Mesh-AI

Federated Data Governance: The Ultimate Enabler Of Rapid Data-Driven Innovation

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Chapter 1

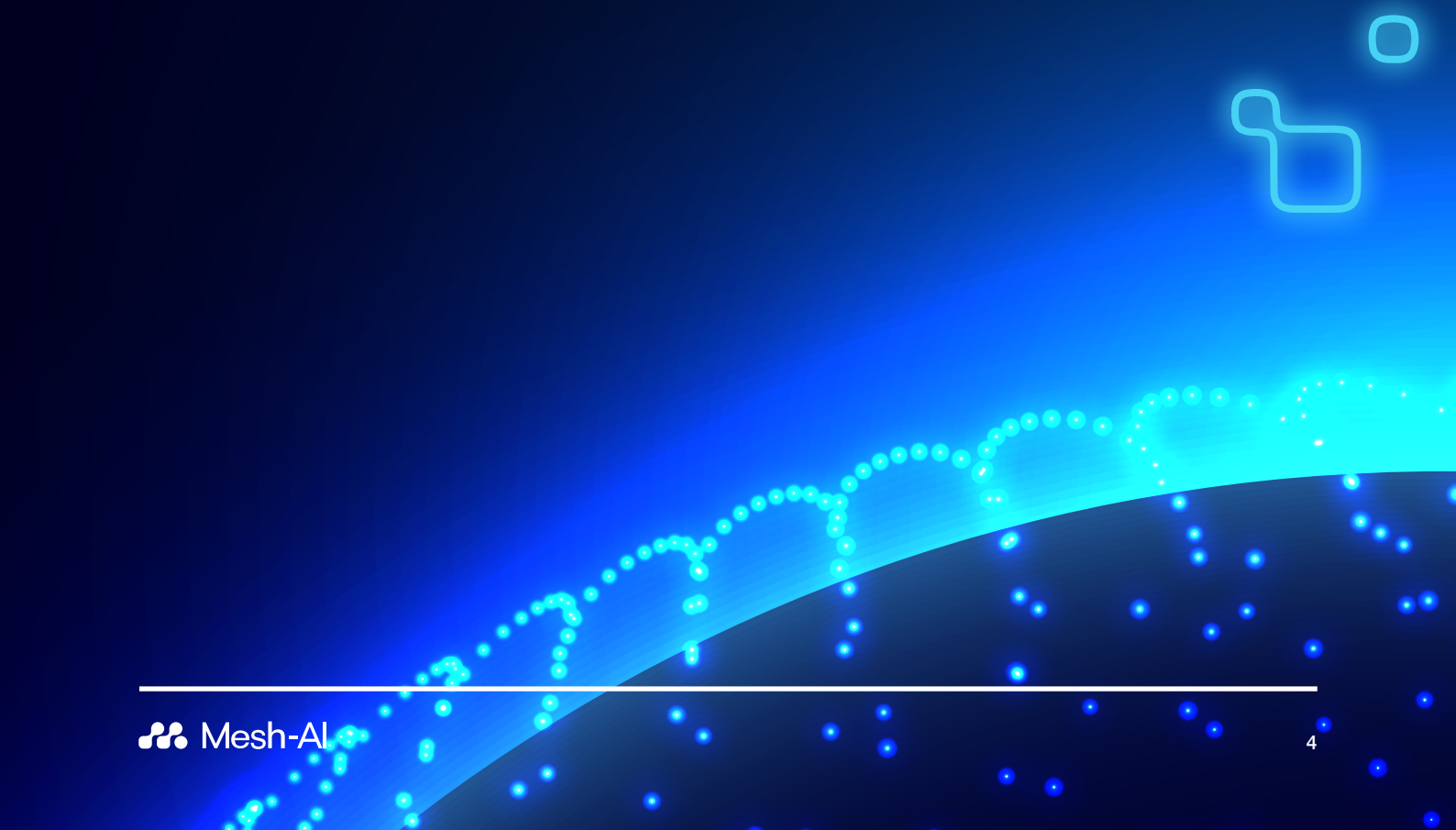
Why Data Governance Matters For Innovation

Highly-regulated enterprises are being squeezed to innovate like never before.

Market conditions are volatile, uncertain, complex and ambiguous. And the only way to respond is to continuously generate new ideas, products and services to adapt.

Nowadays, disruptive innovation is centred on one thing:

DATA.



Enterprise data is a (largely untapped) gold mine of insight that can be funnelled into all areas of your business, from product development to marketing to finance, e.g.:

- Embed customer data into your website to create a personalised experience
- Stream real-time market data into your trading platform to enable new services
- Incorporate customer feedback automatically into your product development to iterate faster and more effectively

But if you want to do more with your data (especially when you have sky-high security, compliance and regulatory requirements), you can't ignore data governance.

Chapter 2

What Is Data Governance?

Data governance sets the framework (context) within which your data (content) moves.

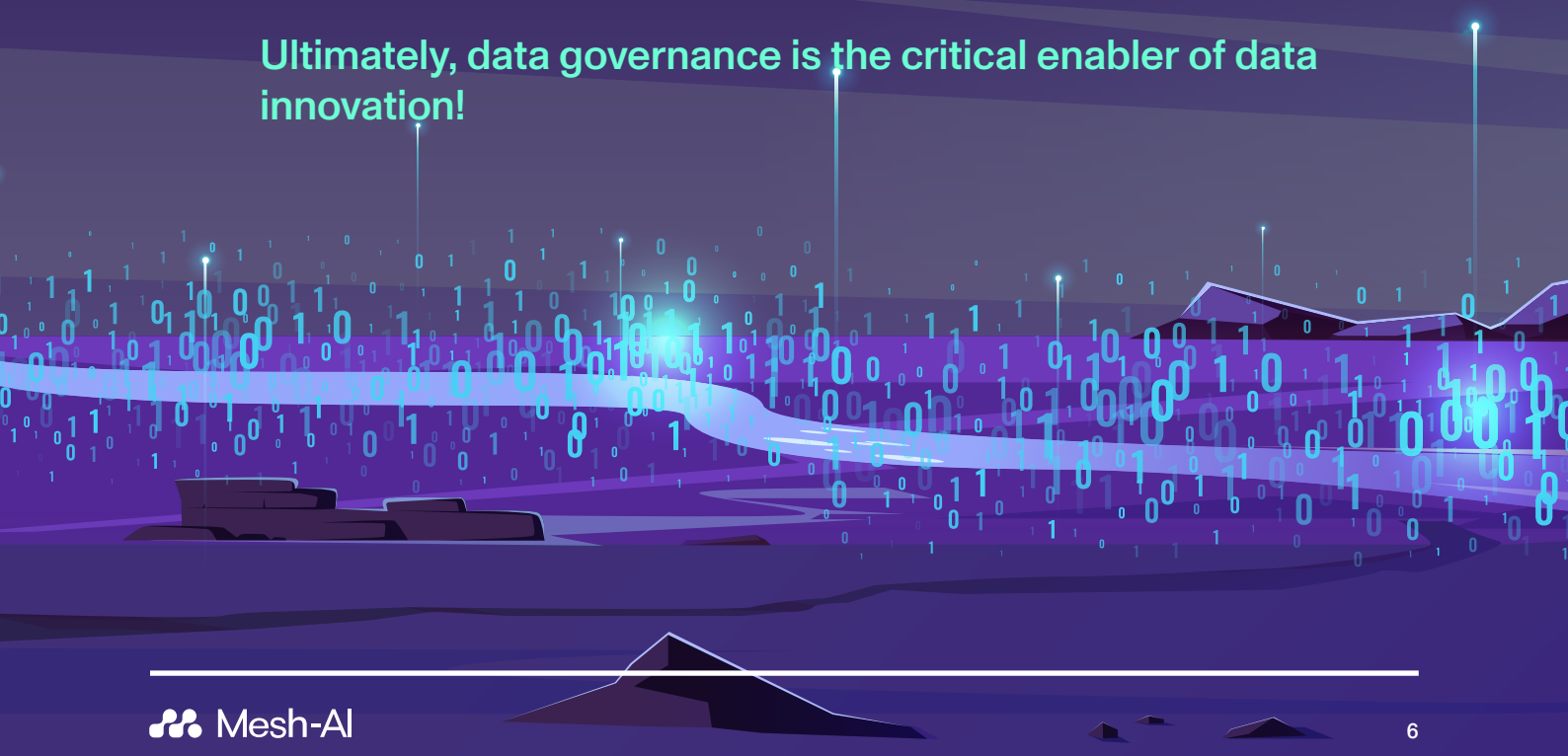
It is the bedrock along which the river of data flows.

If that bedrock is solid and guides the water in the right way, the river can flow fast and free.

Governance also allows for the interoperability of data across the organisation.

This is as if you are creating a network of rivers or canals that you can use to move data seamlessly between different business units, whole organisations or even across industries.

Ultimately, data governance is the critical enabler of data innovation!



It's so important to note that data governance isn't just some little niche technicality. It opens up completely new horizons for what your business can do with data!

By setting the right context, getting the right content (i.e. data) becomes many times easier.

In an ideal world, your data will be trustworthy, high-quality, highly-available, easily-discoverable and consumer-oriented. Not to mention secure and compliant.

And that doesn't happen by magic.

You need the right data governance policies and processes in place, embedded into everything that your business does.

Chapter 3

The Problem With Traditional Data Governance

Traditional data governance is a HINDRANCE to the free flowing of the data river.

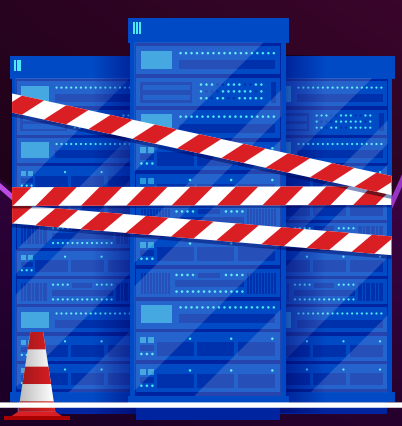
Not an enabler. There are two reasons for this.

Reason 01: How it's viewed

Firstly, data governance has always been viewed as a **deliriously boring, tedious administrative burden**.

- [x] A tick-box exercise that is done for the sake of compliance.

As such, the incredible potential of data governance to enable innovation has never even been considered. There's a lack of vision!



Reason 02:
Split in the business

Secondly, the way it is organised creates a **split in the business**:

Those who *define* the governance policies are the business boffins who need to keep everything stable and secure (and often can't see beyond their tick-box!).

This clashes with those who *implement* the policies, who are data engineers and product developers who are trying to innovate at speed and scale.

This split means that there tends to be **friction between the two sides**. The business folk prefer to go slow and steady to ensure security, while the innovators want to go fast and furious to try to meet the demand for new products.

It's business-critical to overcome this separation: you need your data governance to be completely aligned with how data is actually used in your organisation.

This is where a federated data governance structure can unleash your data innovation tsunami!

Chapter 4

What Is Federated Data Governance?

Federated data governance means that the policies and processes of governance are optimally balanced between **centralised and decentralised functions**.

This heals the split between the two factions striving against each other.

Centralised Governance Definition

In large organisations, governance policies, standards and obligations are naturally defined centrally to support global security and compliance concerns.

When these are standardised it means they can be automated and scaled across the business much more easily.

In terms of data transformation, there are three relevant layers of these standards.

Business standards (e.g. compliance, security, regulation) that the whole business needs to be in line for legal or other important business reasons.

Data standards (e.g. metadata, schemas, service level objectives (SLOs) etc.) that define how data must be produced and consumed in an organisation in order to ensure interoperability.

And implementation-level standards (e.g. infrastructure, platform) that allow the governance policies to be baked into the code of the platforms that product teams are using.

These layers aren't strictly separated, they collaborate to make things work between them.

However, there is normally a tension between defining the governance standards centrally and trying to implement them in the ever-changing local contexts.

That's why, with federated data governance, the standards are centrally defined but the way the policies are implemented can be scaled across many teams.

Decentralised Governance Implementation

Responsibility for the implementing the three layers of data governance standards is decentralised in a federated model.

That means that the local product teams bake those standards into their own platforms, infrastructure and products, however works best for them.

By allowing domains to operate with a high degree of autonomy, those who know the data best are responsible end-to-end for implementing the data governance standards. They can scale their own processes locally to meet their own needs without impacting other teams.

Let the river flow free, while the riverbed guides...

In this way, you provide local teams with enough autonomy to govern their data in whatever way is best for them, while providing an automated and scalable set of global standards and guidelines to ensure that these teams are still all pulling in the same direction.

It's like letting each branch of the Amazon river carve its own path, while ensuring that it is never completely separated from the main trunk.

Chapter 5

Why Data Federation Is A Superpower

There are a few core reasons why data federation is so potent:

01.
Enable innovation at speed and scale

When data governance standards are centralised, responsibility is federated and implementation is automated, your data world is transformed.

The result is high-quality data products that can be produced in a **rapid, scalable and resilient fashion** by teams that know their own domain intimately and are responsible for end-to-end delivery.

02.

Collaborate without friction

In traditional data governance, data management is taken care of by a central team, who, firstly, become a bottleneck and, secondly, aren't experts in the domain-specific datasets.

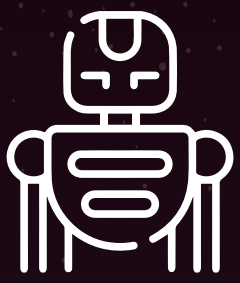
When we decentralise data production, management and consumption, all of a sudden teams are responsible from end-to-end for their own data, **removing the bottleneck and restoring control to the experts**.

When each domain is producing high-quality, trustworthy data and is making it available to others, we suddenly create a vast network of highly-discoverable datasets that can be drawn on

03.

Continuously evolve to meet ever-changing demands

Requirements for compliance, security, product development, innovation and so on are **continuously evolving in the modern enterprise**.



A federated posture allows you to easily automate and scale changes to core data governance policies across your business (e.g. updates to security patches on data infrastructure) while giving teams the freedom to change how they work to meet new demands (e.g. shifting compliance requirements left in their product development).

This approach completely shatters the limits of traditional data governance, and provides a rock-solid foundation for continuous data innovation and advanced use cases, such as data science, artificial intelligence and machine learning.

Federated Data Governance vs Traditional Data Governance

Let's map out the key differences between federated and traditional data governance. As well as what the business outcome of each of these differences is.

Traditional	Business Outcome
Centralised data sources	Data becomes potential bottleneck
Governance standards defined and executed centrally	Interoperability is maintained, but teams cannot function autonomously or work how is best for them
Data governance applied after development	Data governance is an afterthought that can block rapid innovation
Data viewed as a commodity	Data is treated as a static resource that others have the responsibility for preparing/using
Producer oriented	Data produced with the ease of producer in mind, making it harder to discover for consumers

Federated	Business Outcome
Decentralised data sources	Data flow scalable across the organisation
Governance standards defined centrally but executed locally	Ensures that local teams can work how they need, while still being interoperable with the rest of the business
Data governance "shifted left"	Data governance baked into the developed lifecycle to accelerate innovation
Data viewed as a product	Data is delivered to certain standards to internal consumers, just like external products
Consumer oriented	Data produced with ease of consumer in mind, making it highly discoverable

Data governance federation is the secret sauce, making highly-autonomous, local work possible, but within interoperability guardrails that allow for high degrees of collaboration between all the local teams.

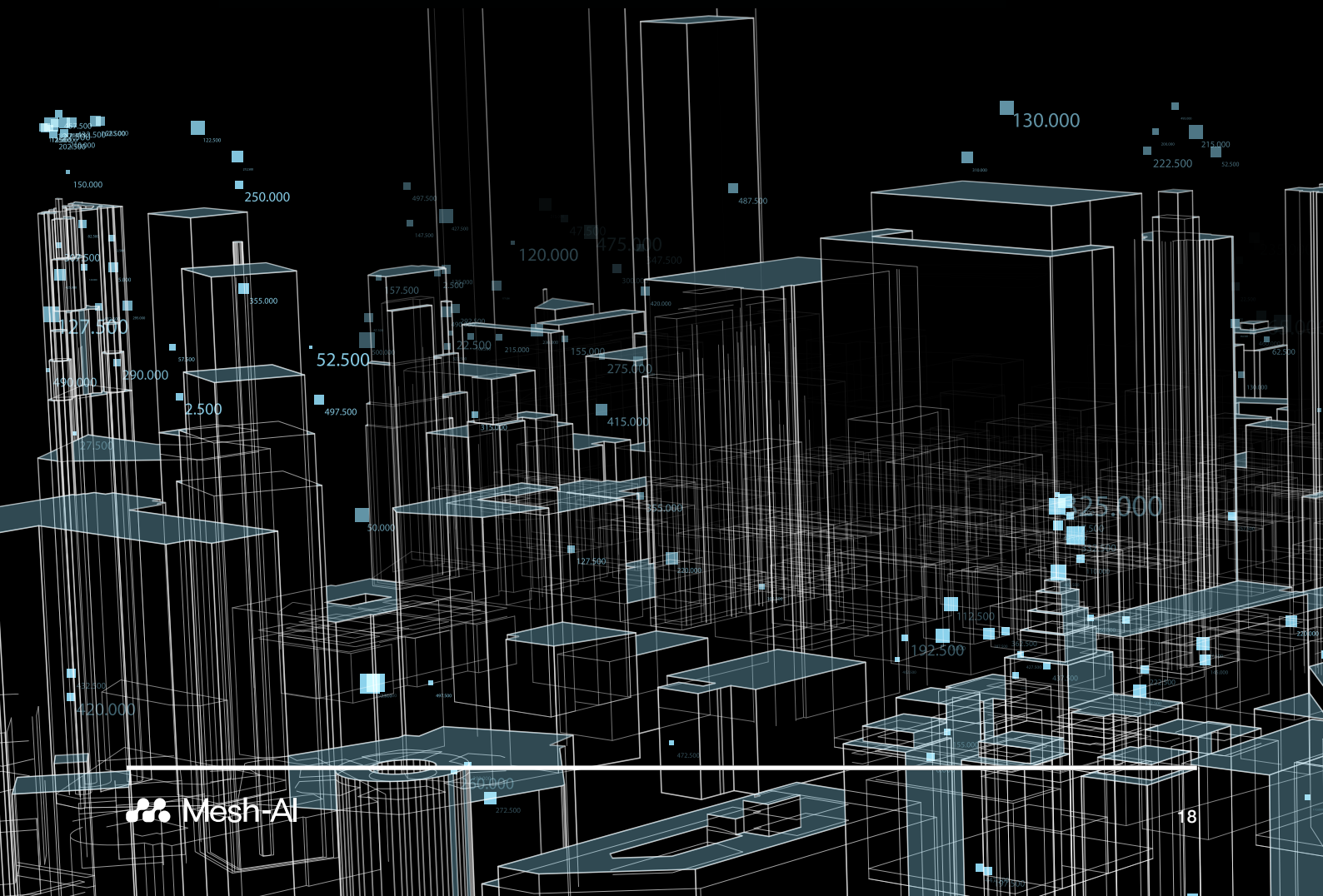
This combination of local excellence and inter-domain collaboration, creates a massive web of high-quality data products that all corners of the business can draw on, to enhance existing services or foster innovation.

Chapter 6

Federated Data Governance Challenges

The main challenges around federation of data are not technical.

The real challenge lies in federating a data-centric culture and mindset, i.e. the ways of working and thinking that must underpin this shift in how we handle data.



01.
Federating trust

Your organisation will have to **be comfortable with federating not only their technology, but their trust**.

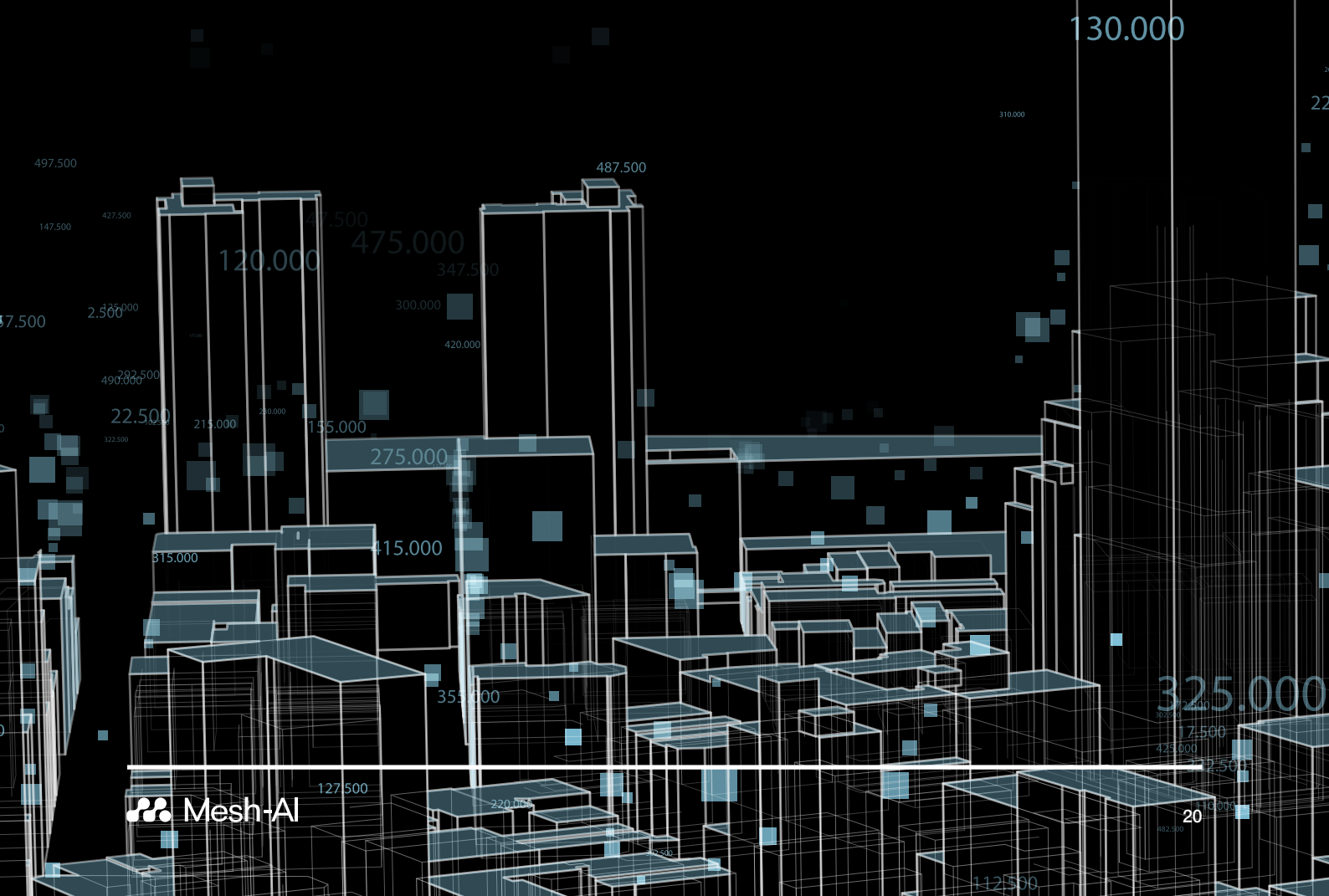
Business domains need to be trusted to get on with the job however they see fit, which some organisations that are used to more centralised control may find unsettling initially.

02.
Encouraging good data citizenship

When each domain is given the trust for their particular piece of the data puzzle at the same time that domain takes on a huge amount of responsibility.

Organisations must make clear that the new ways of working are in place to make life easier for everybody and for the common good of the organisation.

For federated data governance to succeed, people—whether they are data producers or consumers—need to be **actively cultivating their corner of the data garden**.

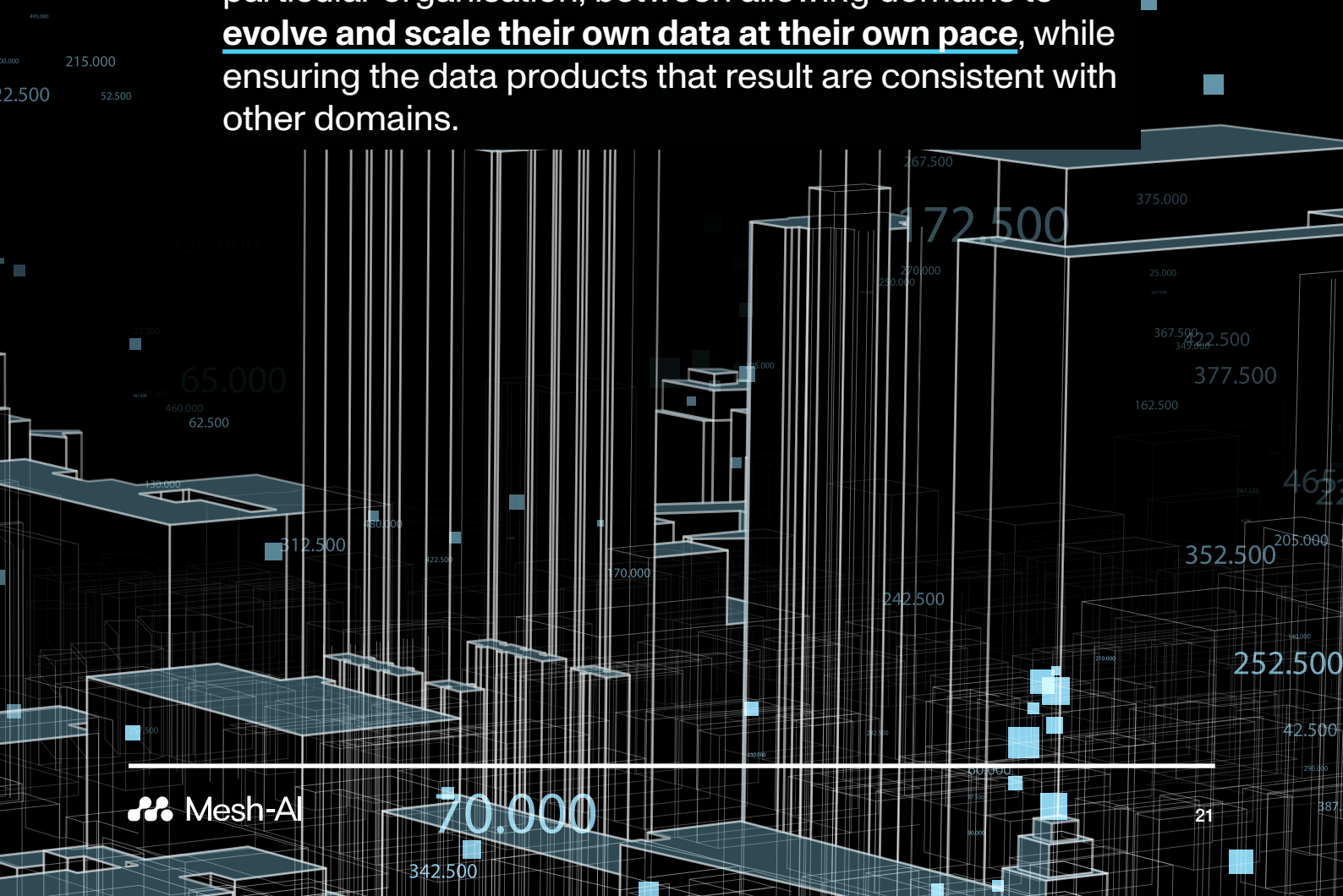


03. Striking the right balance

Imagine that every domain had complete autonomy to manage their own data as they wish, with absolutely no consideration for cross-domain consistency or co-ordination. There would be carnage.

Similarly, if domains were completely reliant on a centralised data function to manage and make data available, then that would become a major bottleneck and innovation would grind to a halt.

The challenge is to find the right balance for your particular organisation, between allowing domains to **evolve and scale their own data at their own pace**, while ensuring the data products that result are consistent with other domains.



Chapter 7

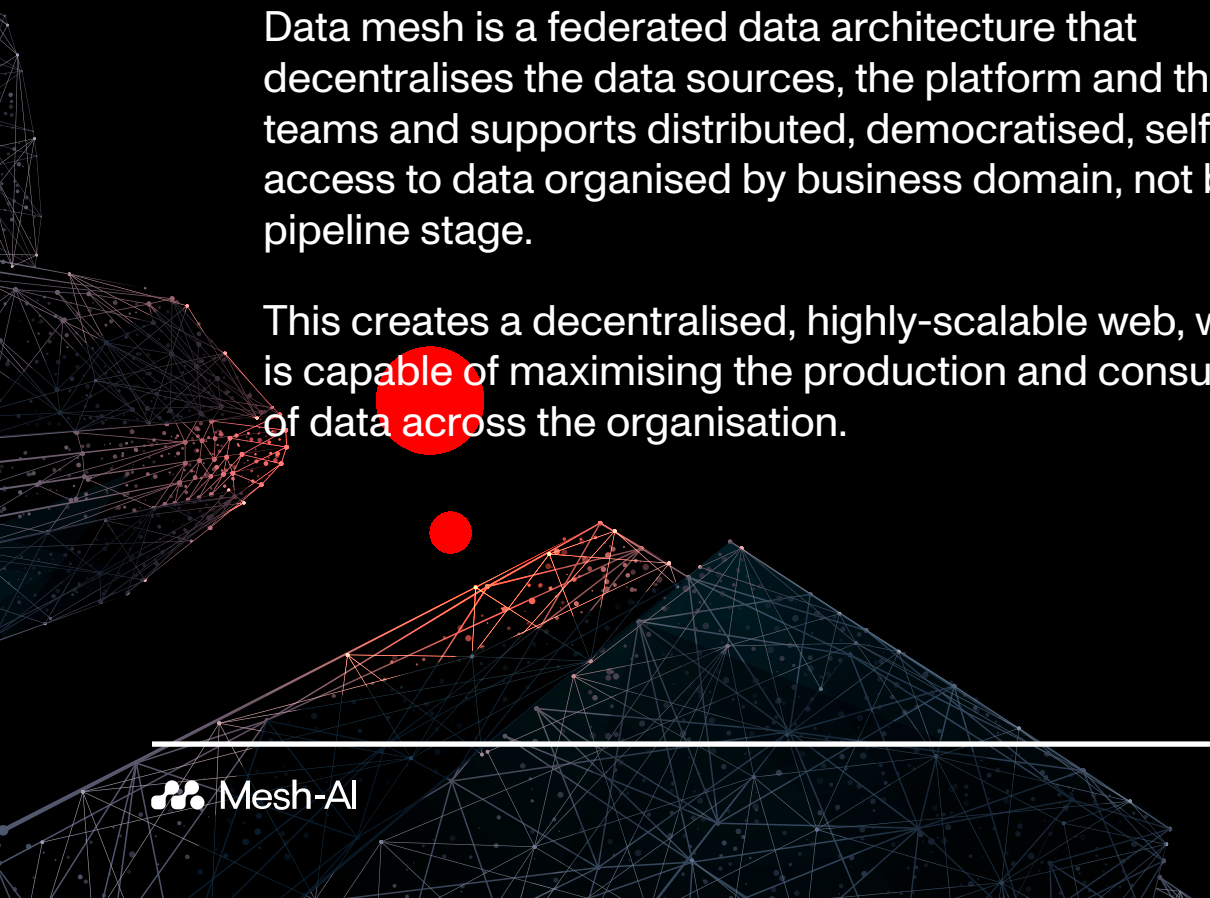
The Ideal Data Architecture for Federated Data Governance: Data Mesh

When you want to evolve towards federated data governance, you need a data architecture that **mirrors that structure**, i.e. federated data architecture.

No governance model will fix your problems if your data architecture is ungovernable!

Data mesh is a federated data architecture that decentralises the data sources, the platform and the teams and supports distributed, democratised, self-serve access to data organised by business domain, not by pipeline stage.

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



This is where centralised data governance comes in, establishing global data management practices and processes that ensure that **the data provided by each node in the web is of the highest quality**, from a consumer perspective.

There are four core principles behind data mesh:

01. **Domain-driven:** organise the platform and teams by domain to allow for end-to-end accountability and scalability

02. **Data-as-a-product:** think about data as a product to ensure it is consumer-friendly

03. **Self-serve:** use cloud and automation to simplify and democratise data access and allow consumers to self-serve

04. **Federated:** some core aspects of data mesh are centralised for the purposes of interoperability, while much is distributed to the individual domains to execute

Data mesh goes hand-in-hand with federated data governance to decentralise, democratise and productise data, and open the door to massive experimentation and innovation.

Chapter 8

Conclusion: Envisioning Data Governance As An Enabler

Data governance doesn't have to be a boring, technical obstruction to the 'real' work.

By ensuring that the data bedrock of your organisation is firm and strong, data governance actually enables data to flow fast and free throughout your organisation, opening the floodgates to disruptive, data-driven innovation.

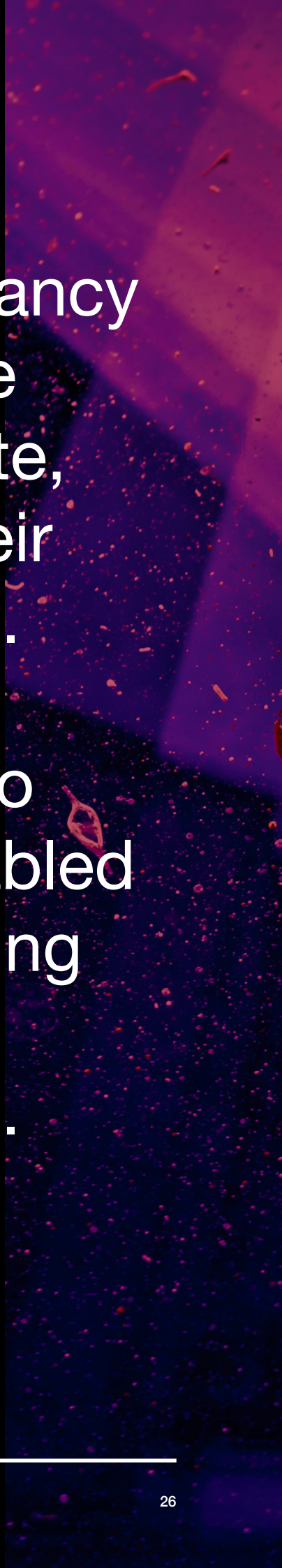
For those that have the vision to see, **it's an exciting, business-critical issue** that deserves careful attention and consideration!

We've helped countless businesses to transform how they govern their data and architect their platforms to **optimise for a data-centric approach**.

Learn More at mesh-ai.com

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.



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