

Toronto Data Professionals Community

Implementing Data Mesh, Data Products,
Data Contracts... and “Smart” Data
Products

Eric Broda

Broda Group Software

eric.broda@brodagroupsoftware.com

<https://www.linkedin.com/in/ericbroda/>

medium.com/@ericbroda

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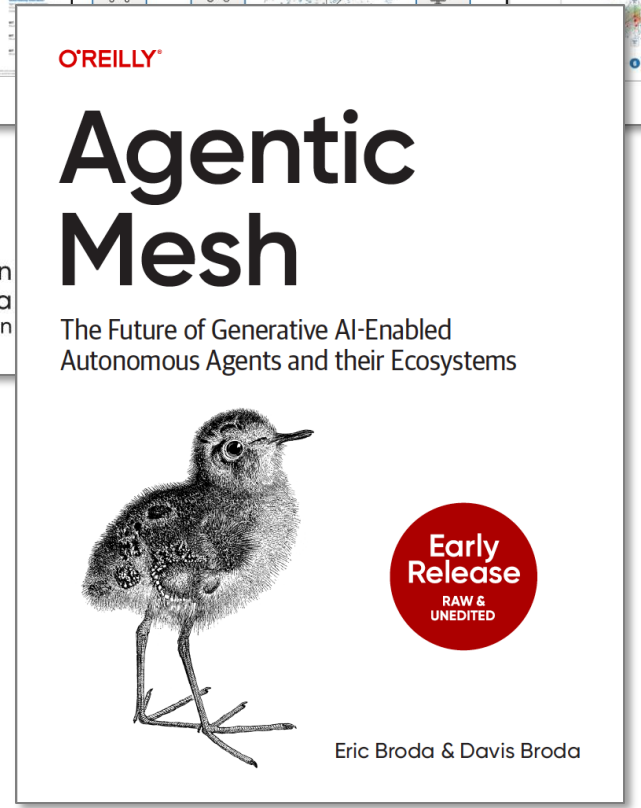
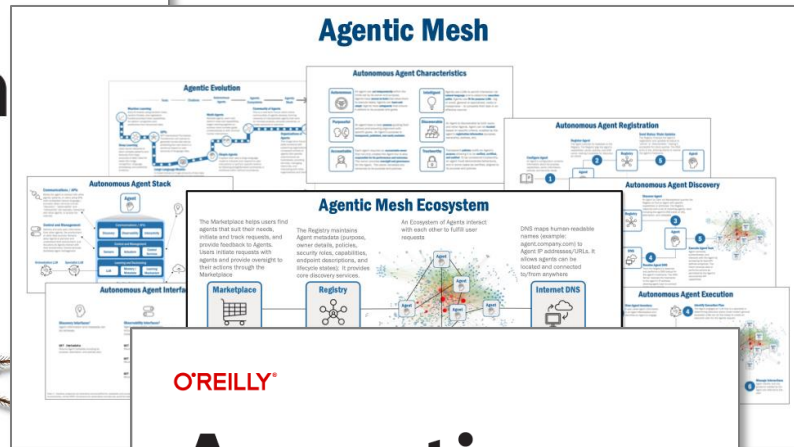
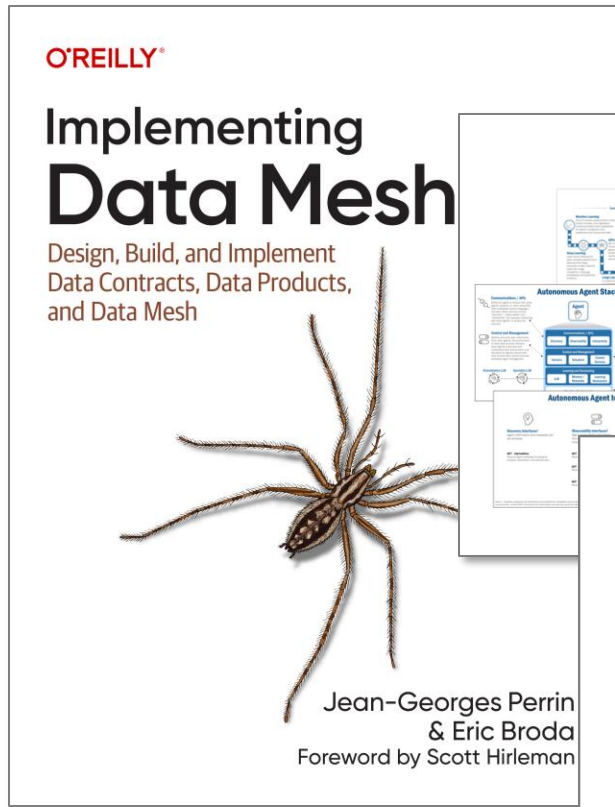
Eric Broda

President, Broda Group Software

Agents | Generative AI | Agentic Mesh | Data Mesh | Data Products | Ecosystems | Marketplaces | Climate Change

Mr. Broda is the President of Broda Group Software, a boutique consulting firm. He is an expert in developing autonomous agent and data ecosystems. Mr. Broda has written numerous articles on agents and data engineering and is the author of several books including O'Reilly's "Agentic Mesh" (Sept 2025) about the evolving agent ecosystem and O'Reilly's "Implementing Data Mesh" book (Oct 2024). Mr. Broda has over 35 years experience in banking, insurance, and payments as a senior executive and global chief architect with large banks and insurers.

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[Data Mesh - Making Data Agile]

Data Mesh brings agile practices to data– our objective is to enable faster decision making and faster time to market, by providing the foundation for delegating decision making to those closest to data

Definition

An ecosystem of data products¹

Makes data easier to find, consume, share, and trust

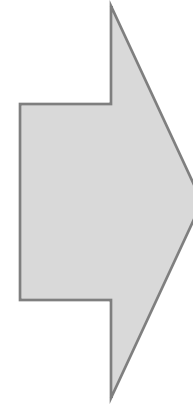
Makes data agile as decisions are delegated to those that can best make them

Built upon a data communications backbone (APIs, Airflow, DBT, Kafka, etc)

Bound together by data contracts

Offering explicit discovery, observability, and “certification” for each data product

With visibility through a data marketplace (the “window” into your data mesh”)



Implication

Agility and Speed vs Cost

Federated vs Centralized (Technical and Organizational)

Has a technical part (easy) vs organization part (hard)

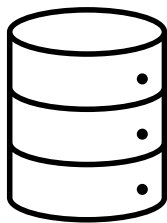
Dealing with Conway’s Law (your systems will follow your organization structure)... this has implications (do not underestimate how hard it is to go against this “law”)

Note 1. Data Product: treats data as a product with a boundary, has a domain owner, is self-serve, and has “federated governance”

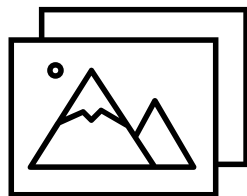
[Data Products – More than Just Data]

Data Products contain any artifacts (and commonly are “multi-modal”) that the Data Product owner deems useful to consumers including, for example, data, images and documents, queries, notebooks and models, queries, and more...

Data Product



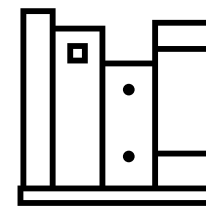
**Database /
Tables**



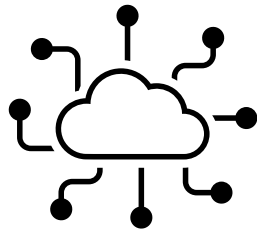
Images



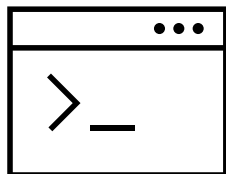
Documents



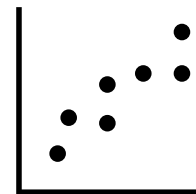
Guides



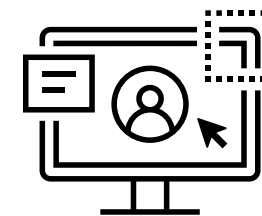
Models



Queries



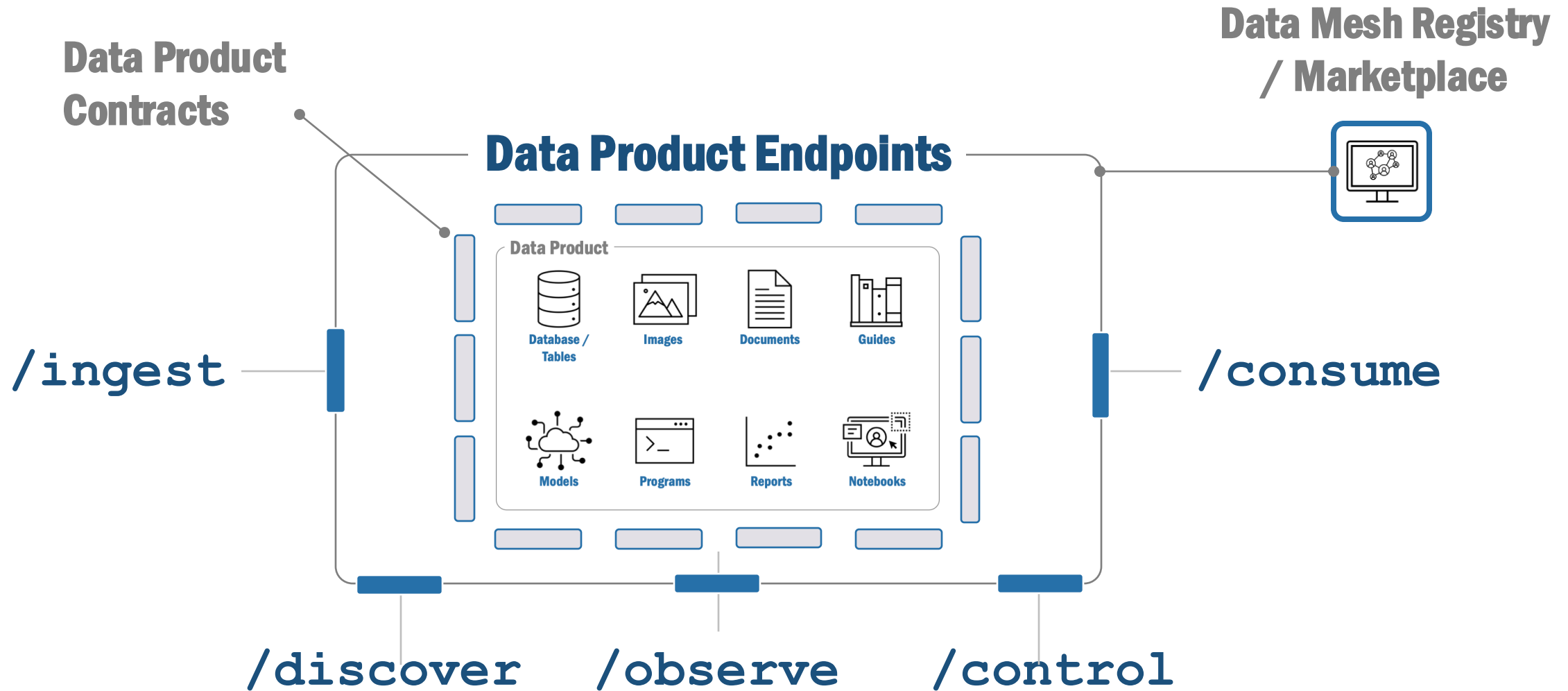
Reports



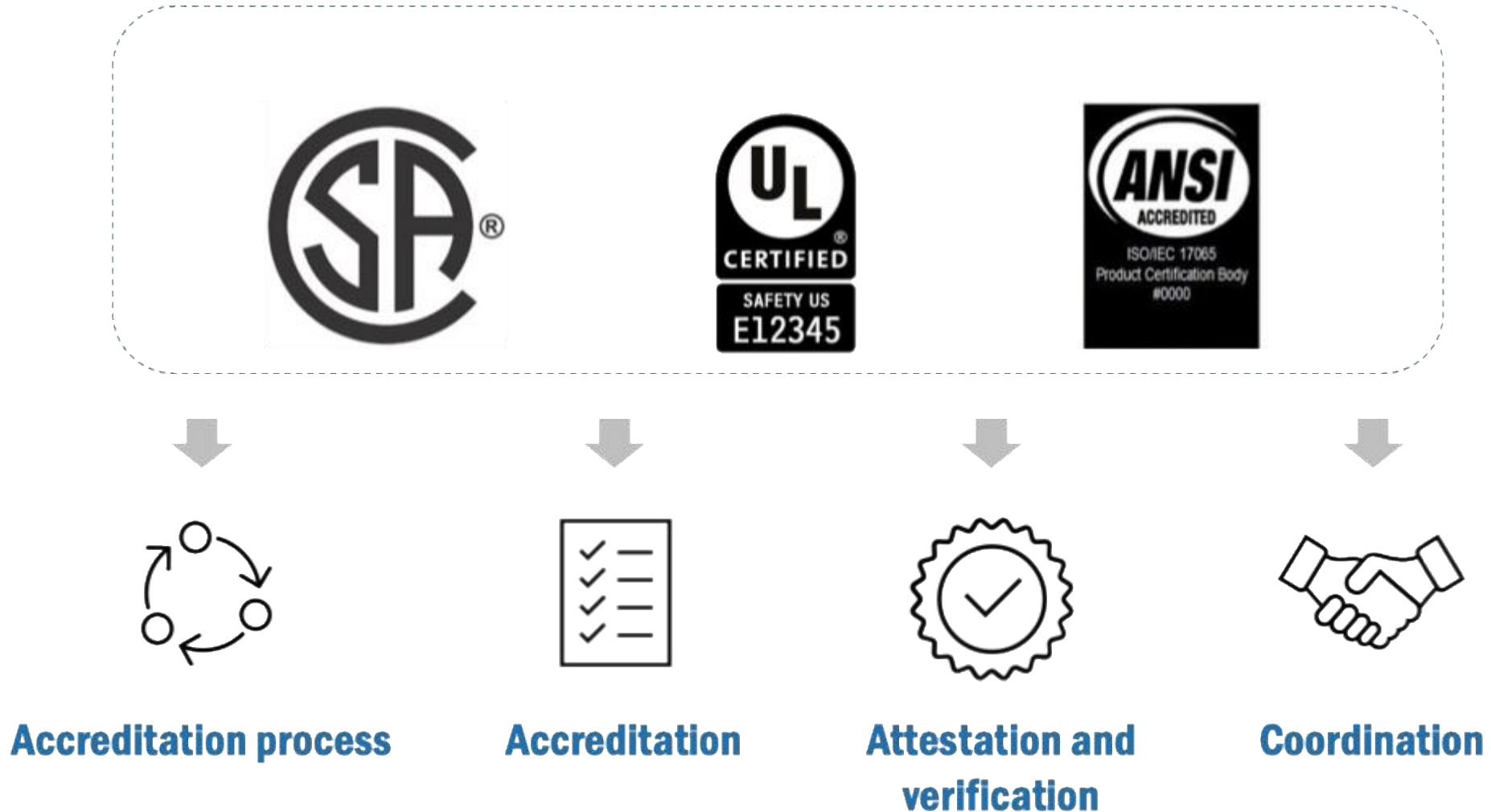
**Notebooks /
Programs**

[Building Consistency into Each Data Product]

Each data product has a common of a set of interfaces (endpoints) that makes them easy to discover, observe, and manage data products

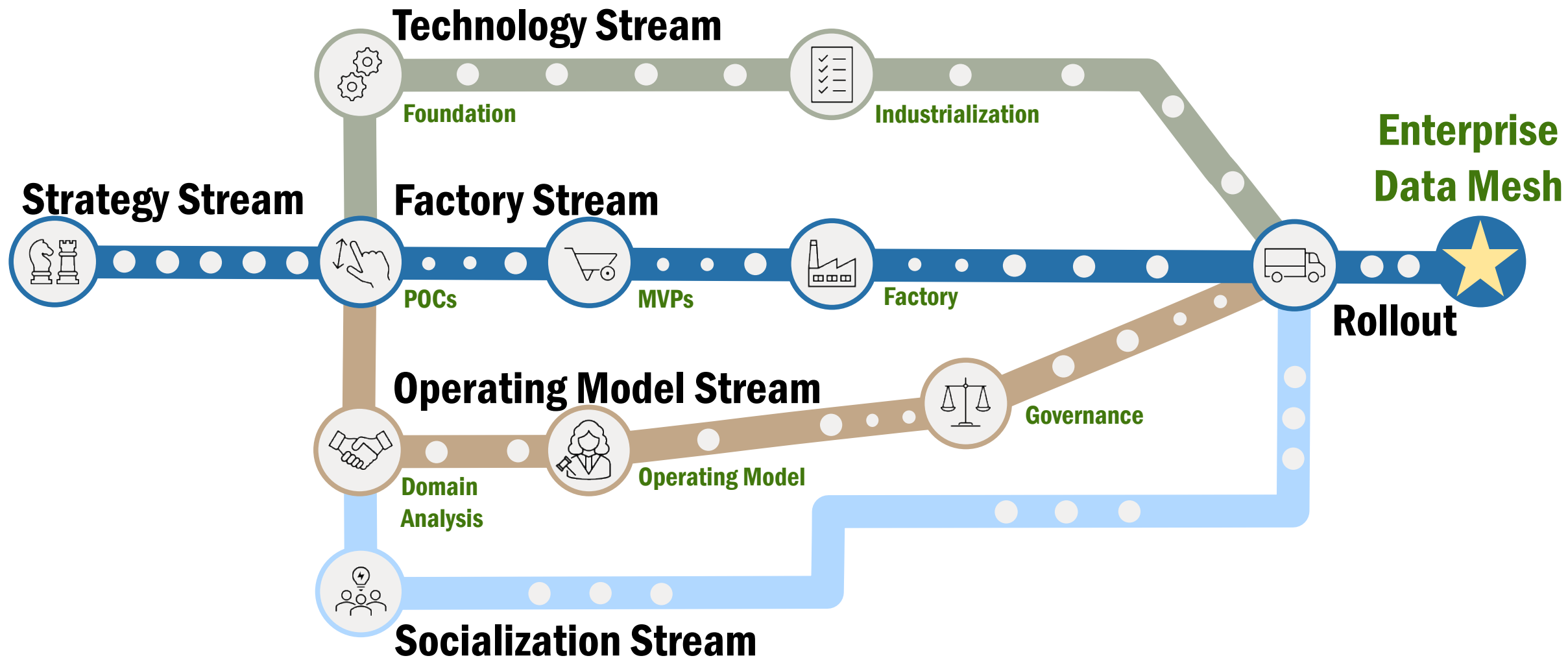


The hidden power of data products – their self-serve nature, and clear ownership – lets us apply well-established with industry standard “certification” mechanisms to data ... thereby bringing “agile” to data governance



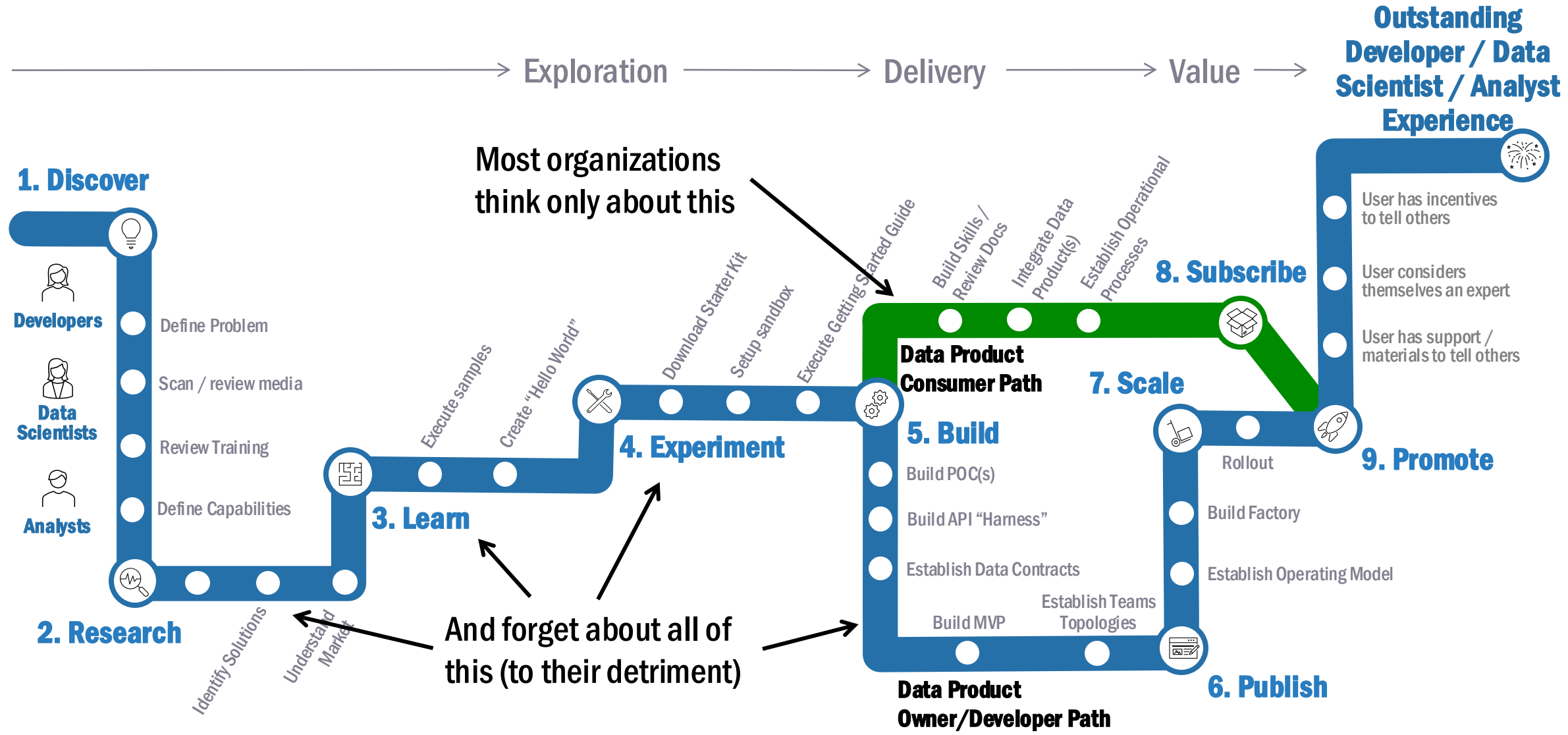
[The Roadmap Towards a Data Product Ecosystem]

The journey towards an enterprise data mesh starts with a strategy and roadmap that defines the technical, delivery, and operating model, and rollout stream (but don't forget the opportunities given by the "socialization" stream)



[Lesson Learned: Delivering an Outstanding Data Mesh Experience]

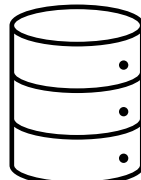
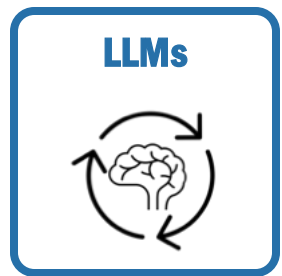
Lesson Learned - Delivering an outstanding data mesh experience is a powerful predictor of future success...



[One more thing...]

About "Smart" Data Products...

Smart Data Product



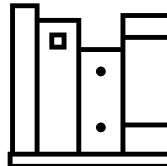
Database / Tables



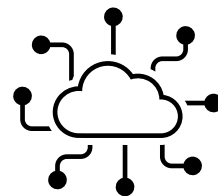
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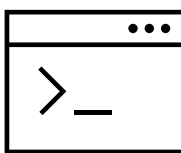
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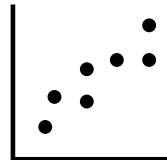
Guides



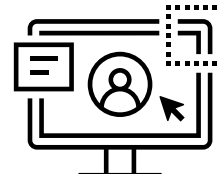
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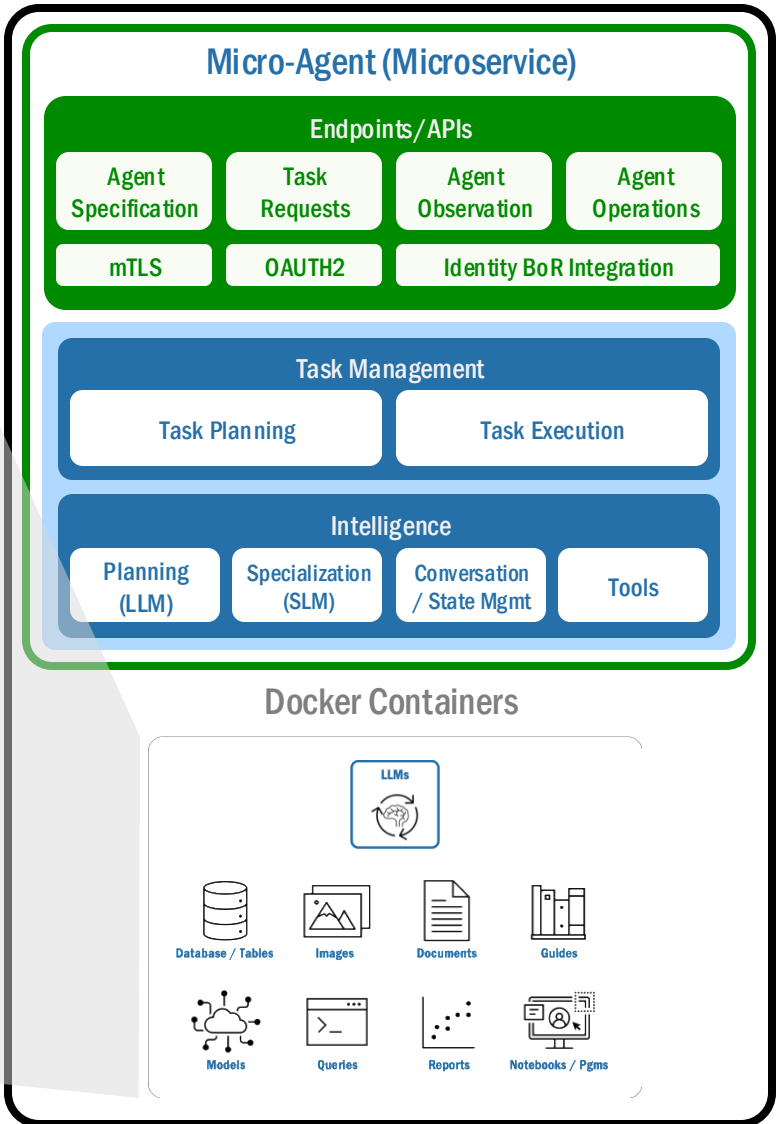
Queries



Reports



Notebooks / Pgms





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