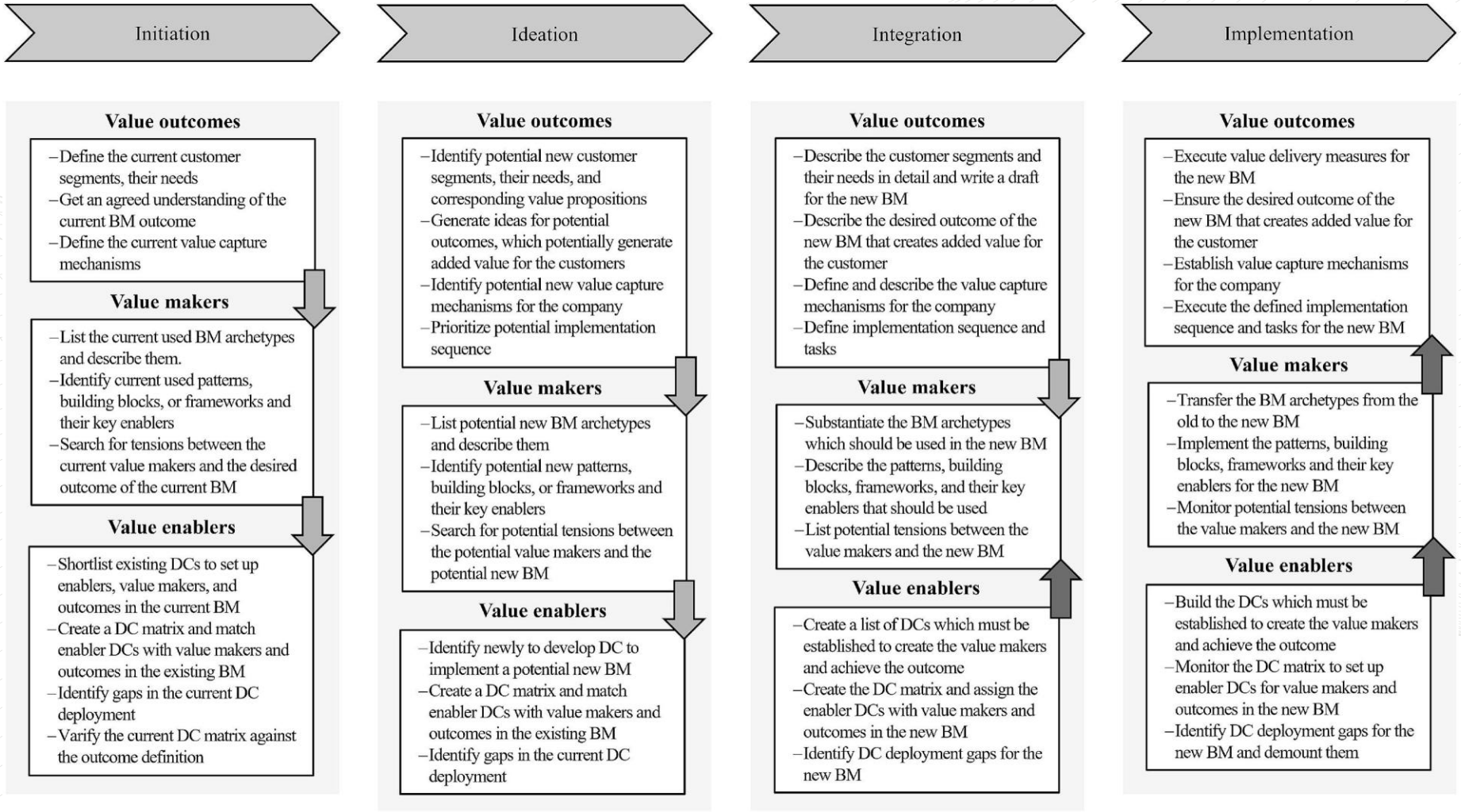
KI Kompetenz

Value outcomes	Value makers	Value enablers
Definition level: –Business understanding –Outcome definition –Prioritization of outcomes	**Identification level:** –Identify BM archetype –Identify patterns, building blocks, or frameworks and their key enablers –Identify gaps between value makers and expected outcomes	**Deployment level:** –Prioritize enabler deployment –Match enabler DCs with value makers –Plan DC deployment
Tasks for definition level: –Define target customer segments and their needs –Understand which outcomes generate added value for customers –Investigate organizational value capture mechanisms –Prioritize implementation sequence	**Tasks for identification level:** –Identify BM archetype supporting the outcome –Select patterns, building blocks, or frameworks to construct the BM archetype –List enablers and barriers for implementing, maintaining, and improving BM patterns and achieving expected outcomes	**Tasks for deployment level:** –Shortlist existing and needed DCs to set up enablers, value makers, and outcomes –Create a DC matrix and match enabler DCs with value makers and outcomes –Schedule DC deployment –Verify the DC matrix against the outcome definition

Technologien, Konzepte, Wirkung



Technologien, Konzepte, Wirkung



Quellen und weitere Informationen

Further readings

- **The future supply chain**
  - Jodlbauer, H., Brunner, M., Bachmann, N., Tripathi, S., & Thürer, M. (2023). Supply Chain Management: A Structured Narrative Review of Current Challenges and Recommendations for Action. Logistics, 7(4), Article 4. https://doi.org/10.3390/logistics7040070
- **Sustainability as a key value proposition**
  - Brunner, M., Gundolf, K., & Guieu, G. (2025). From a conventional to a sustainable business model – a review on transformation actions and indicators. Cleaner Logistics and Supply Chain, 16, 100258. https://doi.org/10.1016/j.clscn.2025.100258
  - Brunner, M., Bachmann, N., Tripathi, S., Pöchtrager, S., & Jodlbauer, H. (2024). Sustainability as a key value proposition—A literature review and potential pathways. Procedia Computer Science, 232, 1–10. https://doi.org/10.1016/j.procs.2024.01.001
- **Harnessing dynamic capabilities**
  - Tripathi, S., Bachmann, N., Brunner, M., & Jodlbauer, H. (2025). Harnessing dynamic capabilities for data-driven business model innovation in incumbents. Digital Business, 100124. https://doi.org/10.1016/j.digbus.2025.100124
- **To the end of the line – the market-sided business model canvas**
  - Brunner, M., Bachmann, N., Thienemann, A.-K., Tuezuen, A., & Jodlbauer, H. (2025). To the end of the line–including intermediaries and end customers in the business model canvas. Journal of Open Innovation: Technology, Market, and Complexity, 100623.
- **Data driven market investigation**
  - Jodlbauer, H., Tripathi, S., Bachmann, N., & Brunner, M. (2024). Unlocking hidden market segments: A data-driven approach exemplified by the electric vehicle market. *Expert Systems with Applications*, *254*, 124331. https://doi.org/10.1016/j.eswa.2024.124331
  - Niedermayr, D., Brunner, M., Tripathi, S., & Jodlbauer, H. (2024). Simplifying Data Analysis: A Visualization Framework and Practical Application for Complex BEV Data. In M. Thürer, R. Riedel, G. Von Cieminski, & D. Romero (Eds.), Advances in Production Management Systems. Production Management Systems for Volatile, Uncertain, Complex, and Ambiguous Environments (Vol. 731, pp. 192–205). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-71633-1_14

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