Difference Between Data Mesh and Data Fabric Architectures

Hi Data Strategy Pro,

Today, we’ll be discussing the difference between Data mesh and Data fabric Architectures.

Data architecture determines the capacity of your organization to harness data. Data architecture may function as a subject and communication tool. Both Data Mesh and Data fabric provide architecture for accessing data across different platforms. However, the difference is how users access the data.

Data Mesh is more about people and processes while Data Fabric is technology centric.

**Data Mesh**:

Decentralizing data management is the main aim of the Data Mesh approach﹘focusing on treating data as a product and distributed ownership. In the Data Mesh approach, your organization relies on different repositories instead of a single platform. Data practitioners play a major role.

**Data Fabric**:

Data fabric provides consistency in data management across the organization ﹘by creating a unified ecosystem for various data sources, services, and applications. In the Data Fabric approach, end-to-end integration of different data pipelines is achieved using Automated Systems.

# Characteristics of Data Mesh Architecture

* Data as a product
* Decentralized data ownership
* Federated computational governance
* Self-serve data infrastructure

# Characteristics of Data Fabric Architecture

* Data integration
* Data governance
* Data Orchestration
* Data virtualization.

## Pros and Cons of Data Mesh and Data Fabric Architecture

### Pros of Data Mesh Architecture

* Efficiency: Data Mesh is more efficient compared to traditional ETL pipelines using centralized IT teams.
* Increase in sharing: Data Mesh treats data as a product; thus exposing data to different domains. This approach improves team collaboration across the organization and minimizes effort duplication
* Strong governance: Security remains a major concern in the Data mesh architecture. This approach utilizes strong governance to maintain data integrity.

### Cons of Data Mesh Architecture

* Effort: Data Mesh requires understanding the scope of change within the data architecture; this prevents unexpected difficulties. When the scope of change is not defined, existing shortcomings may be exacerbated.
* Management strategy: Because Data Mesh focuses on security, robust investment should be made before deploying this architecture.
* Multiple stakeholders; Data Mesh impacts business at the operational level; and like similar approaches, all key stakeholders need to agree to the change.

### Pros of Data Fabric Architecture

* Support:Complete SQL support
* Integration: Data fabric can be used with any integration methodology
* Scalability: Using distributed data stored architecture, Data fabric enables scale linearly
* Data governance: In data fabric architecture, governance is flexible.

### Cons of Data Fabric Architecture

* No Data History: Connecting to business applications and services in Data Fabric is through DV. The DV does not produce or store transactional data ﹘which is useful for expert users.
* Location: When processing analytic models that needs that from dispersed sources, the data fabric model can be unpredictable. Data Fabric uses DV; and DV caches data. However, analytic models require data fetched on demand

Depending on your organization’s needs, you can combine Data Mesh and Data Fabric Architectures; improving decentralization and enterprise data view. Combining both, insights from data fabric metadata is utilized to automate tasks in the monitoring process of the data product.