



Why Data Mesh Is Key To Unleashing True Business Value

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**Failure rates for
analytics, AI, and
big data projects =
85% – yikes!**

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Brian O’Neill

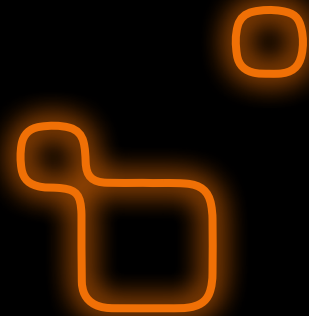
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Chapter 1

The Enterprise Data Challenge



Enterprises are rightly in pursuit of the promise of big data:

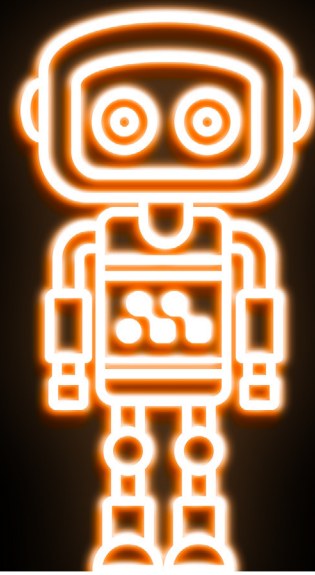
Democratised access to real-time insights into your customers, your products and your business.

These insights can then provide the best-possible ground for making killer business decisions and driving real competitive advantage.

But these data investments rarely deliver what they promise.

In this eBook, I will cover the following:

- The key reasons why the promise of data has not been fulfilled
- How data mesh can help
- How you can implement a data mesh approach
- A powerful data mesh case study



Why Your Data Investments Have Not Yet Delivered

Many enterprises are investing huge sums in next-generation technology, which, on paper, should deliver the promised value but, in practice, deliver mediocre results at a small scale.

There are a few core reasons for this:

01. Enterprise Data Platforms

Enterprises
platforms
centric

This

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02. Your Architecture is Monolithic:

Enterprise platform architectures are monolithic and highly-coupled with many dependencies in terms of both technology and people.

This creates problems:

- **Lots of waiting:** the central data team becomes a bottleneck that all the other areas of the business need to wait on

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03. Your technology is disconnected from the business:

There is a chasm between the people who produce the data, those who manage the data and those who finally use the data.

- **Fragmented data:** because of how your data has developed historically, focused on narrow and limited use cases, much data is fragmented and poorly-suited for wider consumption so cannot be used by the rest of the business
- **Limited data processing:** traditional data processing works in batches because it was designed to accommodate a limited range of use cases, massively constricting data utilisation. Modern business use cases require new capabilities such as real-time streaming!
- **Split from business objectives:** the people who produce data are cut off from the wider direction of the business, so their data struggles to serve business goals

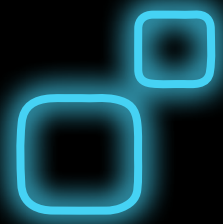


The overall result is data death by a thousand cuts: myriad small bottlenecks, pressures, delays, disconnects, misunderstandings and misalignments add up to a data capability that is too slow, cannot be scaled and that is disconnected from the business.

This will not lead you to the data outcome you want!

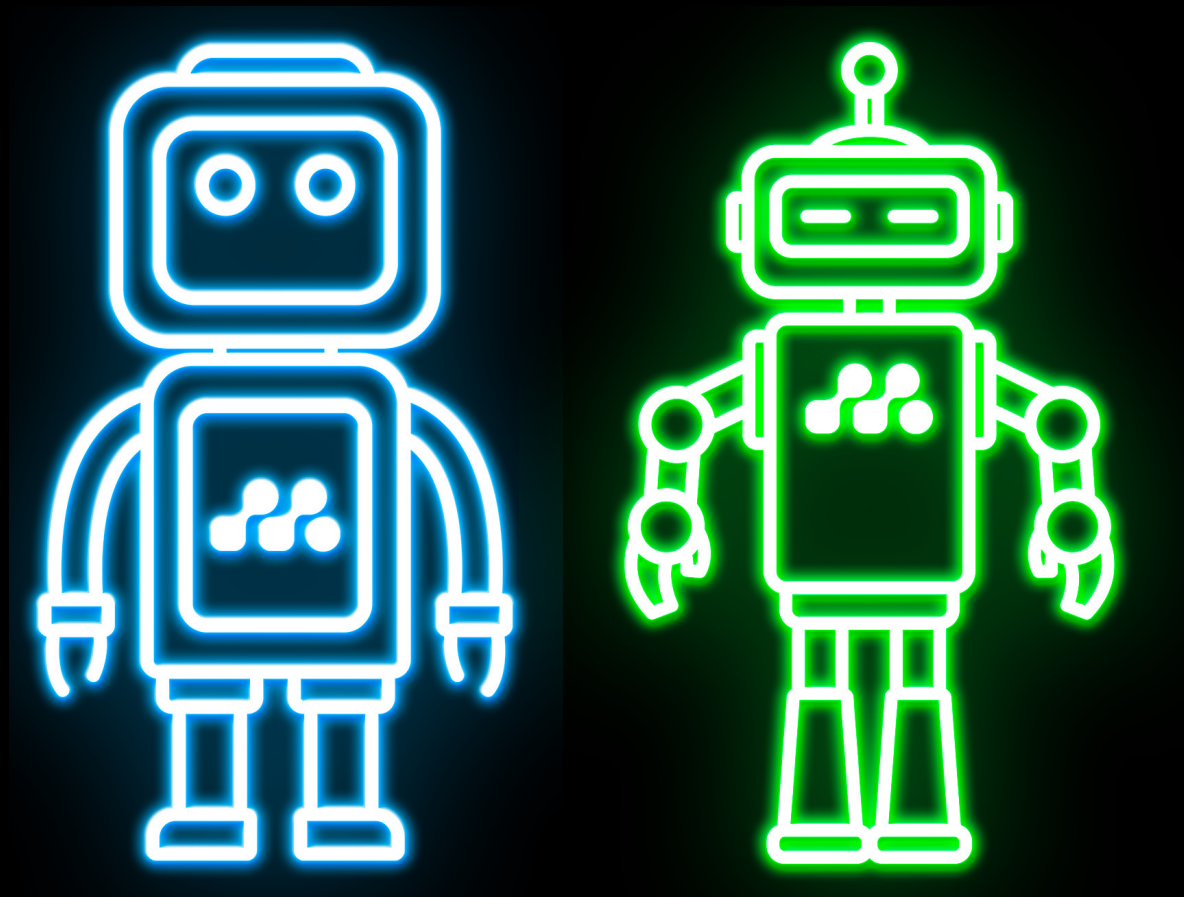
Chapter 2

Data Mesh



In order to redress the issues with the traditional data paradigm we need to rethink some of the core assumptions that underpin it.

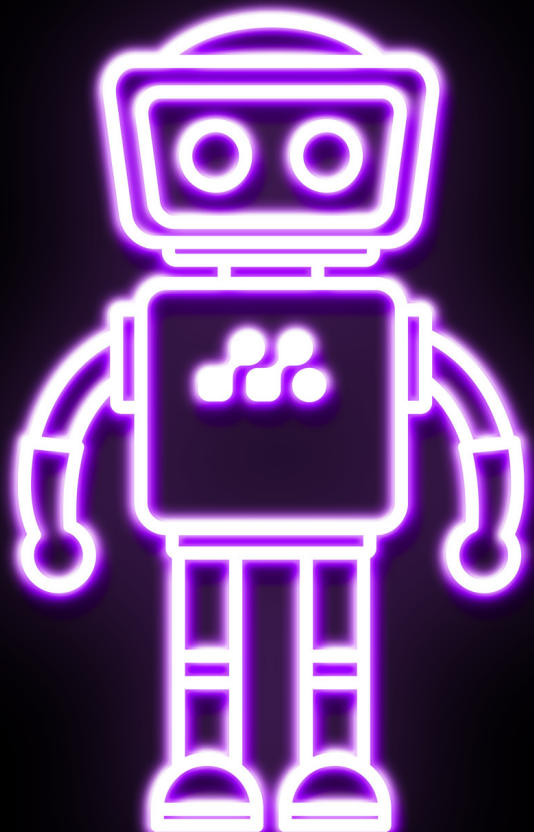
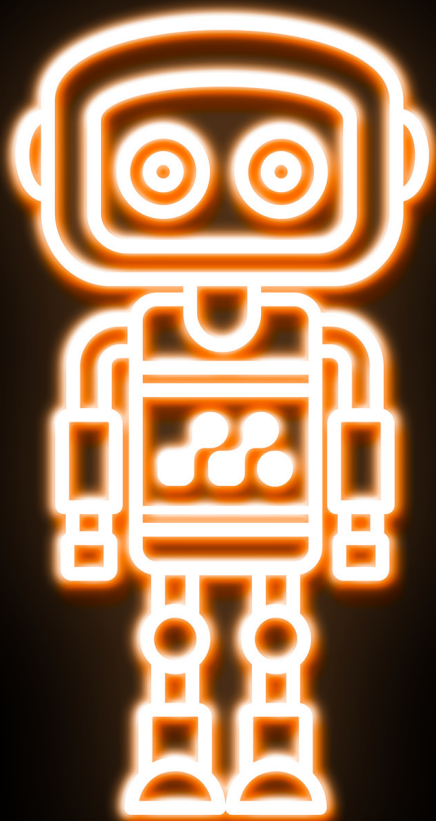
Data mesh is a decentralised, yet federated, approach, supporting distributed, democratised, self-serve access to data organised by business domain, not by pipeline stage.



A data mesh model helps organisations get the right outcome when it comes to data by:

01. Ensuring that the data is owned and maintained by the people who understand it
02. Putting the right data in the hands of the people who need it
03. Conferring an increased agility to the whole organisation by virtue of the increased autonomy that every team gains in a federated, self-serve model

Let's have a look at the core principles that underpin data mesh.





Step 01:

Distributed, decentralised, domain-driven

Data mesh is a paradigm that questions the foundational assumption of data in the enterprise: that everything has to be centralised.

Instead, a data mesh approach decentralises the whole thing, supporting distributed, democratised, self-serve access to data organised by business domain, not by pipeline stage.

This is much more useful from a business perspective as it maps much more closely to the actual structure of your business.

Domains can be followed from one end of the business to the other, meaning teams are accountable from end-to-end and that their processes can be scaled.

Step 02:

Federated Governance:

Data governance standards are defined centrally, but local domain teams have the autonomy to execute these standards however is most appropriate for their particular environment.

In this model, autonomous data domain teams and centralised data governance functions collaborate in order to best meet the data needs of the whole organisation.

Domains take care of the local processes and concerns, with a central team ensuring minimum standards for consistency and accessibility.

Data that is effectively governed in this way is a delight for consumers. They can get on with their work knowing that high-quality, highly-discoverable data is on tap and can be plugged into their projects when needed.

This helps teams to maintain independence, autonomy and accountability, while allowing teams to consume data wherever it is and massively scaling collaboration across the organisation.

Step 03:

Product Thinking:

Approach data as a product to connect the data and your business

By thinking about data in terms of domains, this enables a shift towards Product Thinking.

Product Thinking emphasises solving the customer's problem as the main priority of any task or project. So keeping your eye on the business goal, rather than getting lost in technicalities.

The paradigm shift is for these data domains and their teams to start thinking about themselves as a 'mini enterprise' that is building a product (high-quality, accessible data sets) that will make their customers (lines of business, other data teams etc.) deliriously happy!

The result is cross-functional teams of techies and business folk (the mini enterprise) who are fully accountable for delivering data products that meet the needs of the business as a whole.

The process of decentralising, democratising and productising data is a quantum leap in enterprise data architecture that opens the door to massive experimentation and innovation.

How Does Data Mesh Solve the Problems of the Traditional Data Paradigm?

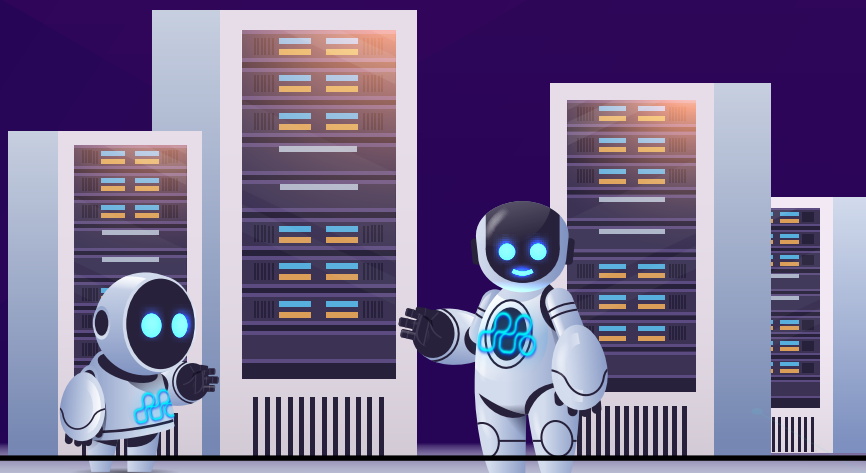
When you abide by the principles of a data mesh approach, cool things start to happen.

- End-to-end accountability and autonomy creates a fluid and resilient network of data streams

In a data mesh, the dependence on a centralised team from the side of both the producer and the consumer is removed. Combined with thinking about data in terms of products, this creates end-to-end accountability for specific domains.

When each domain does this, the result is a network of data-producing and data-consuming nodes, each of which is responsible for keeping the flow of their data open for the other domains.

This creates a decentralised, highly scalable web, which is accountable and capable of maximising the production and consumption of data across the organisation.



Your people have access to trustworthy, consumer-centric, highly-discoverable data

When domain teams are accountable for their data end-to-end, suddenly the gaps and disconnects that led to problems disappear.

One team now has the power to ensure that the data produced is tailored to the needs of their consumers, is up-to-date and trustworthy and that it is inline with centrally mandated governance standards so that it is highly-discoverable and usable.

Plus, there is no need to constantly badger the central team to hurry up so you can get access to the data you need!

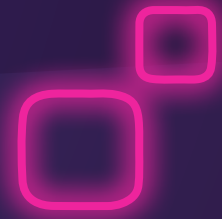
Delivery is faster and waste is reduced

The fundamental point that enables faster delivery with data mesh is that it reverses the dynamics of traditional data access patterns. It puts the emphasis on empowering data consumers to find and consume what they need autonomously.

The federated aspect of data mesh means that there is no more one single bottleneck to throttle data access requirements across the organisation. Data is accessible self-serve removing any requirement for waiting if executed well.

Chapter 3

The Business Outcome of Data Mesh



The technical benefits of data mesh translate into massive business benefits:

01:

Data is aligned with business objectives



This is critical! By eliminating the siloes that have traditionally separated the data engineers from the business folk, these two ‘sides’ can start to mutually inform each other: business objectives set the direction for data projects, the results of which then inform business objectives.

It’s a virtuous circle!

02:

Unleash data-driven innovation



By decentralising the whole data kit and caboodle, democratising access with scalable self-serve capacities and placing the emphasis on providing a first-class consumer experience, data mesh opens the door to serial, distributed, democratised innovation.

Product teams have self-serve access to reliable streams of trustworthy data from across the business which they can plug directly into their new software, apps and features.

By dealing with data properly at the source, data mesh lifts the handbrake on truly data-driven innovation.



03:

Massive scalability



A data mesh is not centralised, monolithic or tightly-coupled. All the different ‘nodes’ on the mesh are autonomous and independent, while working within the centrally-defined standards of federated governance.

When you have a mesh of independent but interoperable nodes that can be effectively governed and are easy to consume, you have a foundational pattern that can then be scaled massively across the organisation. Not only this, but each node can scale at its own pace, depending on its level of maturity, without impacting the rest of the business.



Chapter 4

How to Implement Data Mesh Approach

Data mesh vision is where high-quality, highly-discoverable data is provided in a user-friendly way so it can be consumed at scale.

The core mechanism of data mesh is the data product. This is the basic unit of value.

But for these data products to be useful, they need to be aligned with business outcomes. And that is the first step.

01:

Identify valuable business outcomes.

Start from a user-first view and look at what business outcomes will be most valuable.

02:

Identify what data products are needed.

Determine the fundamental data sources that will need to be delivered as-a-product in order to make those business outcomes a reality.

03:

Deliver each data product as a lighthouse project.

Take your highest-priority data product (aligned with a business outcome) and take that slice of the business on the journey of transformation.

The best approach is not trying to do everything at once with a big-bang approach, but it's opposite: an incremental approach.

This will help you to slowly embed new ways of working across your business.

As you incrementally develop your data products, you will need to add supporting technical capabilities alongside:

Self-Serve Infrastructure

Your data domains will need autonomous access to infrastructure so they can run their own data pipelines.

Federated Data Governance

Central data standards will need to apply so that domains produce data in ways that are consistent.

Data Discovery

Develop data contracts that describe your data products and stipulate the level of service that data owners will need to provide to their data consumers across the business. Provide your users with an intuitive platform to discover the data they need.

Mesh-AI is a transformation consultancy that exists to reimagine how enterprises operate, making data and AI their competitive advantage.

We turn enterprises into data-driven and AI enabled organisations, unleashing business growth and accelerating outcomes.





mesh-ai.com | hello@mesh-ai.com