

# DDD incontra i Dati

(AKA Data Mesh)



# All we need is Data!



# Operational vs Analytical

Operational



Analytical

→ E T L →

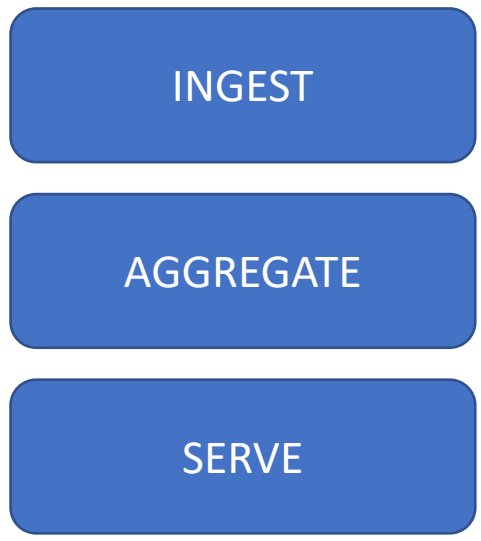


# Centralized Monolithic





# Decomposition

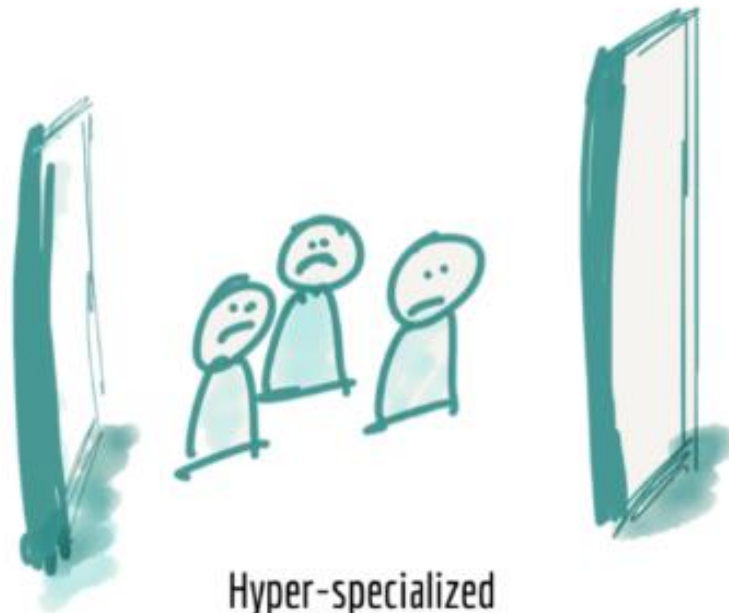


Scale Architecture  
with top-level  
technical partitioning



Architecture  
decomposition  
orthogonal to change

# Hyper-specialized silos



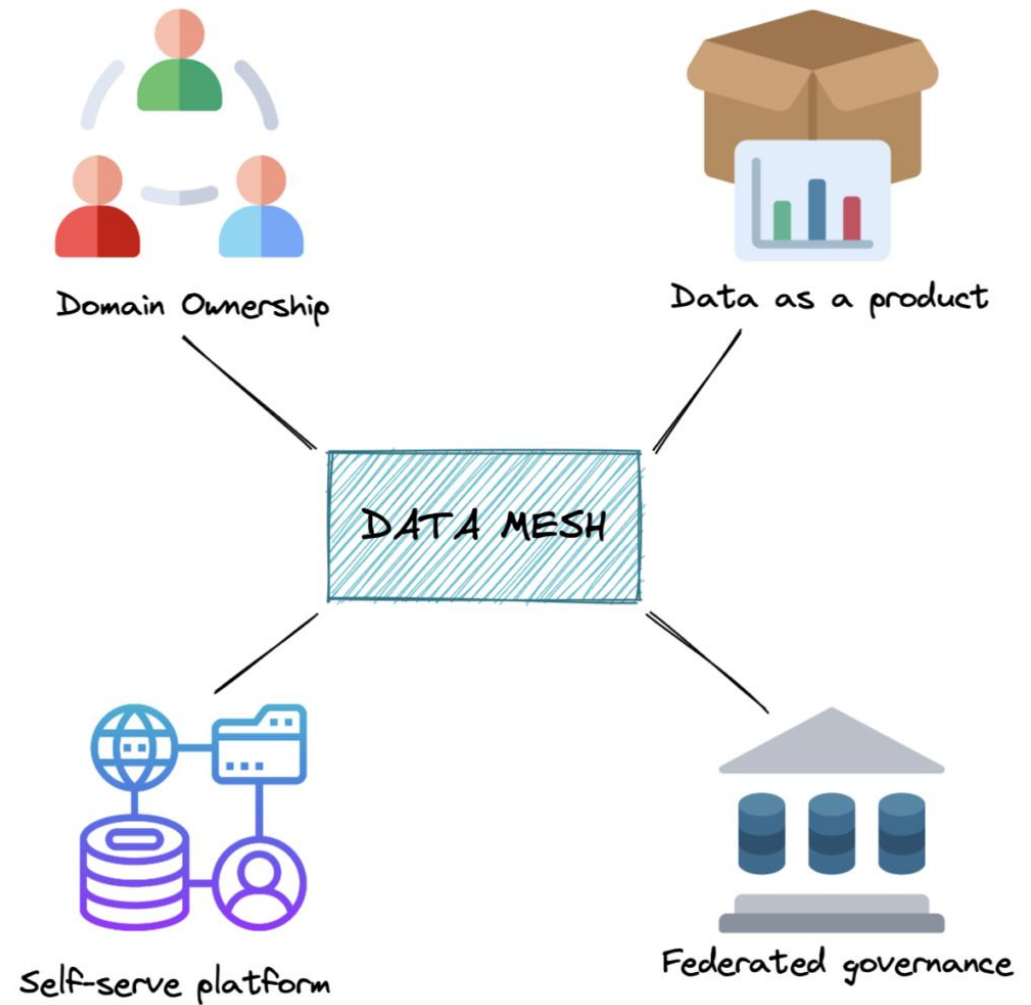
Hyper-specialized  
Data & ML Platform Engineers

Disconnected



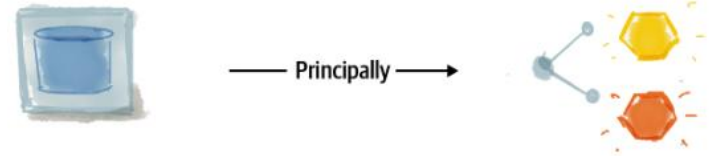
# Data Mesh

(Zhamak Dehghani)

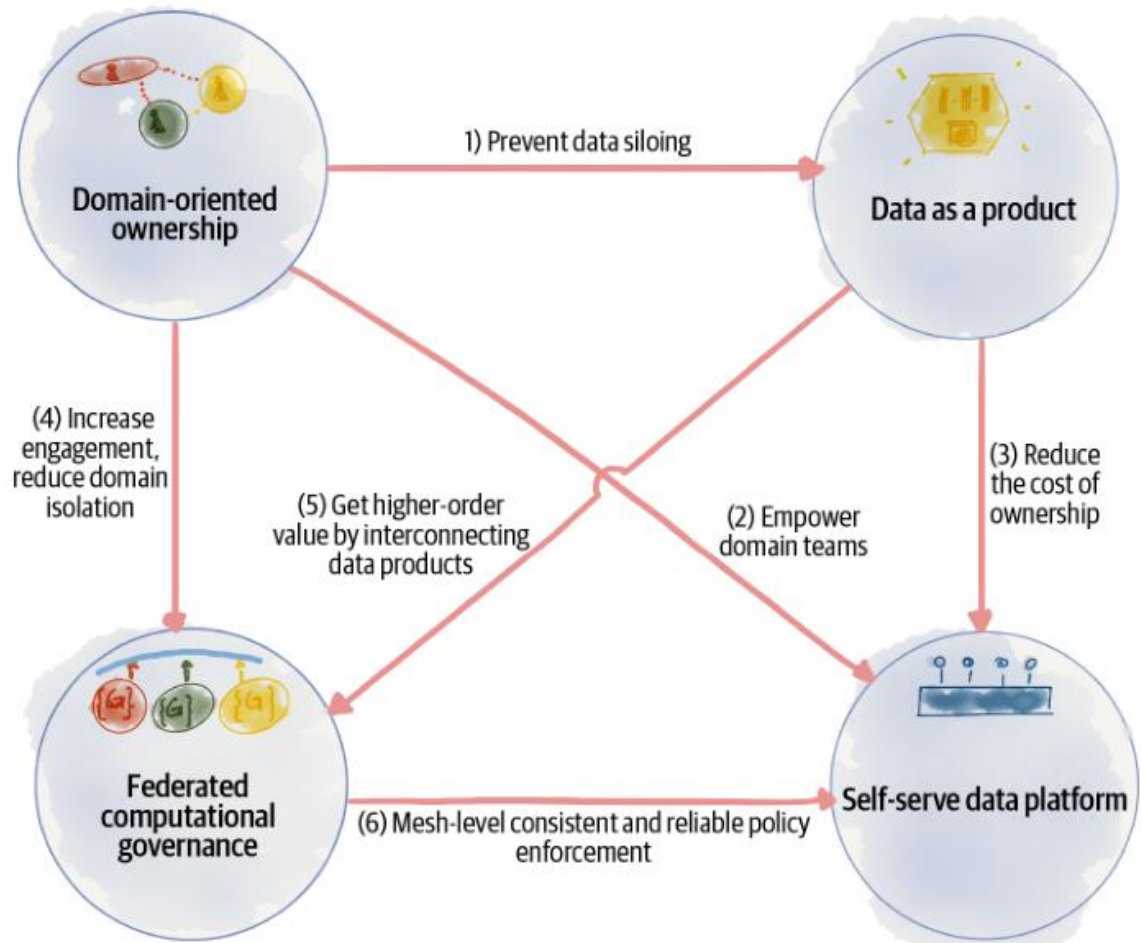




# A socio-technical approach



# 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


## Data Mesh 4 Principles


Coined by Zhamak Dehghani




 **1. Domain-oriented ownership**

Decentralize the ownership to business domains who are closer to the data.







# Decompose Data Around Domains

*Domains aligned  
with the origin of  
data*

*Domains aligned  
with the  
consumption*

*Domains aligned  
with shared  
aggregates*

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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

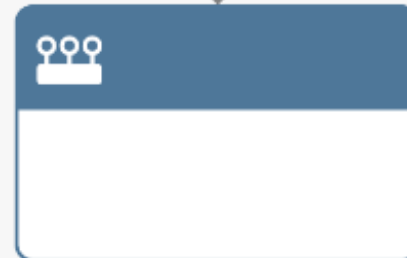
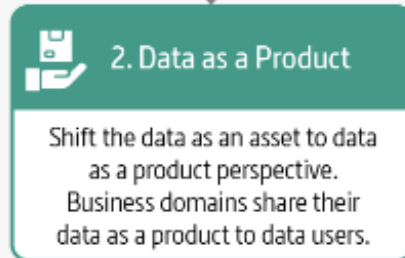
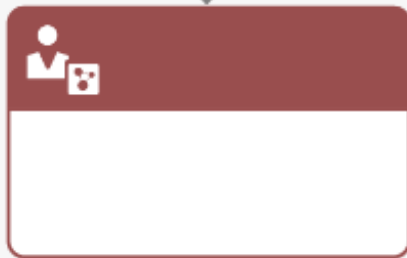
Support agility by reducing the need for synchronize between teams

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

# Data as a Product

## Data Mesh 4 Principles

Coined by Zhamak Dehghani



# A Successful Product

Usable

Discoverability

Trustful  
(trustworthy)

Interoperable

Valuable

Understanding

Natively  
Accessible

Feasible

Marty Cagan  
«Inspired»

Don Norman «The  
design of every  
day things»

«A confident  
relationship with  
the unknown»  
Rachel Botsman

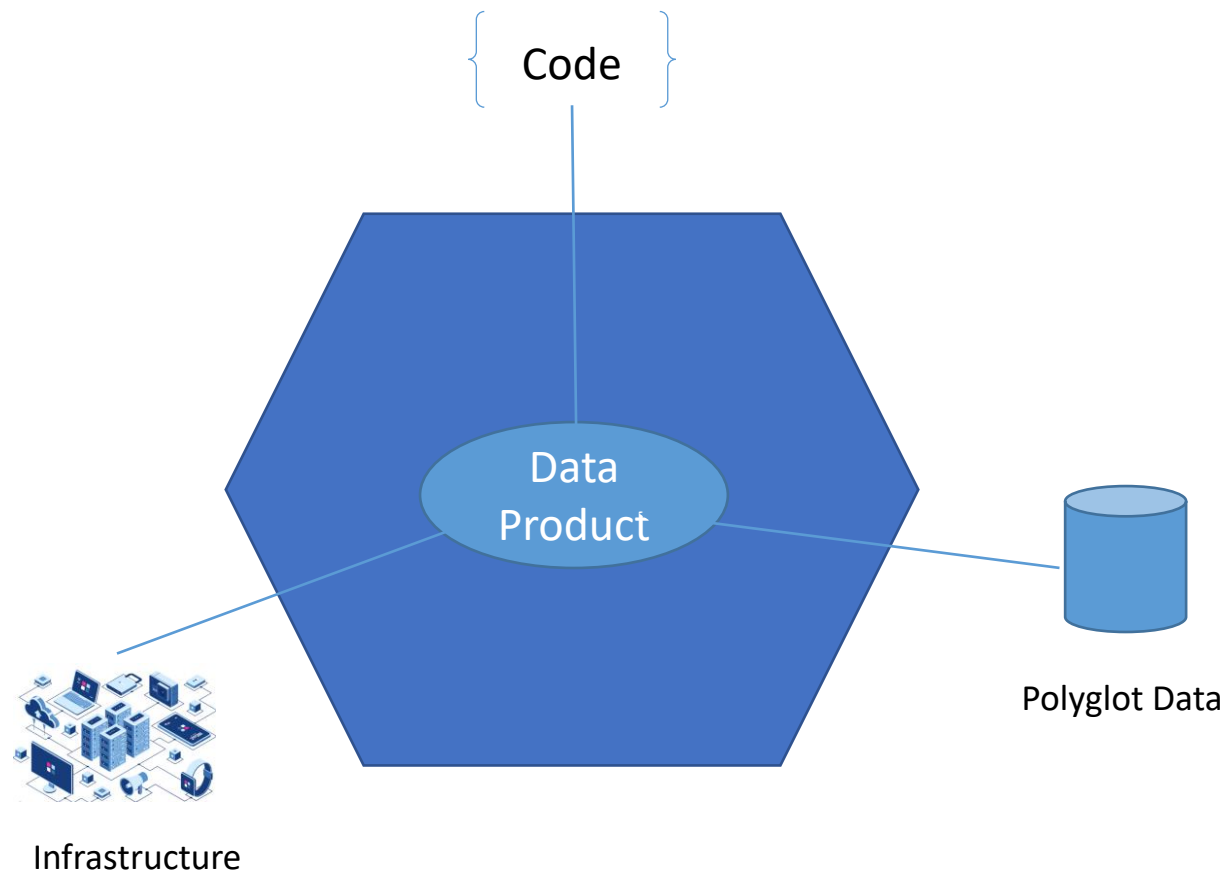
Data  
Product  
Owner



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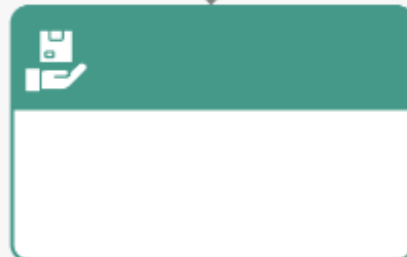
# Data as a Product



# Self-serve Data Platform

## Data Mesh 4 Principles

Coined by Zhamak Dehghani

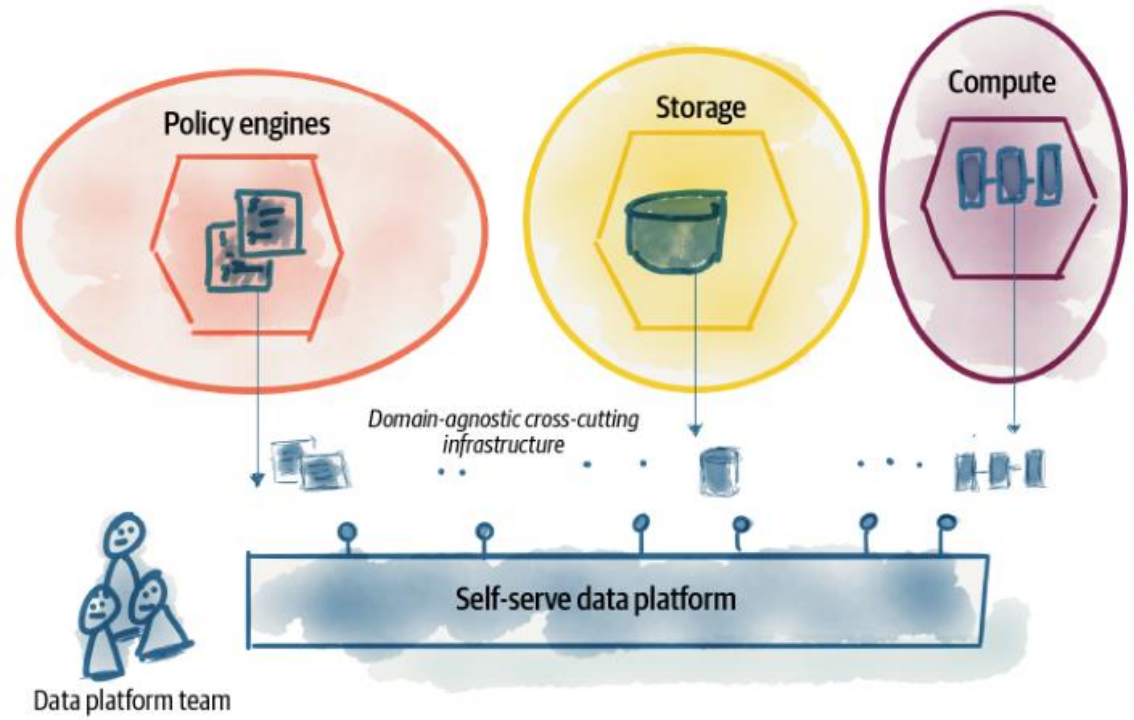


**3. Self-Serve platform**

Empower domain-oriented teams and users to manage the end-to-end life cycle of their data products.



# Team Autonomy



# Logical Architecture

## Mesh Supervision Plane

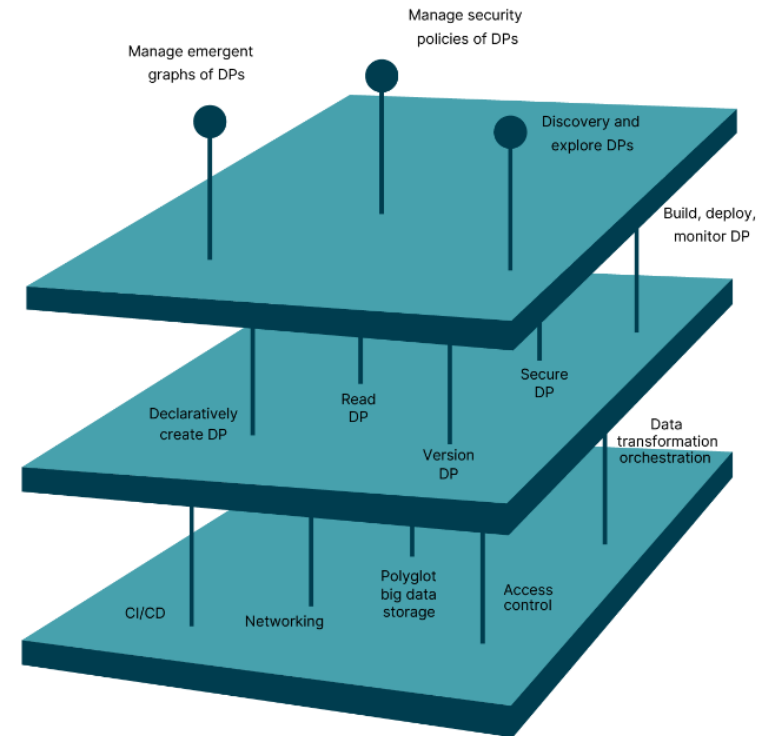
Capabilities that are accessible more conveniently at mesh level

## Data Product Developer Experience Plane

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

## Data Infrastructure Plane

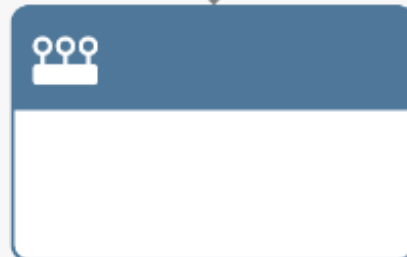
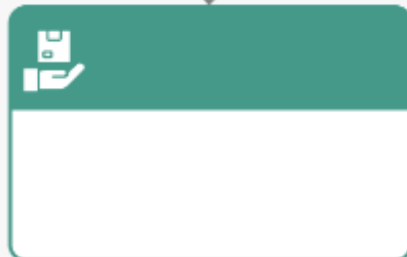
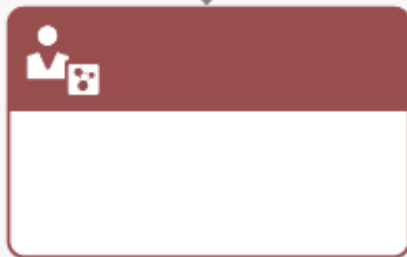
Providing the underlying infrastructure required to build, run, and monitor data products



# Federated Computational Governances

## Data Mesh 4 Principles

Coined by Zhamak Dehghani



**4. Federated Governance**

A govern based on a federated decision. A team made up of domains, data platform, and subject matter experts.

# Federated Computational Governances

**Decentralization**  
and domain self-  
sovereignty

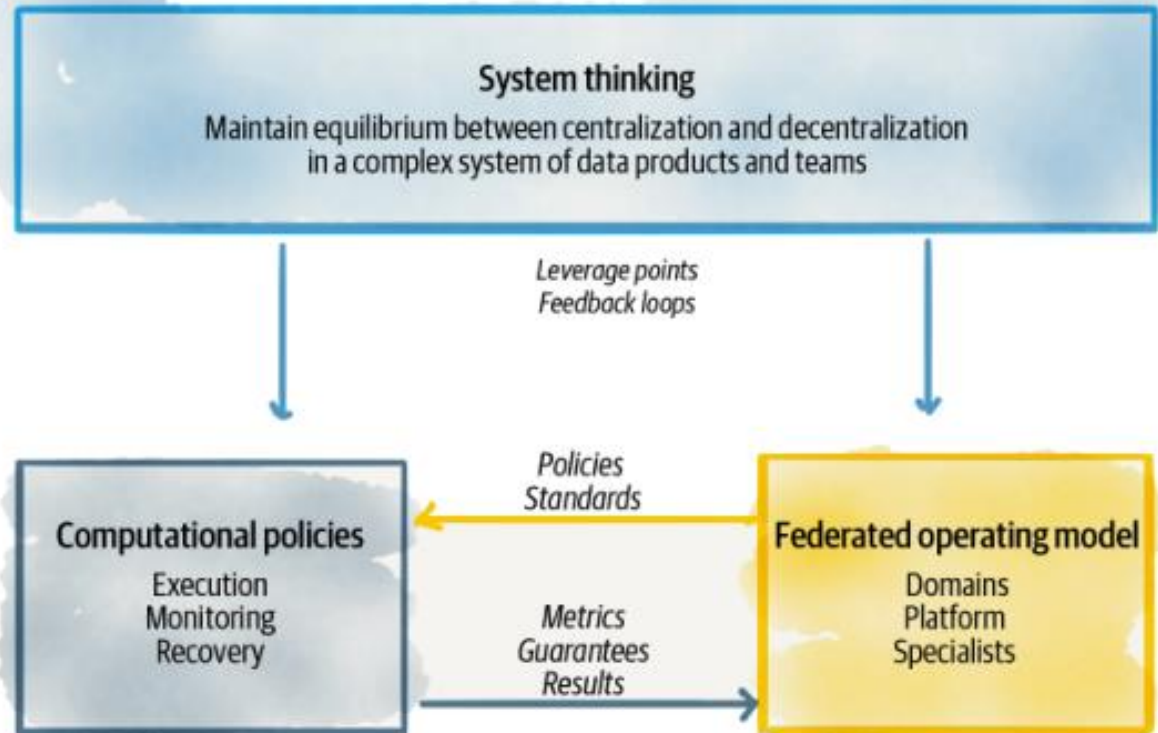
**Interoperability**  
through global  
standardization  
across data  
products

A dynamic  
topology

Automatic  
exection of  
decisions and  
policies by the  
platform

Maintains equilibrium between centralization and decentralization

# Equilibrium

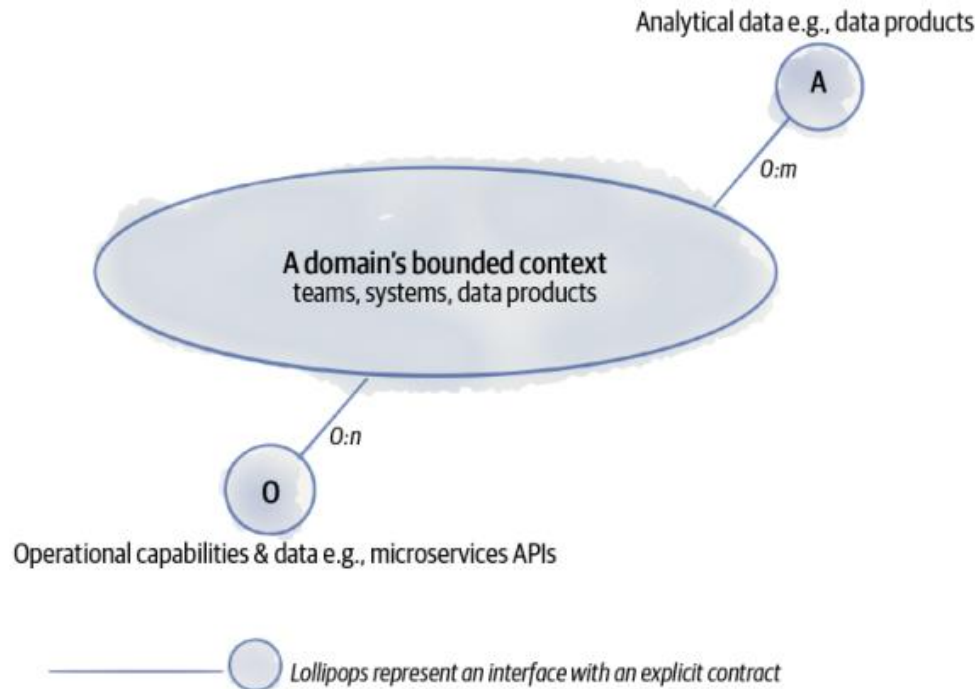


**So Far, So Good**

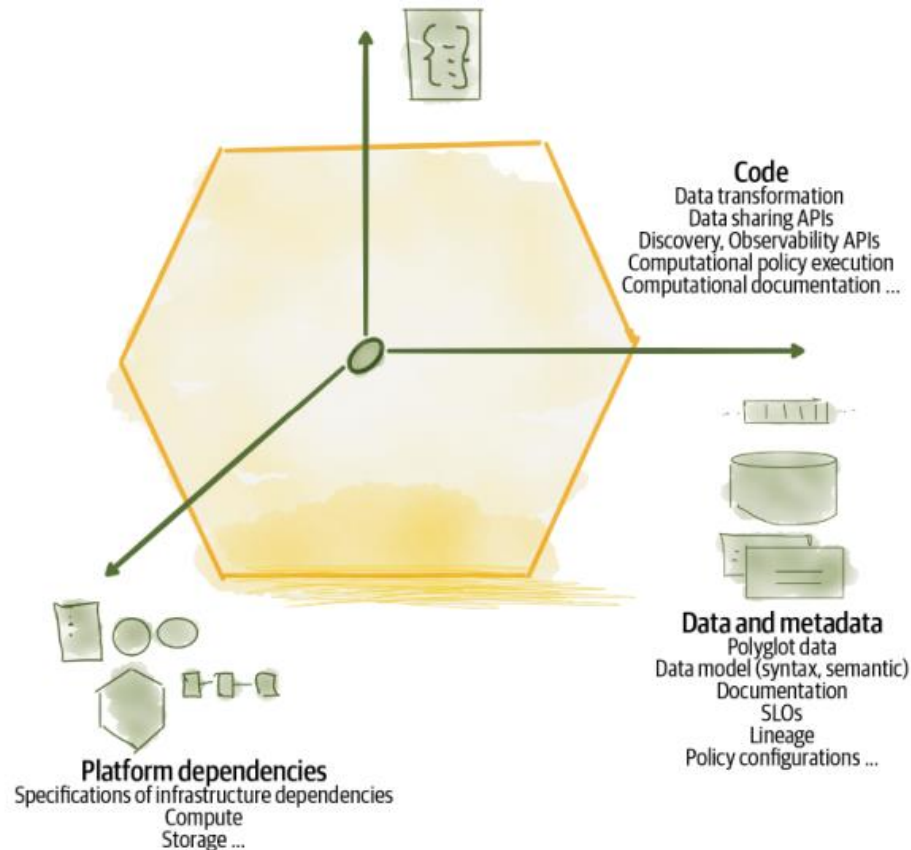
The image features a vibrant blue sky filled with wispy white clouds. In the lower portion, a landscape is visible through a jagged, torn-paper-like cutout. The landscape includes rolling green hills, a few trees, and a small structure. The bottom of the image is a solid black area, suggesting the paper has been torn away from a black background.



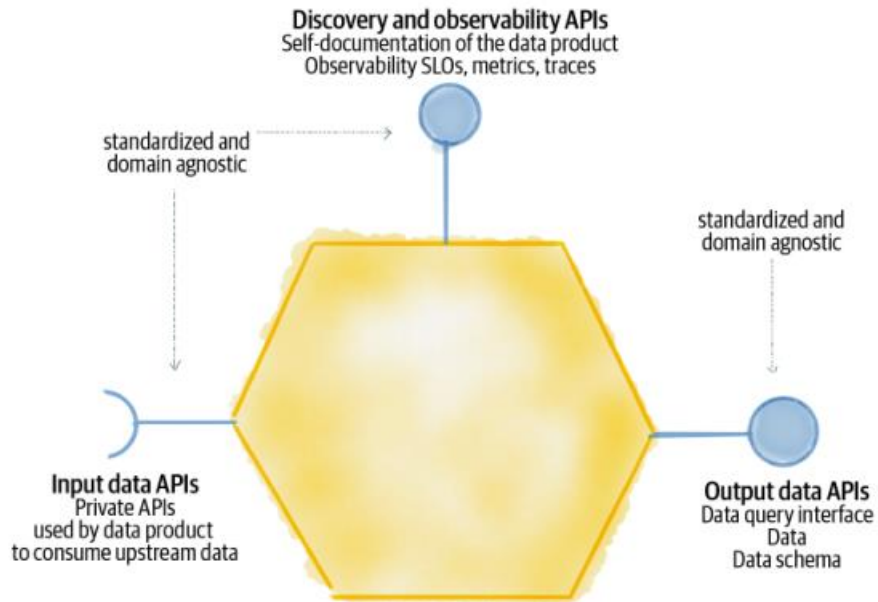
# Building a Data Product



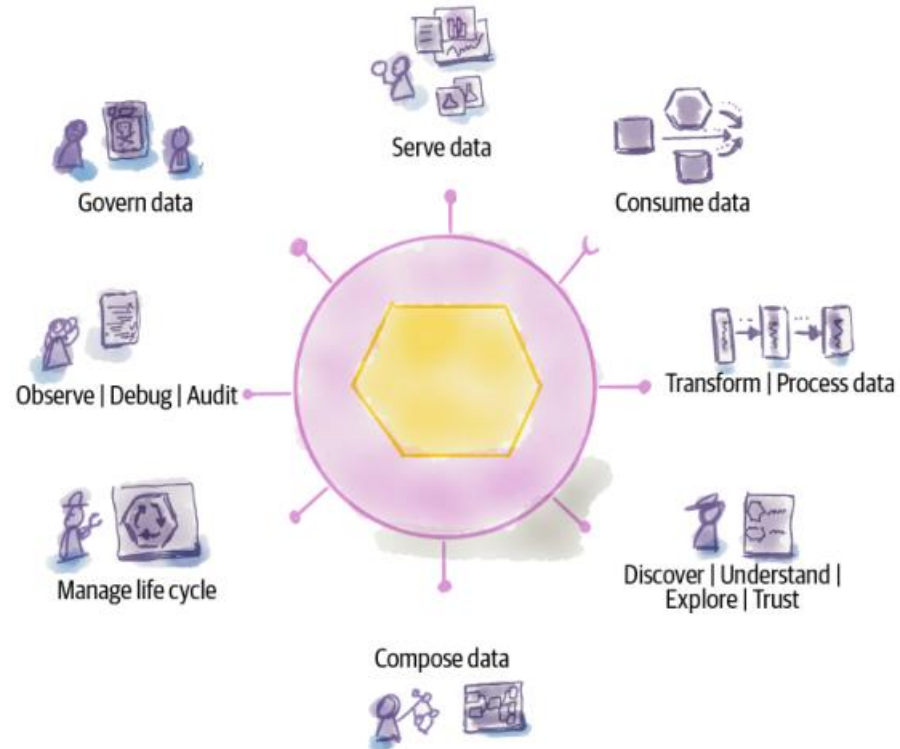
# Architectural Quantum



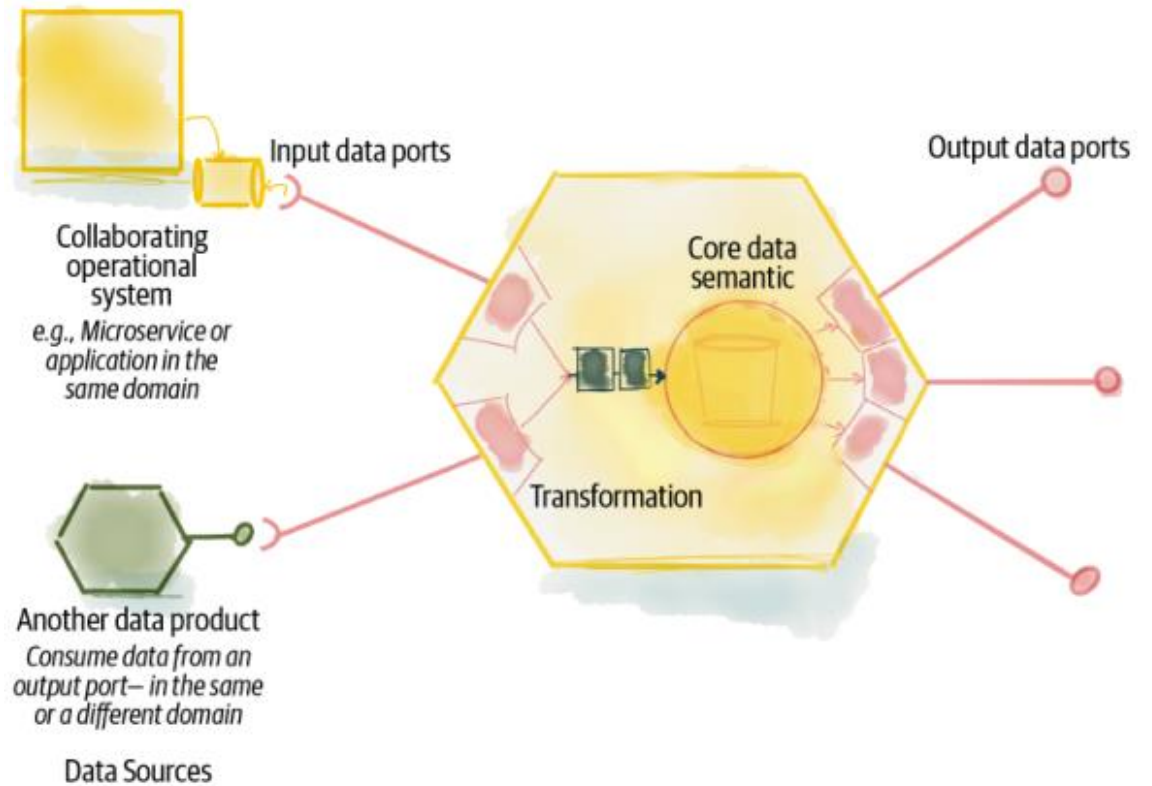
# Components



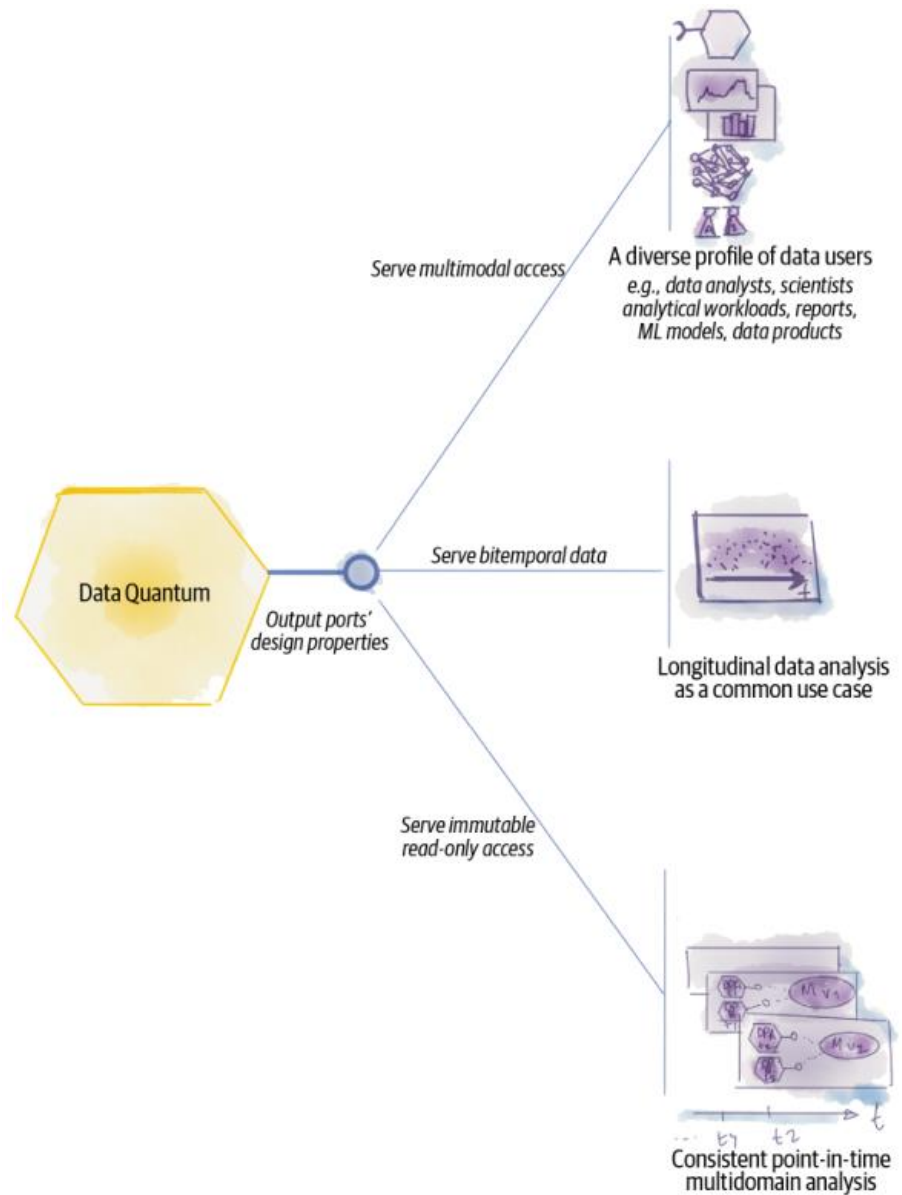
# Affordances



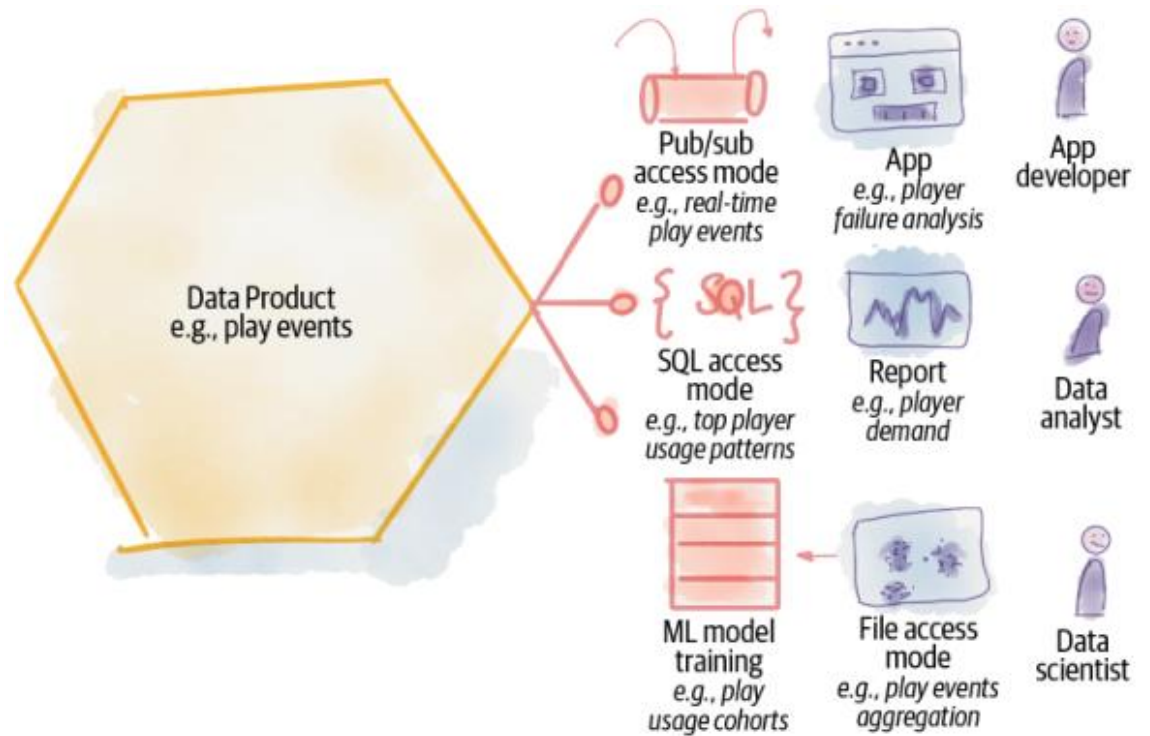
# Consume Data



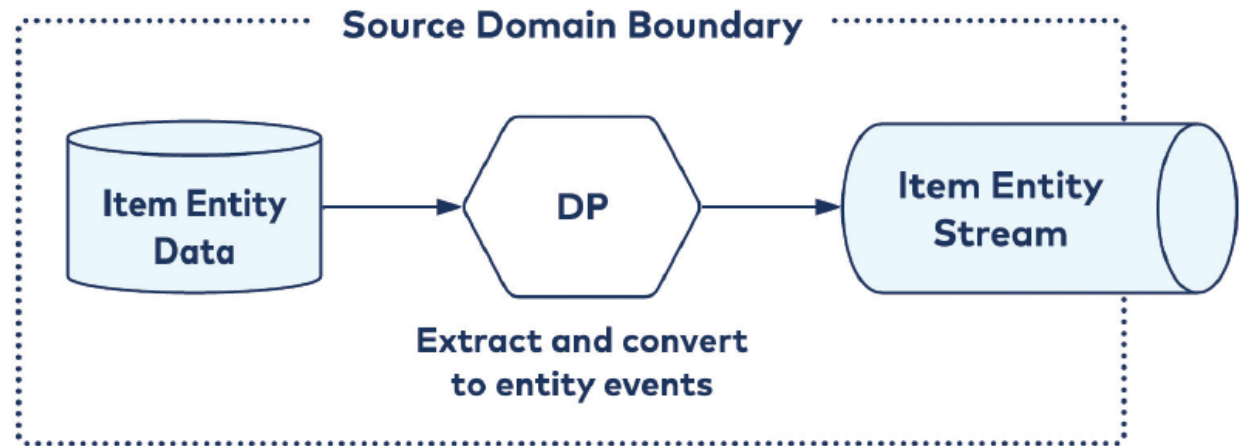
# Different Needs



# Multimodal Access

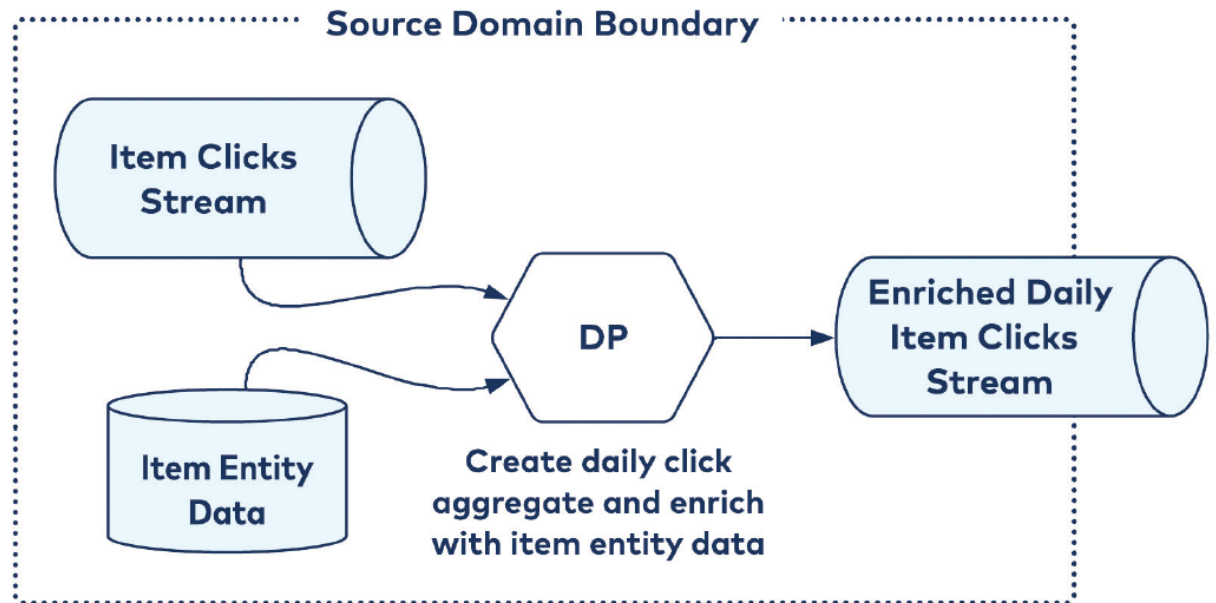


# Source Aligned

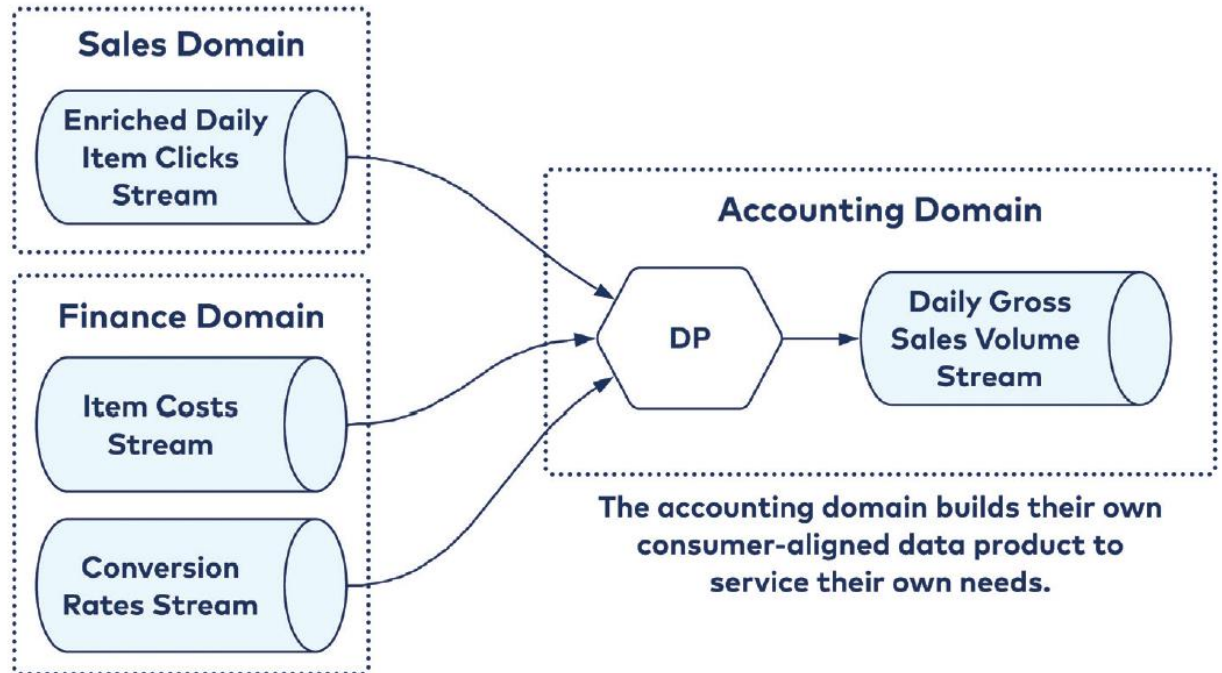




# Aggregate Aligned



# Customer Aligned

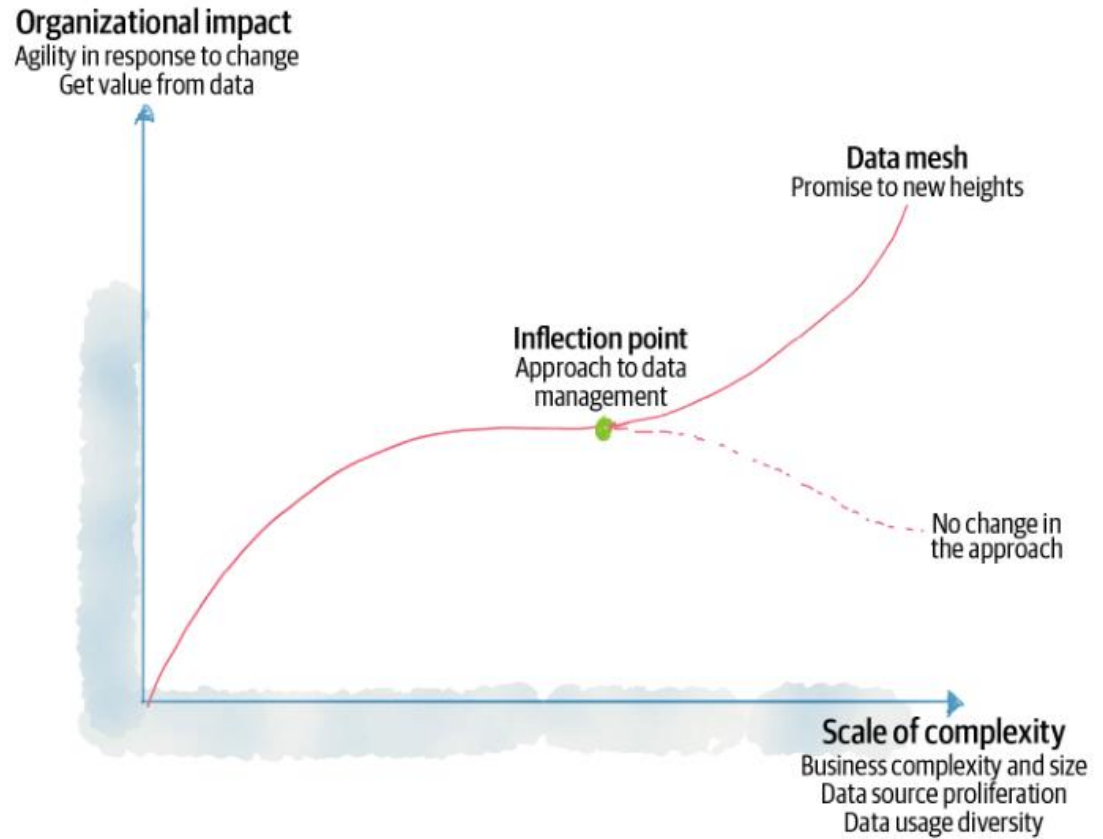


# A New Order

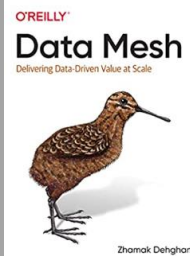


You hear that Mr.  
Anderson?  
That is the sound of  
inevitability ...

# Data Mesh Inflection Point



# References



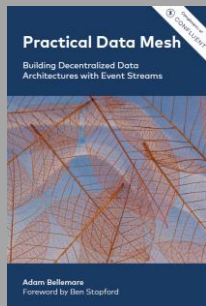
Zhamak Dehghani



[Introduction to Data Mesh](#)

Martin Fowler

[Data Mesh Principles and Logical Architecture](#)



[Practical Data Mesh](#)



# About me

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<https://github.com/brewup>



<https://github.com/cqrs-muflone>



<https://github.com/ace68>



<https://www.twitch.tv/dddbrewup>



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