

Datamesh a gyakorlatban

Domain-alapú data product

és LLM a marketing szolgálatában



File Máttyás

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History of Data Mesh



Data Mesh @Zeiss



Data 4 Growth

Centralized Architecture

Centralized architectures, such as data warehouses and data lakes, were initially used to consolidate data within an organization. However, they faced several limitations.

- **Scalability:** As organizations grew, centralized systems became bottlenecks, unable to handle the increasing volume, variety, and velocity of data.
- **Ownership:** Data teams were often overwhelmed as they were solely responsible for managing, cleansing, and delivering data across all domains.
- **Slow Time-to-Insights:** Centralized systems required lengthy processes to introduce new data sources, which led to delays in decision-making.
- **Lack of Domain Expertise:** Centralized teams often lacked in-depth knowledge of the given areas, leading to poor data quality and usability.

History of Data Mesh

Domain Driven Design



From centralized data teams to domain-owned data products

Data is organized into **domain-based data products**, each owned by the team that owns that domain in the operational systems

From one enterprise data model to multiple bounded contexts

Each domain defines its own **bounded context**: its own model and meaning of concepts inside its boundaries

From “data as exhaust” to “data as a domain product”

Each domain provides **data as a product**, with:

- Clear purpose and intended users
- Documented schemas, lineage, and business meaning
- Product-like qualities: discoverable, trustworthy, with defined SLAs and quality metrics

From technical schemas to ubiquitous, business-aligned language and events

Data models use a **ubiquitous language** shared between business and tech: the same terms used in conversations, documentation, and data structures

History of Data Mesh

Data Mesh



Domain-oriented decentralized data ownership and architecture

So that the ecosystem creating and consuming data can scale out as the number of sources of data, number of use cases, and diversity of access models to the data increases; simply increase the autonomous nodes on the mesh.

Self-serve data infrastructure as a platform

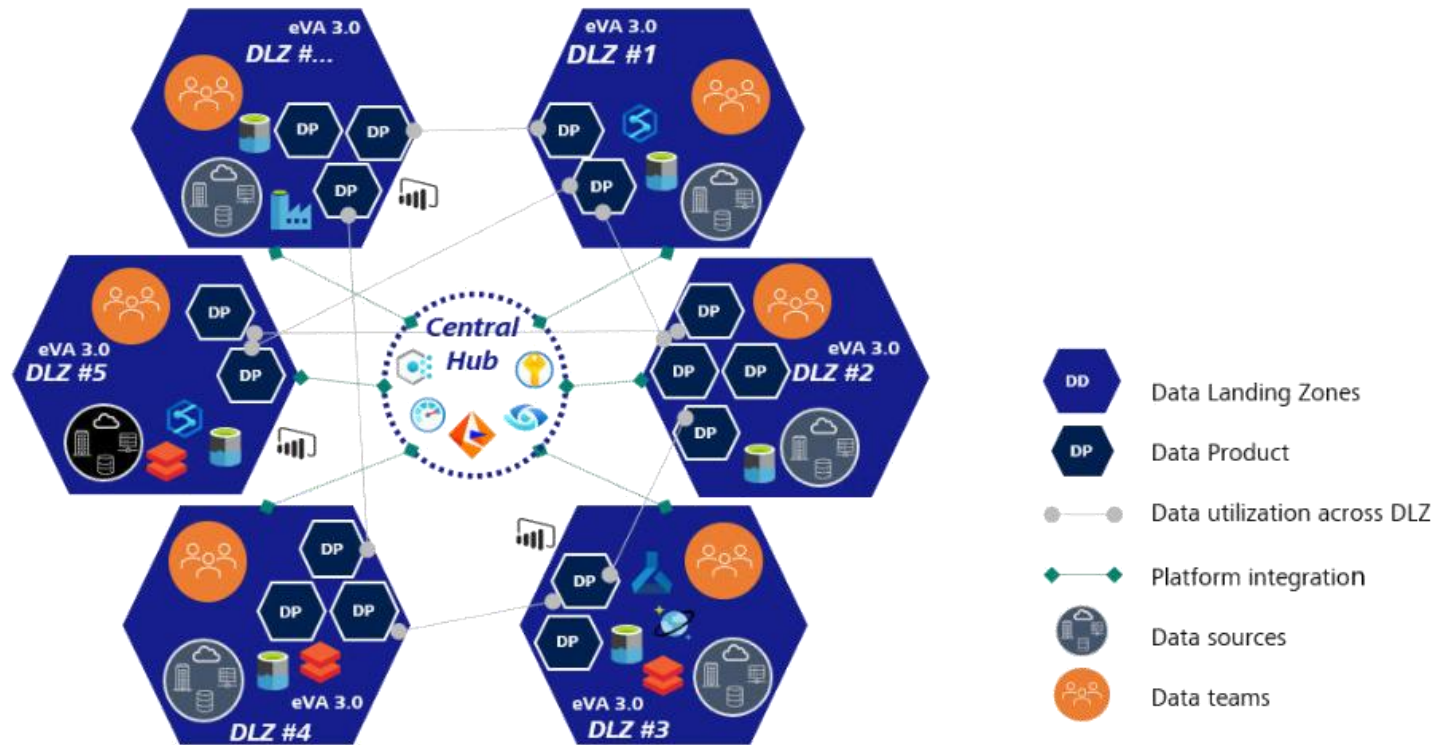
So that the domain teams can create and consume data products autonomously using the platform abstractions, hiding the complexity of building, executing and maintaining secure and interoperable data products.

Data as a product

So that data users can easily discover, understand and securely use high quality data with a delightful experience; data that is distributed across many domains.

Federated computational governance

So that data users can get value from aggregation and correlation of independent data products - the mesh is behaving as an ecosystem following global interoperability standards; standards that are baked computationally into the platform.



Platform services

- Infrastructure as Code
- Security by Design
- Role Based Access Control
- Principle of Least Privilege
- Non-Prod / Prod differentiation
- Centralized Data Catalog
- Centralized Network
- Data Sharing: PurView / Databricks
- Security + Governance + Data Quality teams

Data Mesh @Zeiss

The Domains



Zeiss Meditech



Zeiss SMT



Zeiss IQS



**Zeiss
Photography**



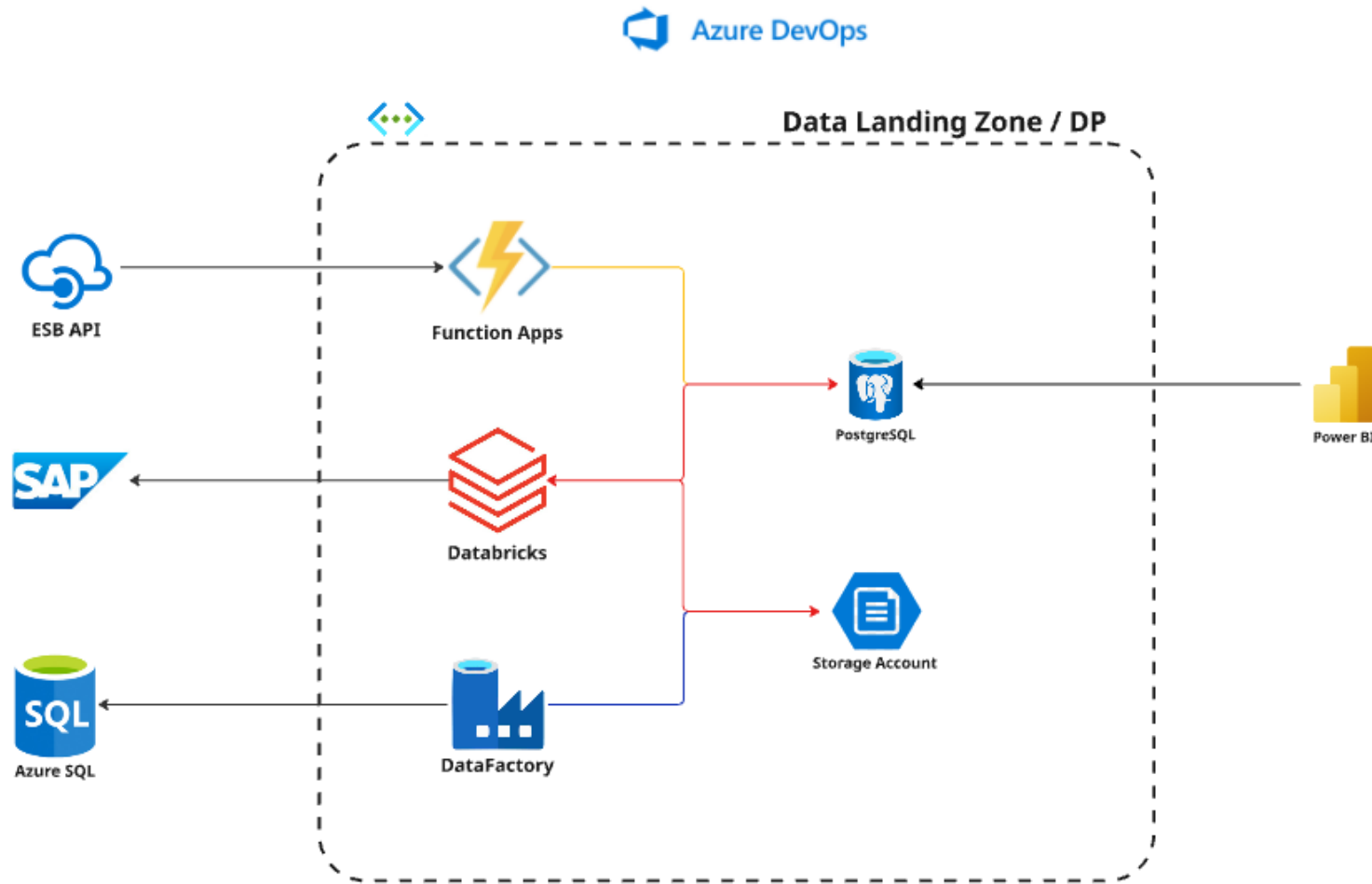
Zeiss Vision



Zeiss RMS

Data Mesh @Zeiss

Useases



Landing Zone types

- Data Product as a Service
- Platform as a Service
- Infrastructure as a Service

Data Mesh @Zeiss

Takeaway



*Data Mesh is **good** if...*

- The company is large enough with multiple domains
- Data sharing between domains is a common usecase
- Central data team is a bottleneck
- Willing to invest in a self-serve data platform

*Data Mesh is **not good** if...*

- Small company
- Organization is mostly one domain
- With standard reporting needs
- Engineering capabilities are limited

Data 4 Growth

What business wants...



Zeiss IQS



„We are looking for **medical device companies** that establishes a **factory** (or expands an existing one) where we are confident that they **will need quality assurance equipment** and *this investment has not yet been made*”

Data 4 Growth

What business wants...

Zeiss IQS

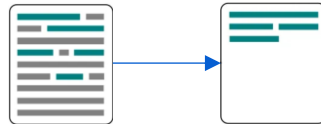


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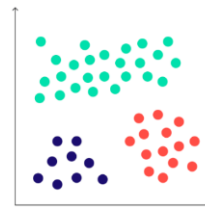
Websearch



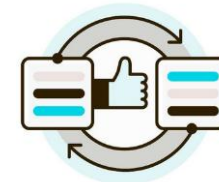
Summarize content

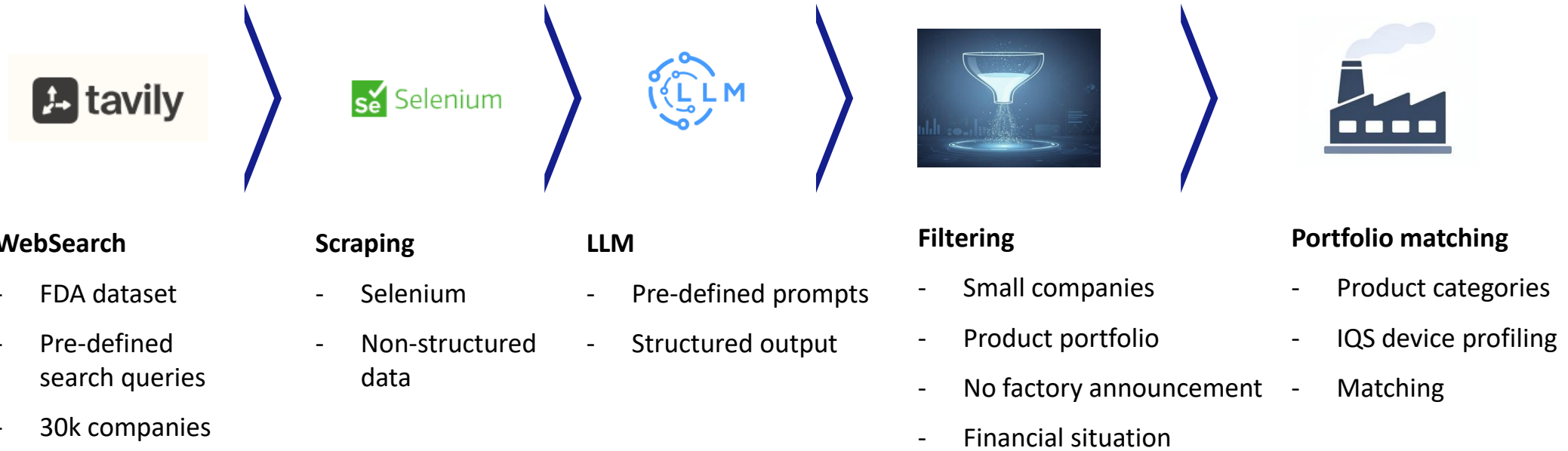


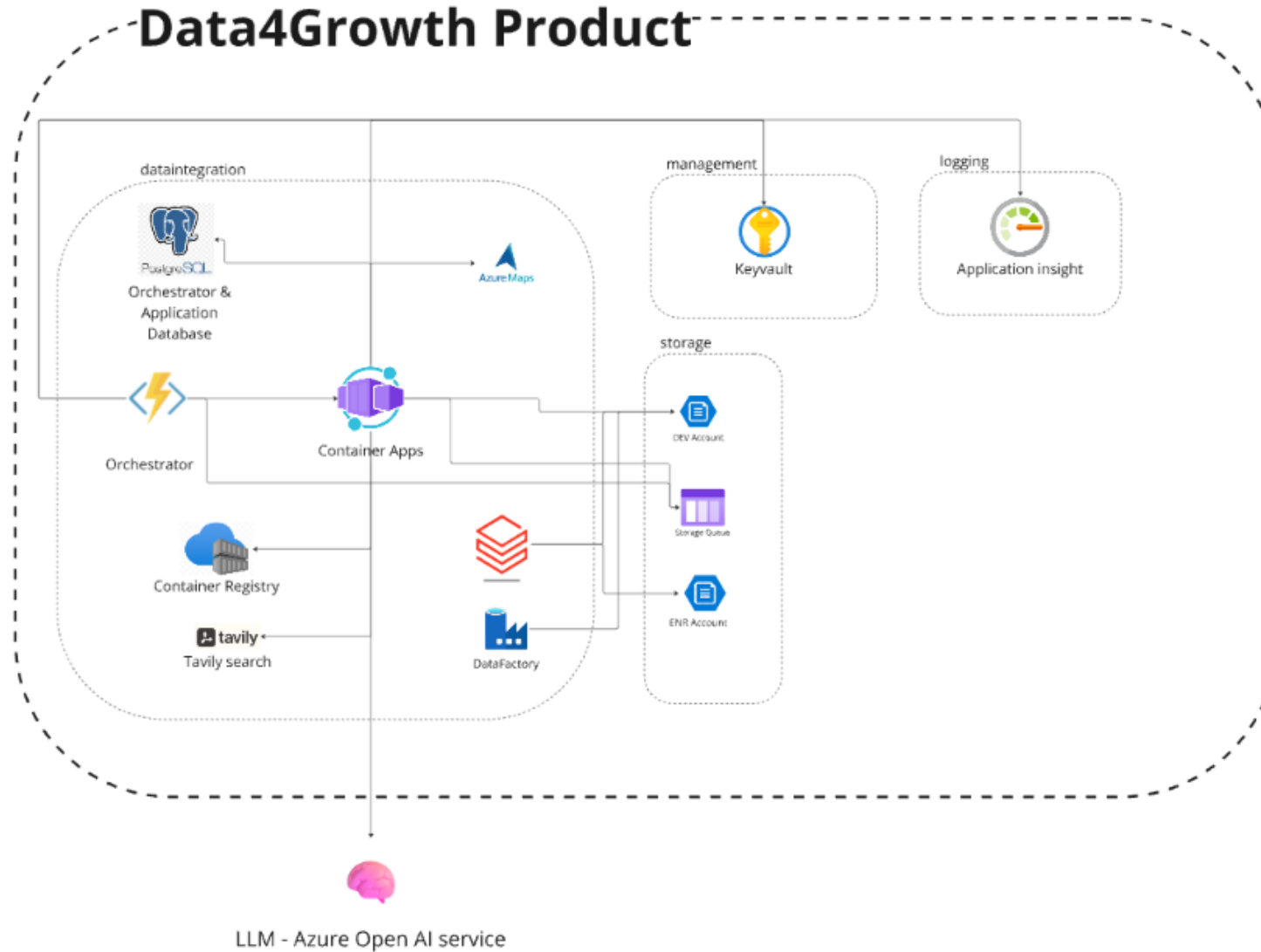
Categorize companies



Match with portfolio









Seeing beyond