DDD anche nei Dati?

(AKA Data Mesh)

Sponsors

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All we need is Data!

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NewVantage Report

- Have a data culture
  27 %
- Become data-driven
  38 %
- Competing on data
  45 %
- Investments > $50
  65 %

Failure Symptoms

- Fail to bootstrap
- Fail to scale sources
- Fail to scale consumers
- Fail to materialize Data-Driven value

Operational vs Analytical

Operational

E T L

Analytical

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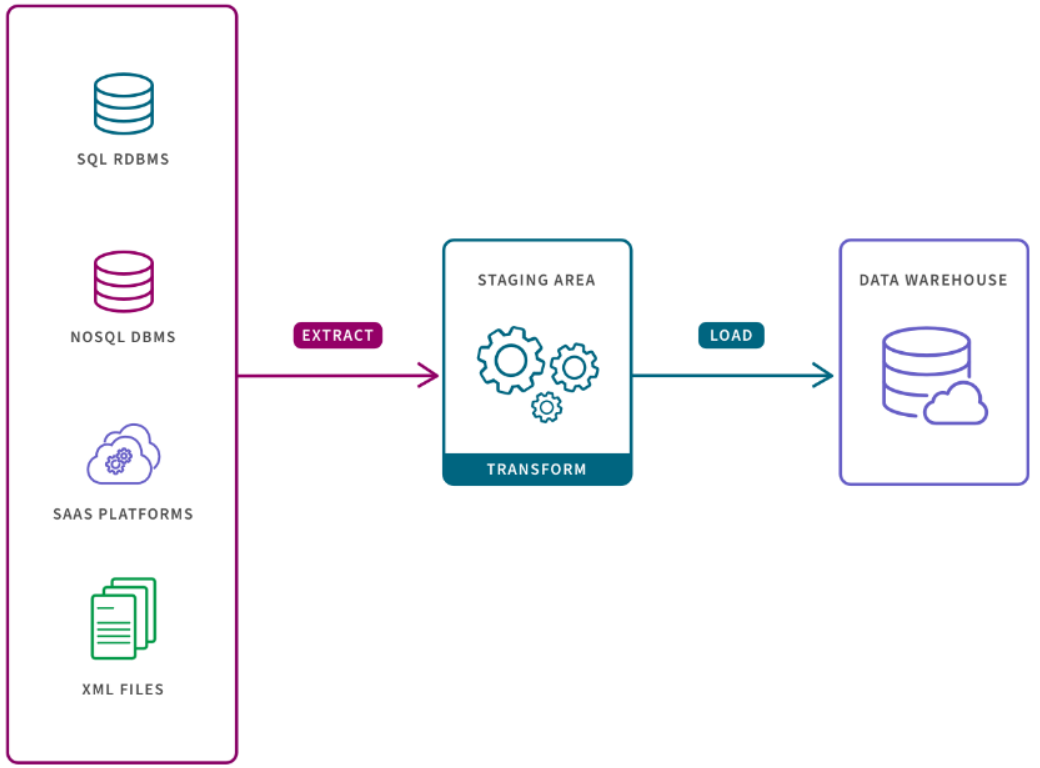
Misintegration



Centralized Monolithic

Decomposition

- INGEST
- AGGREGATE
- SERVE

- FEATURES
- CAPABILITIES

Scale Architecture with top-level technical partitioning

Architecture decomposition orthogonal to change

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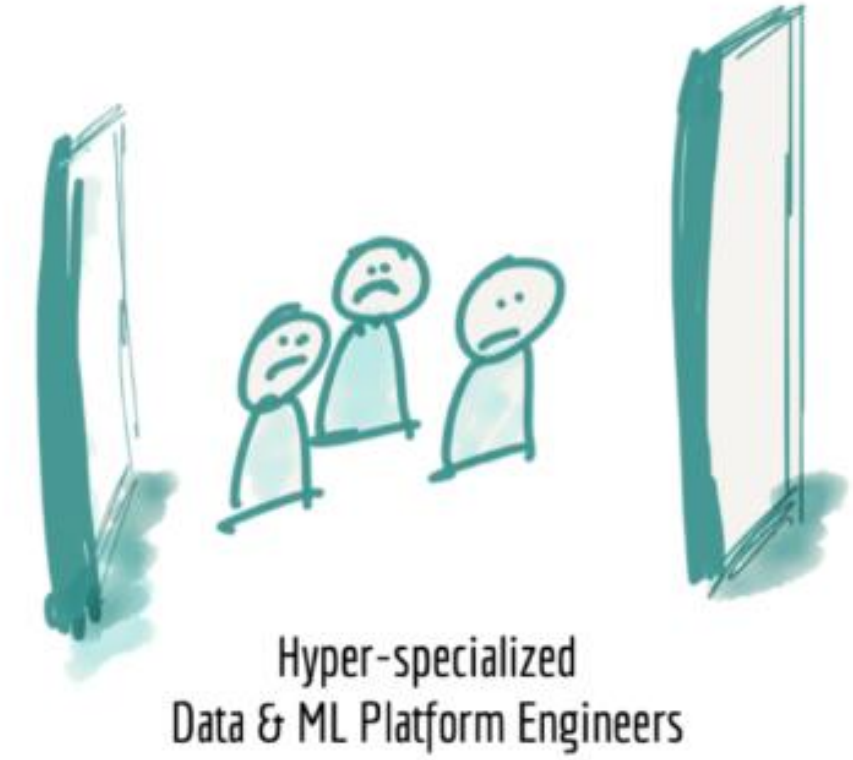
Hyper-specialized silos



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Disconnected

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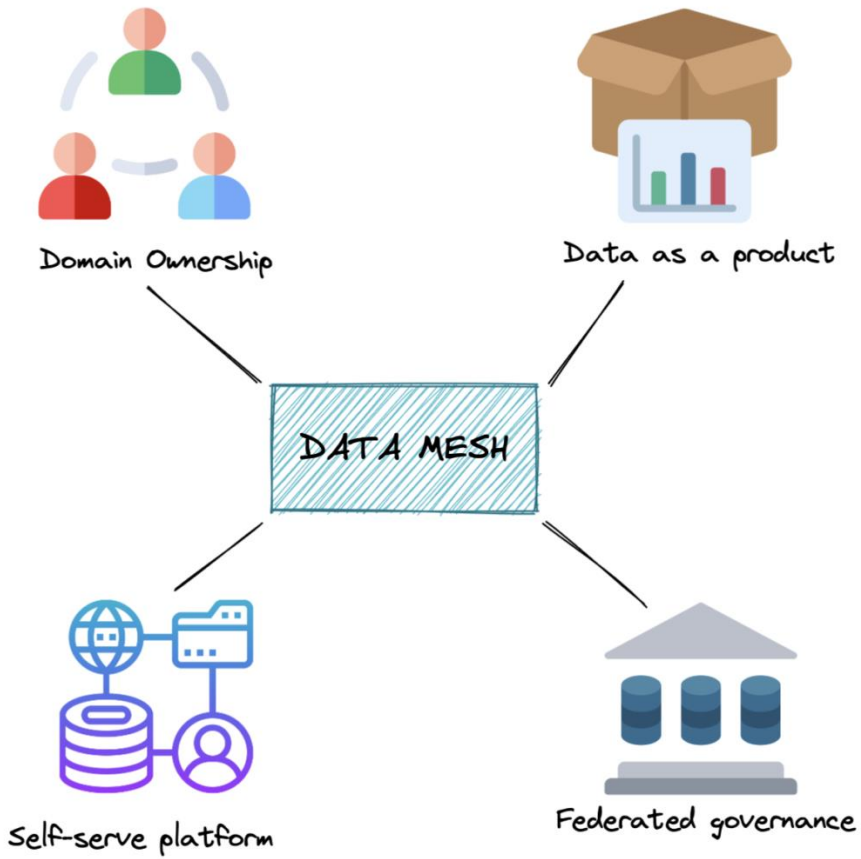
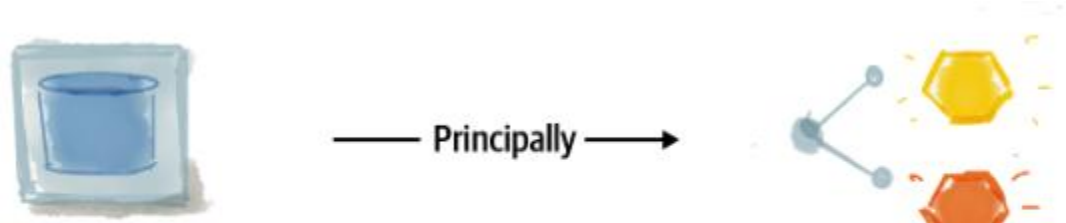
Data Mesh

(Zhamak Dehaghani)



Data Mesh as a socio-technical approach



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Domain-Driven Design

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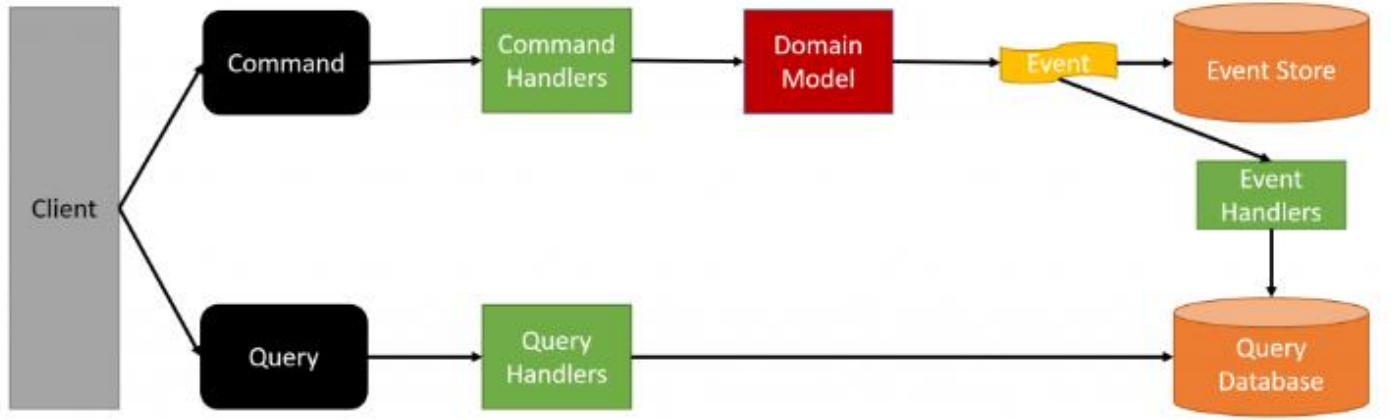
Pattern Strategici

- Ubiquitous Language
- Bounded Context
- Context Mapping

Pattern Tattici

- Entity
- Value Object
- Aggregate
- Aggregate Root

CQRS + ES



YouTube IT

[CQRS and Event Sourcing Introduction – Greg Young]

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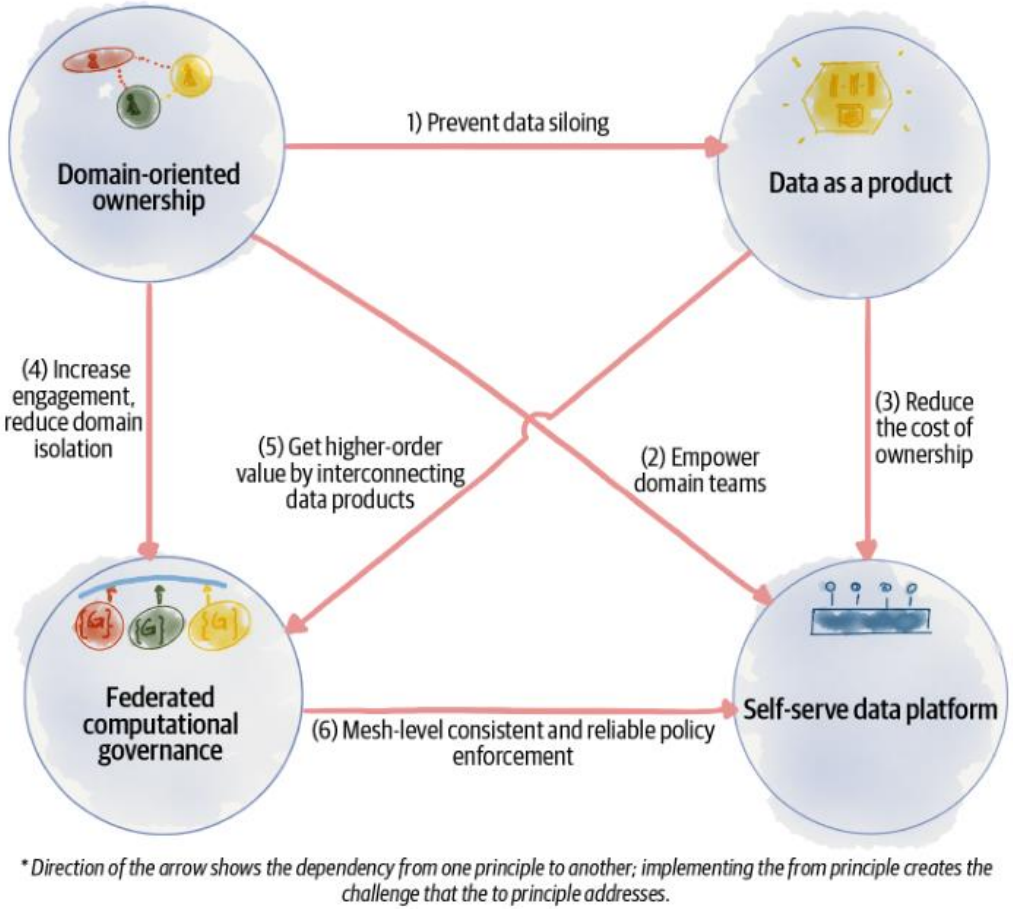
The Principles



*Direction of the arrow shows the dependency from one principle to another; implementing the from principle creates the challenge that the to principle addresses.

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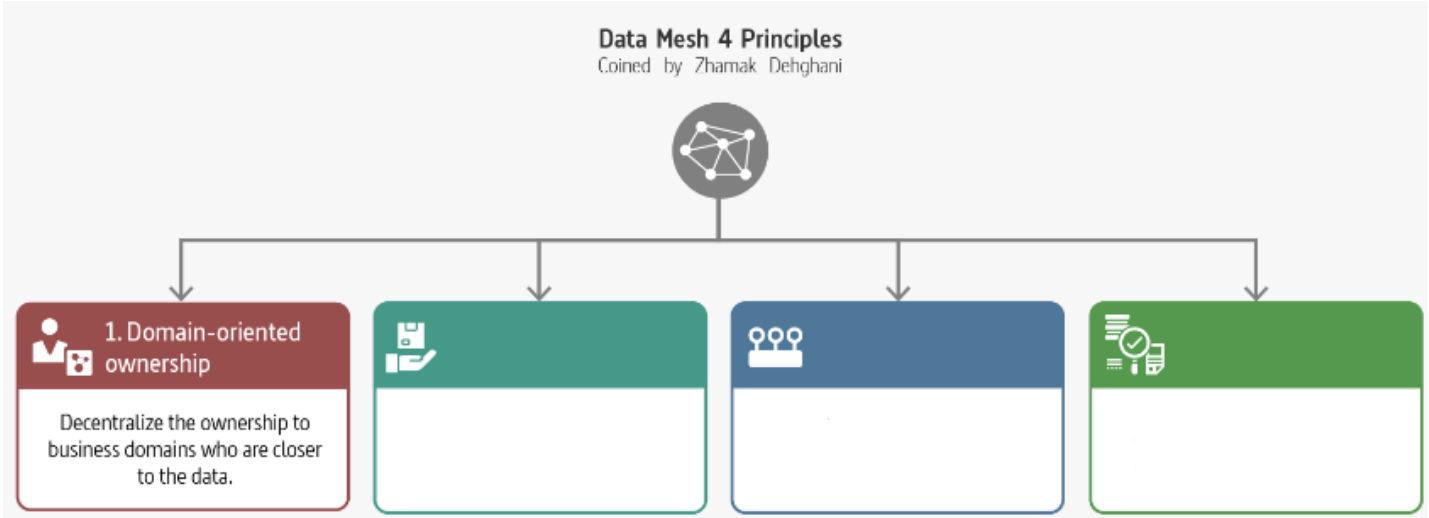
Domain-Oriented Ownership



Decompose Data Around Domains

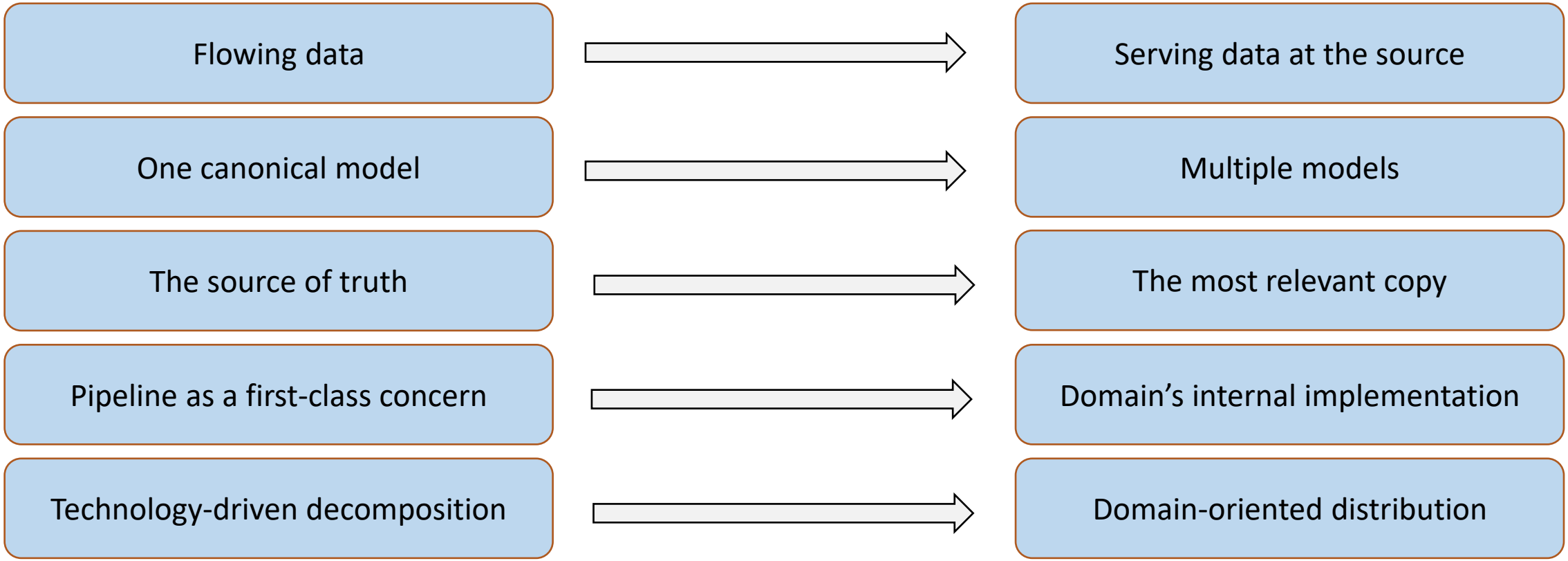
Domains aligned with the origin of data

Domains aligned with the consumption

Domains aligned with shared aggregates

Distributed the ownership

Transformation to Domain-Oriented Data



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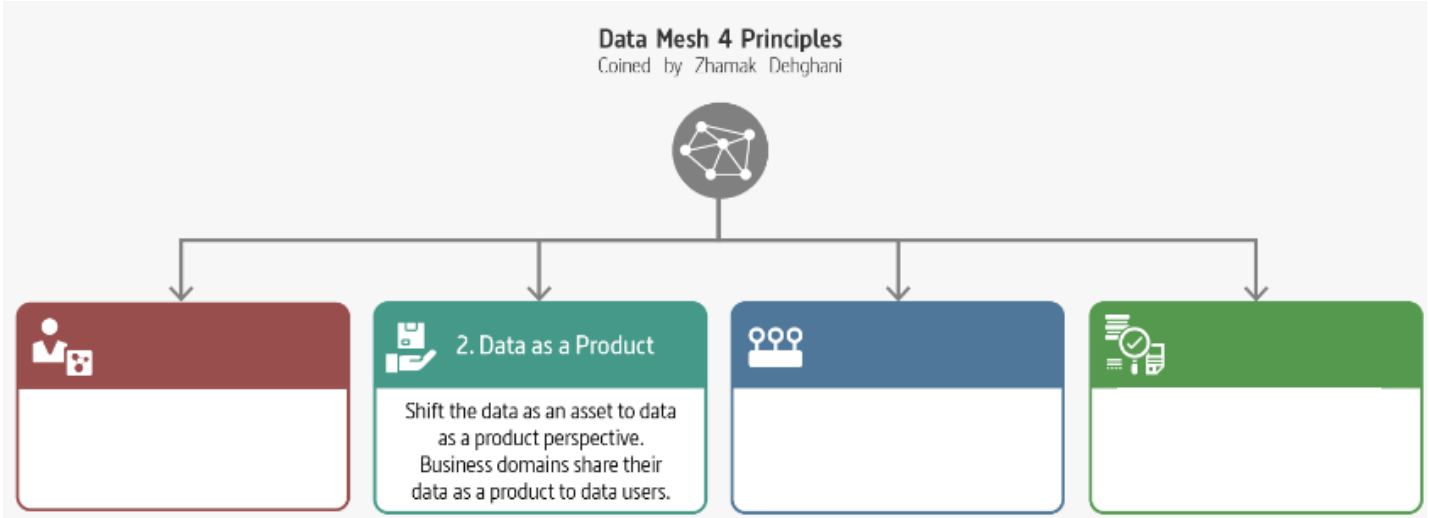
Data as a Product



A Succesful Product

- Usable
- Valuable
- Feasible

Marty Cagan «Inspired»

- Discoverability
- Understanding

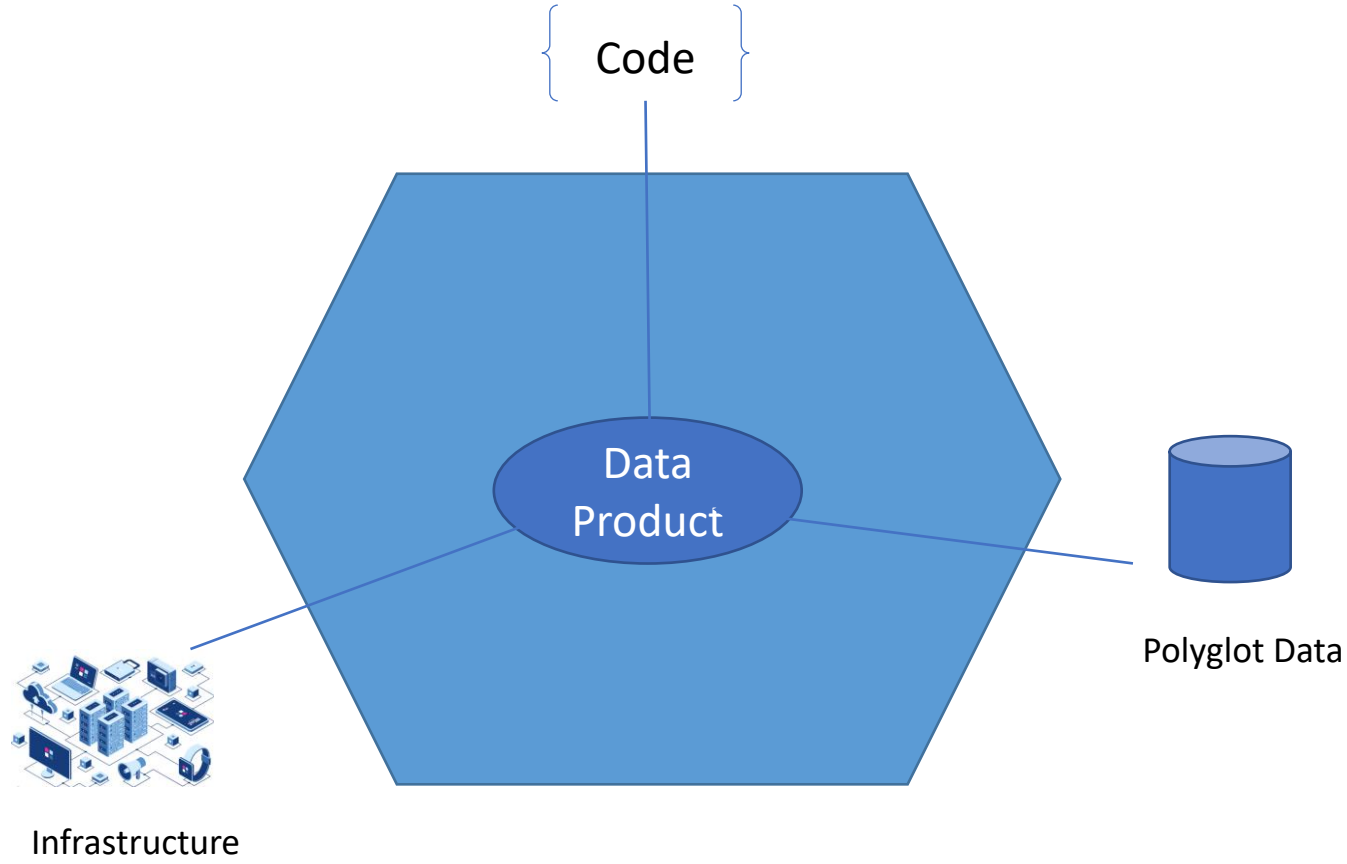
Don Norman «The design of every day things»

- Trusthful (trustworthy)

«A confident relationship with the unknown» Rachel Botsman

- Interoperable
- Natively Accessible

Data as a Product



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Data Product Owner

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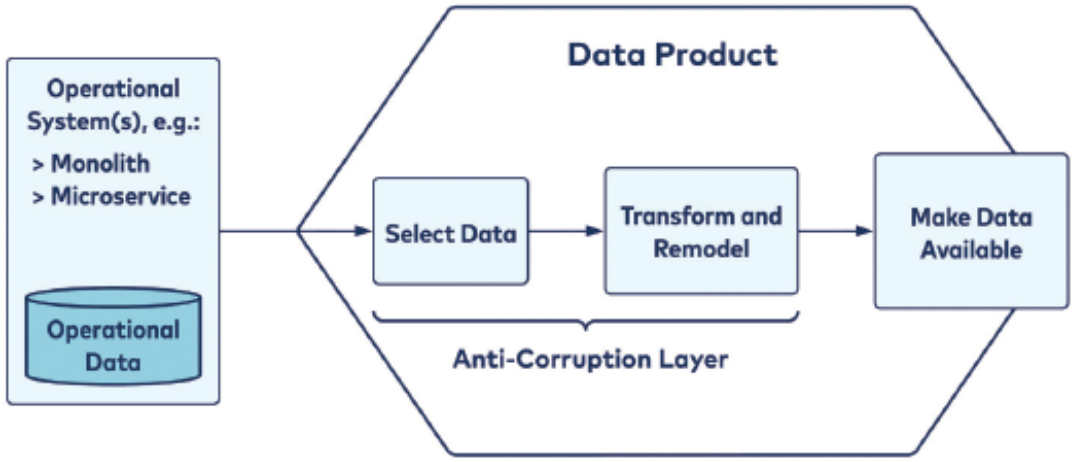
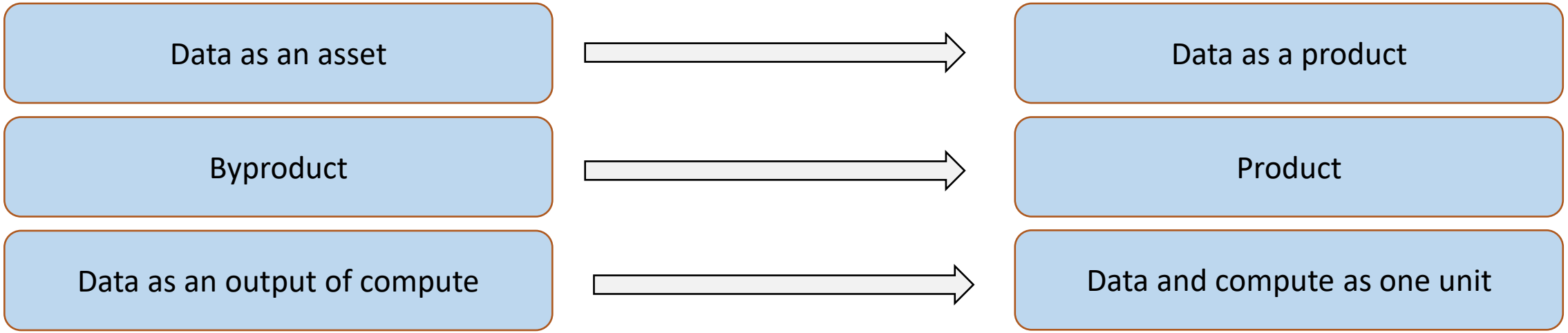
Domain Boundary



Building a Data Product

Facts are read-only	Only the data product owner can add new facts to the data product.
Facts are immutable	Data product owners can append new facts as an addendum to previous facts, but cannot modify, overwrite, or delete them
Facts are timestamped	Each fact contains a timestamp representing when it occurred, such that time-based ordering is made possible

Transformation to Data as a Product



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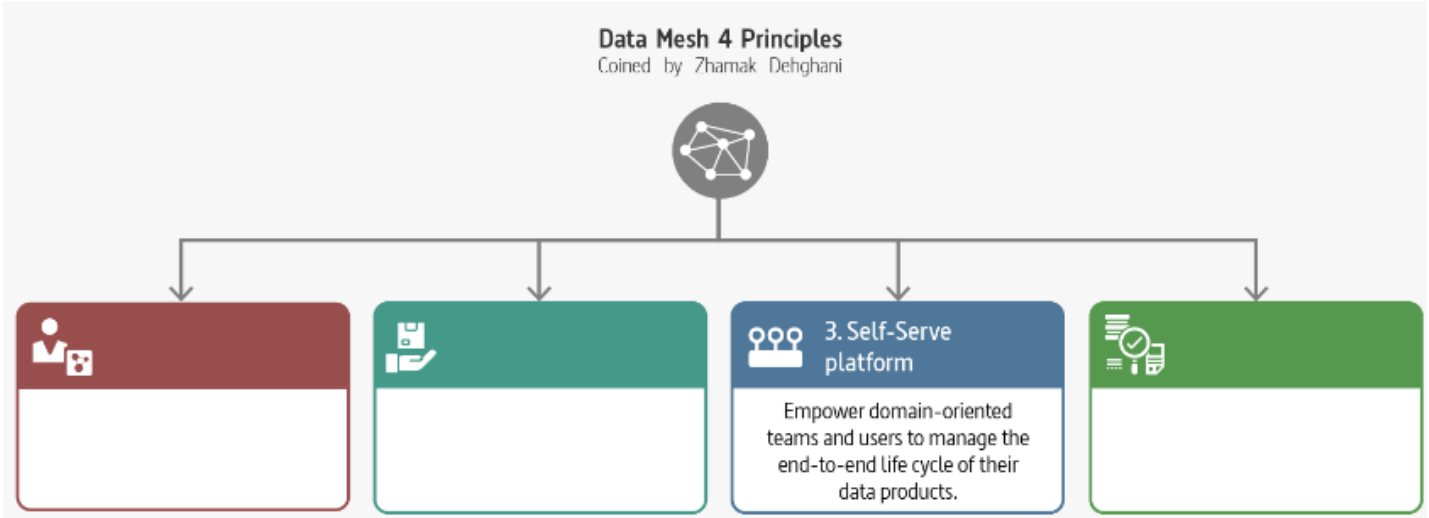
Self-serve Data Platform



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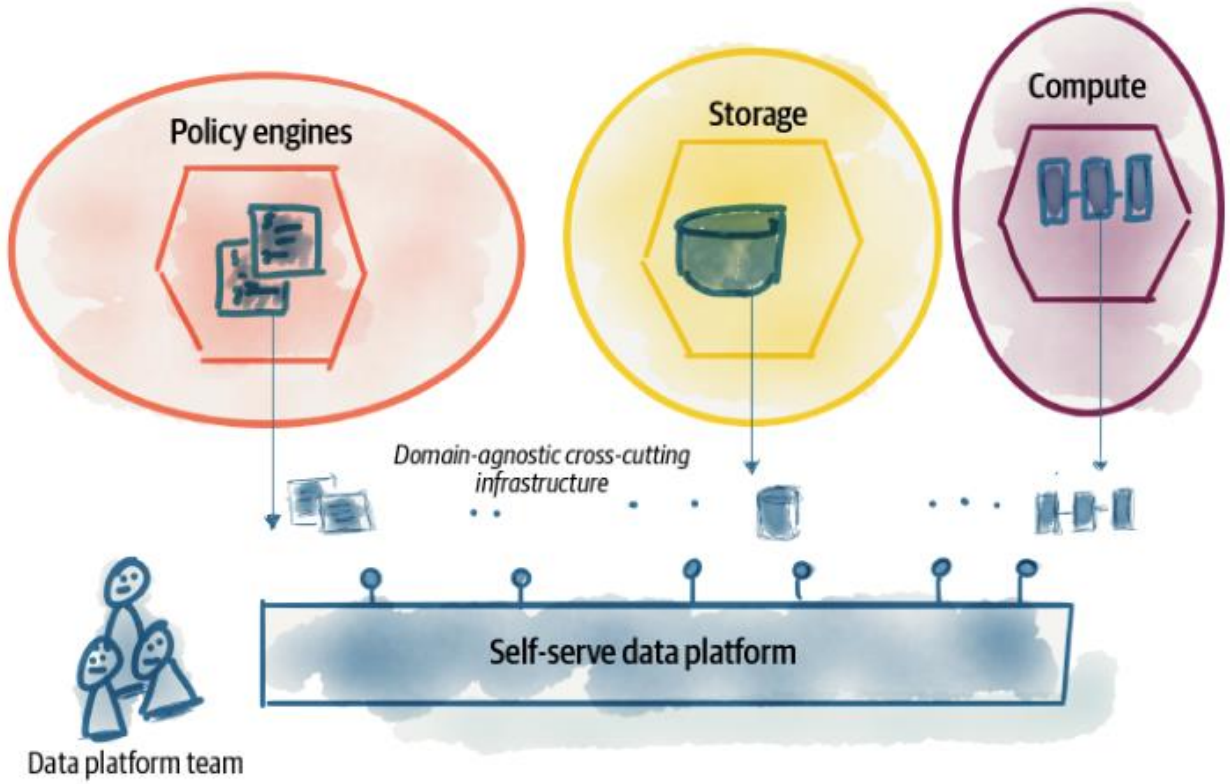
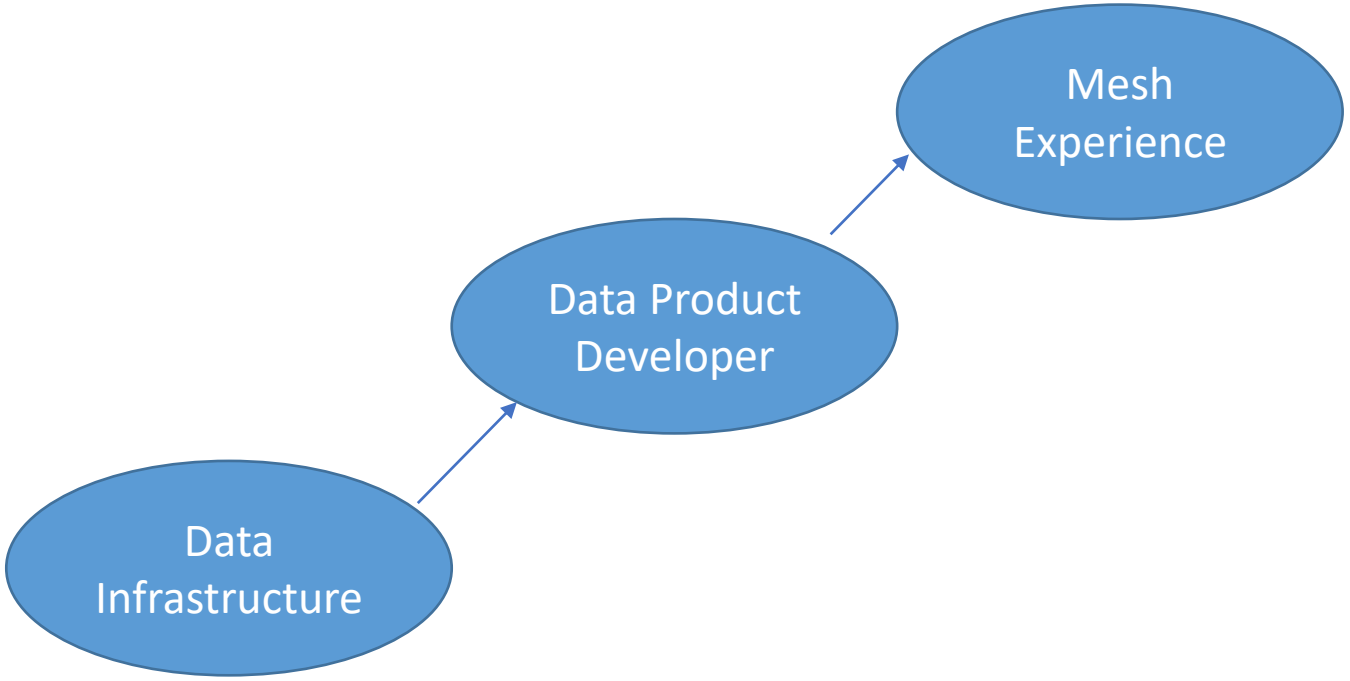
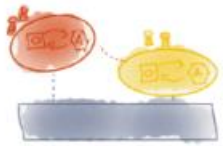
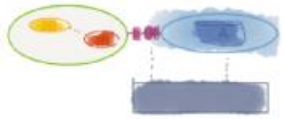
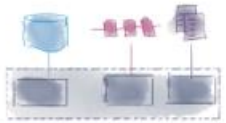
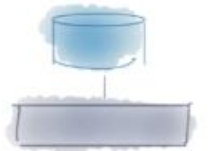
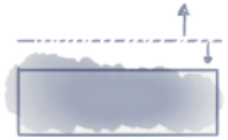
Self-Serve Data Platform



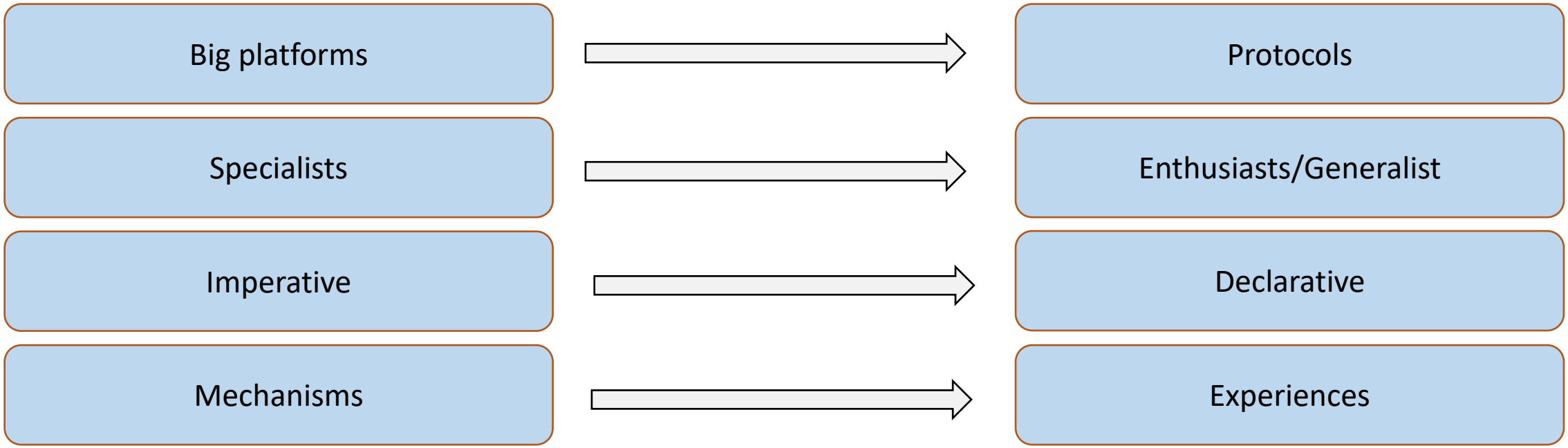
Logical Architecture



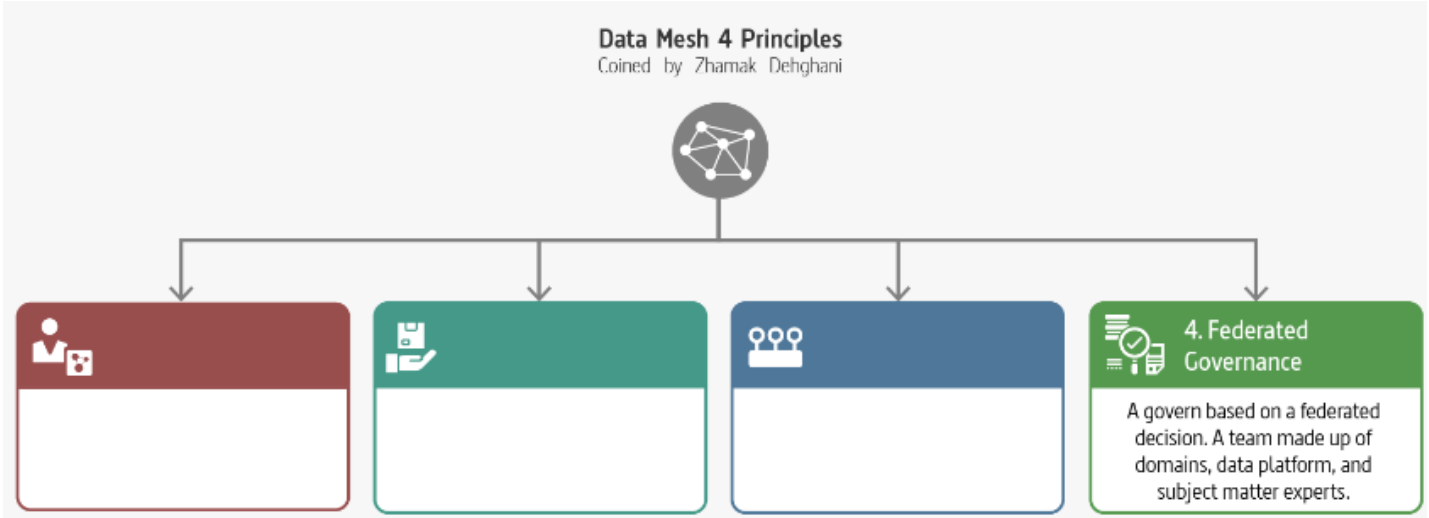
Data Mesh vs Others

Data Mesh	Others	Data Mesh	Others
 Serve autonomous domain-oriented teams	 Serve a centralized data team for all domains	 Designed for a generalist majority	 Designed for a specialist majority
 Manage autonomous interoperable data products (with code, data, policy as one unit)	 Manage data, pipelines, code, and policies separately	 Favor decentralized technologies	 Favor centralized technologies
 Integrated platform of operational and analytical capabilities	 Two independent stacks for operational and analytical systems with point-to-point integrations	 Domain agnostic	 Domain aware

Transformation to Self-Serve Data Platform



Federated Computational Governances



Federated Computational Governance

Decentralization and domain self-sovereignty

Interoperability through global standardization across data products

A dynamic topology

Automatic exection of decisions and policies by the platform

Maintains equilibrium between centralization and decentralization

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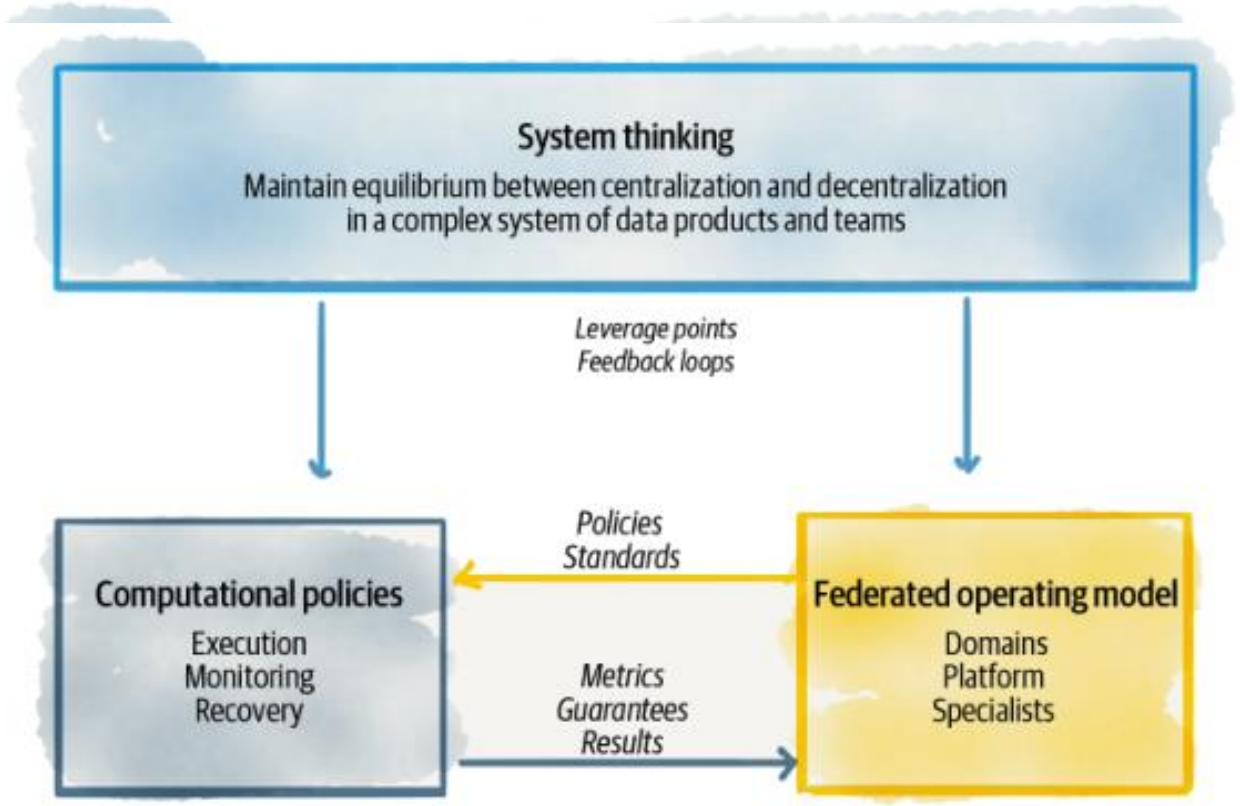
Equilibrium



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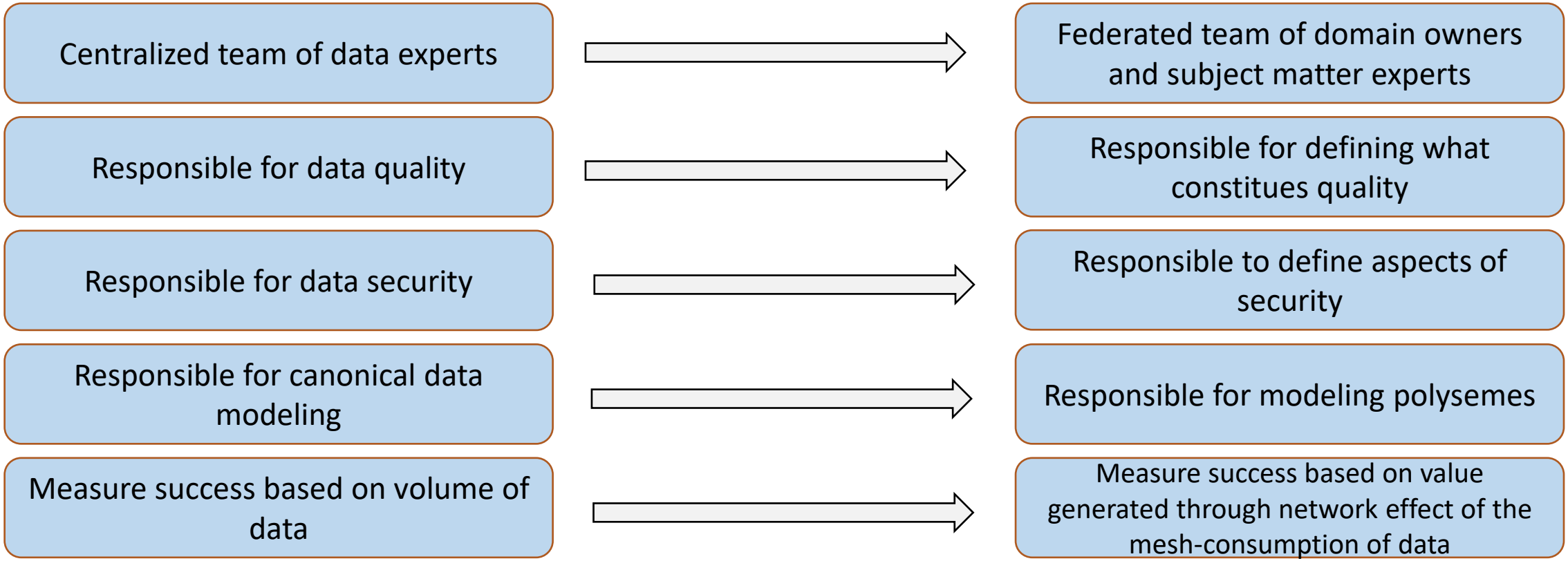
Transformation to Federated Computational Governance



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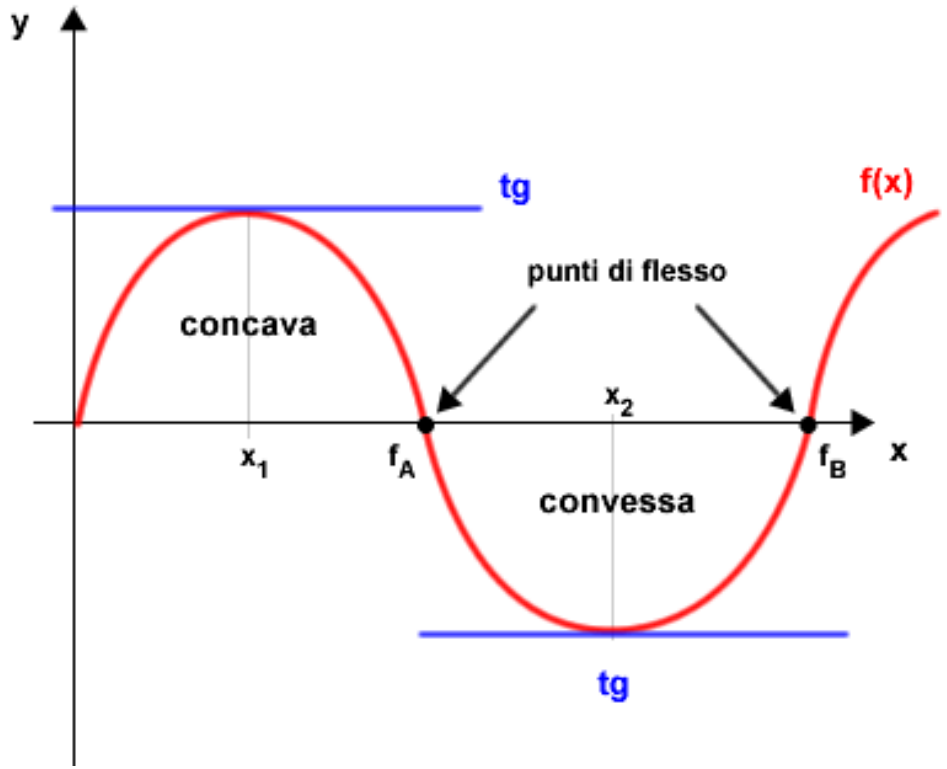
Why Data Mesh?



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You hear that Mr. Anderson? That is the sound of inevitability …

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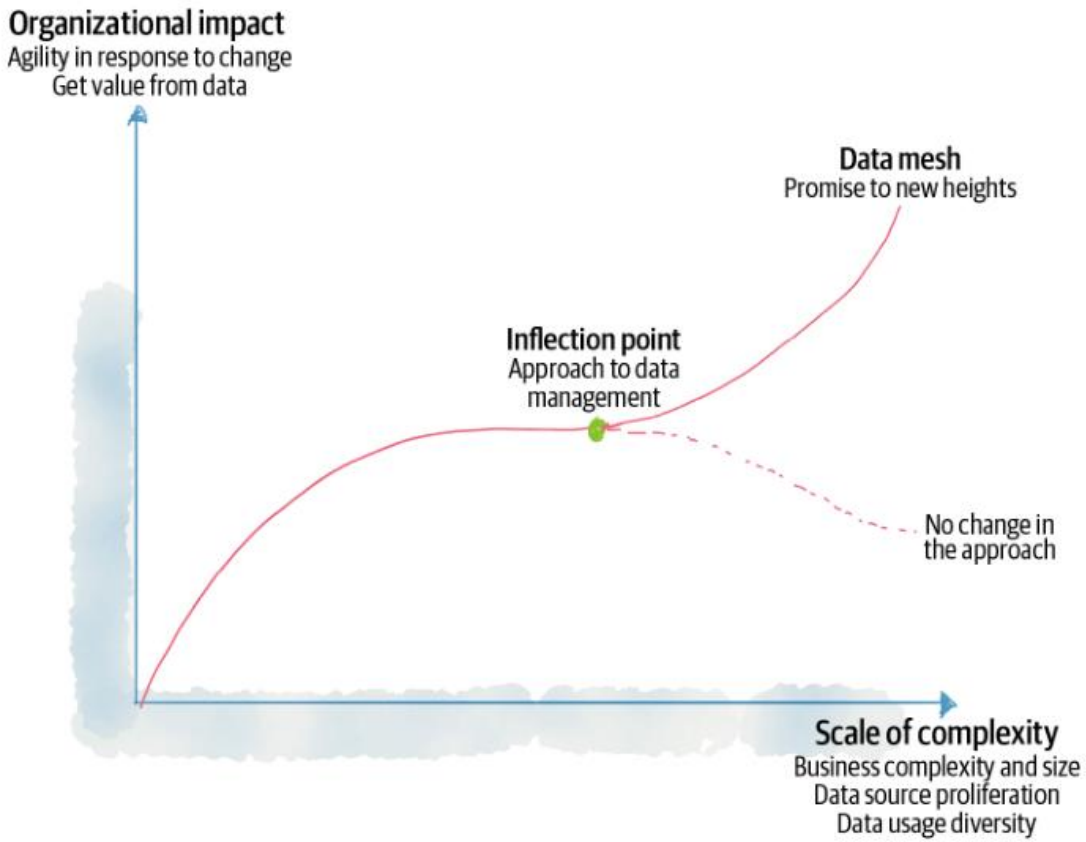
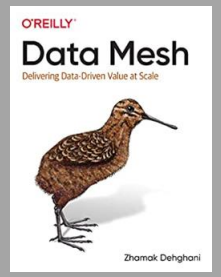
Data Mesh inflection point



References



Zhamak Dehghani

YouTube

Introduction to Data Mesh

Martin Fowler

Data Mesh Principles and Logical Architecture

CONFLUENT

Practical Data Mesh

Irion

Data Fabric and Data Mesh

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