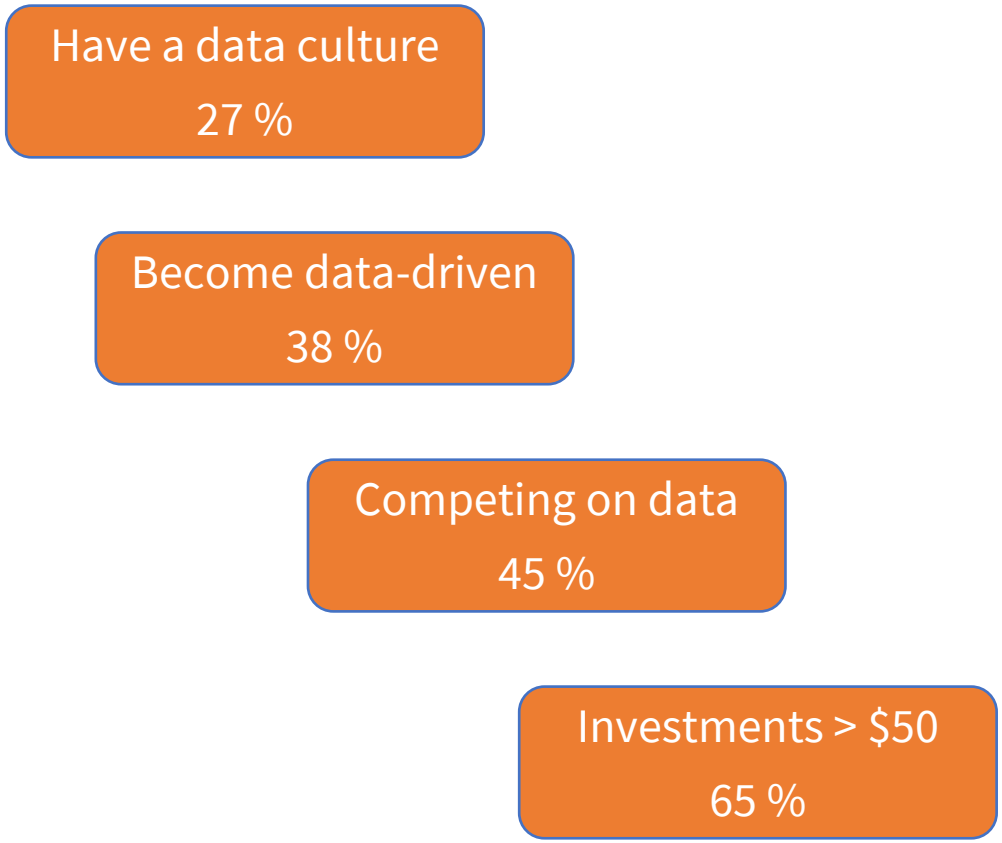
DDD anche nei Dati?

(AKA Data Mesh)

INTR3

All we need is Data!

NewVantage Report



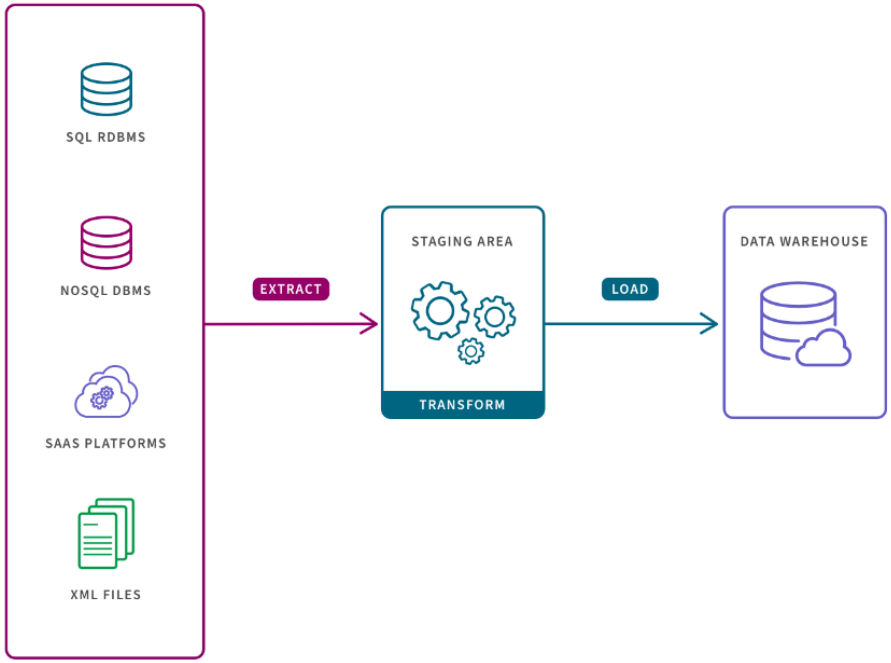
Operational vs Analytical

Operational

E T L

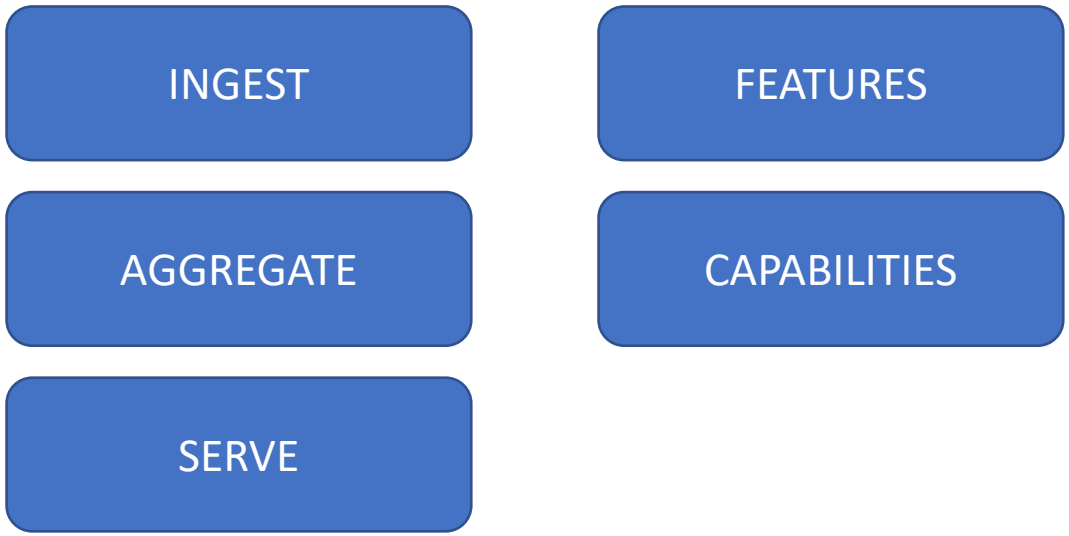
Analytical

Misintegration



Centralized Monolithic

Decomposition



Scale Architecture with top-level technical partitioning

Architecture decomposition orthogonal to change

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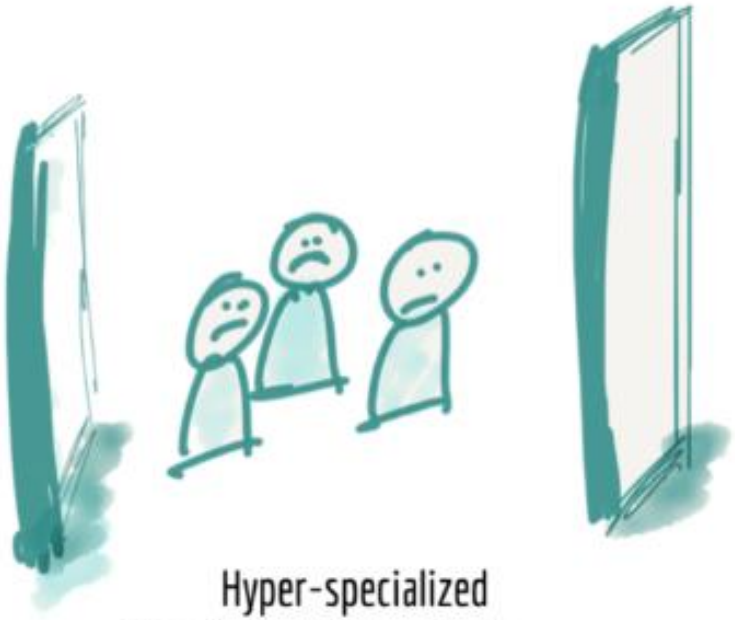
Hyper-specialized silos

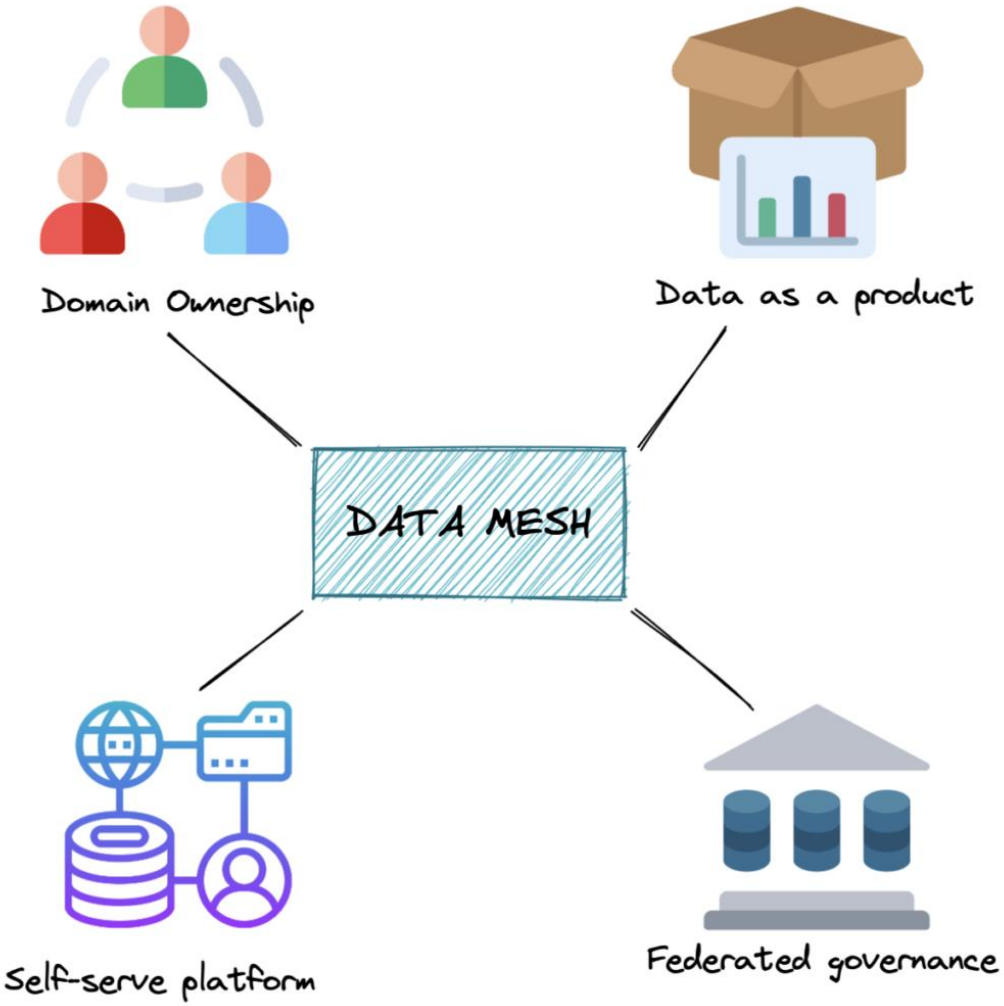


Hyper-specialized
Data & ML Platform Engineers

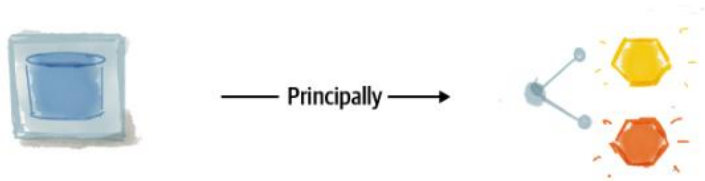
Disconnected

Data Mesh

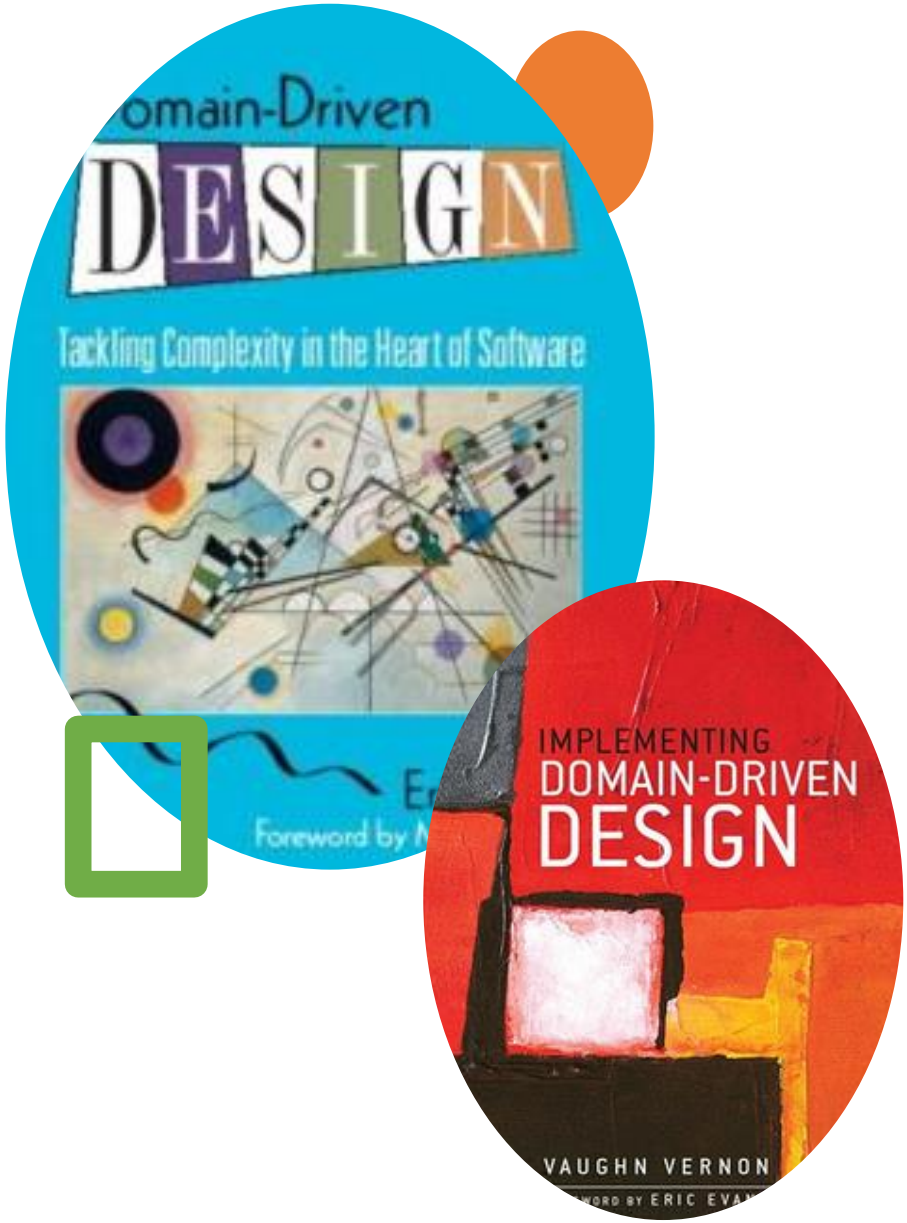
(Zhamak Dehghani)



A socio-technical approach



Domain-Driven Design



DDD's approach

Pattern Strategici

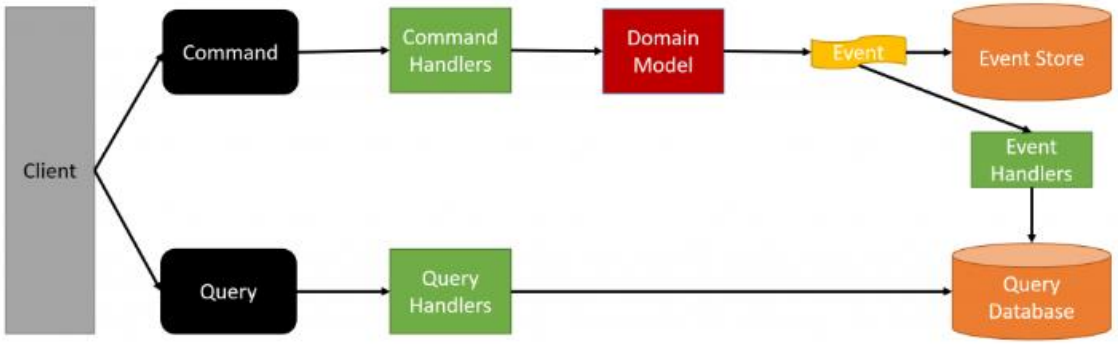
- Ubiquitous Language
- Bounded Context
- Context Mapping

Pattern Tattici

- Entity
- Value Object
- Aggregate
- Aggregate Root

CQRS/ES

(Greg Young)



YouTube IT

[CQRS and Event Sourcing Introduction – Greg Young]

add dot hosted by Vaughn Vernon

[The CQRS and Event Sourcing Long Position]

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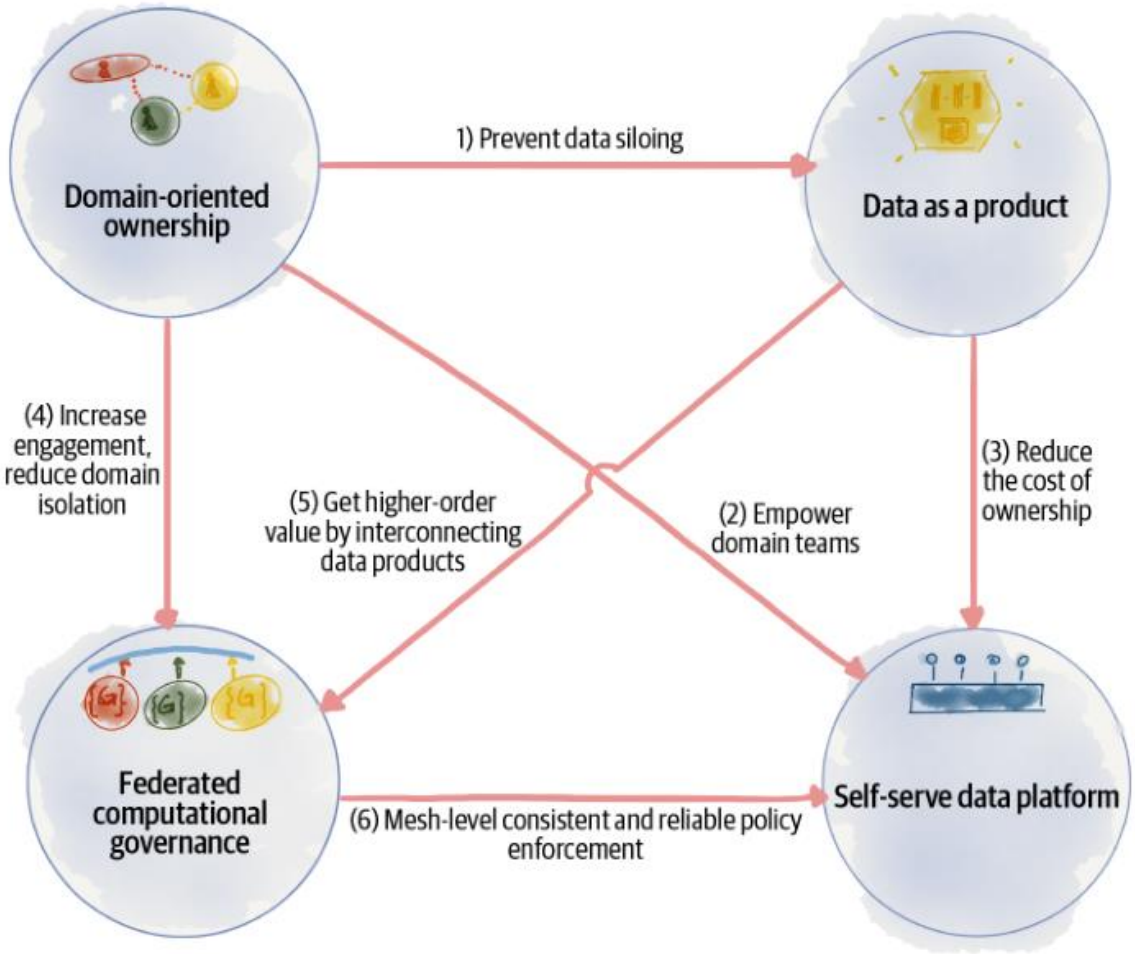
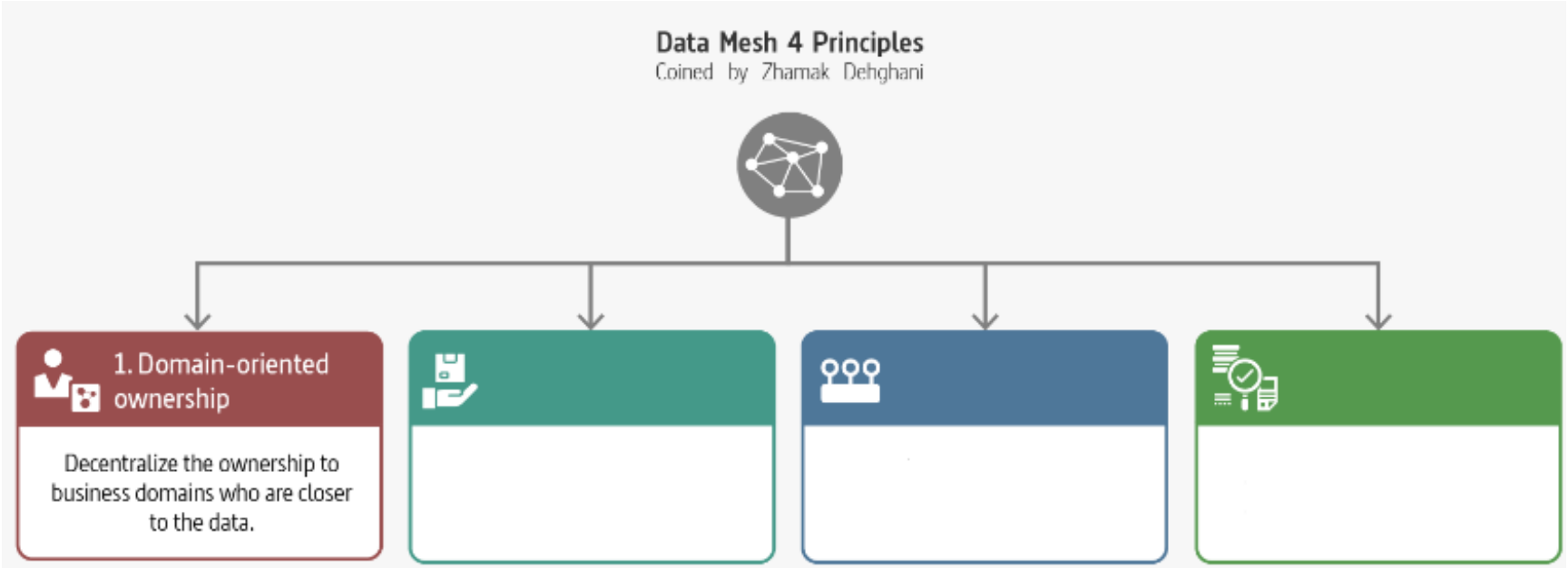
The Principles



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

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

Motivations

The ability to scale data sharing aligned with the axes of organisation growth

Optimize continuous change by localize change in business domains

Support agility by reducing the need for synchronize between teams

Increase the resilience of ML solutions by removing complex intermediate data collection pipelines

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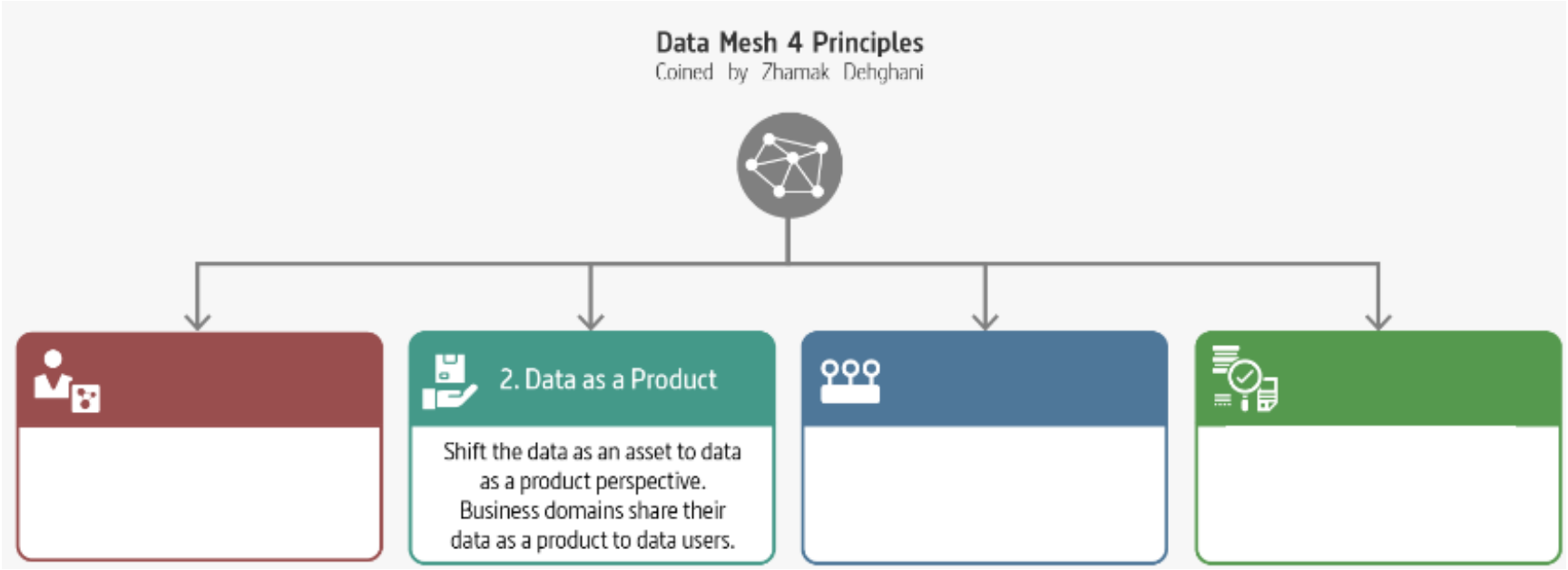
Data as a Product



A Succesful Product

- Usable
- Valuable
- Feasible

Marty Cagan «Inspired»

- Discoverability
- Understanding

Don Norman «The design of every day things»

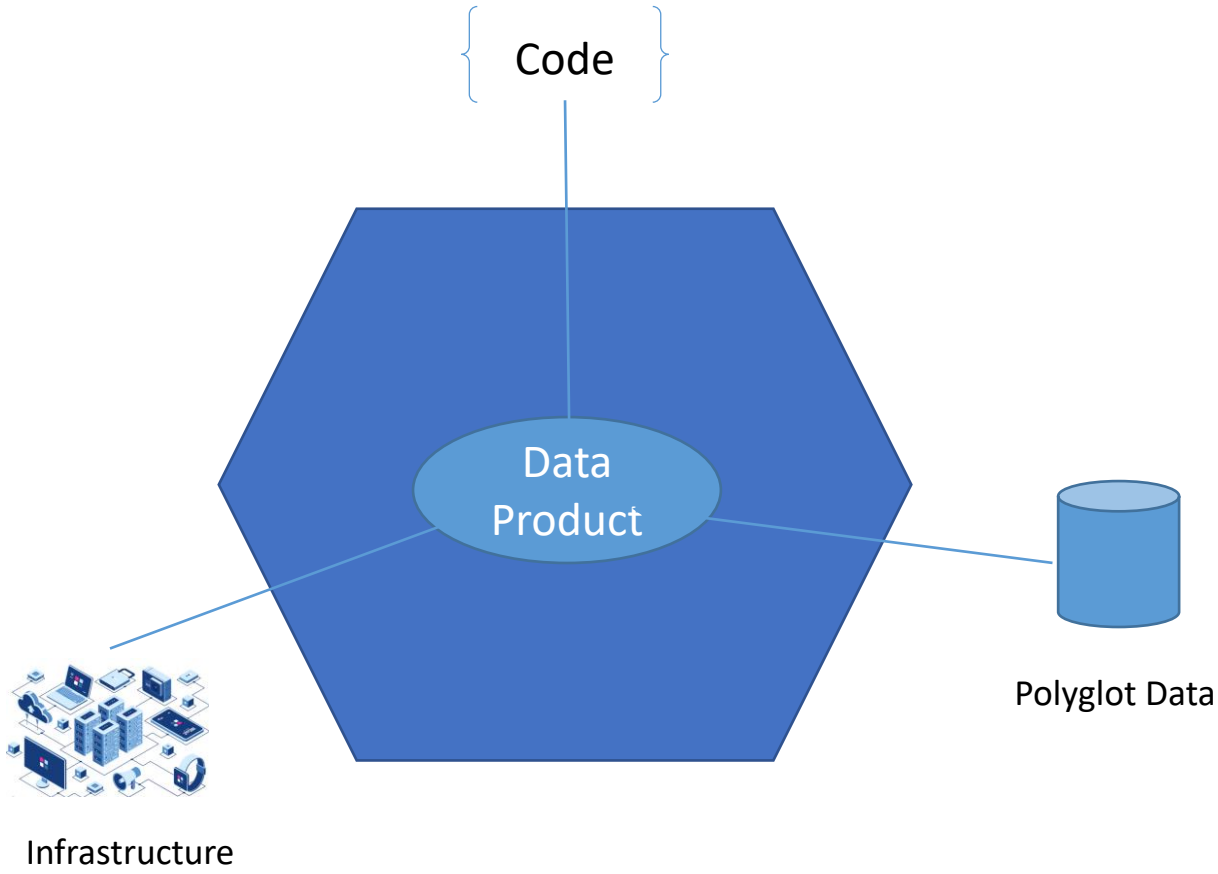
- Trusthful (trustworthy)

«A confident relationship with the unknown» Rachel Botsman

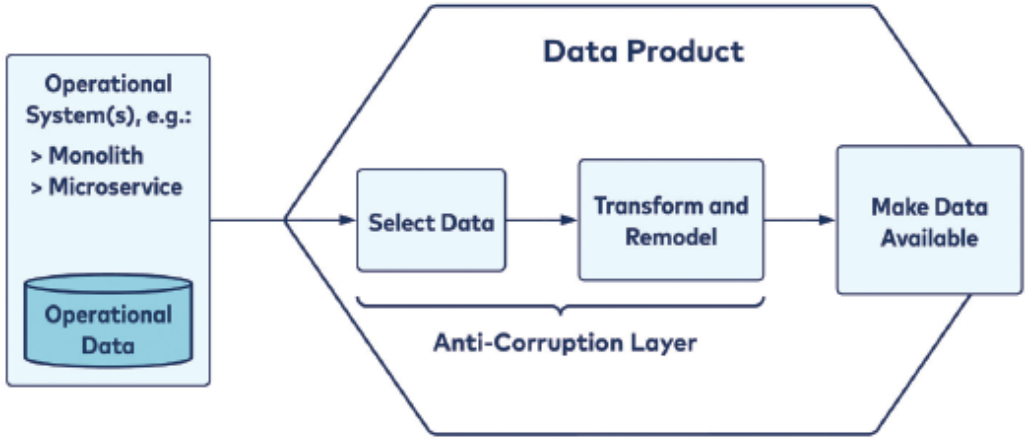
- Interoperable
- Natively Accessible

Data Product Owner

Data as a Product



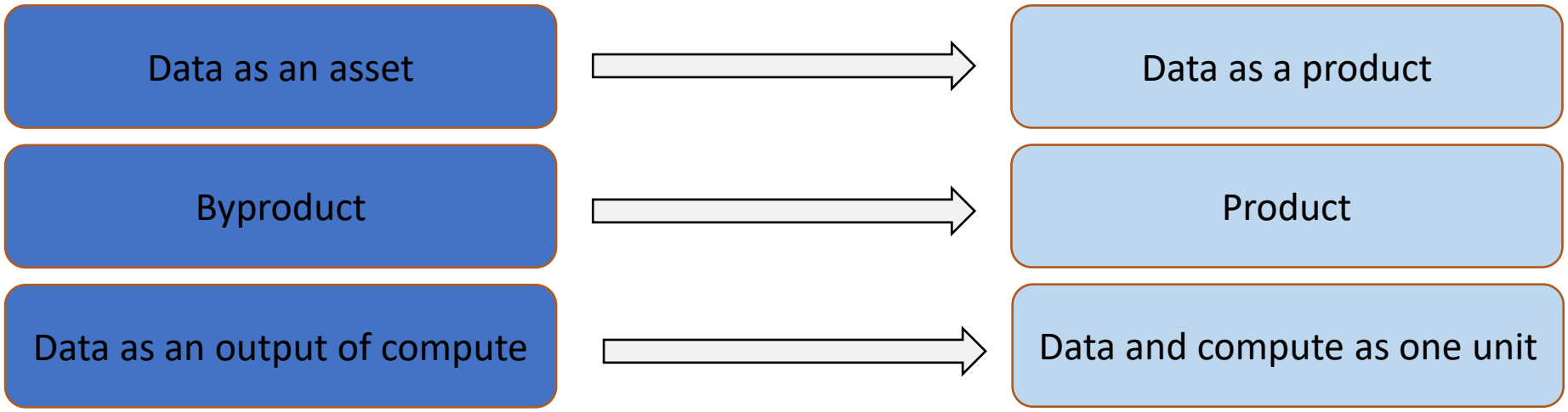
Domain Boundary



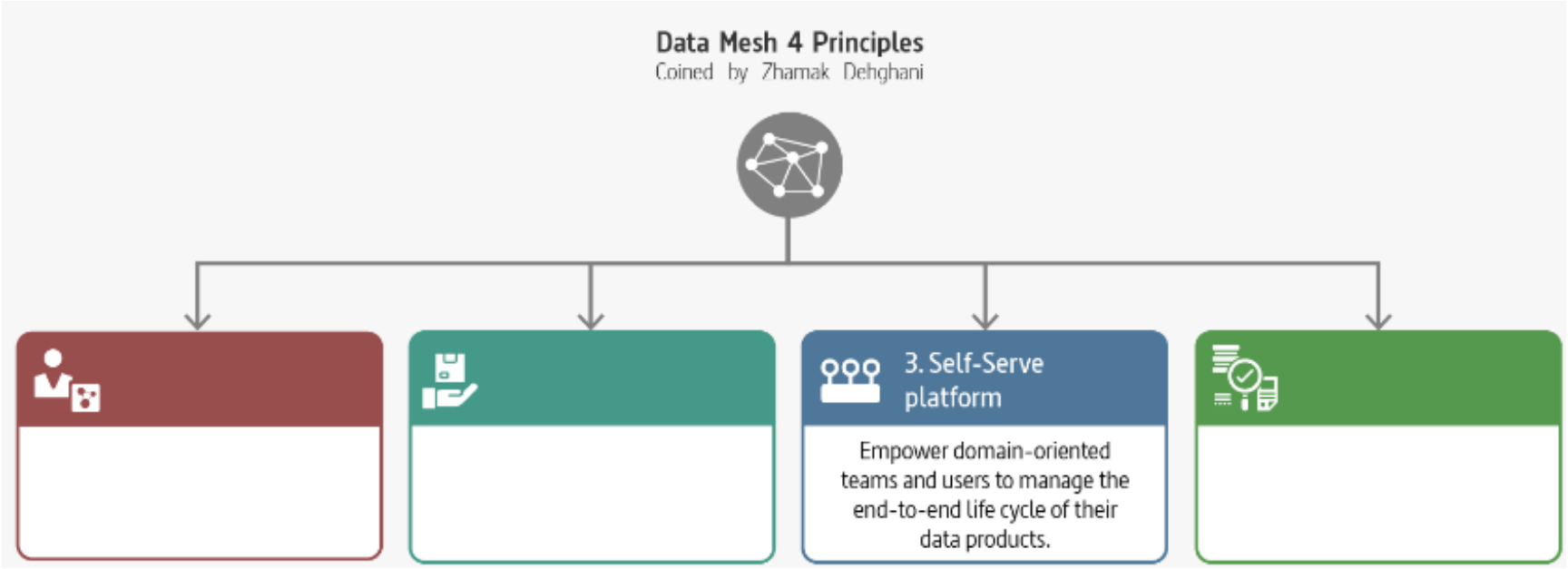
Building a Data Product

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

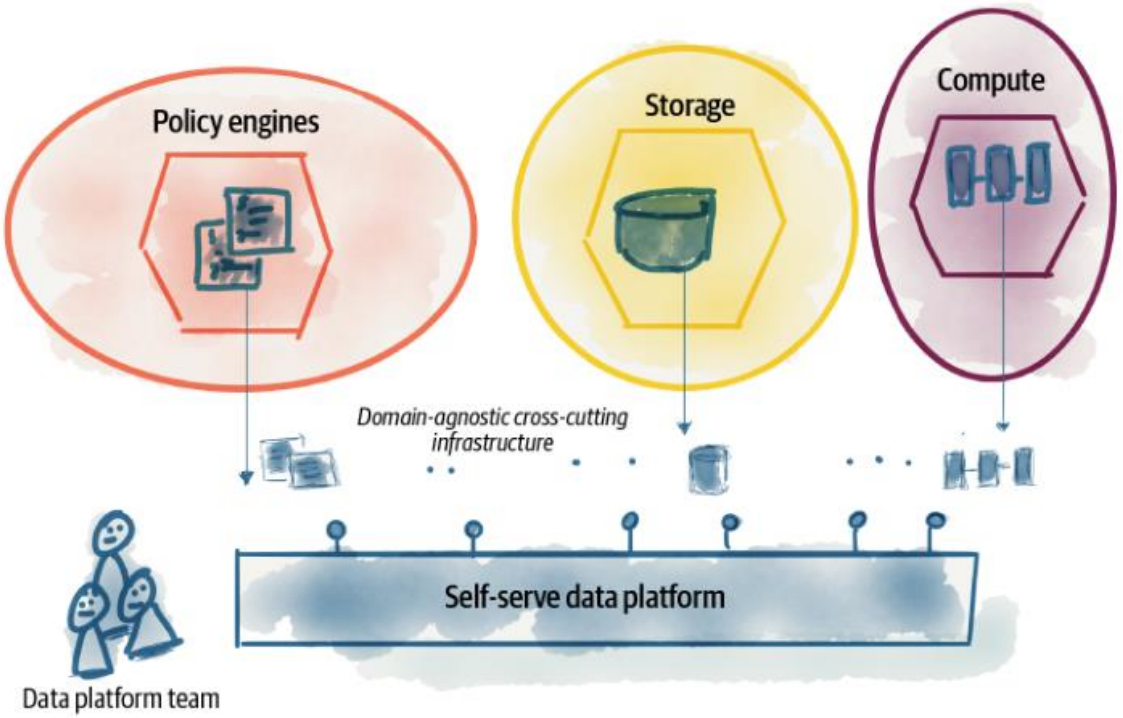
Transformation to a Data as a Product



Self-serve Data Platform



Team Autonomy



Logical Architecture

Mesh Supervision Plane

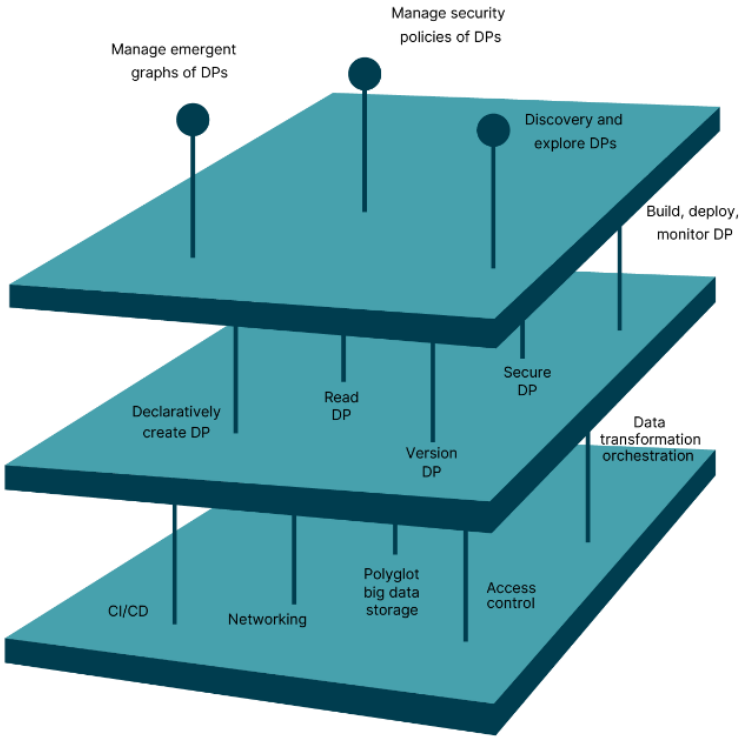
Capabilities that are accessible more conveniently at mesh level

Data Product Developer Experience Plane

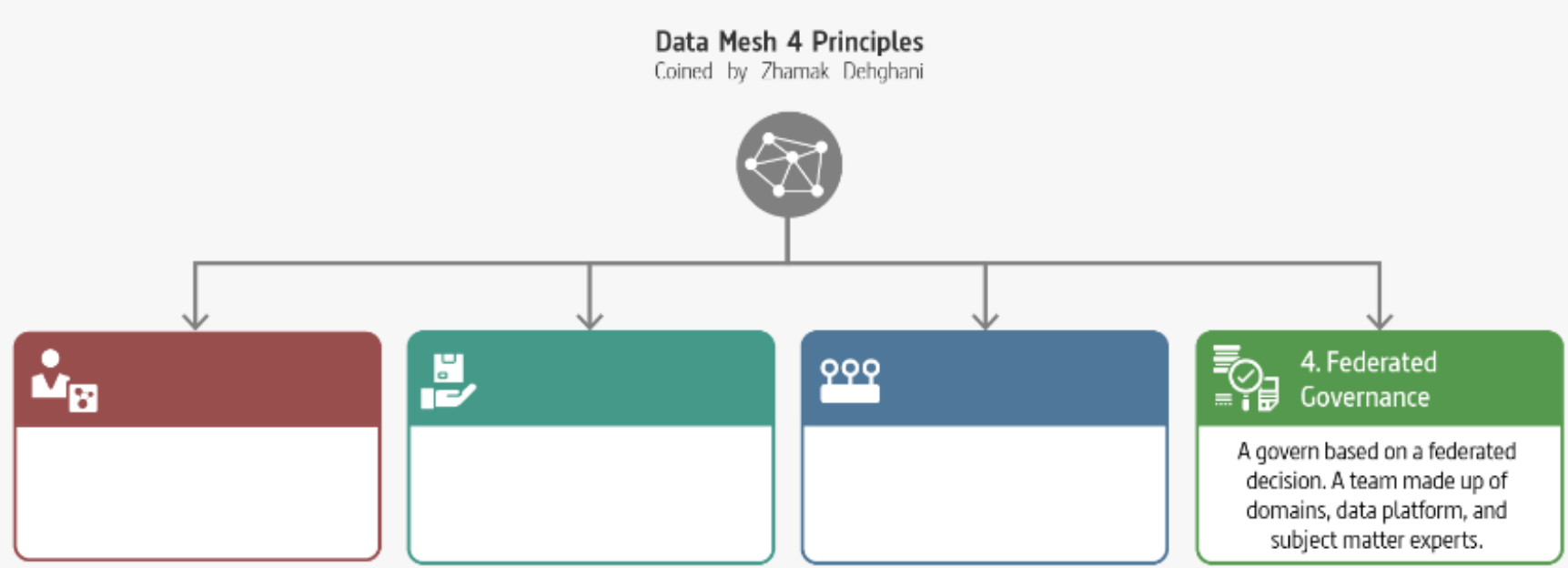
The higher level abstraction of data infrastructure designed to support the common data product developer journey

Data Infrastructure Plane

Providing the underlying infrastructure required to build, run, and monitor data products



Federated Computional Governances



Federated Computional Governances

Decentralization and domain self-sovereignty

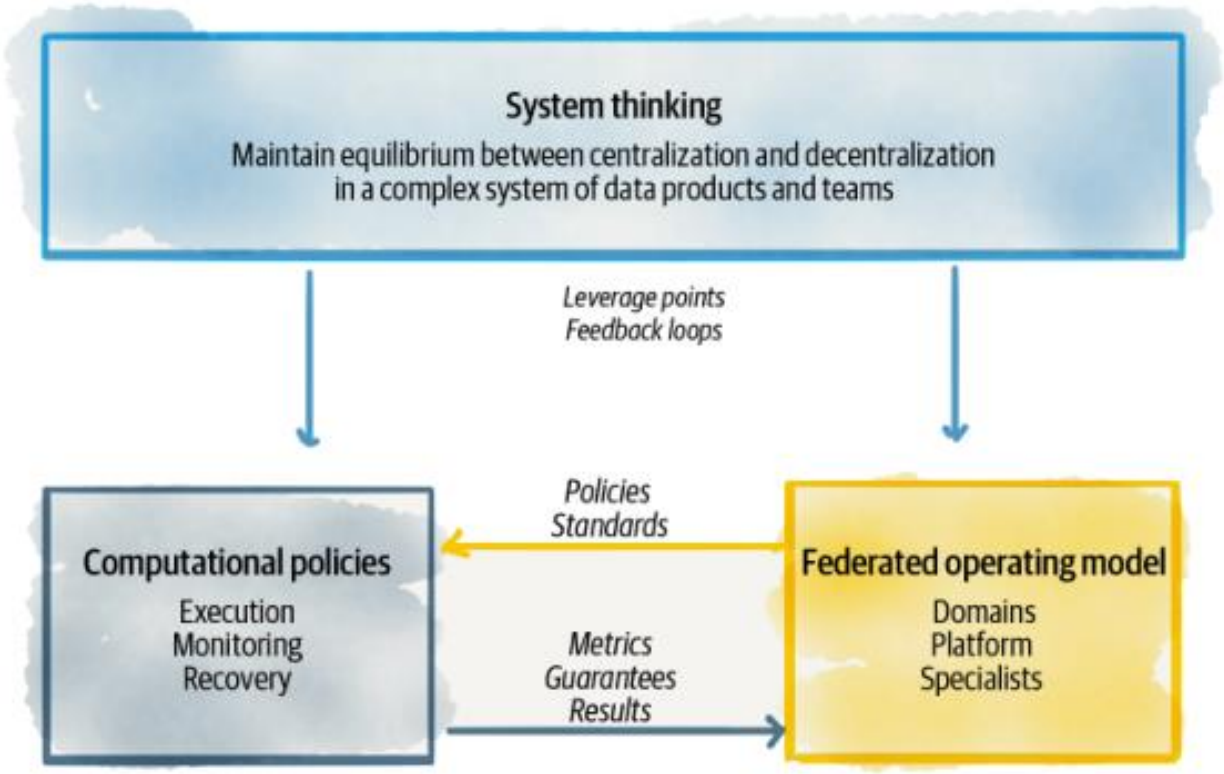
Interoperability through global standardization across data products

A dynamic topology

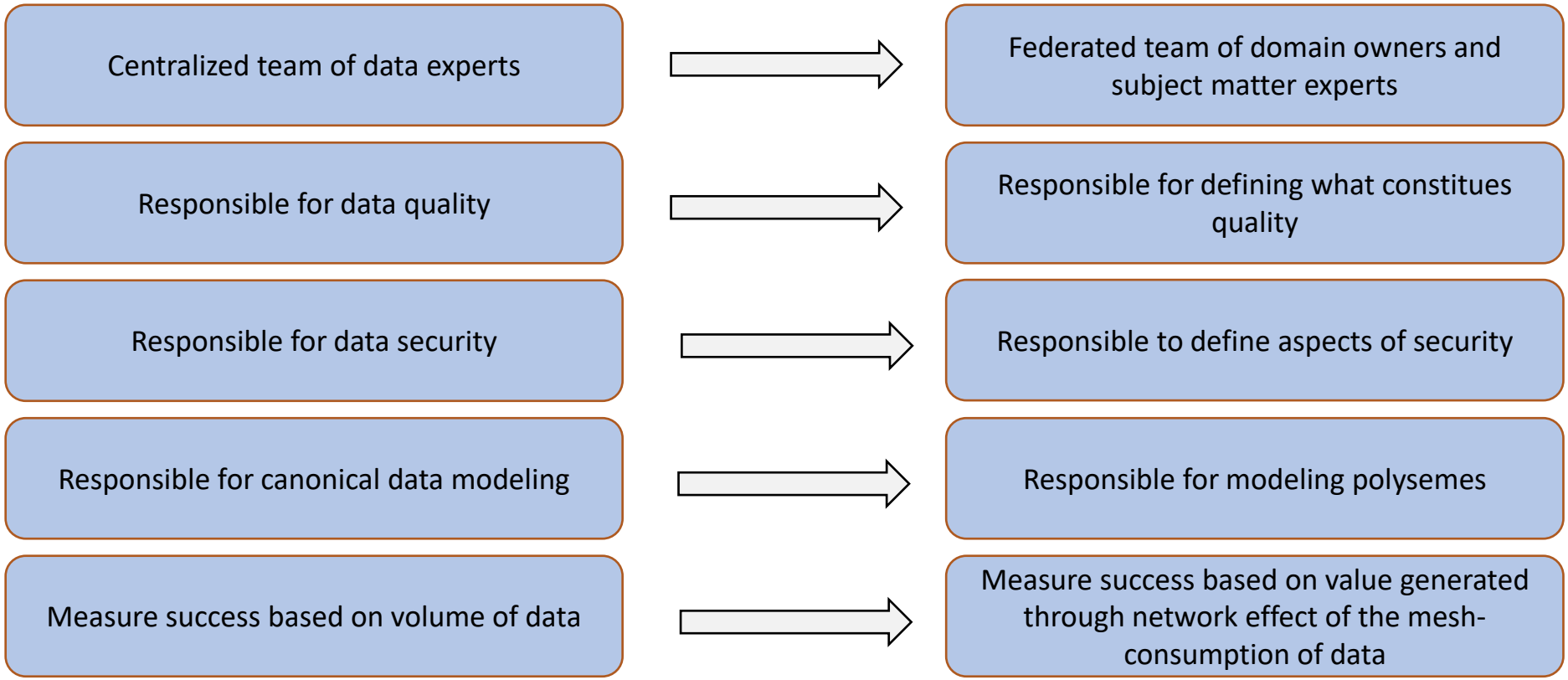
Automatic exection of decisions and policies by the platform

Maintains equilibrium between centralization and decentralization

Equilibrium



Transformation to Federated Computational Governance



Data Fabric

- Is an architecture pattern
- Accelerates self-service data discovery
- Active Metadata
- Integrates and connects all your organization's data
- Delivery real-time analytics and insights by optimizing the data lifecycle
- Strong Data Integration / Preparation / Orchestration

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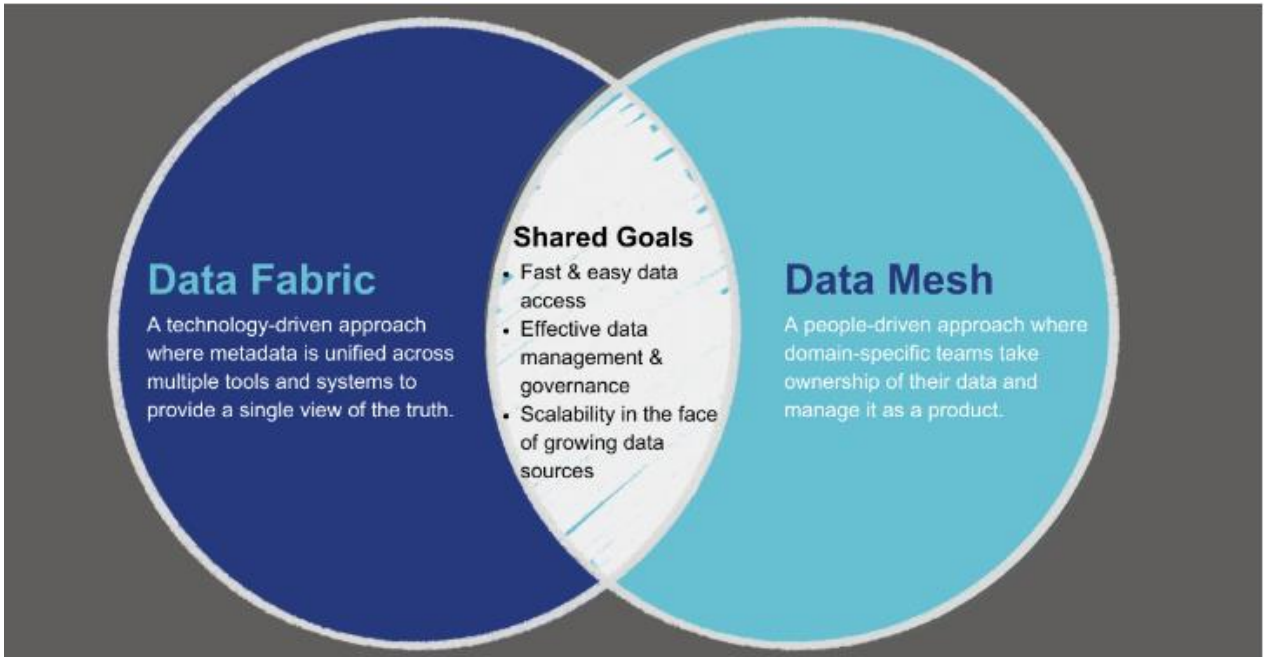
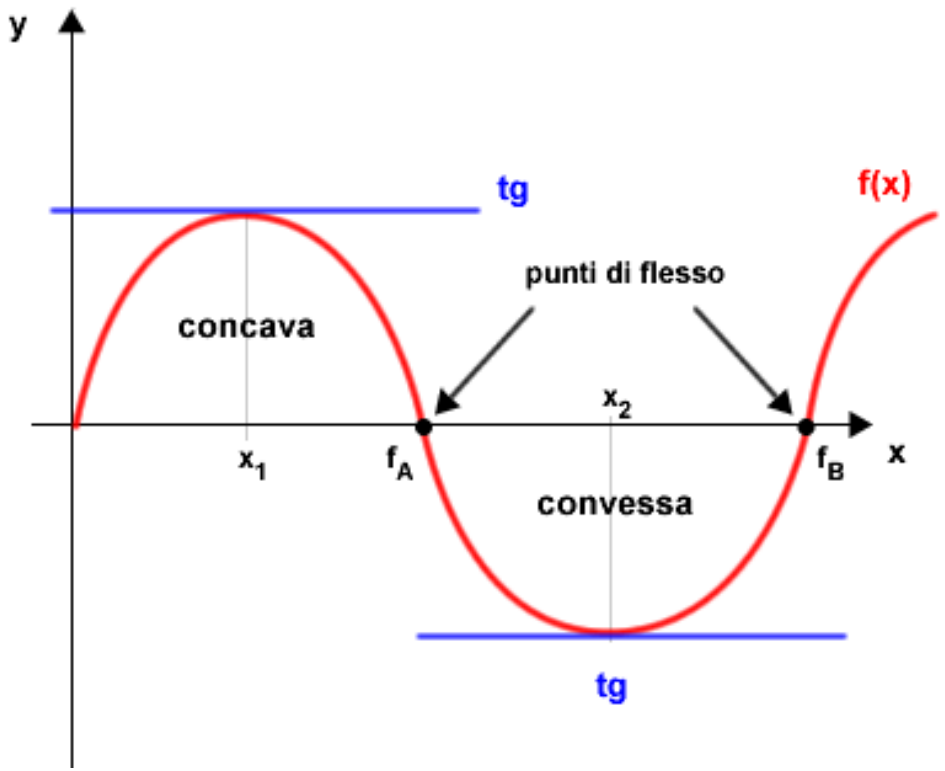
Data Fabric
e
Data Mesh



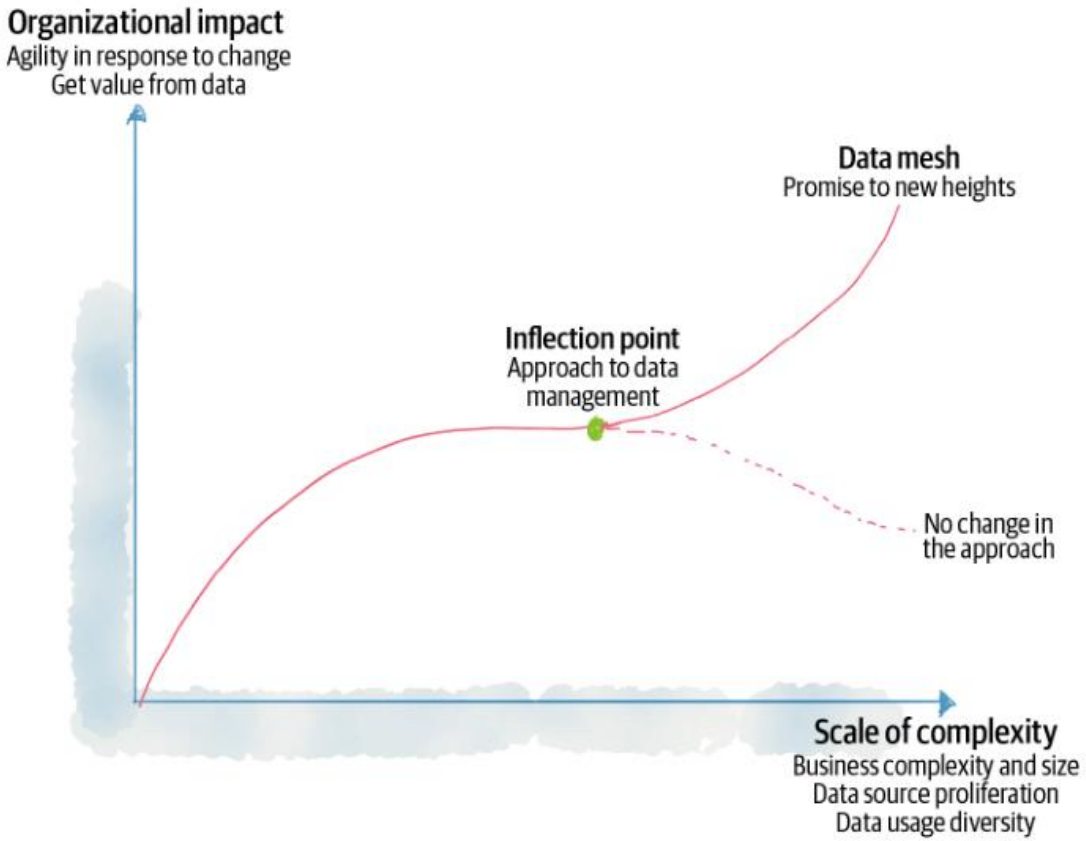
To Data Mesh or not to Data Mesh?



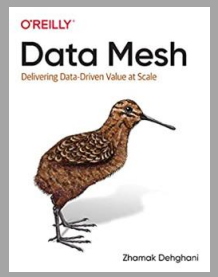
A New Order

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

Data Mesh Inflection Point



References



Zhamak Dehghani

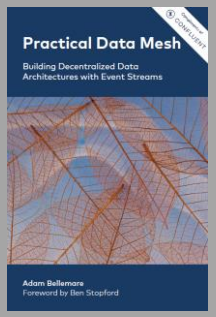
YouTube

[Introduction to Data Mesh]

Martin Fowler

[Data Mesh Principles and Logical Architecture]

Irion



CONFLUENT

[Practical Data Mesh]

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Microsoft CERTIFIED AZURE SOLUTIONS ARCHITECT EXPERT

Microsoft CERTIFIED AZURE IOT DEVELOPER SPECIALTY

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