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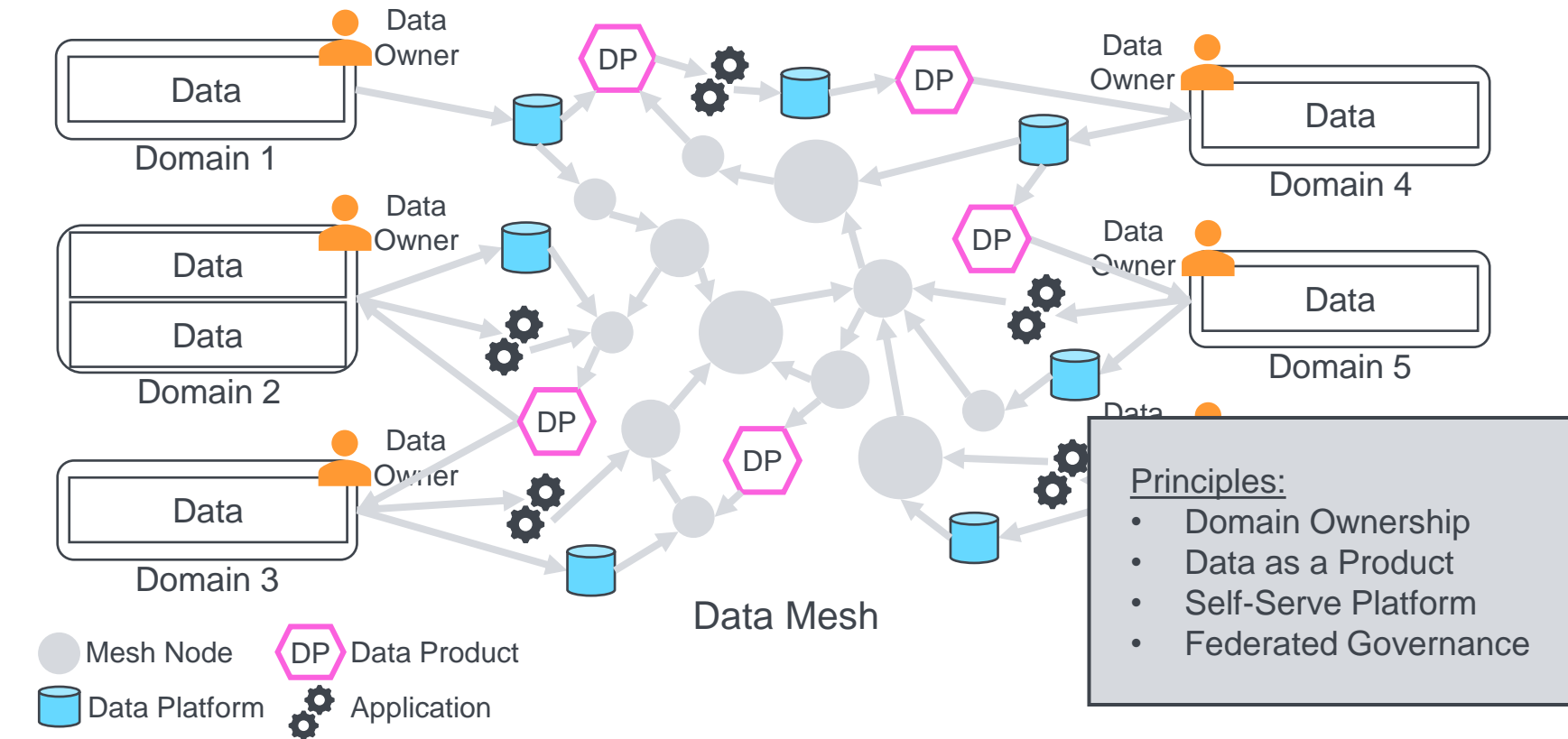
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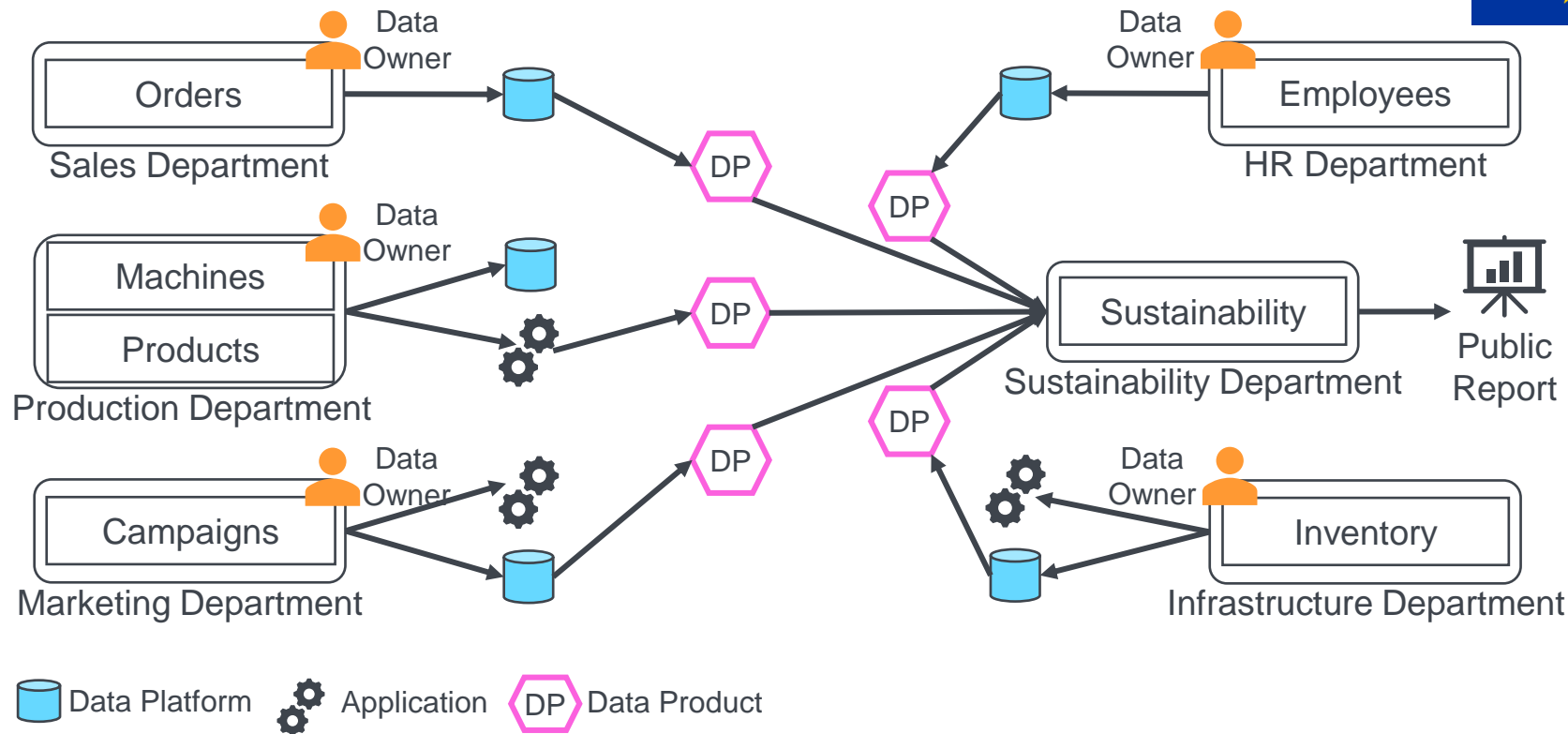
Unraveling Data Mesh: Current State, Challenges and Research Gaps

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Data Mesh



Application Scenario for Data Mesh



Current State of Research

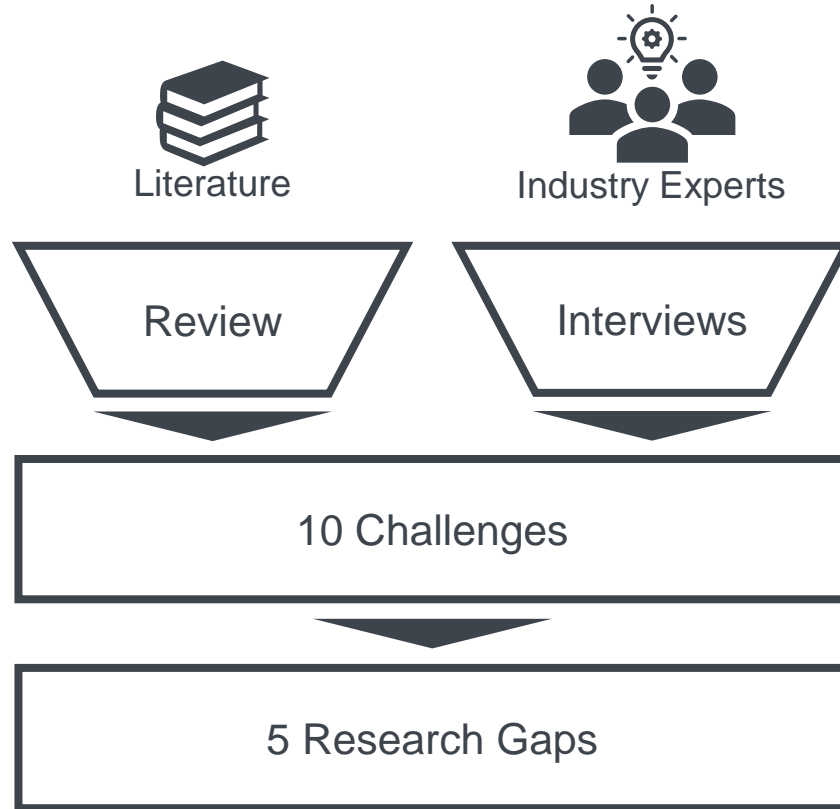
- Research regarding implementation of Data Mesh principles
 - Consider just one of four principles
 - Don't consider interactions between the principles



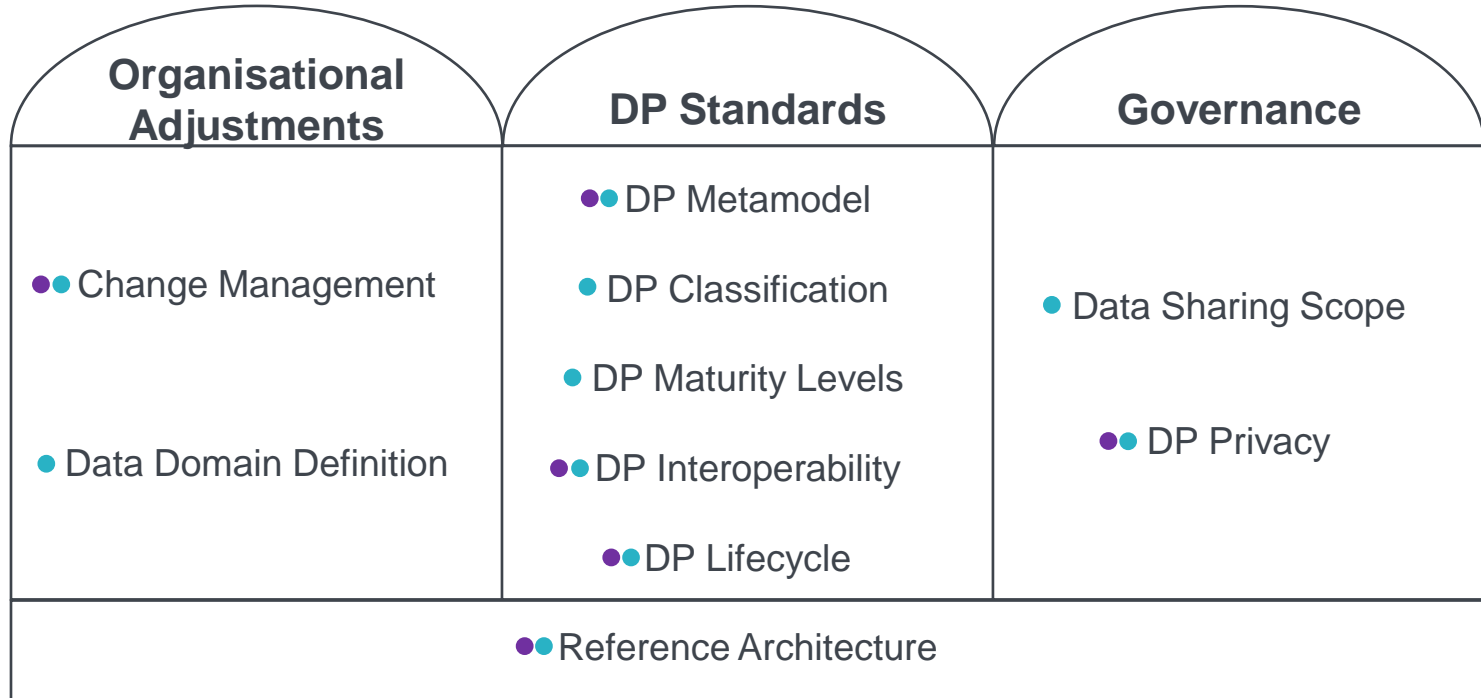
- Research regarding implementation of a Data Mesh
 - Three kinds of literature: Literature Review, Interviews and both combined
 - Results are limited



Our Approach: Literature Review & Interviews



Our Approach: Challenges



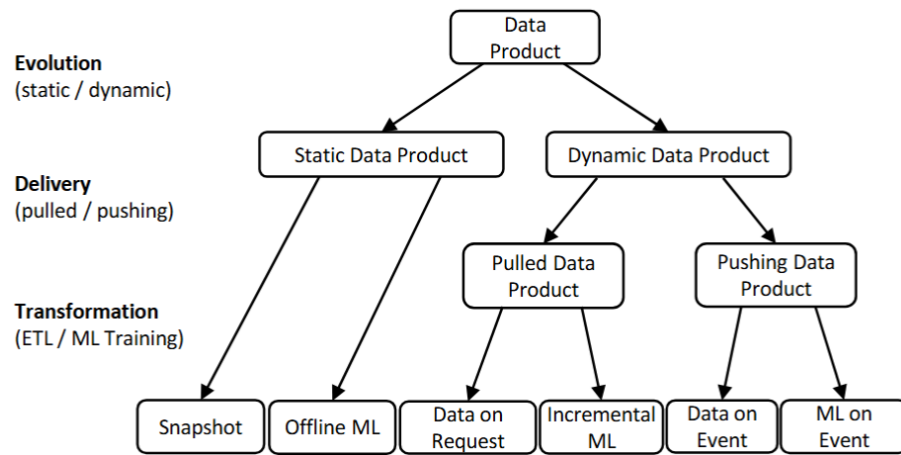
- Found in Literature
- Mentioned in Interviews

Research Gaps

Definition of a Data Product Classification

- Various use cases for data products with different characteristics
- Support providers in deciding on most suitable type of data product
- Provide instructions on how to implement a specific data product

- Publication presenting a data product classification accepted at DEXA 2025
- Future Work
 - Investigate impact on implementation
 - Implementation instructions for classes
 - Evaluate applicability in practice

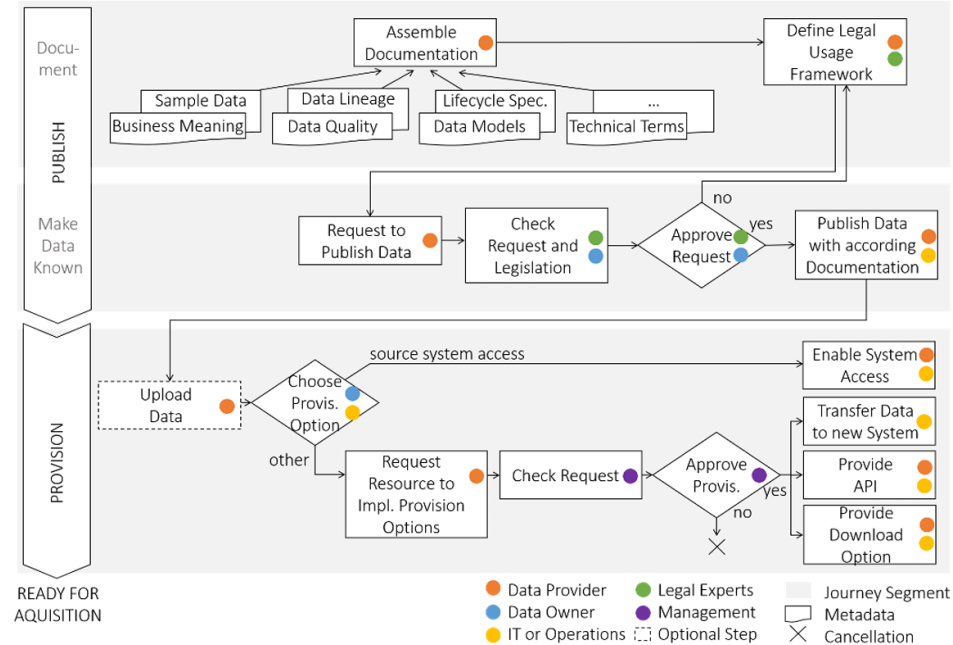


Approach to Data Product Classification by Schuiki et al. [1]

Research Gaps

Definition of a Data Product Lifecycle

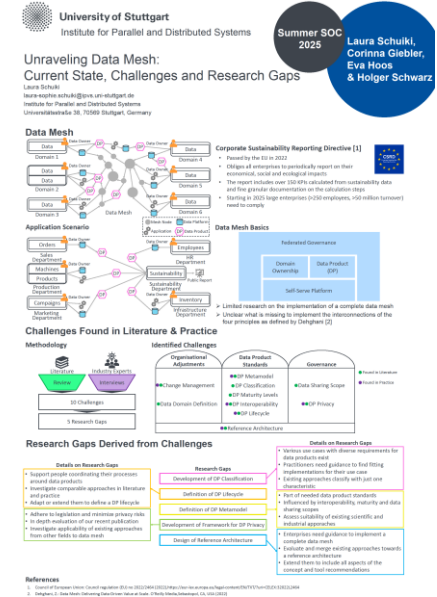
- Processes surrounding data sharing are highly complex and require coordination
- Support roles by providing an overarching Data Product Lifecycle
- Future Work
 - Investigate comparable approaches
 - Adapt or extend them to define a Data Product Lifecycle
 - Evaluate its applicability in practice

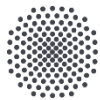


Complexity of data sharing visualized by publication and provisioning of data by Eichler et al. [2]

Summary

- Data Mesh is beneficial in data sharing scenarios that are highly relevant to enterprises
- Implementation is unclear, needs to be investigated further
- Our contribution
 - Literature review & interviews with industry experts
 - Identification of ten challenges regarding the implementation of Data Mesh
 - Derivation of five research gaps to inspire future research





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Thank you!



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References

- (1) Schuiki, L., Schreier, U., Schwarz, H, Mitschang, B.: A Data Product Classification by Technical and Machine Learning Aspects. (Aug 2025) *Accepted and to be published at DEXA 2025.*
- (2) Eichler, Rebecca & Gröger, Christoph & Hoos, Eva & Schwarz, Holger & Mitschang, Bernhard. (2022). From Data Asset to Data Product – The Role of the Data Provider in the Enterprise Data Marketplace.