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CPAs | CONSULTANTS | WEALTH ADVISORS

Data for Government:

An Introduction to Data Warehouses

July 25, 2024



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Today's Presenters



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About CLA



CLA Promise

OUR PURPOSE

CLA exists to create opportunities for our clients, our people, and our communities.

OUR PROMISE

We promise to know You and help you.

OUR FAMILY CULTURE

We're one family, working together to create opportunities.

OUR STRATEGIC ADVANTAGES

Deep industry specialization
Seamless, integrated capabilities
Premier resource for private businesses and owners
Inspired careers



Curious, Collaborative, Transparent, Inclusive, Reliable

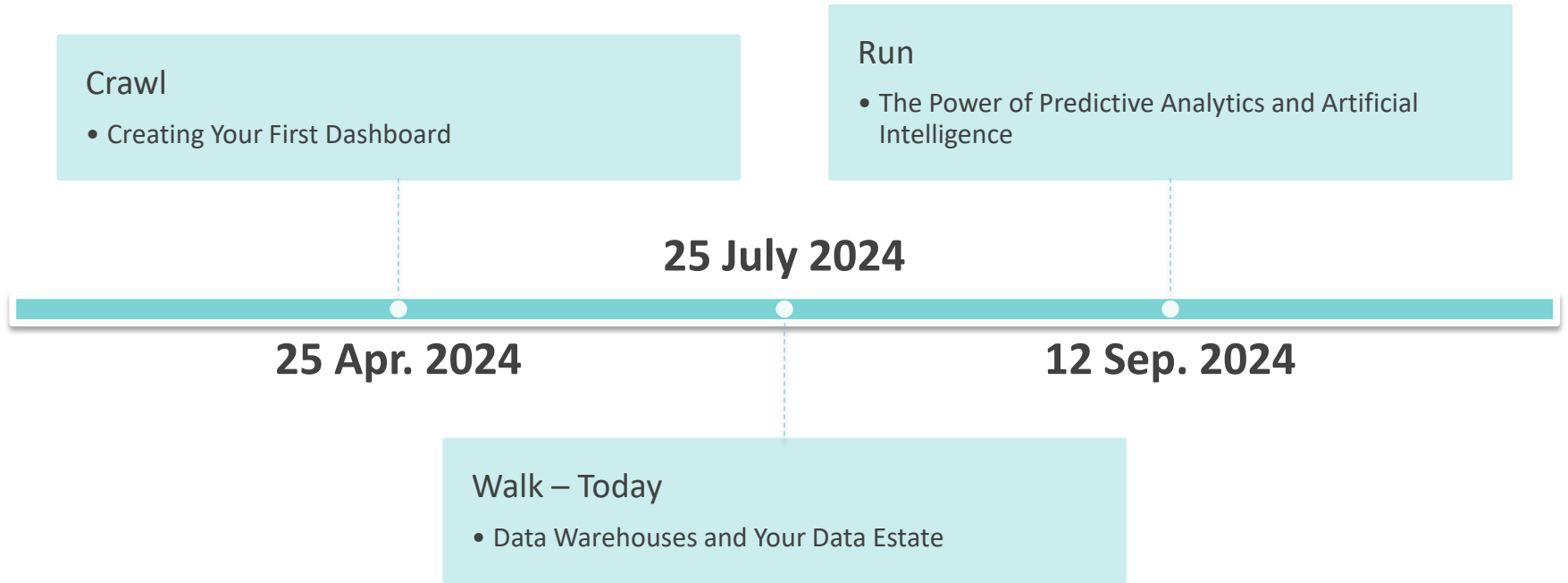


Review | What Is Digital?

- CLA Digital uses data, automation, cyber, and software to meet our clients where they are and help them make data driven decisions.



Data Analytics: Crawl, Walk, Run Series





Review: Crawl Webinar



Client Lifecycle: CLA Digital

Phase 1

No dashboards or manually compiled dashboards
Disconnected data
Abundance of manual processes

Phase 2

Automated dashboard for one or more departments
Analytics supported by data integration and automated workflows

Phase 3

Most departments supported by automated dashboards and self-service BI
Defined sources of truth across enterprise
Exploring machine learning and artificial intelligence for analytics

Phase 4

Integrated systems and solutions supporting advanced analytics
Machine learning and artificial intelligence integral to business decisions

Crawl

Walk

Run



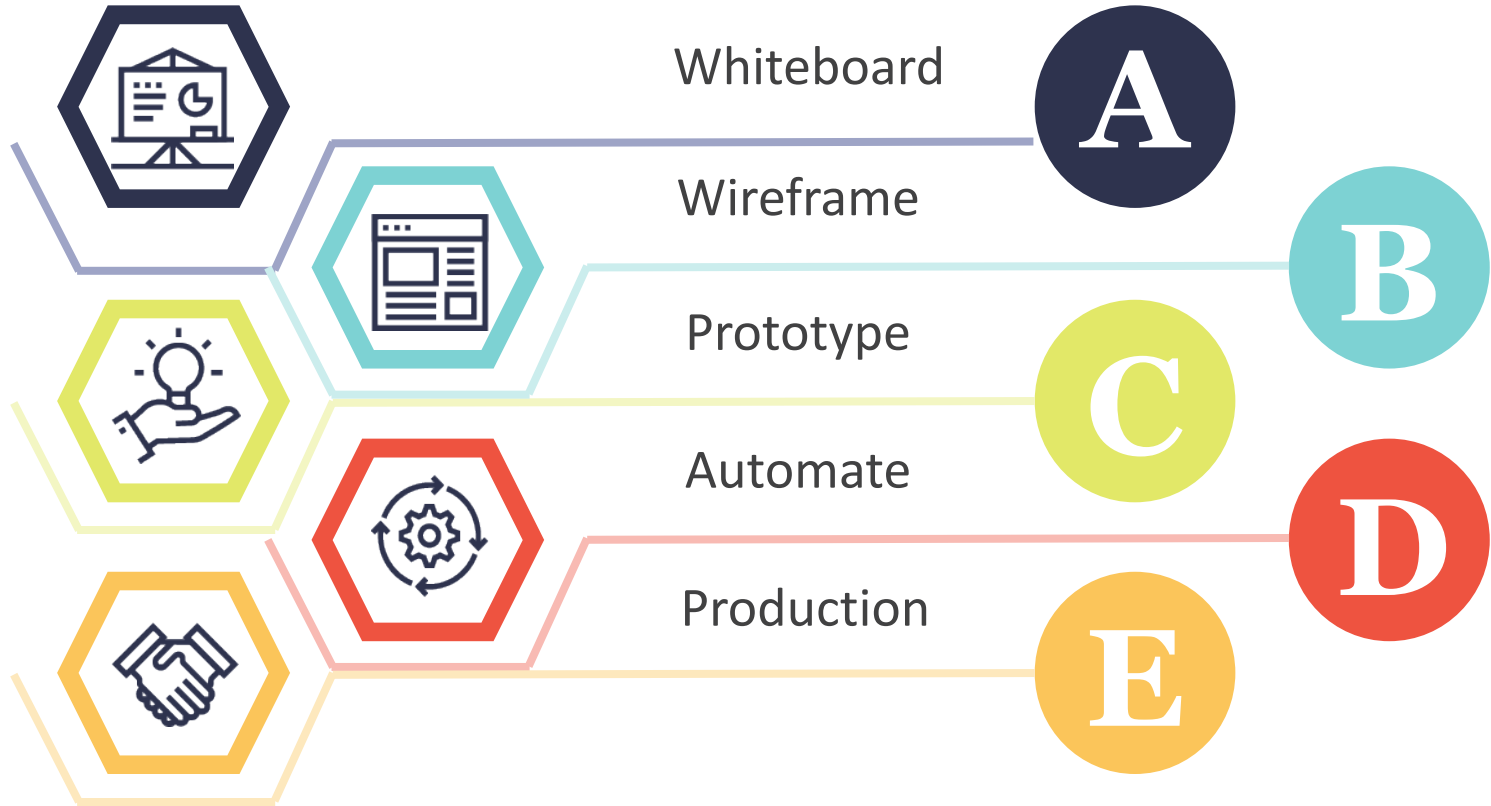
Polling Question

Where on the lifecycle do you see your organization?

- Phase 1: Mostly manual, disconnected systems, not easy to pull data, limited dashboards
- Phase 2: Starting to integrate systems, some dashboards
- Phase 3: Integrated environment, robust dashboarding and reporting, Self Service analytics, using AI for productivity
- Phase 4: Fully Integrated environment, using AI and ML for multiple business decisions
- I'm not sure...



Review: Building Your First Dashboard





Moving From Crawl To Walk

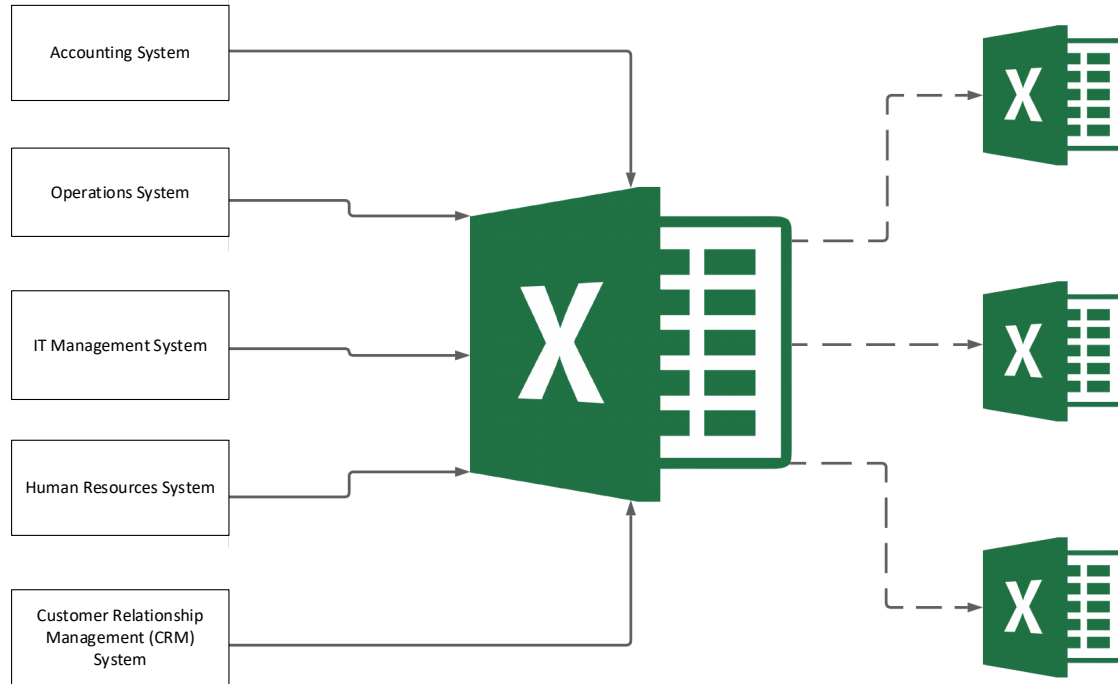


The Challenge We Heard

- Crawl content was informative – but what if my environment is more complicated?
 - Multiple disparate data sources
 - Tying out operational and financial data
 - Thinking about “integrating” but don’t know where to start
- “Even if I wanted to just ‘load’ my data into a dashboard, it’s more complicated than that!”



Example Challenge Diagram



How We Tackle This

- **General Concept:**

We need to bring data into a central place with effective policies so we can organize and analyze it

- **Building Your Data Estate**

- Data storage structures

- **Governing Your Data Estate**

- Data Quality
- Visibility
- Security



Key Structures for Your Data Estate

Data Lake

- Centralized storage of data from multiple sources.
- Reflects how data exists in the source and is often transformed for use in solutions.
- Can host structured, semi-structured, and unstructured data.

Data Warehouse

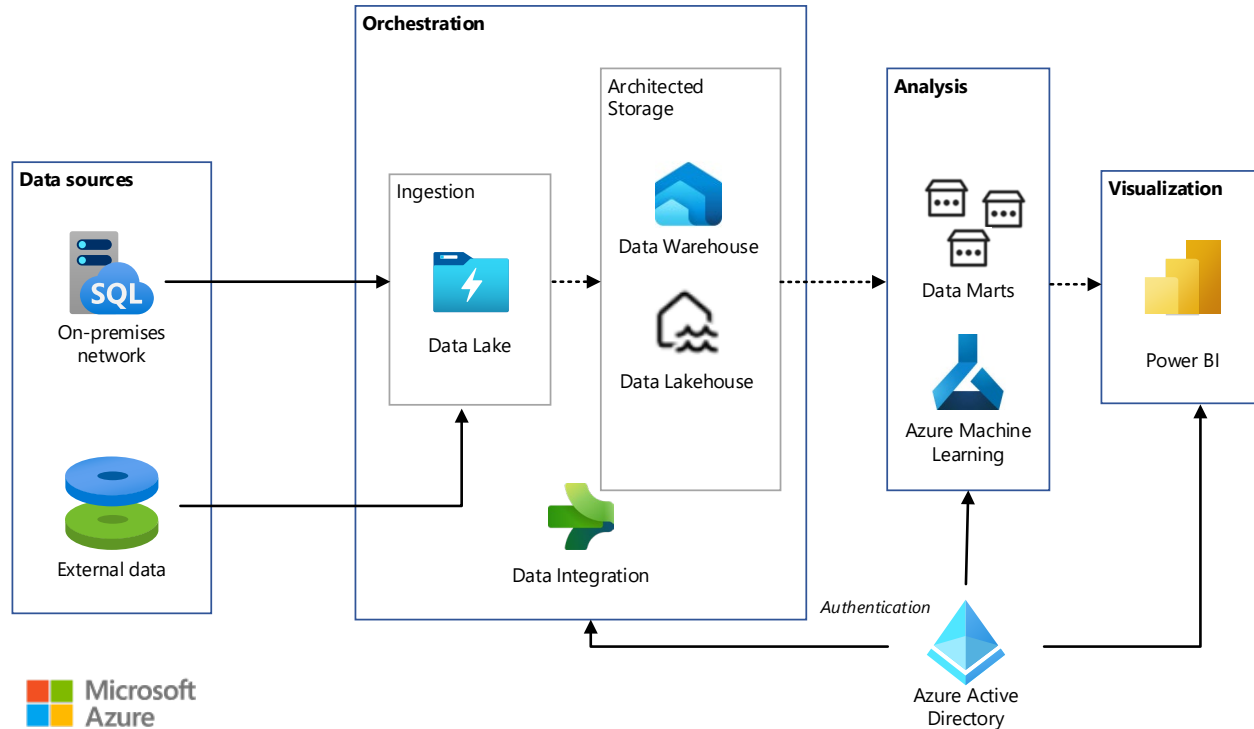
- Centralized database showing accurate picture of key strategic metrics.
- Organized around facts described by dimensions.
- Hosts structured data.

Data Lakehouse

- Takes the best from data lakes & data warehouses.
- Better governance and support for machine learning and artificial intelligence.
- Can host structured, semi-structured, and unstructured data.

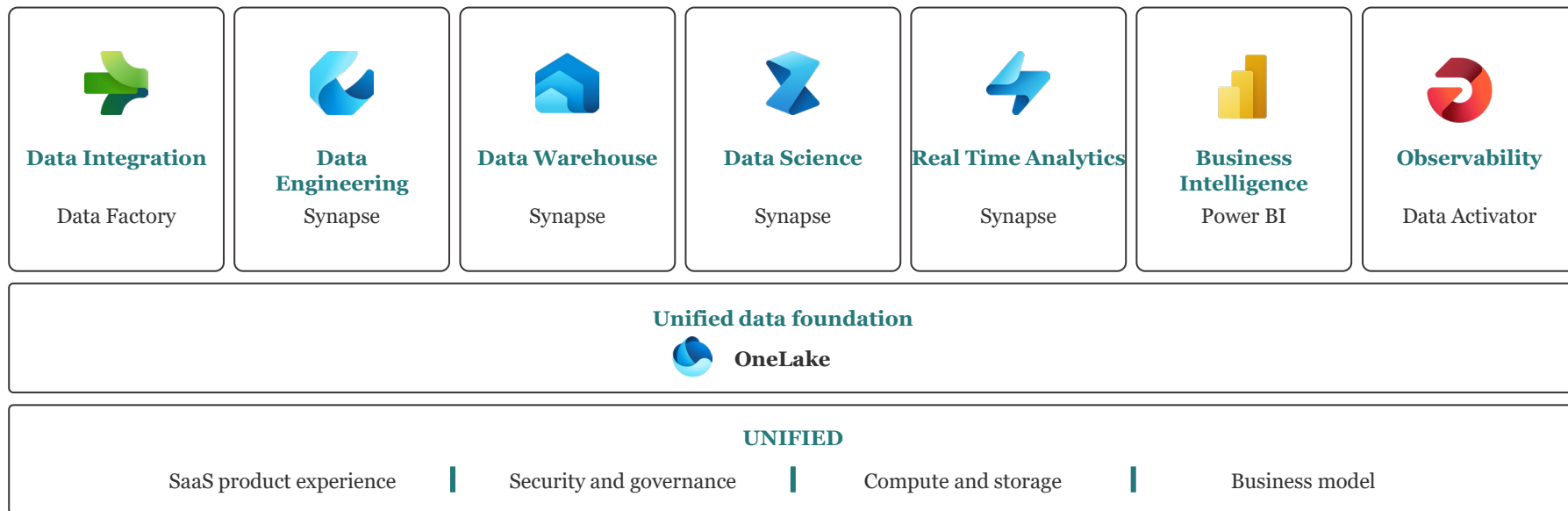


Example Data Estate Topography



Microsoft Fabric

An end-to-end analytics platform that brings together all the data and analytics tools that organizations need to go from the data lake to the business user



Polling Question

Do you have any of the following repositories that support analytics in your data estate?

- We have a data warehouse or data marts.
- We have a series of network folders/drives.
- We have SharePoint.
- I'm not sure.

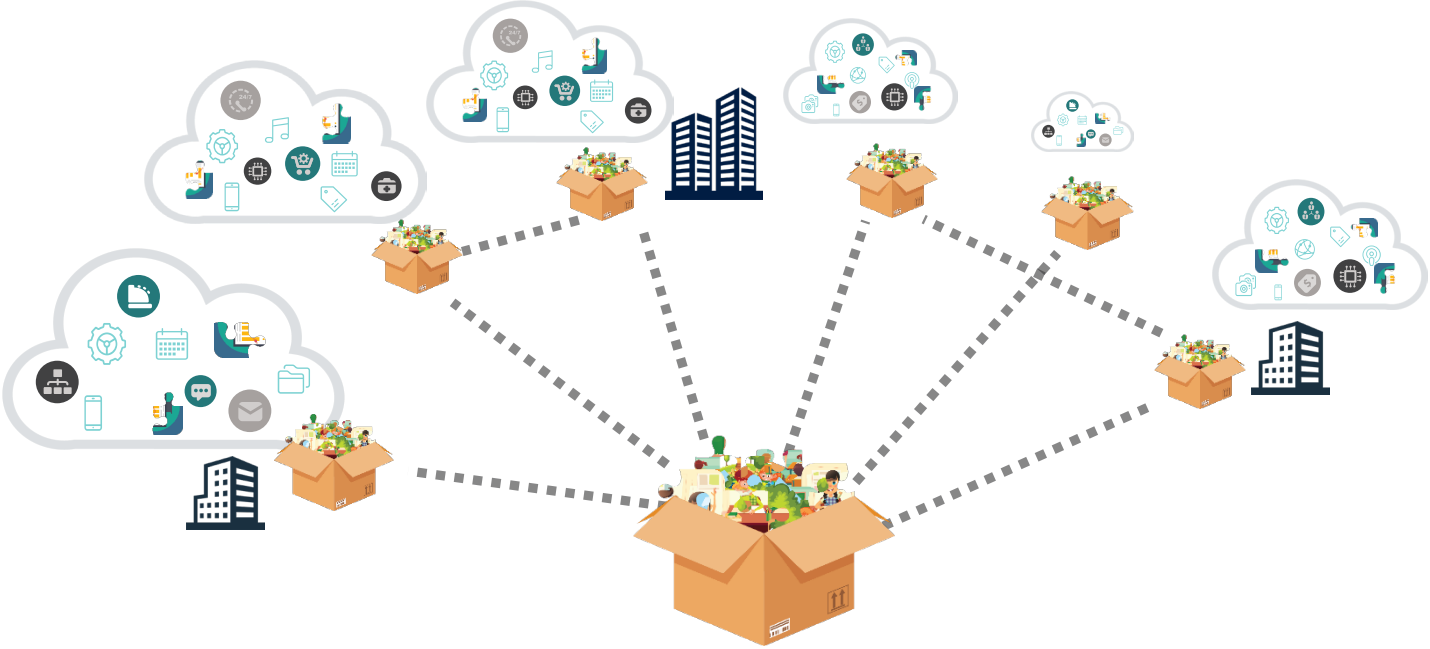


We all know this...

Data volumes ↑

System Complexity ↑

Digital Initiatives ↑

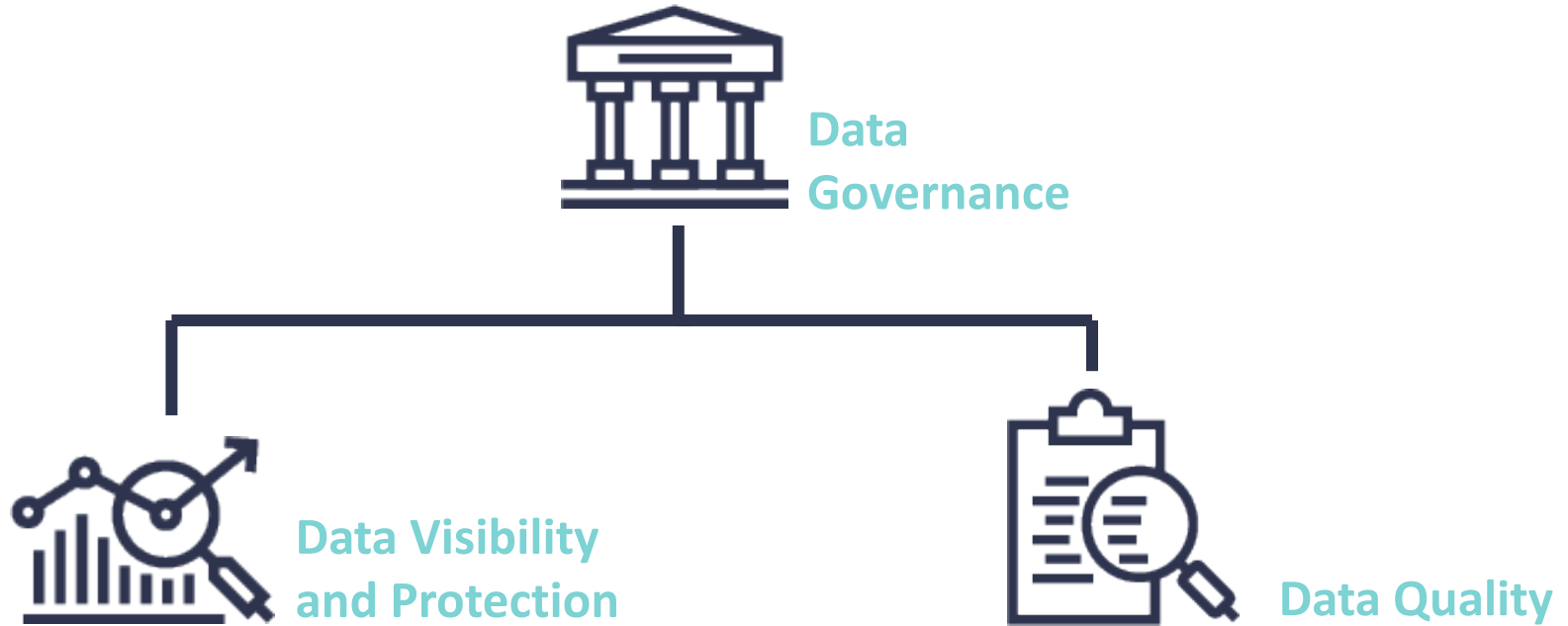


Efficiency ↑ Costs ↓ Risk ↓ Agility ↑

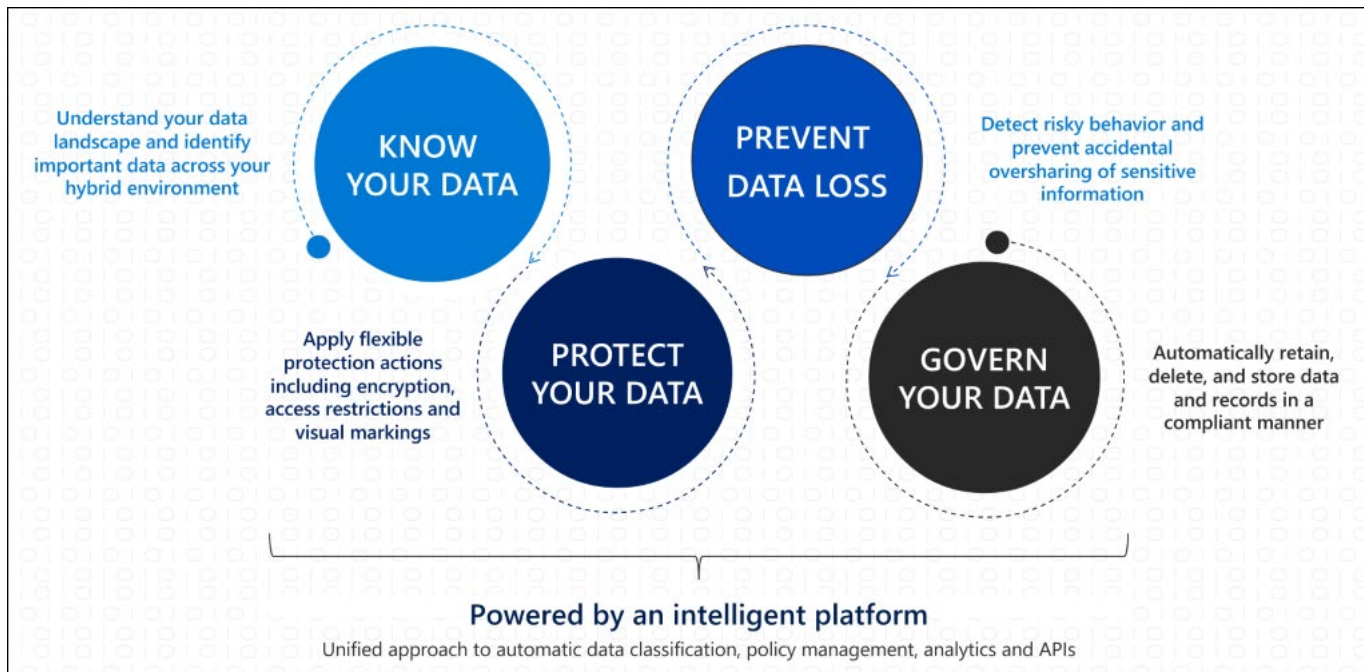
Digital Transformation



Governing Your Data Estate



Data Visibility and Protection



[Microsoft Purview Information Protection](#) | [Microsoft Learn](#)



Understanding Data Quality



Reference data

Standards based, mostly static
critical, easy to manage



Master data

Customers, locations, products
more dynamic, existing in multiple systems



Transactions

Orders, invoices, documents
business system managed facts



Big data

Volume, variety, velocity
often questionable veracity

Real World Example

8/30/2021 1:09 PM Sales Receipt #165372
Store: 1234

[Redacted]
marietta, ga 30060
www. [Redacted].com

Bill To:
Jane Doe
123 Frazier St
Marietta, GA 30060

Cashier: John

Item Name	Qty	Price	Ext. Price
sid dickens memory	1	\$107.00	\$107.00 T
Dog Collar	1	\$15.00	\$15.00 T
3/4 in SM geography glasses	1	\$12.38	\$49.50 T
7% 28% Sale Item			
Subtotal			\$171.50
MARIETTA 6% Tax			+ \$10.29
RECEIPT TOTAL			\$181.79

Credit Card: \$181.79
MasterCard
Total Sales Discounts: \$16.50

Return Policy: 30 Days with receipt for full refund. Store credit will be given if receipt is not present at current price level. Holiday items may not be returned after the holiday is over.

Clothing may be returned for Store Credit Only if not worn, with all tags attached and in a resaleable state as determined by [Redacted]

All Sales are FINAL on Sales Items and on any Special Order items.

Have a [Redacted]

[Barcode]
165372

Location Master Data

Customer Master Data

Transactional Data

Employee Master Data

Product Master Data

Tax Rate Reference Data

Policy Reference Data



Polling Question

When does your organization plan to modernize your data estate?

- Within this year.
- Future budget years.
- I'm not sure.
- We'd like to move forward soon but need help planning/budgeting.



Where to Go from Here?

- **3 Part Series**
 - Crawl – April 25th
 - Walk – Today
 - Run – September 12th
- Have specific questions or want to discuss 1:1?
 - Scan the QR code to schedule time to talk



Thank you!

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