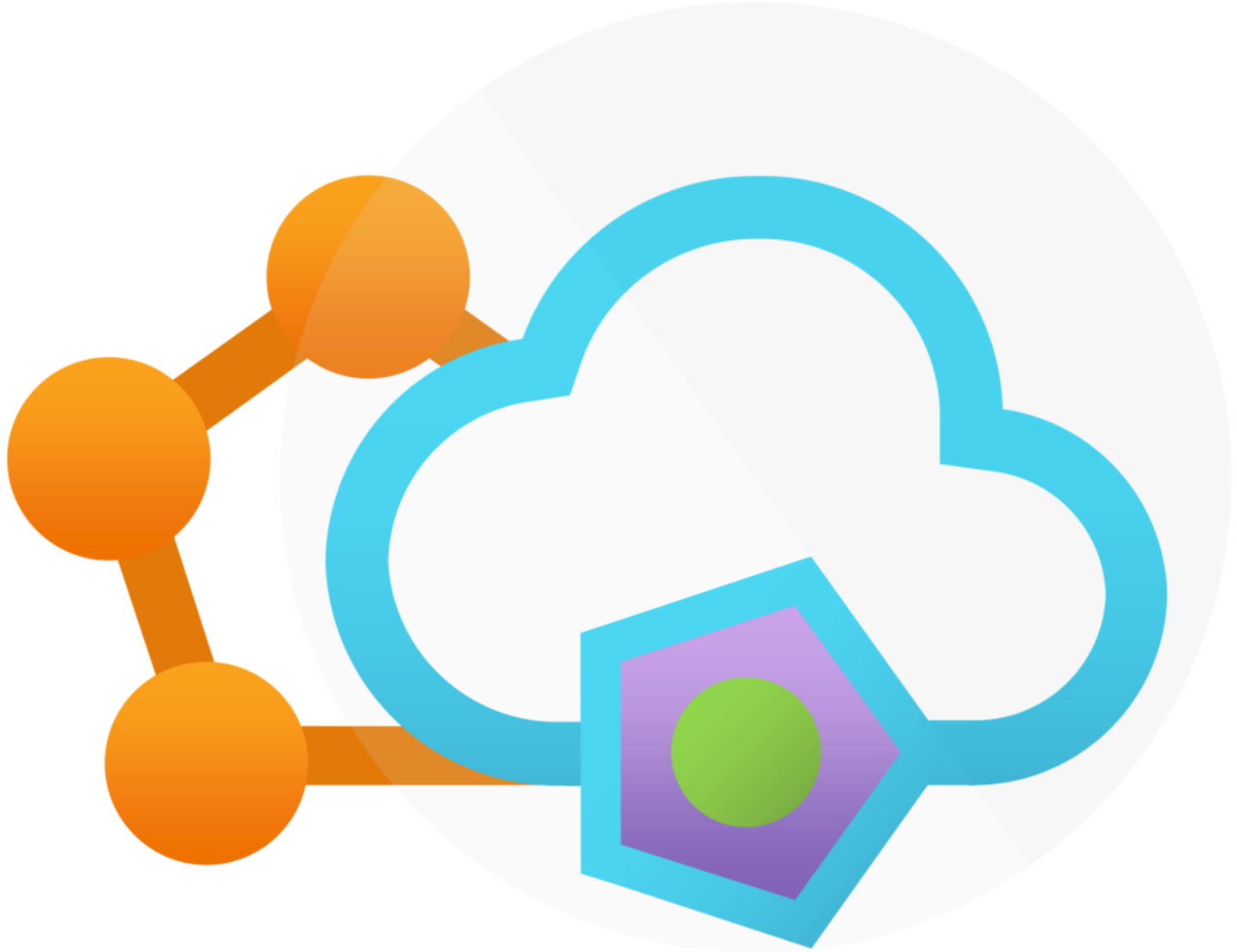

How Can Microsoft Fabric Have an Impact on Your Business?

Paul Andrew

Technical Architect

Microsoft Most Valuable Professional

Cloud Formations

Paul Andrew

Founder & Director

Chief Technology Officer

/mrpaulandrew

@mrpaulandrew

In/mrpaulandrew

- Mentor | Author
- Speaker | Podcast Host
- Event Organiser

SQL Server 2000

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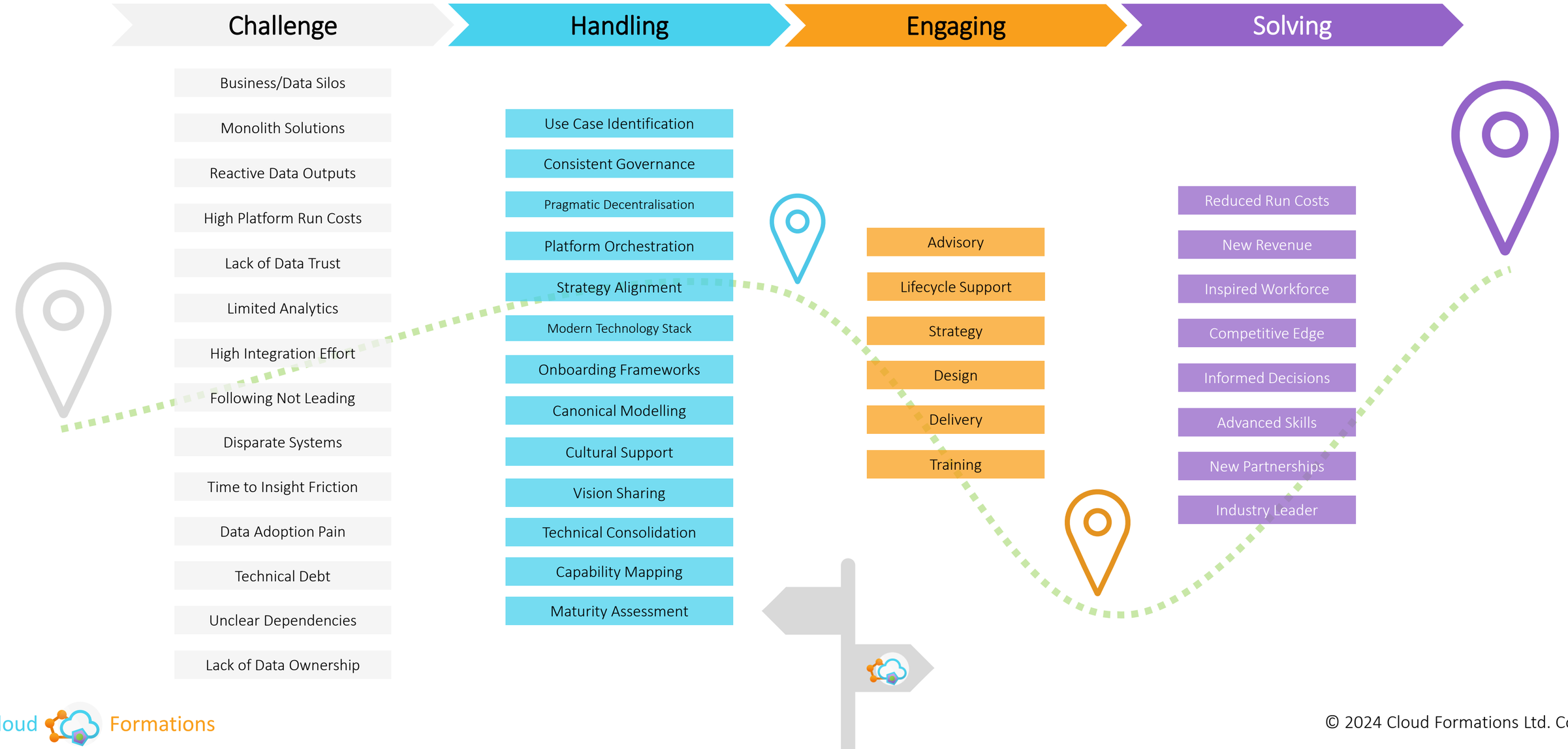
Common Data Problems

Identifying Pathways to Value and Data Insights



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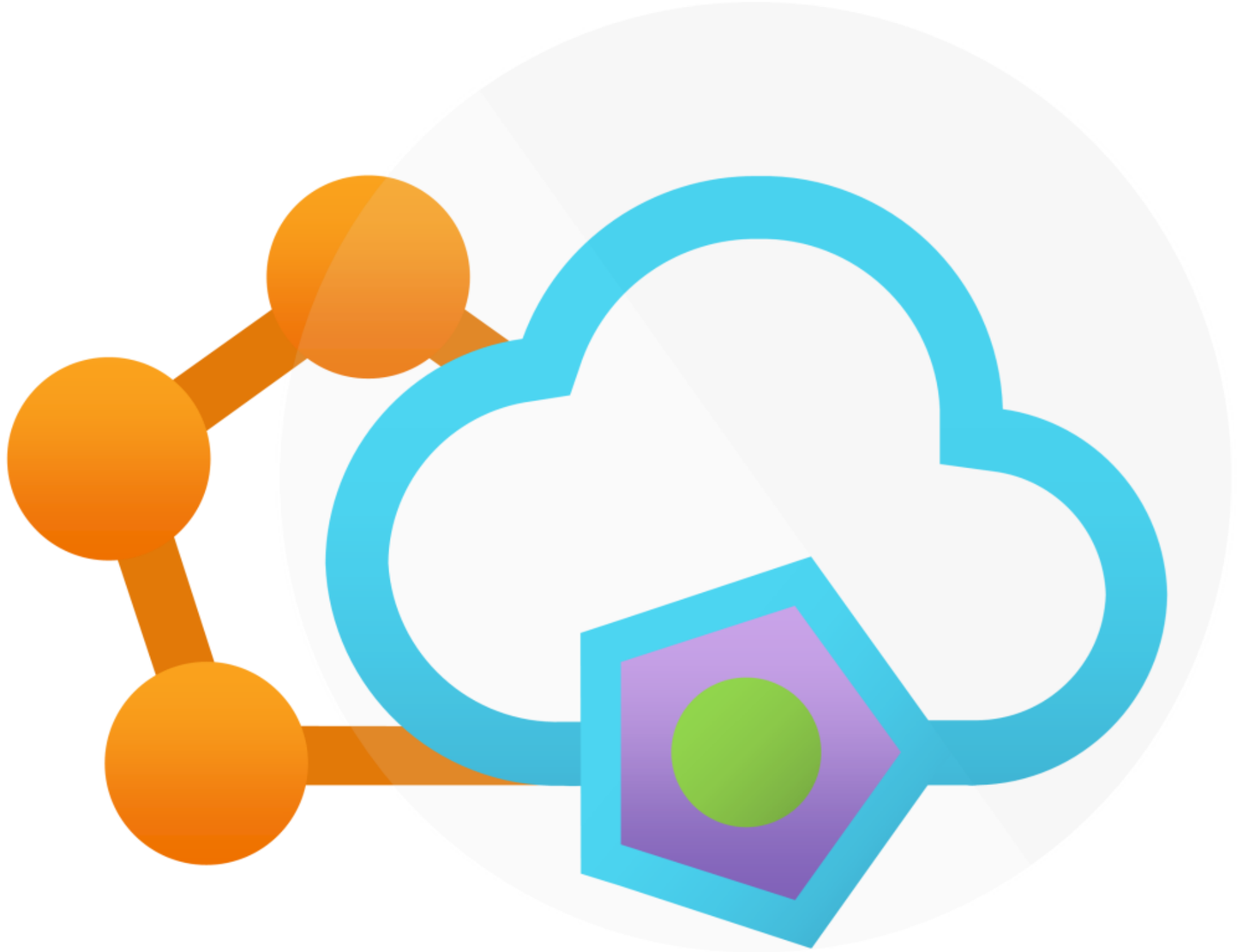

How Can Microsoft Fabric Have an Impact on Your Business?

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Technical Architect

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Abstract

All this talk about Data-Ware-Lake-Delta-Beach-House-Lakes (or some combination of that) and Data, Yarn, Fabric integration, everything has got a bit… Meshy! Yes, my friends. The beat of the technology drum is certainly relentless. And with no limits cloud scale and huge innovations from the biggest brains. Two years, it seems, has become the benchmark for tools to live and die by. Reach three years and you almost have a mature product. That said, Microsoft Fabric, the latest offering from global software giant is no exception. But what does this mean for the real world. For the data analysts, engineers and scientists that need to continue answering everyday problems to inform business decisions. In this session we will firmly ignore the hype and focus on the reality. With the pragmatic view of an experienced architect. The problem of gaining insights from our data hasn't changed. So, what does this mean if implemented using Microsoft Fabric. What, why and how is the tooling going to change our daily deliverables in the short term, medium and long term. Join me for these answers and more as we explore the impact of Microsoft Fabric-Server, erm, Power. Resource. Thing!

Q: How Can Microsoft Fabric Have an Impact on Your Business?

A:

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Q: ~~How~~ Can Microsoft Fabric Have an Impact on Your Business?

A: ~~No~~ Yes

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Q: How Can Microsoft Fabric Have an Impact on Your Business?

A:

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Q: ~~How Can~~ *What Does* Microsoft Fabric ~~Have an Impact on~~ Your *Mean For* Business?

A:

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Q: *Why Implement* ~~How Can~~ Microsoft Fabric ~~Have an Impact on~~ Your ~~Business?~~ *As Part Of Technology Landscape*

A:

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Q: ~~How Can~~ *Will* Microsoft Fabric Have a~~n~~ *Positive or Negative* Impact on Your Business?

A:

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~~How Can~~ *Will* Microsoft Fabric ~~Have an~~ Have an Impact on Your Business?

Positive or Negative

Microsoft SQL Server 2000

2016 2018 2020 2023

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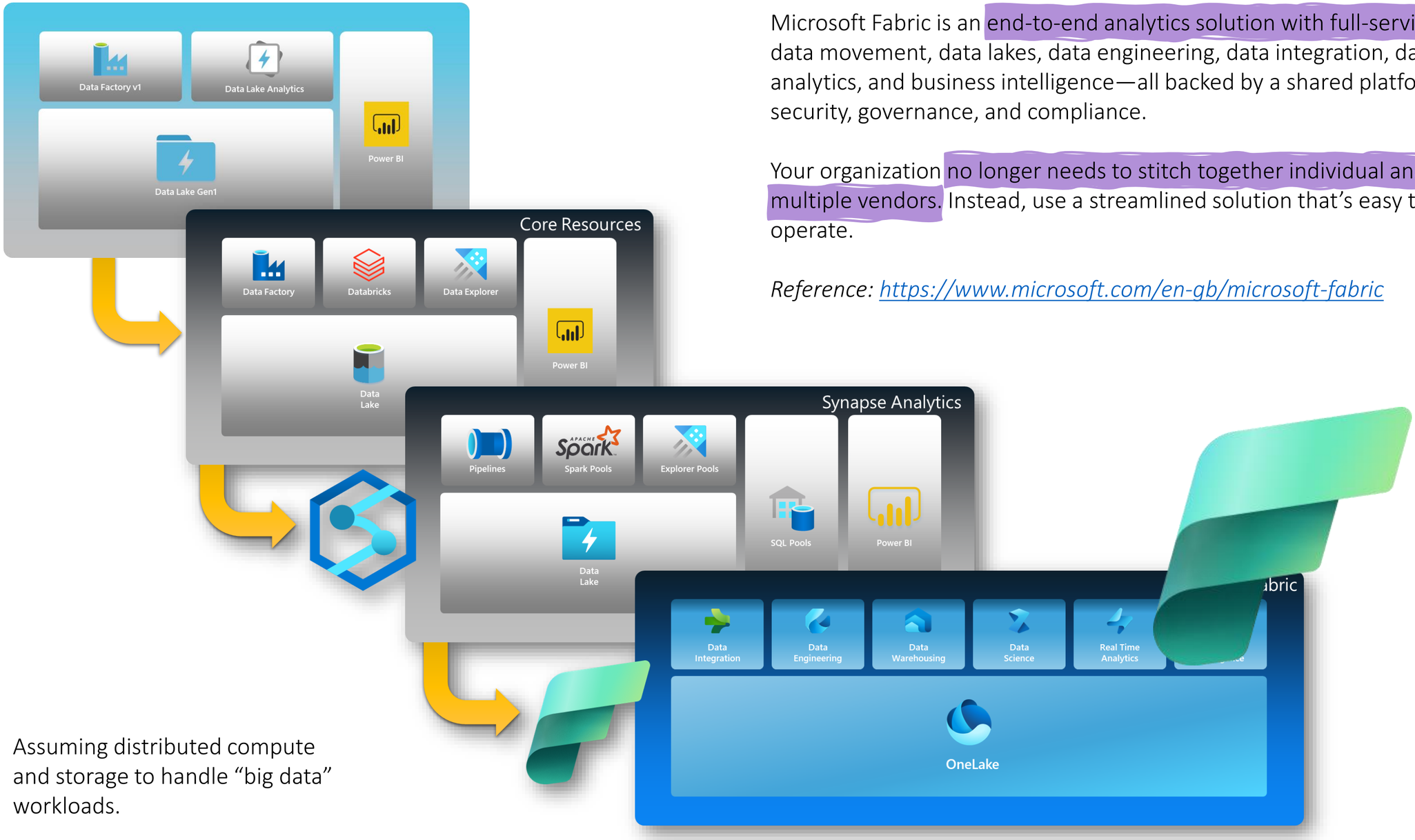
What is Microsoft Fabric? – Vision and Stack Evolution



Microsoft Fabric is an end-to-end analytics solution with full-service capabilities including data movement, data lakes, data engineering, data integration, data science, real-time analytics, and business intelligence—all backed by a shared platform providing robust data security, governance, and compliance.

Your organization no longer needs to stitch together individual analytics services from multiple vendors. Instead, use a streamlined solution that's easy to connect, onboard, and operate.

Reference: https://www.microsoft.com/en-gb/microsoft-fabric

Assuming distributed compute and storage to handle "big data" workloads.

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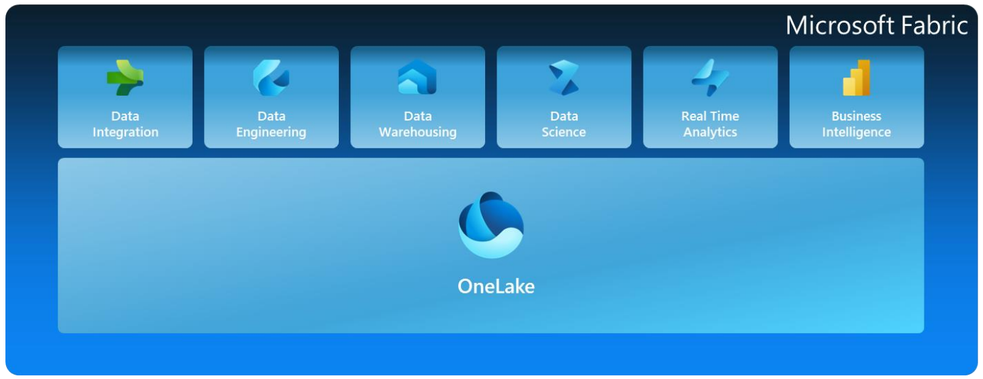
What is Microsoft Fabric?



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What is Microsoft Fabric? - Experiences vs Technical Capabilities

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Data Integration

- Workload management and orchestration with dependency chain handling and scheduling.

Think… Azure Data Factory

Data Engineering

- Low code and full code development in **Python**, **Scala**, **R**, **SQL** executed using Spark clusters.

Think… Azure Databricks

Data Warehouse

- Schema driven relational entities coded using **T-SQL** covering DML and DDL functionality.

Think… Azure Synapse Analytics – SQL Pools.

Data Science

- Predictive analytics and experimentation on data to expose insights and drive outcomes.

Think… Azure Machine Learning.

Real-time Analytics

- Time series data exploration over inbound telemetry and messages coded using **KQL**.

Think… Azure Data Explorer.

Business Intelligence

- Dashboards and metrics created to for the business to consume data, coded using **DAX** and **M**.

Think… Power BI.

Data Activator

- Actions triggered by defined changes in modelled datasets.

Think… Azure Alerts * *Closest equivalent capability.*

One Lake

- Distributed data storage optimised for analytics and structured as Delta Lake tables.

Think… Azure Data Lake Gen2

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What is Microsoft Fabric? – As a “Traditional” Development Workflow

Data Integration

Ingest some source data and land in my lake.

Data Engineering

Perform some complex data cleansing and enrichment on the ingested data.

Data Warehouse

Create dimensional models to facilitate data serving and exploration.

Data Science

Score data and predict trends.

Real-time Analytics

Explore telemetry and report on the outputs.

Business Intelligence

Create dashboards to show business performance and revenue over time.

Data Activator

Inform business decisions with actionable insights.

One Lake

- Landing
- Cleansed
- Modelled
- Lab

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Q: How Can Microsoft Fabric Have an Impact on Your Business?

A:

1. Simplifying Compute Consumption & Running Costs

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1. Simplifying Compute Consumption & Running Costs

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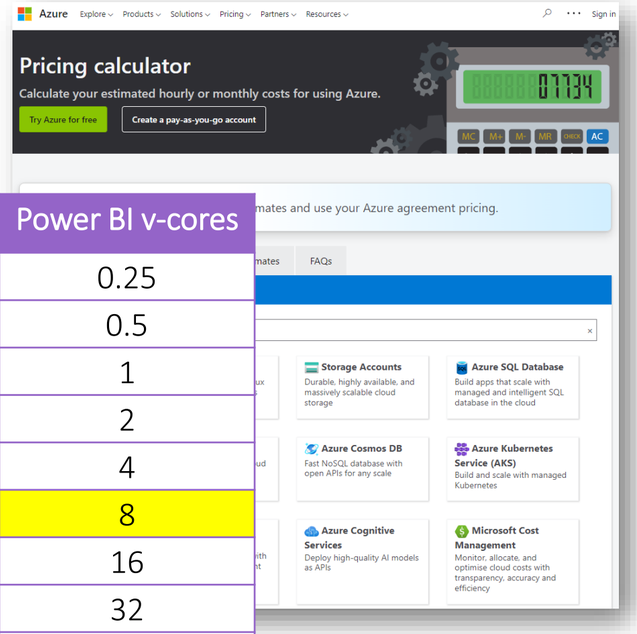
- Data Integration
- Data Engineering
- Data Warehouse
- Data Science
- Real-time Analytics
- Business Intelligence
- Data Activator
- One Lake

CPU Compute

SSD Storage

TBA

Capacities



SKU	Capacity Units	Power BI SKU	Power BI v-cores
F2	2	-	0.25
F4	4	-	0.5
F8	8	EM/A1	1
F16	16	EM2/A2	2
F32	32	EM3/A3	4
F64	64	P1/A4	8
F128	128	P2/A5	16
F256	256	P3/A6	32
F512	512	P4/A7	64
F1024	1024	P5/A8	128
F2048	2048	-	256

Reference:
https://blog.fabric.microsoft.com/en-us/blog/capacity-metrics-in-microsoft-fabric
https://learn.microsoft.com/en-us/fabric/enterprise/licenses
https://learn.microsoft.com/en-us/power-bi/enterprise/service-premium-smoothing
https://learn.microsoft.com/en-us/fabric/data-engineering/spark-job-concurrency-and-queueing

1. Simplifying Compute Consumption & Running Costs

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- Data Integration
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- Real-time Analytics
- Business Intelligence
- Data Activator
- One Lake

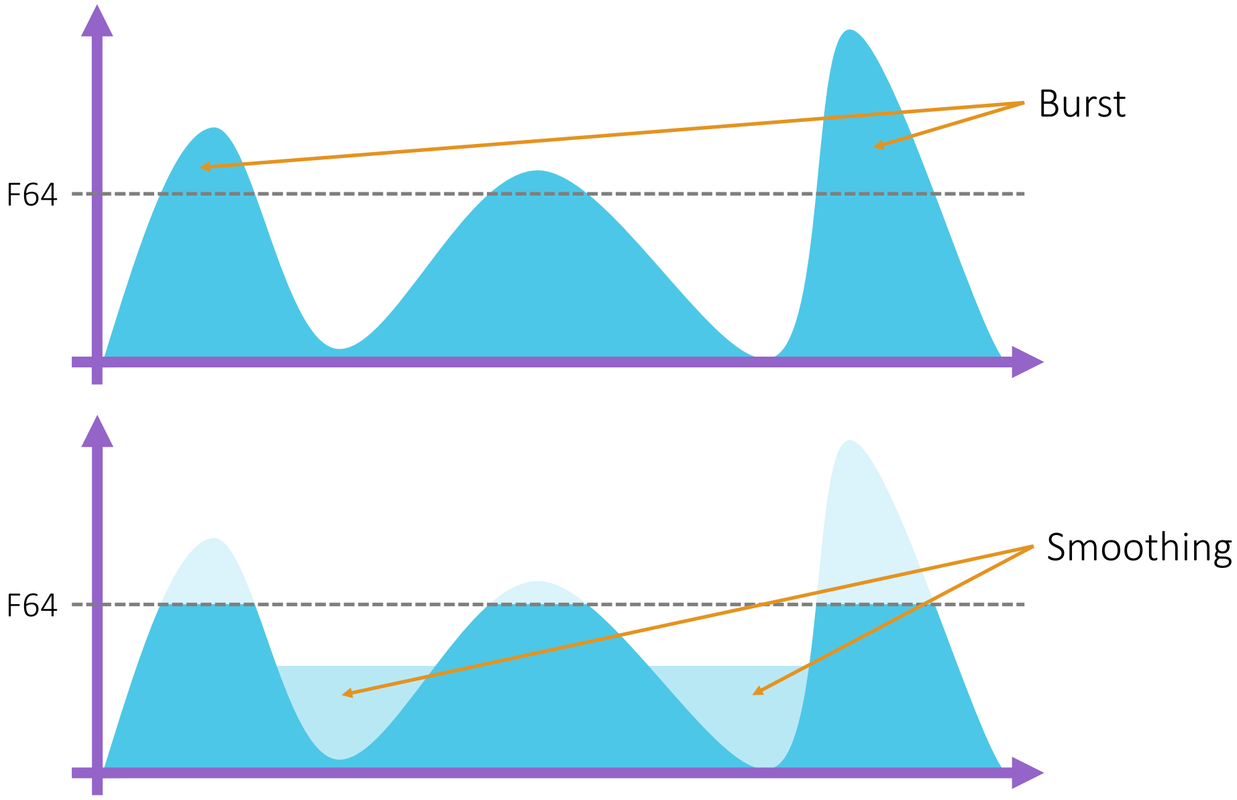
Spark
Concurrency Limits and Queueing

CPU
Compute

SSD
Storage

TBA

Bursting and Smoothing



Reference:
https://blog.fabric.microsoft.com/en-us/blog/capacity-metrics-in-microsoft-fabric
https://learn.microsoft.com/en-us/fabric/enterprise/licenses
https://learn.microsoft.com/en-us/power-bi/enterprise/service-premium-smoothing
https://learn.microsoft.com/en-us/fabric/data-engineering/spark-job-concurrency-and-queueing

Q: How Can Microsoft Fabric Have an Impact on Your Business?

A:

1. Simplifying Compute Consumption & Running Costs
2. Accelerating Time to Insight

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2. Accelerating Time to Insight

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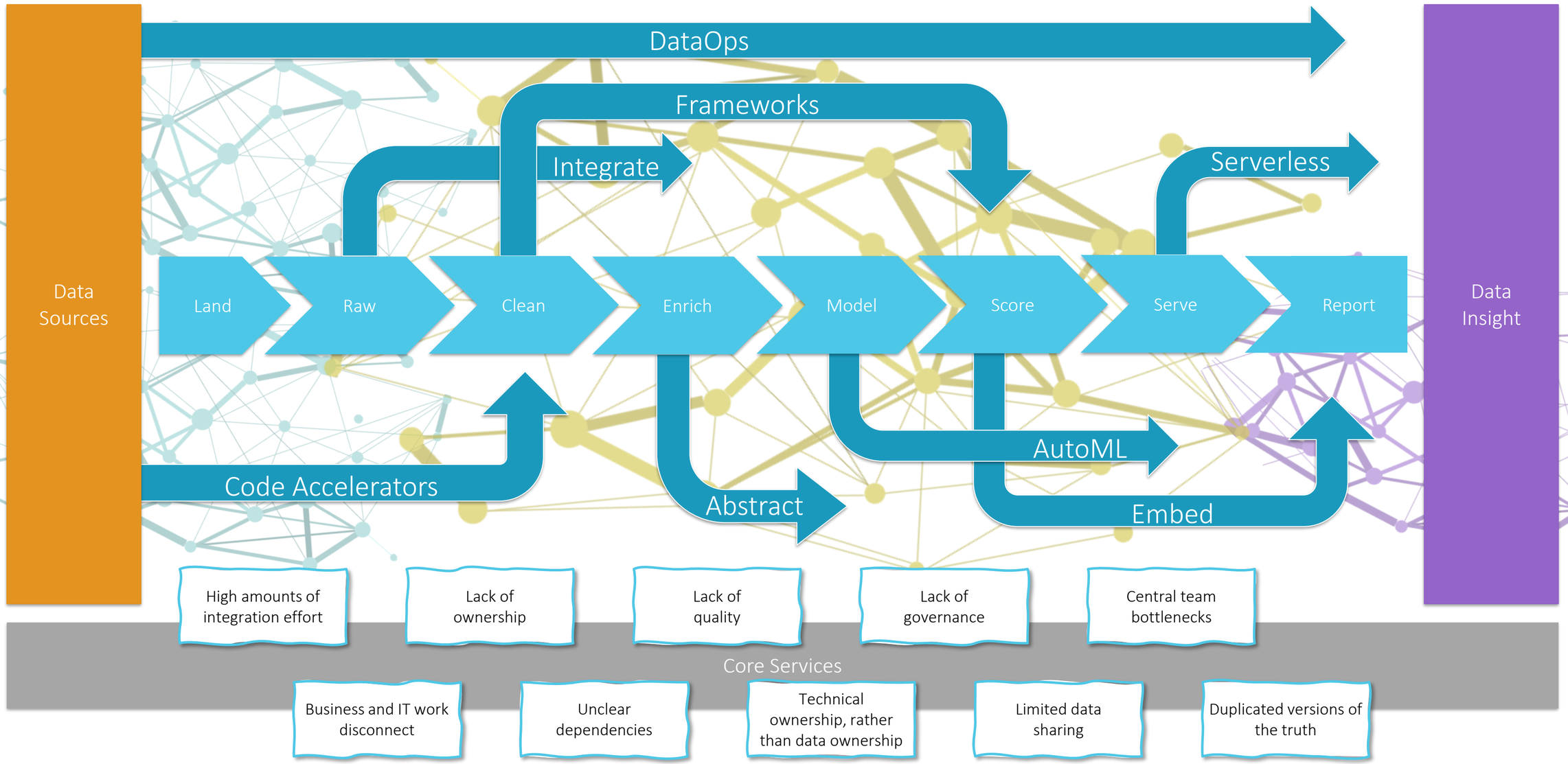
2. ~~Accelerating~~ Time to Insight



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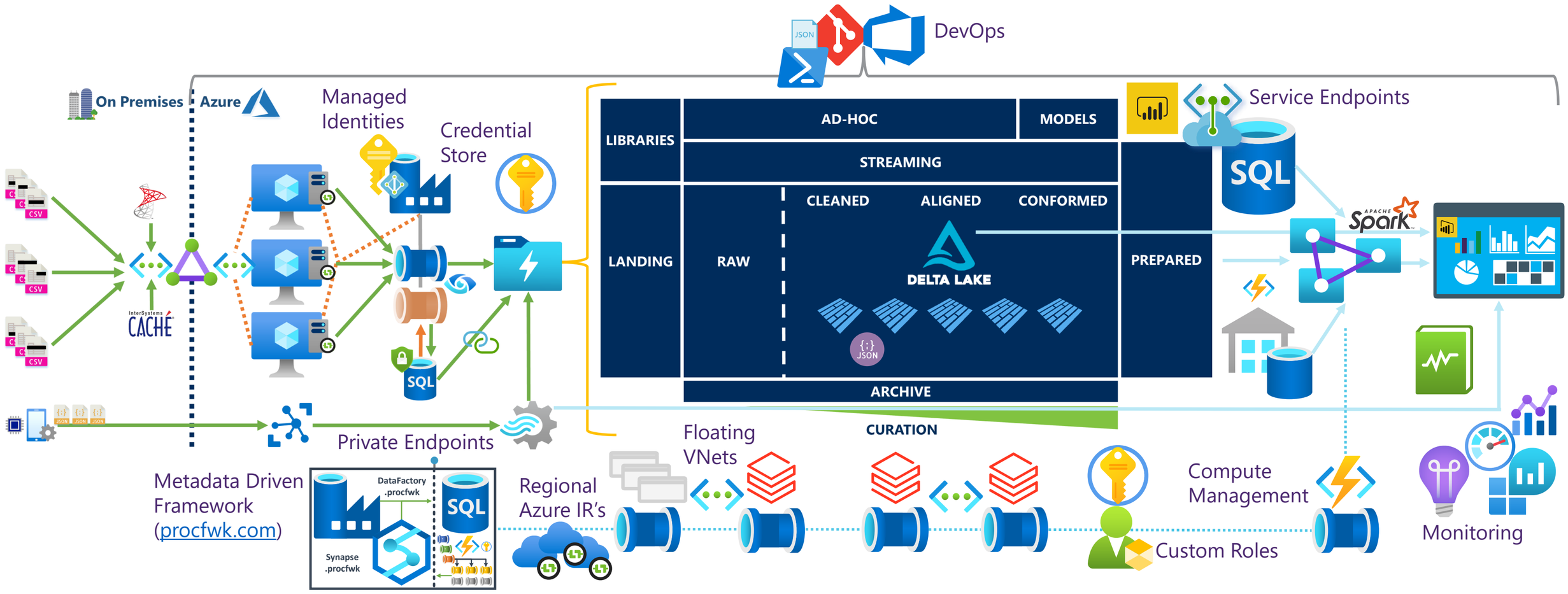
2. ~~Accelerating~~ Time to Insight



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sqlbits YouTube Building an Azure Data Analytics Platform End-to-End
https://www.youtube.com/watch?v=Y9EDvBKNVtU
* Recorded 18th March 2023

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2. Accelerating Time to Insight

Data Source

Ingestion

Store

Expose

Reference: *https://learn.microsoft.com/en-us/fabric/onelake/create-adls-shortcut*

Shortcut Enabled

Shortcuts

Reference: *https://blog.fabric.microsoft.com/en-us/blog/introducing-mirroring-in-microsoft-fabric/*

Structured / Unstructured

Pipelines & Dataflows

Reference: *https://learn.microsoft.com/en-us/power-bi/enterprise/directlake-overview*

Lakehouse(s)

PBI

Lake Warehouse

Transform

Notebooks & Dataflows

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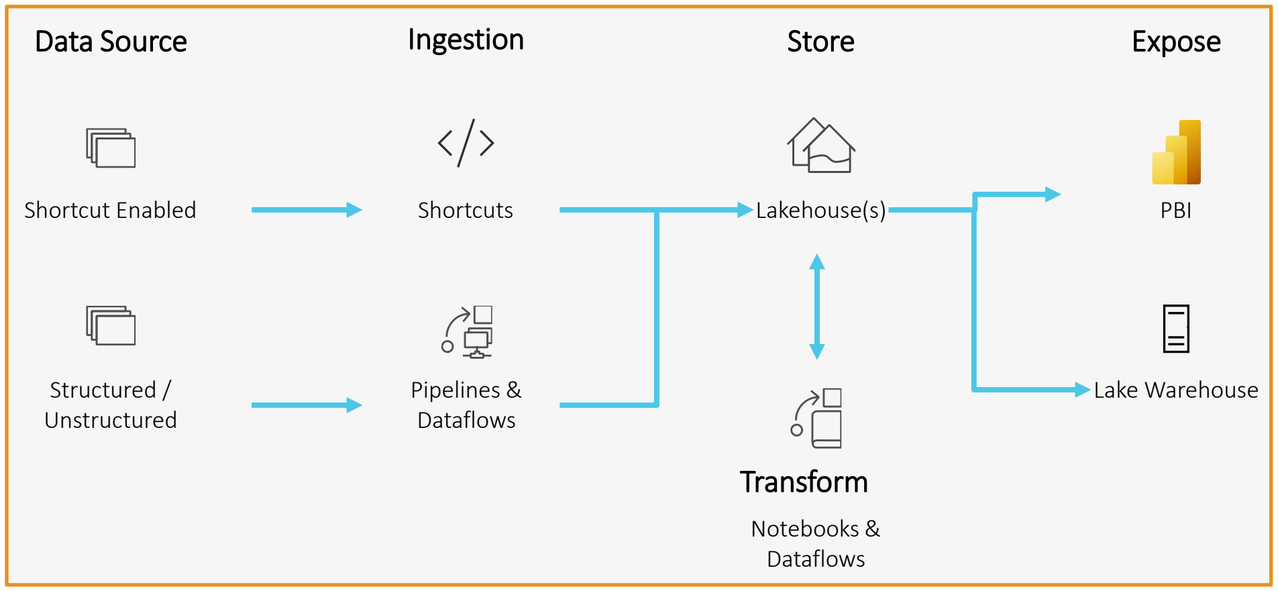
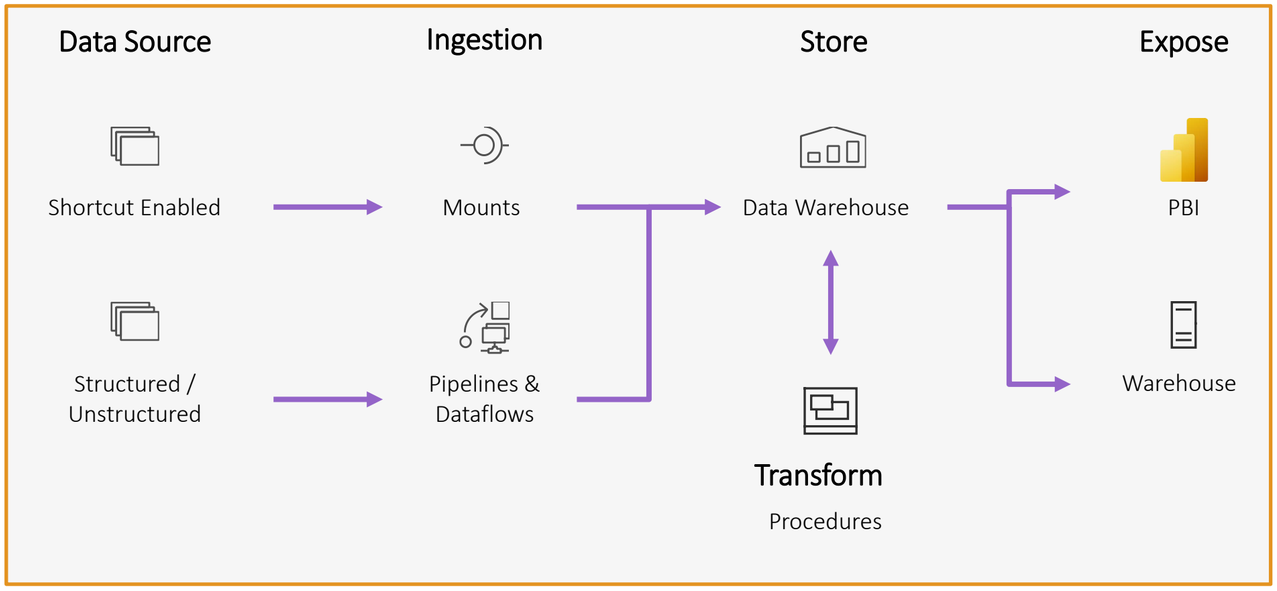
Microsoft Fabric – ‘Happy Paths’ (Patterns)

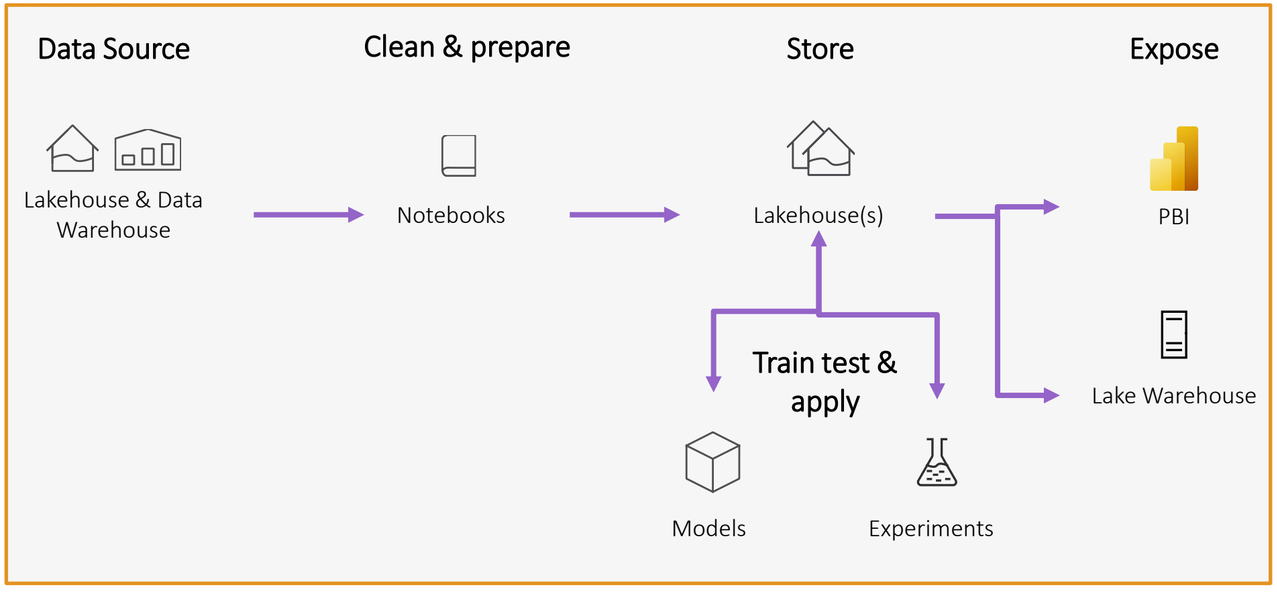
Lakehouse



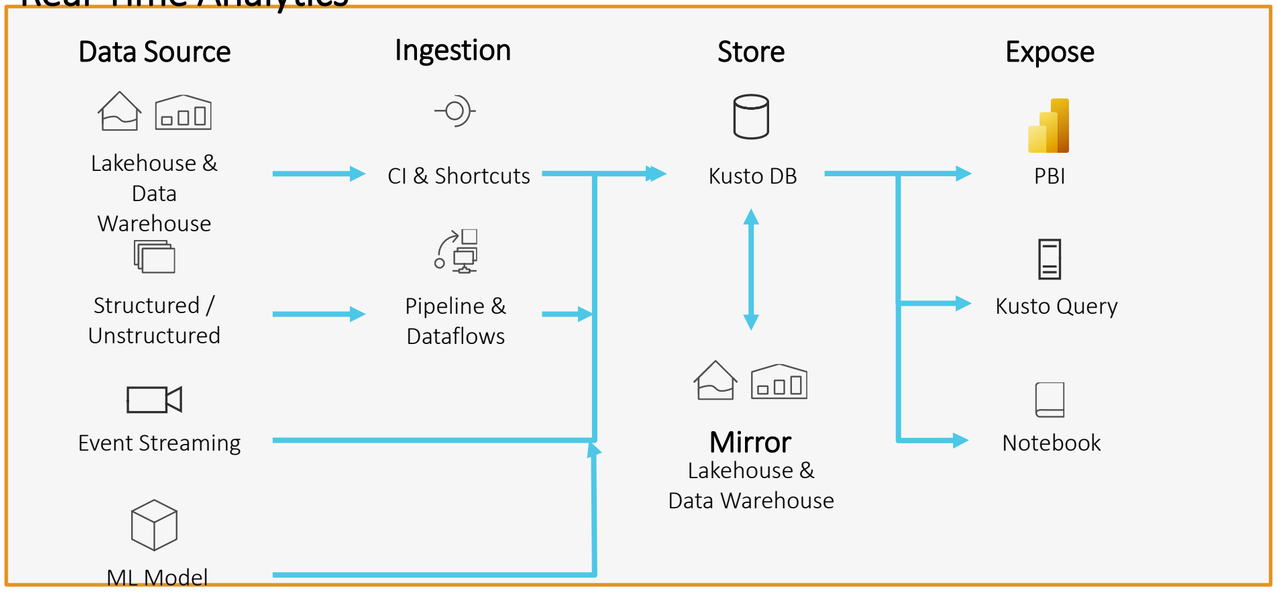
Data Warehouse



Data Science



Real-Time Analytics



Q: How Can Microsoft Fabric Have an Impact on Your Business?

A:

1. Simplifying Compute Consumption & Running Costs
2. Accelerating Time to Insight
3. Unified Tooling – Avoiding Complex Infrastructure

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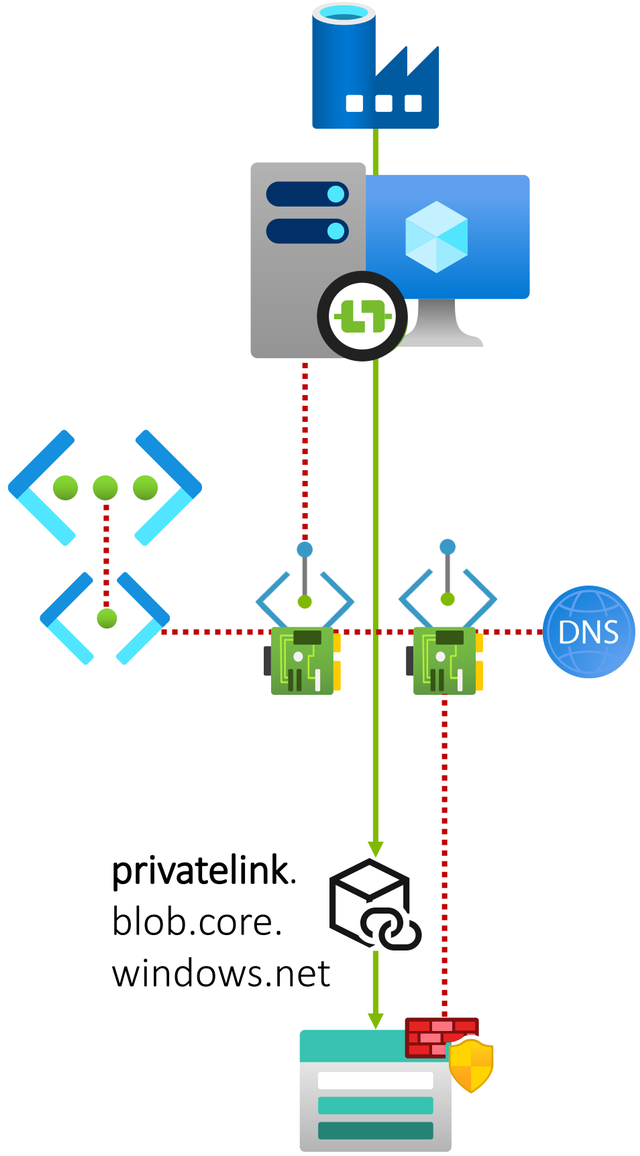
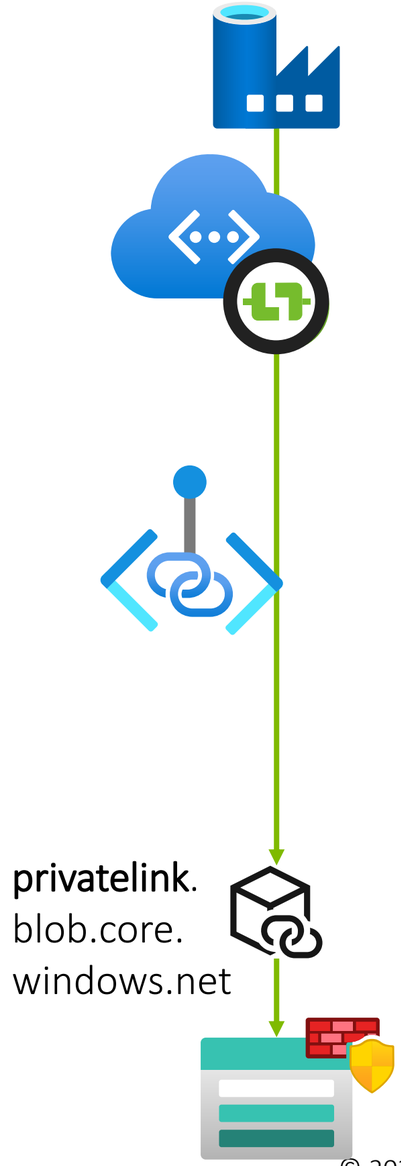
3. Unified Tooling – Avoiding Complex Infrastructure





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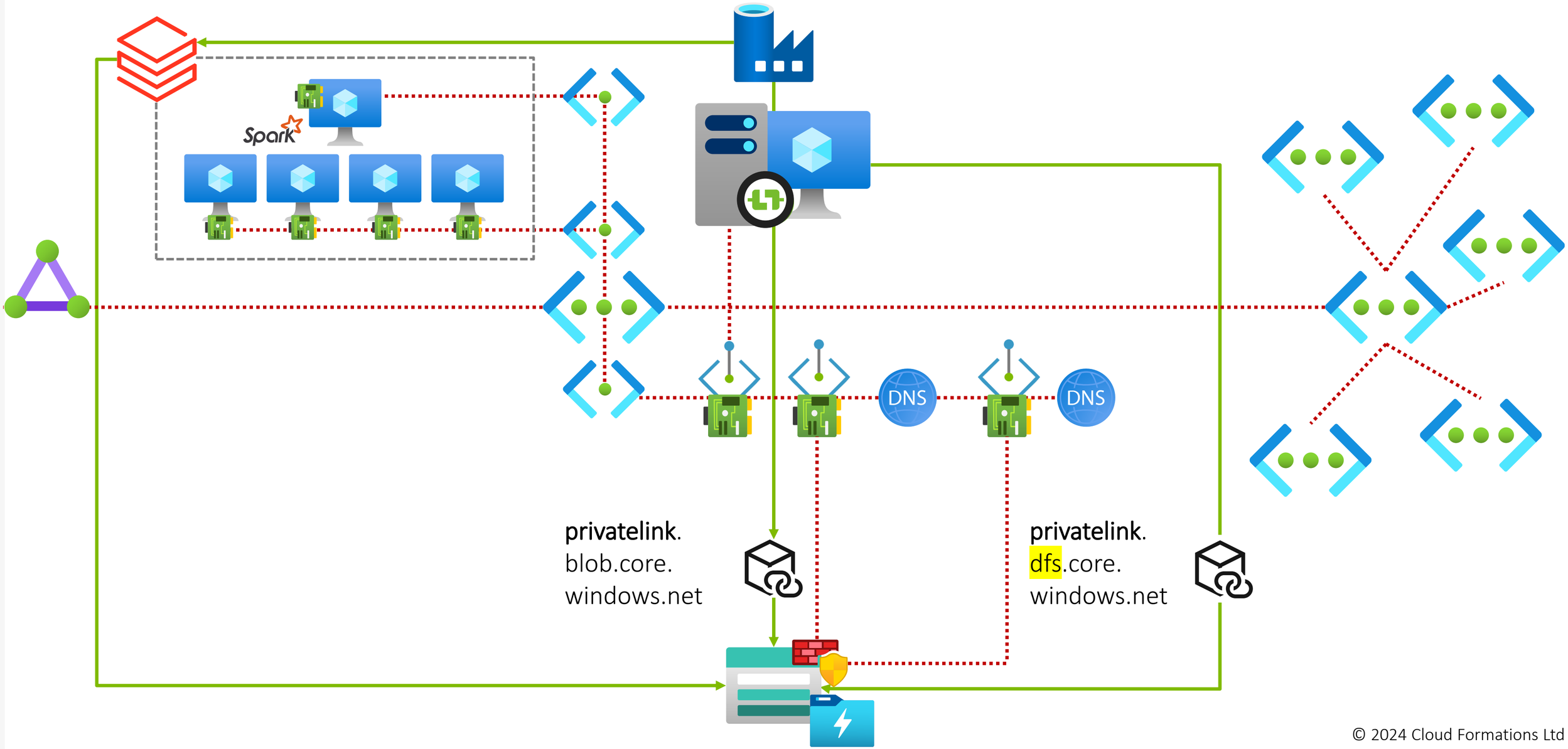
3. Unified Tooling – Avoiding Complex Infrastructure



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3. Unified Tooling – Avoiding Complex Infrastructure

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- Data Integration
- Data Engineering
- Data Warehouse
- Data Science
- Real-time Analytics
- Business Intelligence
- Data Activator
- One Lake

Self-Hosted	Infra as a Service (**IaaS**)	Platform as a Service (**PaaS**)	Software as a Service (**SaaS**)
Applications	Applications	Applications	Applications
Data	Data	Data	Data
Runtime	Runtime	Runtime	Runtime
Middleware	Middleware	Middleware	Middleware
Operating System	Operating System	Operating System	Operating System
Virtualization	Virtualization	Virtualization	Virtualization
Servers	Servers	Servers	Servers
Storage	Storage	Storage	Storage
Networking	Networking	Networking	Networking

Fabric as a Service (**FaaS**)

Mesh as a Service (**MaaS**)

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Q: How Can Microsoft Fabric Have an Impact on Your Business?

A:

1. Simplifying Compute Consumption & Running Costs
2. Accelerating Time to Insight
3. Unified Tooling – Avoiding Complex Infrastructure
4. Empowering Business Users

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4. Empowering Business Users

Data Integration

Data Engineering

Data Warehouse

Data Science

Real-time Analytics

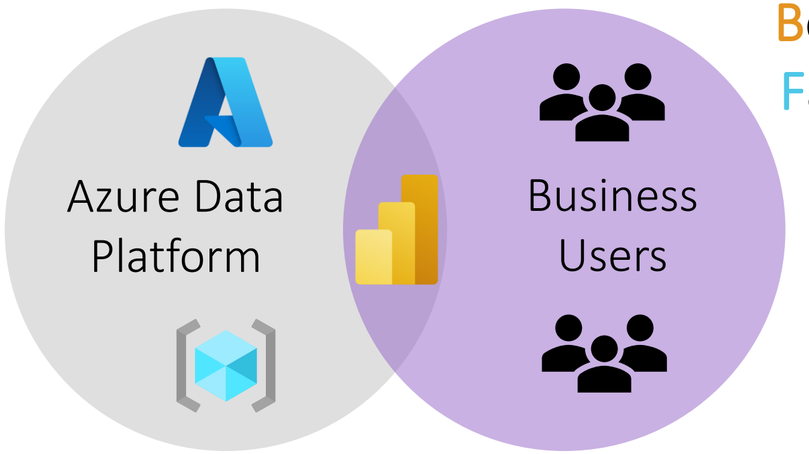
Business Intelligence

Data Activator

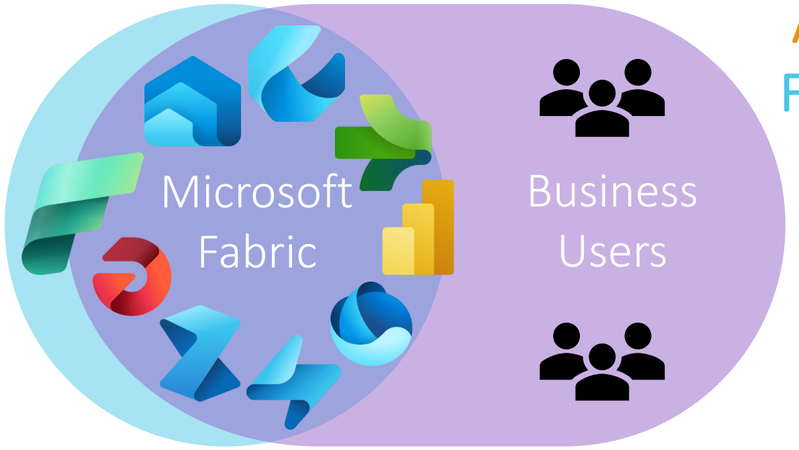
One Lake

Workspaces

https://app.powerbi.com



Before Fabric



After Fabric

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4. Empowering Business Users

Data Integration

Data Engineering

Data Warehouse

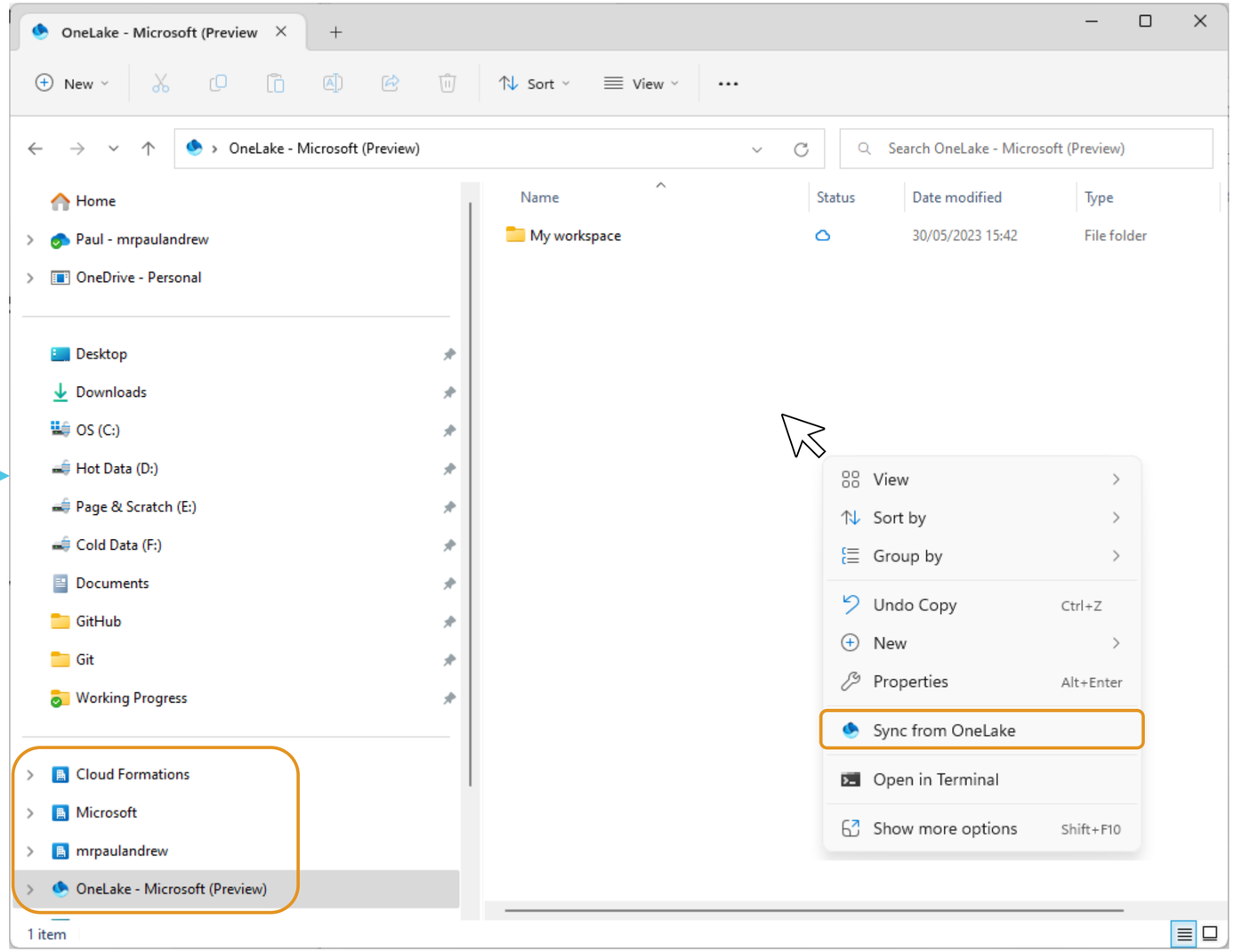
Data Science

Real-time Analytics

Business Intelligence

Data Activator

One Lake



Reference: https://learn.microsoft.com/en-us/fabric/onelake/onelake-file-explorer

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A:

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4. Empowering Business Users
5. Driving Innovation

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5. Driving Innovation – Improving Productivity

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- Data Integration
- Data Engineering
- Data Warehouse
- Data Science
- Real-time Analytics
- Business Intelligence
- Data Activator
- One Lake

"Show me the top 10 most profitable products sold in the last 6 months by category and region."

"Give me a summary of my meetings today."

"Draft an announcement ready for my next event."

"Write a SQL script to aggregate my sales data."

"Create a DAX measure for the average numbers of customers that subscribe to my website per week."

"Build a dashboard for all sales this month with visuals showing a breakdown by product owner."

WIKIPEDIA
The Free Encyclopedia

Create account Log in

Microsoft 365 Copilot

10 languages

Article Talk Read Edit View history Tools

From Wikipedia, the free encyclopedia

Microsoft 365 Copilot is an artificial intelligence assistant feature for Microsoft 365 applications and services.[1][2][3] Announced by Microsoft on March 16, 2023, the tool builds on OpenAI's advanced GPT-4 large language models (LLMs) and incorporates Microsoft Graph in order to convert user text input into content in Microsoft 365 apps, such as Word, Excel, PowerPoint, Outlook, and Teams.[1] Copilot is being marketed with a focus on productivity for its users, with 20 initial testers as of March 16, 2023.[1][4] In May 2023, Microsoft expanded access to 600 customers willing to pay for early access, with the office apps[5] and services getting new Copilot features.[6] Although there are public concerns about the chatbot, including hallucinations and racial or gender bias, experts believe that Copilot may change the way that Microsoft users work and collaborate.[7] Microsoft announced during the Build 2023 conference that it is adding the AI assistant Copilot to Windows 11. The Windows Copilot service is directly integrated with Windows 11 and users can access it through the taskbar.[8]

Microsoft 365 Copilot

Developer(s)	Microsoft
Type	Chatbot
License	Proprietary

Reference: https://powerbi.microsoft.com/en-us/blog/introducing-microsoft-fabric-and-copilot-in-microsoft-power-bi/

https://en.wikipedia.org/wiki/Microsoft_365_Copilot

https://blogs.microsoft.com/blog/2023/03/16/introducing-microsoft-365-copilot-your-copilot-for-work/

@BenniDeJagere

Senior Program Manager Fabric CAT

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1. Simplifying Compute Consumption & Running Costs
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4. Empowering Business Users
5. Driving Innovation
6. Improving Governance

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6. Improving Governance – One Security & Admin

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- Data Integration
- Data Engineering
- Data Warehouse
- Data Science
- Real-time Analytics
- Business Intelligence
- Data Activator
- One Lake

Compute

Storage

Fabric Admin Portal

Administration
Monitoring
Security
Compliance
Governance

Purview

Reference: https://www.youtube.com/watch?v=eBuz_hMuyAw
https://learn.microsoft.com/en-us/fabric/onelake/onelake-security

Endorsement of data assets by data owners:

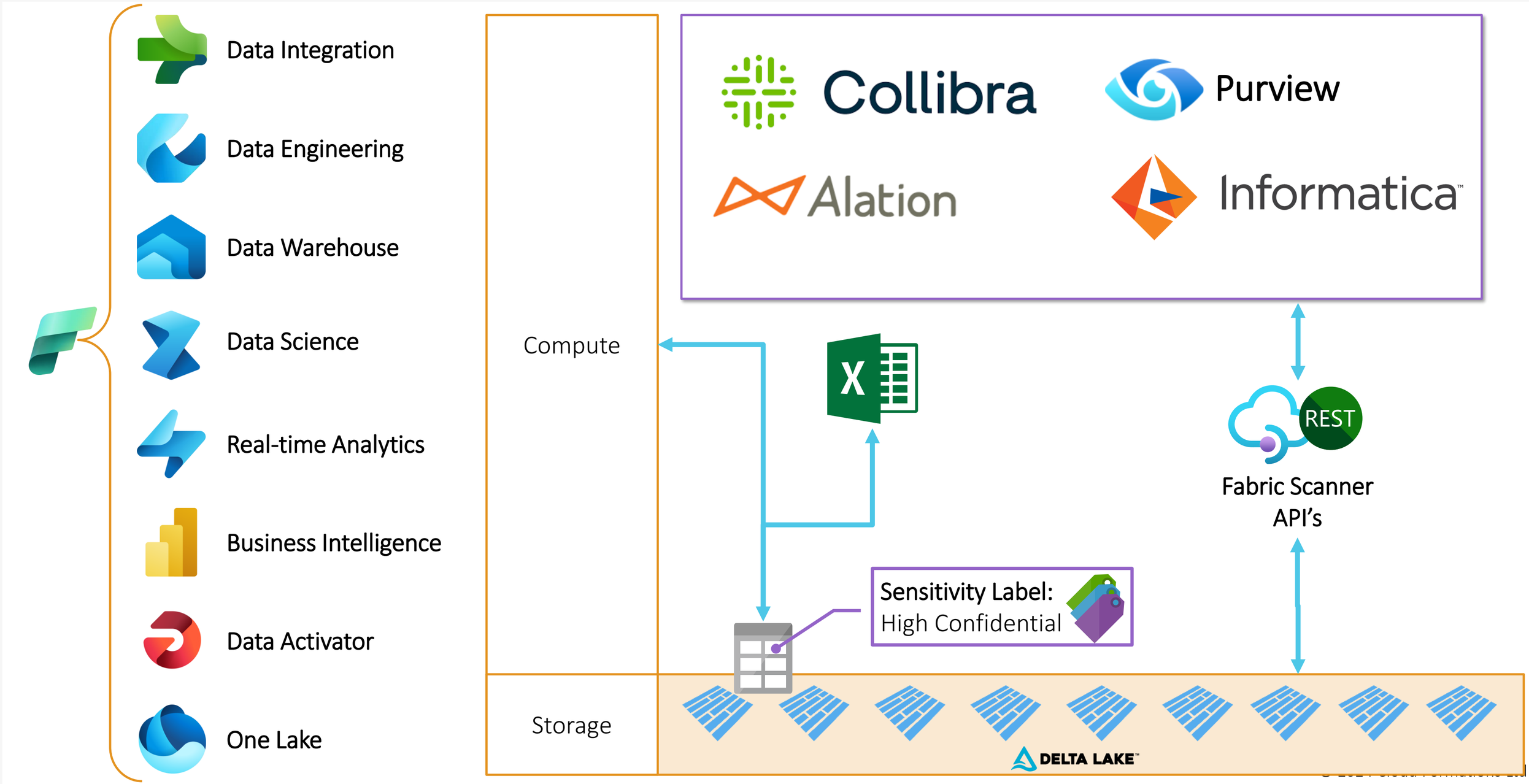
- Certified
- Promoted

Lineage baked in.

One Security

DELTA LAKE

6. Improving Governance – Sensitivity & Tooling



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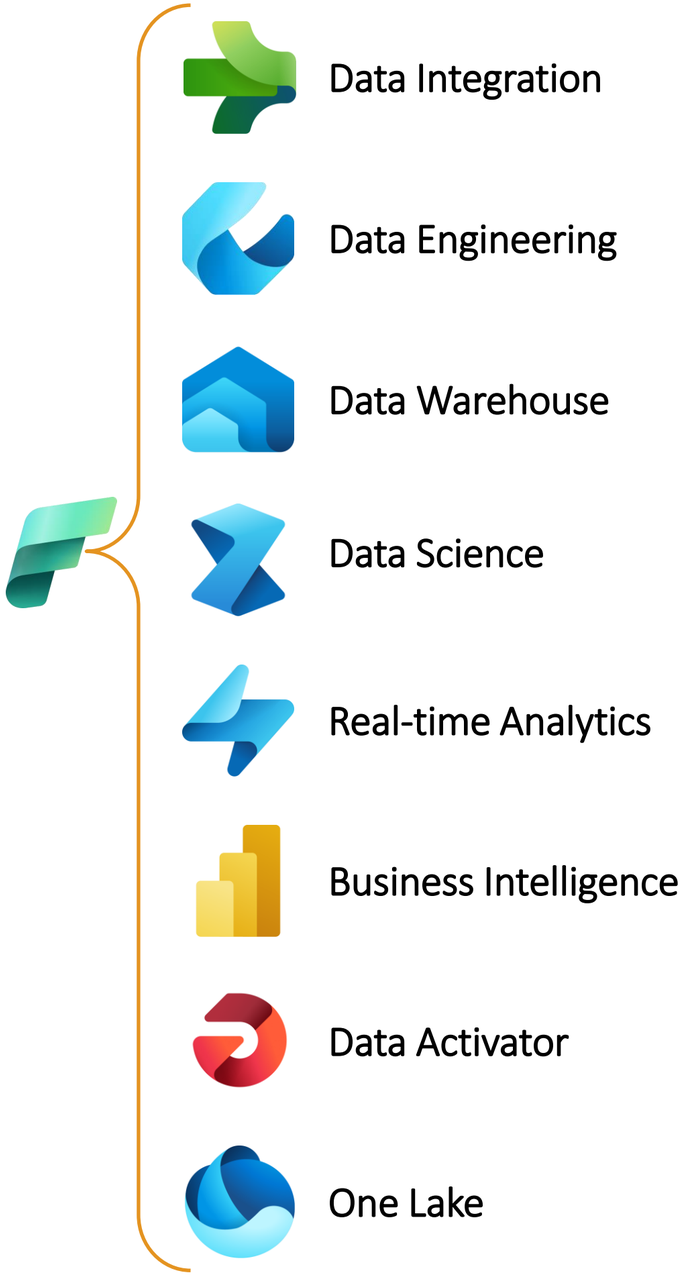
6. Improving Governance – Domains



Compute

Storage

…. To meet this challenge, organizations are shifting from traditional IT centric data architectures, where the data is governed and managed centrally, to more federated models organized according to business needs. This federated data architecture is called data mesh. A data mesh is a decentralized data architecture that organizes data by specific business domains, such as marketing, sales, human resources, etc.

What are Fabric domains?

In Fabric, a domain is a way of logically grouping together all the data in an organization that is relevant to a particular area or field. ….

Reference: https://learn.microsoft.com/en-us/fabric/governance/domains

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6. Improving Governance – Domains

- Data Integration
- Data Engineering
- Data Warehouse
- Data Science
- Real-time Analytics
- Business Intelligence
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- One Lake

Compute

Storage

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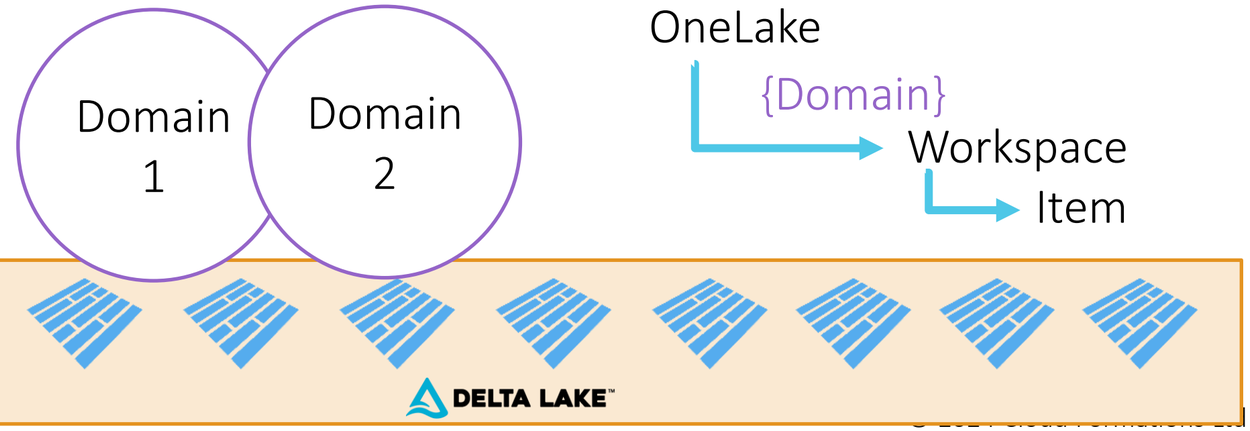

Q: How Can Microsoft Fabric Have an Impact on Your Business?

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In Summary

But:

Full Source Control.
Private Network Connectivity.
Remote Source Data Ingestion.
Key Vault Integration.
One Security.
Comprehensive Monitoring.

build.microsoft.com
21–23 May
Seattle & Online

//build/

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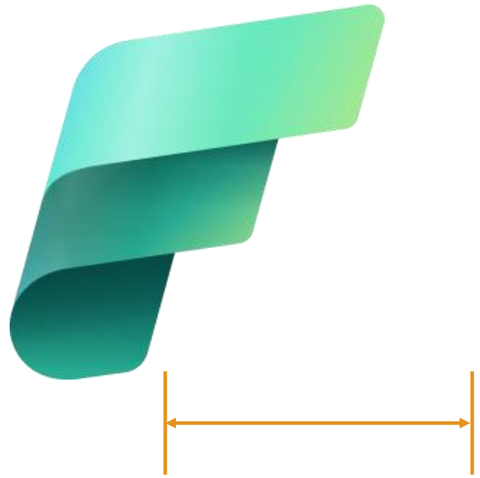

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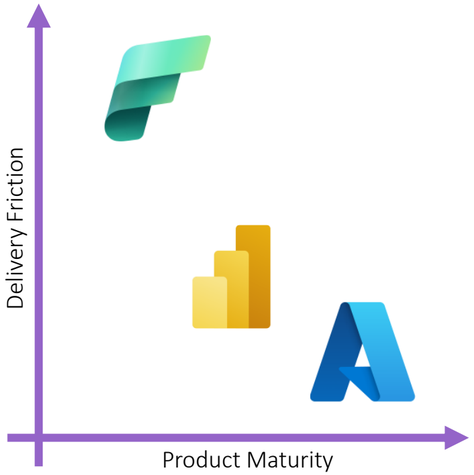
In Summary

But:



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Our Points of View

Thought leadership and technical content informed by decades of industry experience. Digested as sharable single page views.

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How Can Microsoft Fabric Have An Impact On Your Business

Answer: Simplified Running Costs. Accelerated Time to Insight. Unified Tooling- Avoiding Complex Infrastructure Builds. Empowered Business Users. Driving Innovation. Improved Governance.

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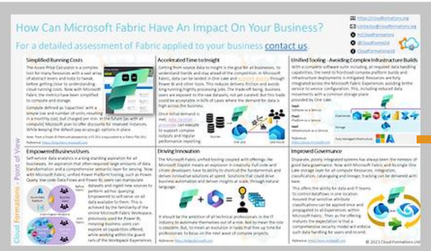

An Evolution of Cloud Technology to Microsoft Fabric

Having an understanding of how Microsoft has evolved its data product offerings over the last decade can greatly inform the technical direction and implementation of these resources for your business.

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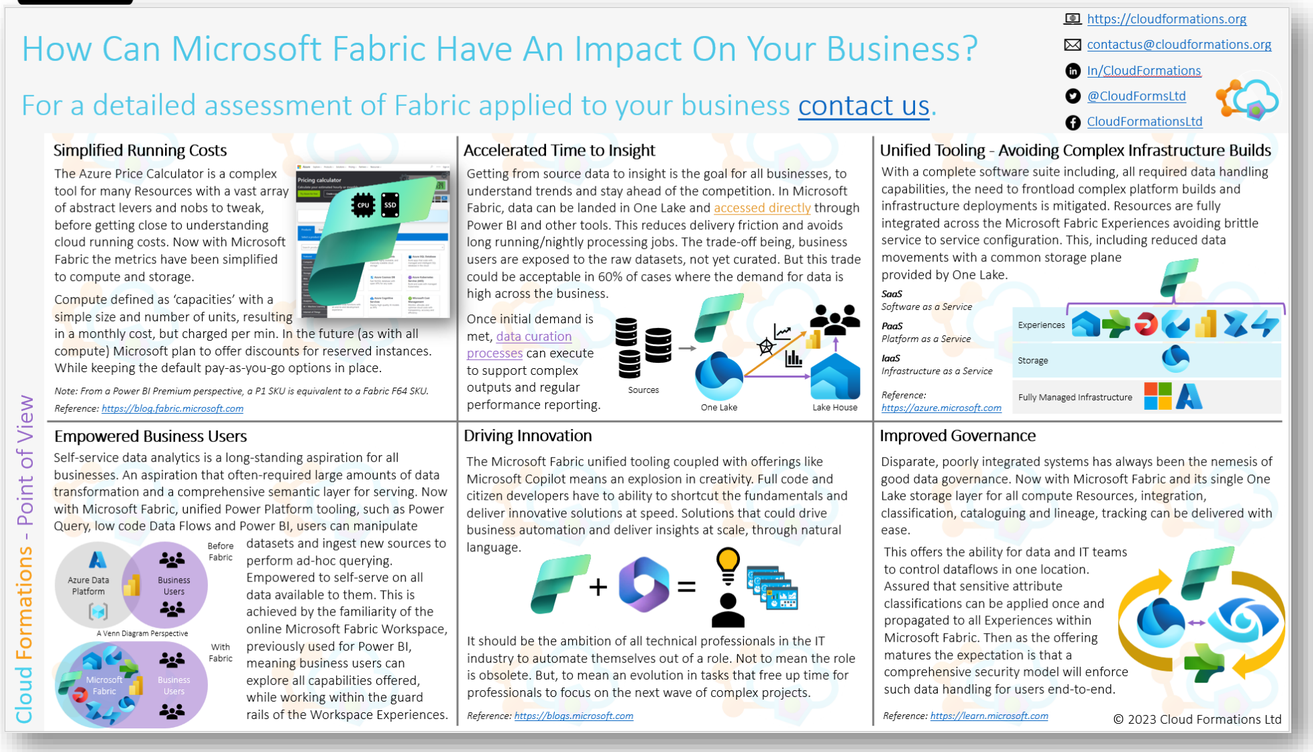

How Can Microsoft Fabric Have An Impact On Your Business?

For a detailed assessment of Fabric applied to your business contact us.

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contactus@cloudformations.org
In/CloudFormations
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CloudFormationsLtd

Cloud Formations - Point of View

Simplified Running Costs

The Azure Price Calculator is a complex tool for many Resources with a vast array of abstract levers and nobs to tweak, before getting close to understanding cloud running costs. Now with Microsoft Fabric the metrics have been simplified to compute and storage.

Compute defined as 'capacities' with a simple size and number of units, resulting in a monthly cost, but charged per min. In the future (as with all compute) Microsoft plan to offer discounts for reserved instances. While keeping the default pay-as-you-go options in place.

Note: From a Power BI Premium perspective, a P1 SKU is equivalent to a Fabric F64 SKU.

Reference: https://blog.fabric.microsoft.com

Accelerated Time to Insight

Getting from source data to insight is the goal for all businesses, to understand trends and stay ahead of the competition. In Microsoft Fabric, data can be landed in One Lake and accessed directly through Power BI and other tools. This reduces delivery friction and avoids long running/nightly processing jobs. The trade-off being, business users are exposed to the raw datasets, not yet curated. But this trade could be acceptable in 60% of cases where the demand for data is high across the business.

Once initial demand is met, data curation processes can execute to support complex outputs and regular performance reporting.

Sources One Lake Lake House

Unified Tooling - Avoiding Complex Infrastructure Builds

With a complete software suite including, all required data handling capabilities, the need to frontload complex platform builds and infrastructure deployments is mitigated. Resources are fully integrated across the Microsoft Fabric Experiences avoiding brittle service to service configuration. This, including reduced data movements with a common storage plane provided by One Lake.

SaaS *Software as a Service*
PaaS *Platform as a Service*
IaaS *Infrastructure as a Service*

Experiences Storage Fully Managed Infrastructure

Reference: https://azure.microsoft.com

Empowered Business Users

Self-service data analytics is a long-standing aspiration for all businesses. An aspiration that often-required large amounts of data transformation and a comprehensive semantic layer for serving. Now with Microsoft Fabric, unified Power Platform tooling, such as Power Query, low code Data Flows and Power BI, users can manipulate datasets and ingest new sources to perform ad-hoc querying. Empowered to self-serve on all data available to them. This is achieved by the familiarity of the online Microsoft Fabric Workspace, previously used for Power BI, meaning business users can explore all capabilities offered, while working within the guard rails of the Workspace Experiences.

Azure Data Platform Business Users Before Fabric
A Venn Diagram Perspective
Microsoft Fabric Business Users With Fabric

Driving Innovation

The Microsoft Fabric unified tooling coupled with offerings like Microsoft Copilot means an explosion in creativity. Full code and citizen developers have to ability to shortcut the fundamentals and deliver innovative solutions at speed. Solutions that could drive business automation and deliver insights at scale, through natural language.

It should be the ambition of all technical professionals in the IT industry to automate themselves out of a role. Not to mean the role is obsolete. But, to mean an evolution in tasks that free up time for professionals to focus on the next wave of complex projects.

Reference: https://blogs.microsoft.com

Improved Governance

Disparate, poorly integrated systems has always been the nemesis of good data governance. Now with Microsoft Fabric and its single One Lake storage layer for all compute Resources, integration, classification, cataloguing and lineage, tracking can be delivered with ease.

This offers the ability for data and IT teams to control dataflows in one location. Assured that sensitive attribute classifications can be applied once and propagated to all Experiences within Microsoft Fabric. Then as the offering matures the expectation is that a comprehensive security model will enforce such data handling for users end-to-end.

Reference: https://learn.microsoft.com

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Getting Started With Microsoft Fabric:

What/Why/How

Blog & Register

Thursday 9th May 2024
2pm – 3pm BST

Real world experience and advice on the latest technologies from industry leading data professionals.

Join us online, free to attend.

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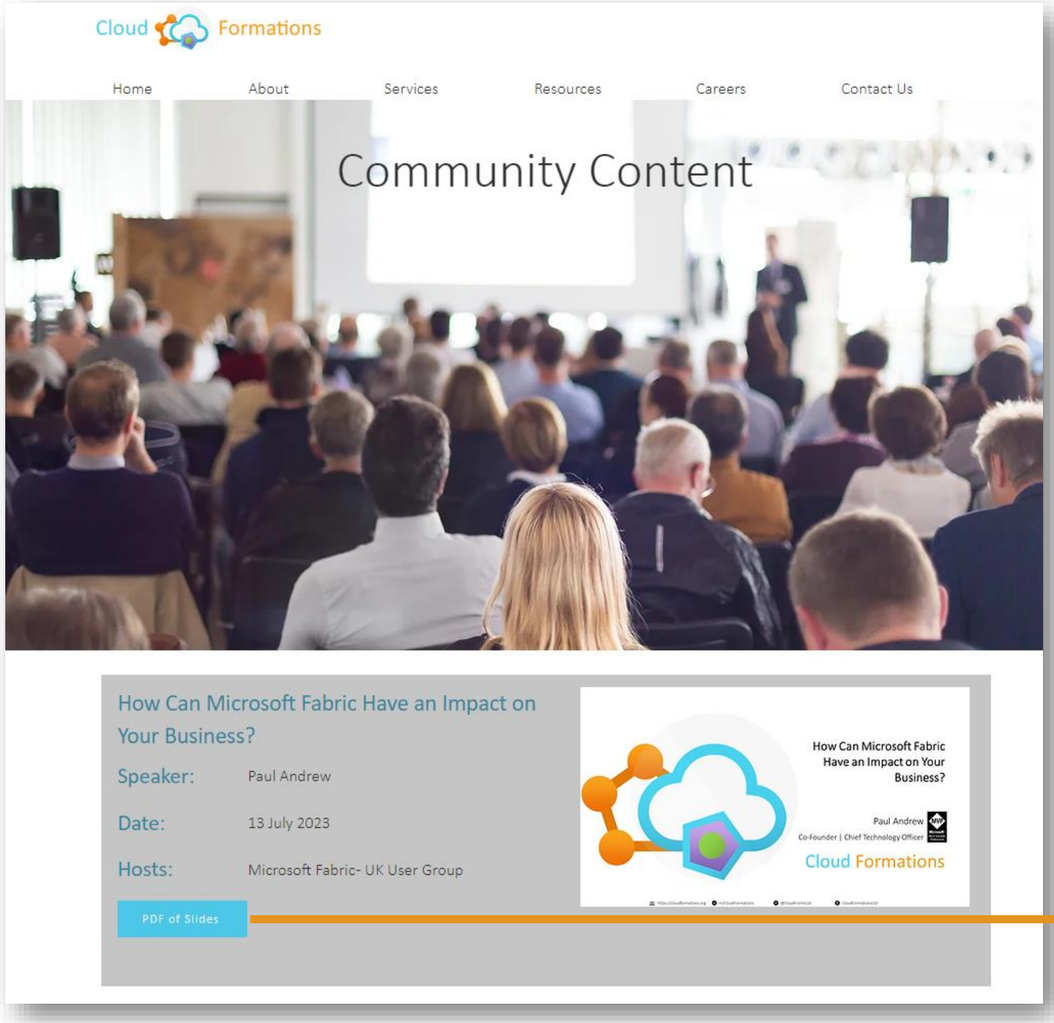

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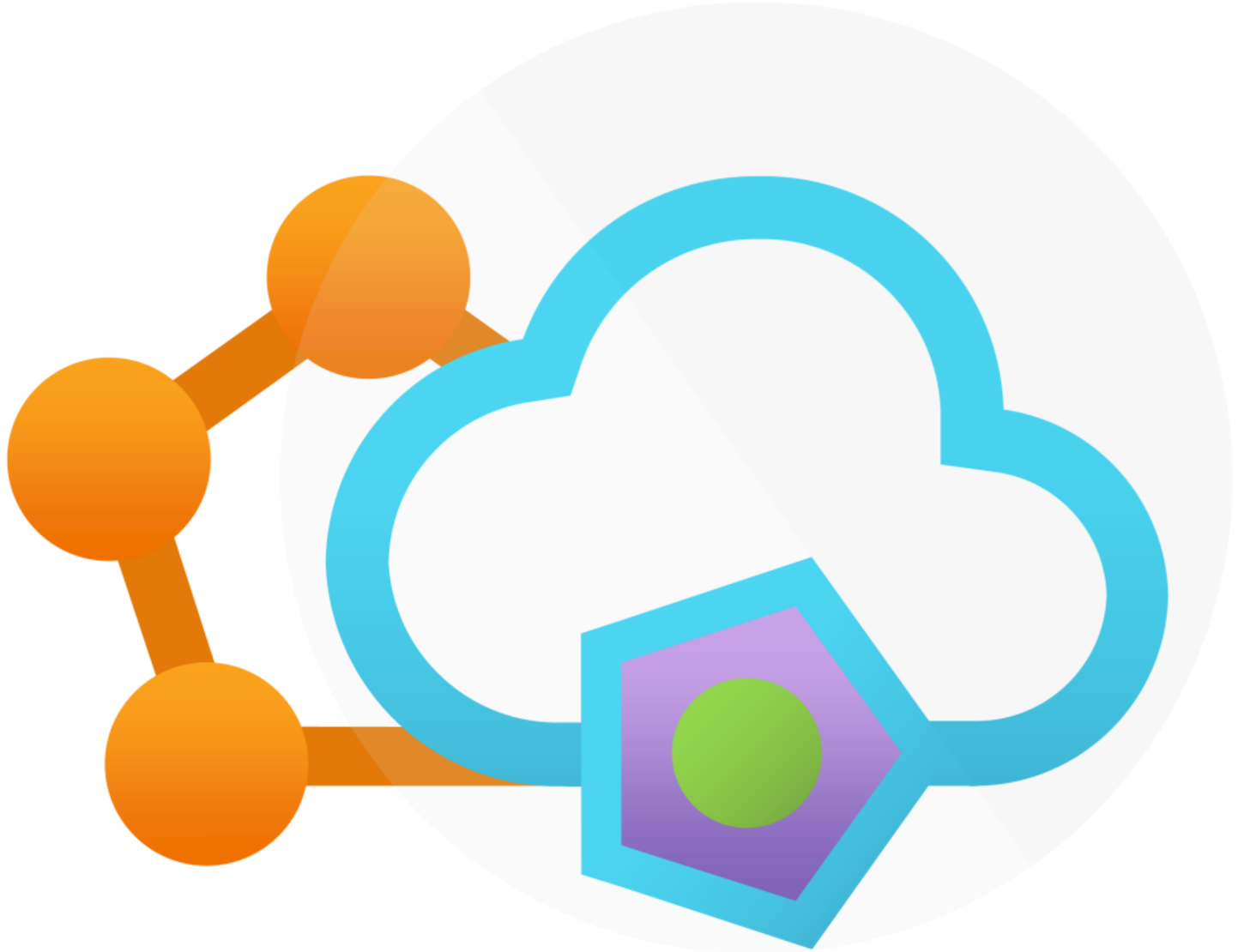

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mrpaulandrew.com

paul@mrpaulandrew.com

In/mrpaulandrew

@mrpaulandrew

https://cloudformations.org

contactus@cloudformations.org

In/CloudFormations

@CloudFormsLtd

CloudFormationsLtd

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