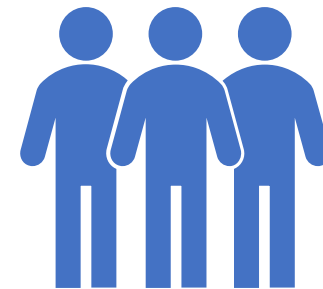# Data Management for Public Health

CSTE Applied Informatics Team Training

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March 13, 2018

Agenda

- Defining Data Management
- The Data Management Framework
- Data Governance
- Data Warehousing Tools and Techniques
- Questions
- Upcoming Webinars

Learning Objectives

By the end of the training participants will be able to:

- Define data management

- Discuss the essential concepts of data management

- Define the data management framework

- Discuss data governance and its relationship to data management

- Describe data warehousing tools and techniques

Defining Data Management

Poll

- How confident are you in your understanding of basic data management principles?
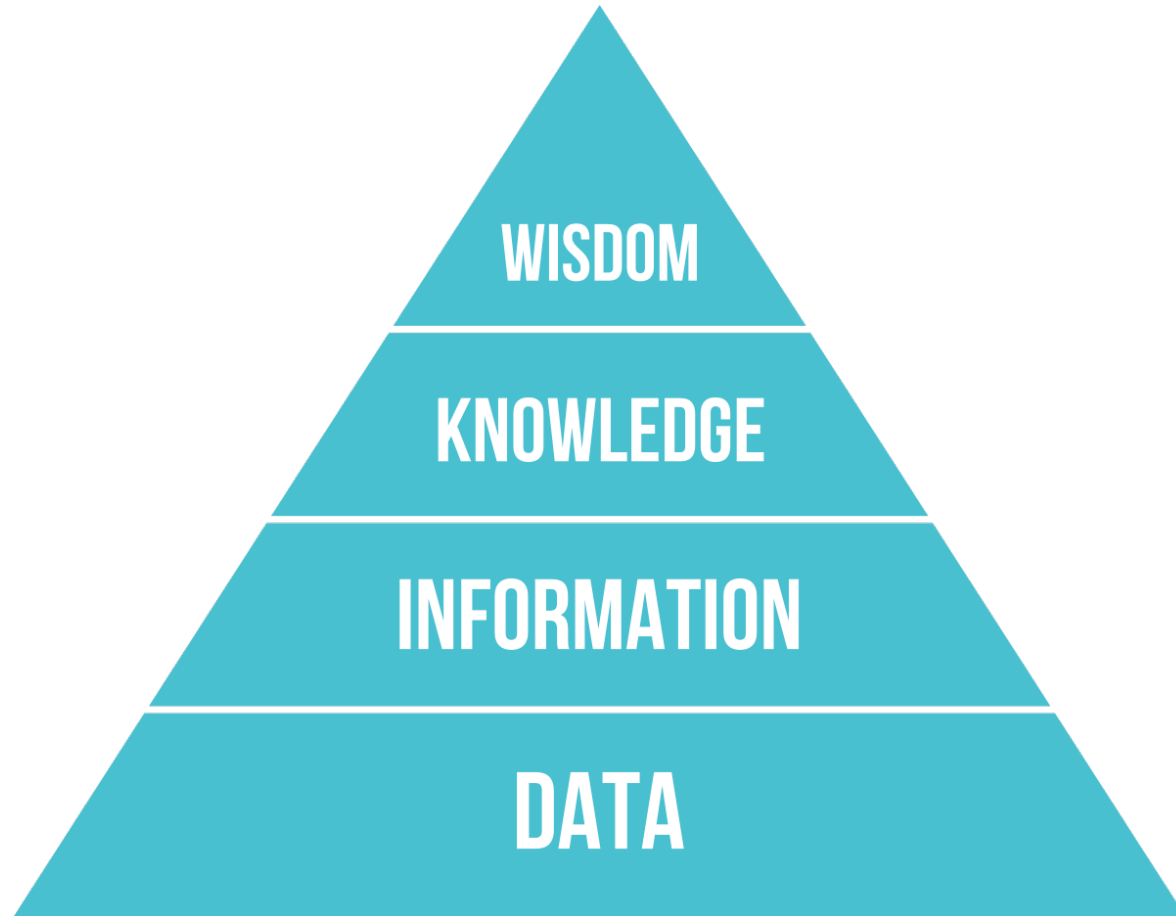
Very Confident

Confident

Neutral

Not Confident

Not at all Confident

What is Data Management

What is Data Management

"***Data Management*** is the development, execution, and supervision of plans, policies, programs and practices that deliver, control, protect and enhance the value of data and information assets throughout their lifecycles."[1]

1 The DAMA Guide to the Data Management Body of Knowledge - DAMA-DMBOK. Technics Publications, LLC , USA 2009. ISBN:0977140083 9780977140084

Data Management Goals

- Understanding and supporting the information needs of the agency and its stakeholders
- Capturing, storing, protecting, and ensuring the integrity of data assets
- Ensuring the quality of data and information
- Ensuring the privacy and confidentiality of stakeholder data
- Preventing unauthorized or inappropriate access, manipulation, or use of data
- Ensuring data can be used effectively to add value to the agency

Data Management Principles

Effective data management requires leadership commitment

Data is valuable

Data management requirements are business requirements

Data management depends on diverse skills

Data management is lifecycle management

Participant Response

In the chat box please answer the following question…

Does your agency have written policies and/or standard operating procedures for collecting and managing data?

Breaking Down Data Silos

- Appoint a "Data Leader"
- Institute Common Data Standards
- Understand how Data Effects your Organizational Objectives and Value Drivers

Breaking Down Data Silos - Examples
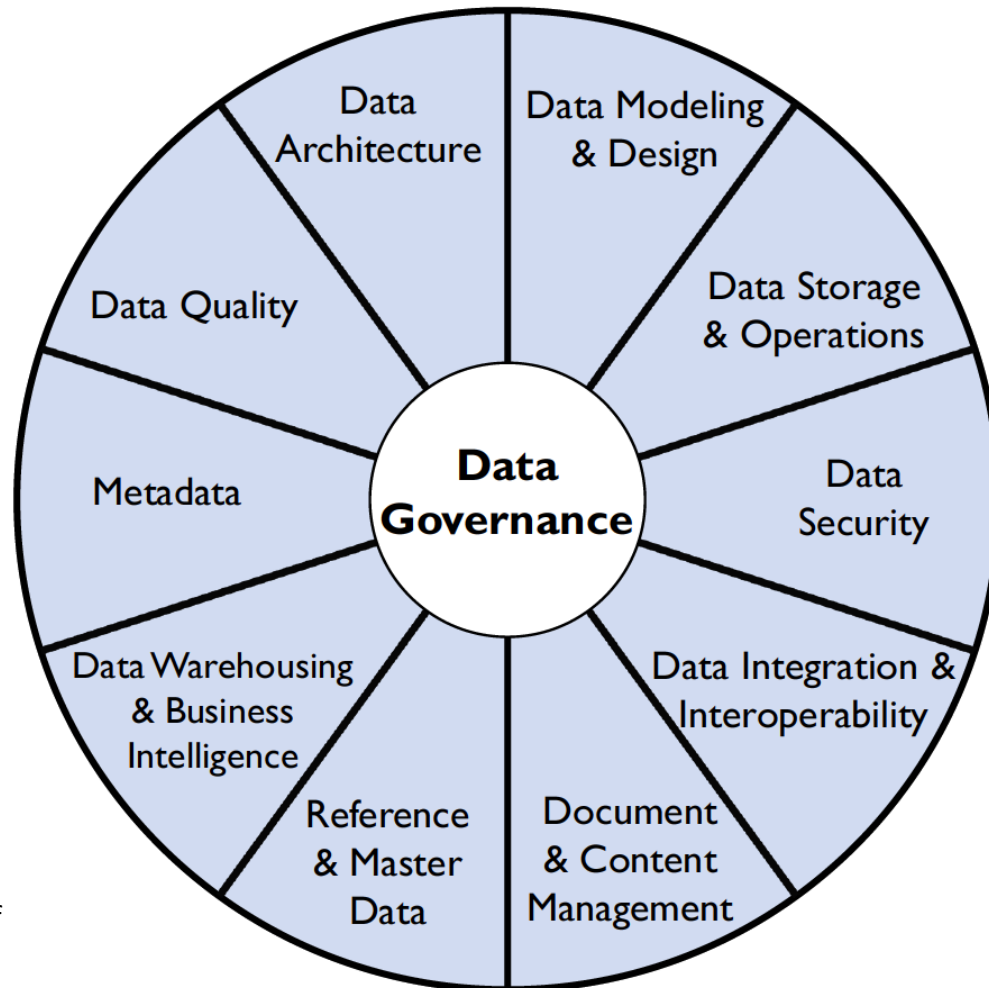
GEORGIA HEALTH INFORMATION NETWORK

Participant Response...
What are some examples of how your agency has removed the data silos?

Health Information Exchanges

- Connect data from multiple, disparate electronic health record systems

- Allow for real-time data sharing

- Distribution of all types of information — from laboratory results to prescriptions, hospital discharge summaries and more — to all within the exchange

Data Management Framework
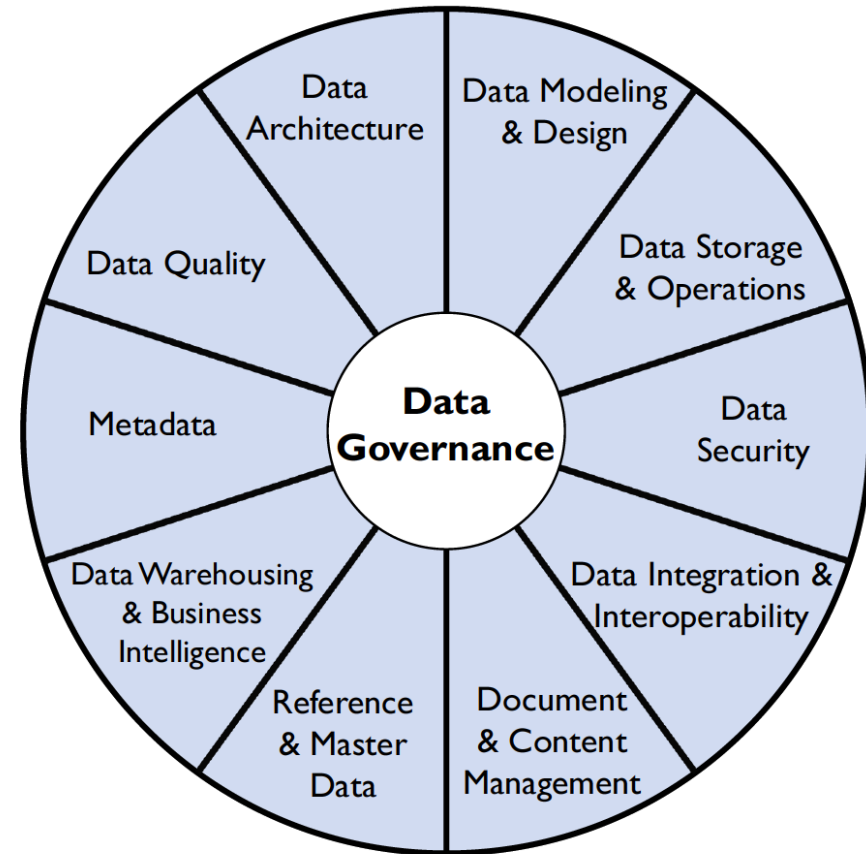
Data Management Framework[1]

1 The DAMA Guide to the Data Management Body of Knowledge - DAMA-DMBOK. Technics Publications, LLC , USA 2009. ISBN:0977140083 9780977140084
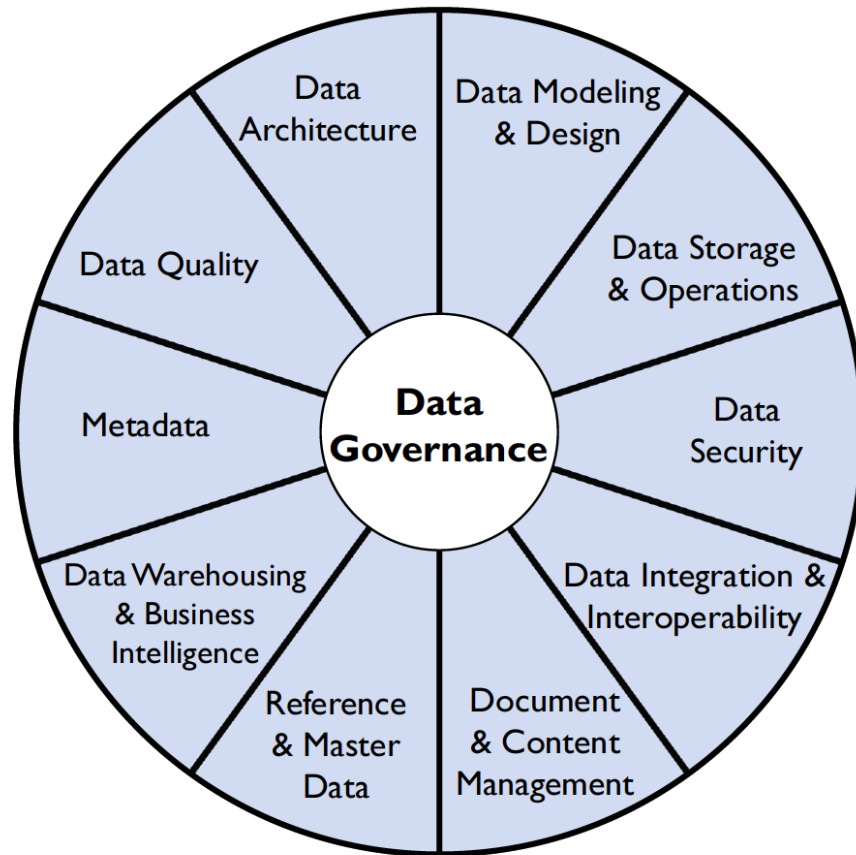
Data Management Framework

DM involves a set of interdependent functions, or knowledge areas, each with its own goals, activities, and responsibilities

Data Management Knowledge Areas

- **Data Governance – Direction and oversight for DM**

- Data Architecture – The blueprint for managing data assets

- Data Modeling and Design – Process of discovering, representing, and communicating data requirements
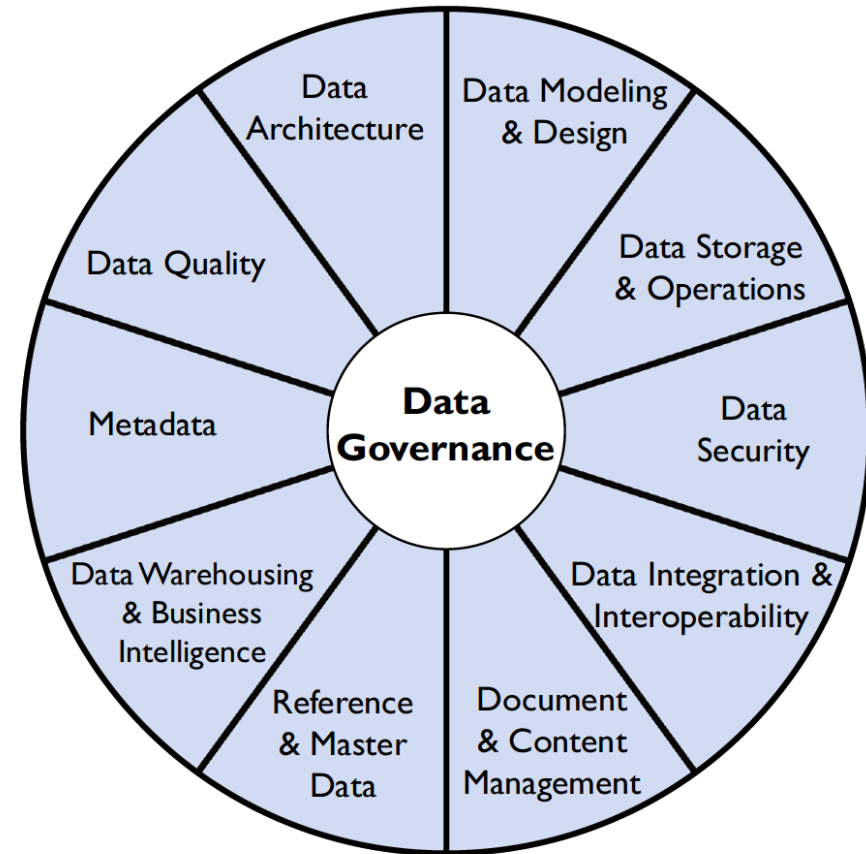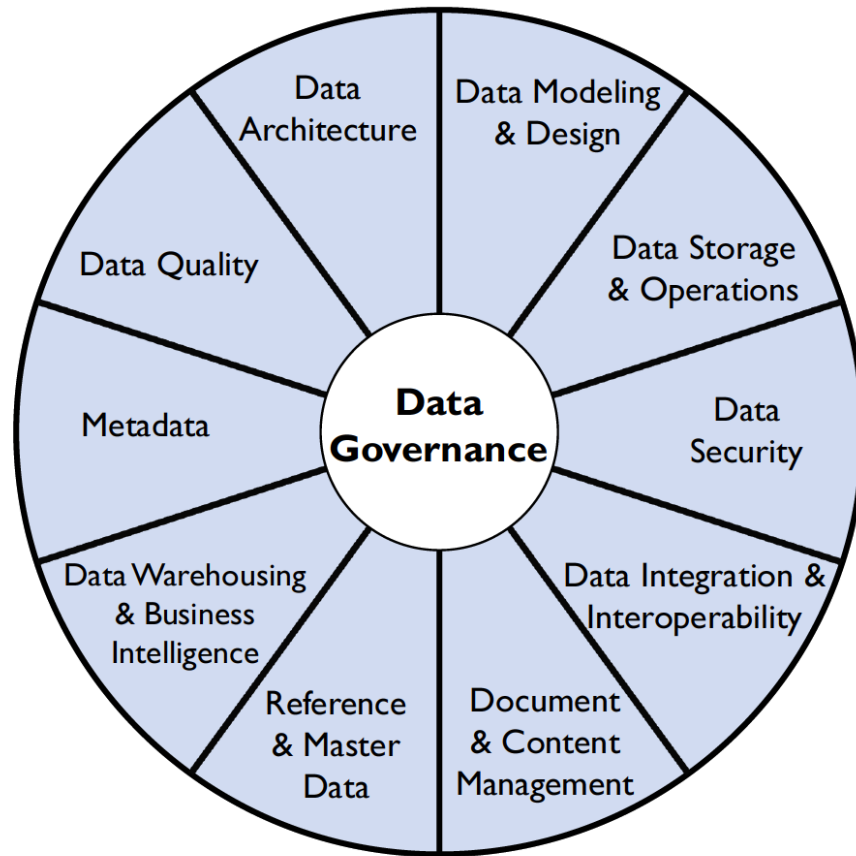
Data Management Knowledge Areas

- Data Storage and Operations – Design, implementation, and support of stored data to maximize value

- Data Security – Ensures data privacy and confidentiality

- Data Integration and Interoperability – Movement and consolidation of data within and between data stores

Data Management Knowledge Areas

- Document and Content Management – Managing the lifecycle of data and information

- Reference and Master Data – Maintenance of core critical shared data

- **Data Warehousing and Business Intelligence – Managing decision support data to enable knowledge workers to get value from data via analysis and reporting**
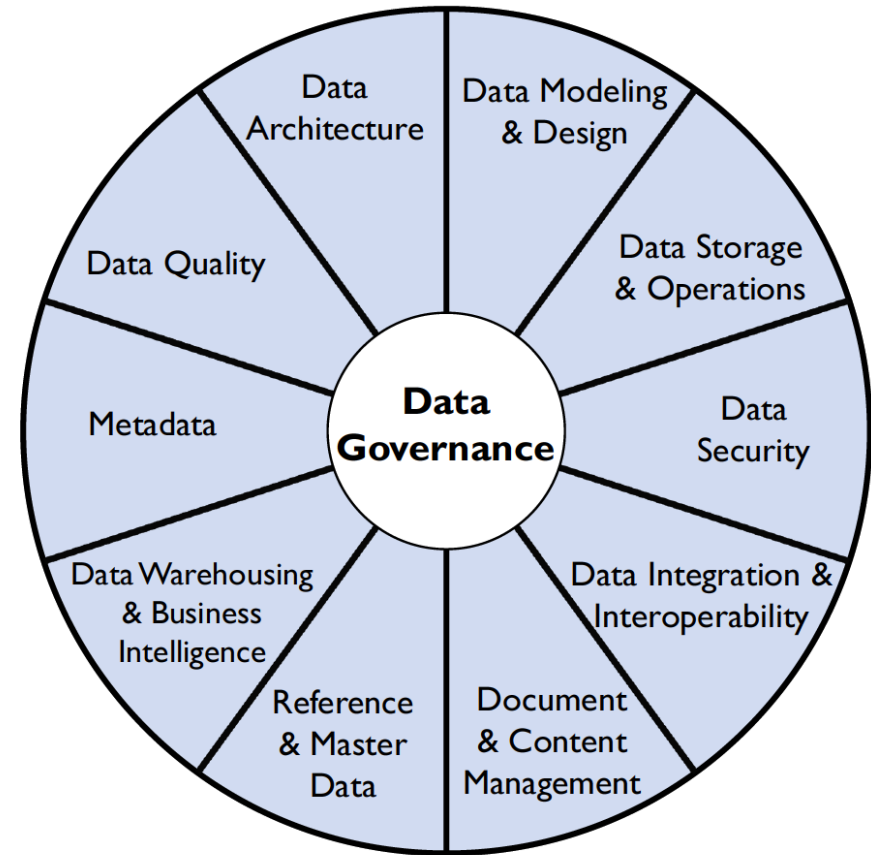
Data Management Knowledge Areas

- Metadata – Managing "data about data"
- Data Quality – Techniques to measure, assess, and improve the fitness of data

Participant Response

In the chat box please answer the following question...

Which of the DM knowledge areas do you feel you and/or your agency would benefit from knowing more about?

Data Governance

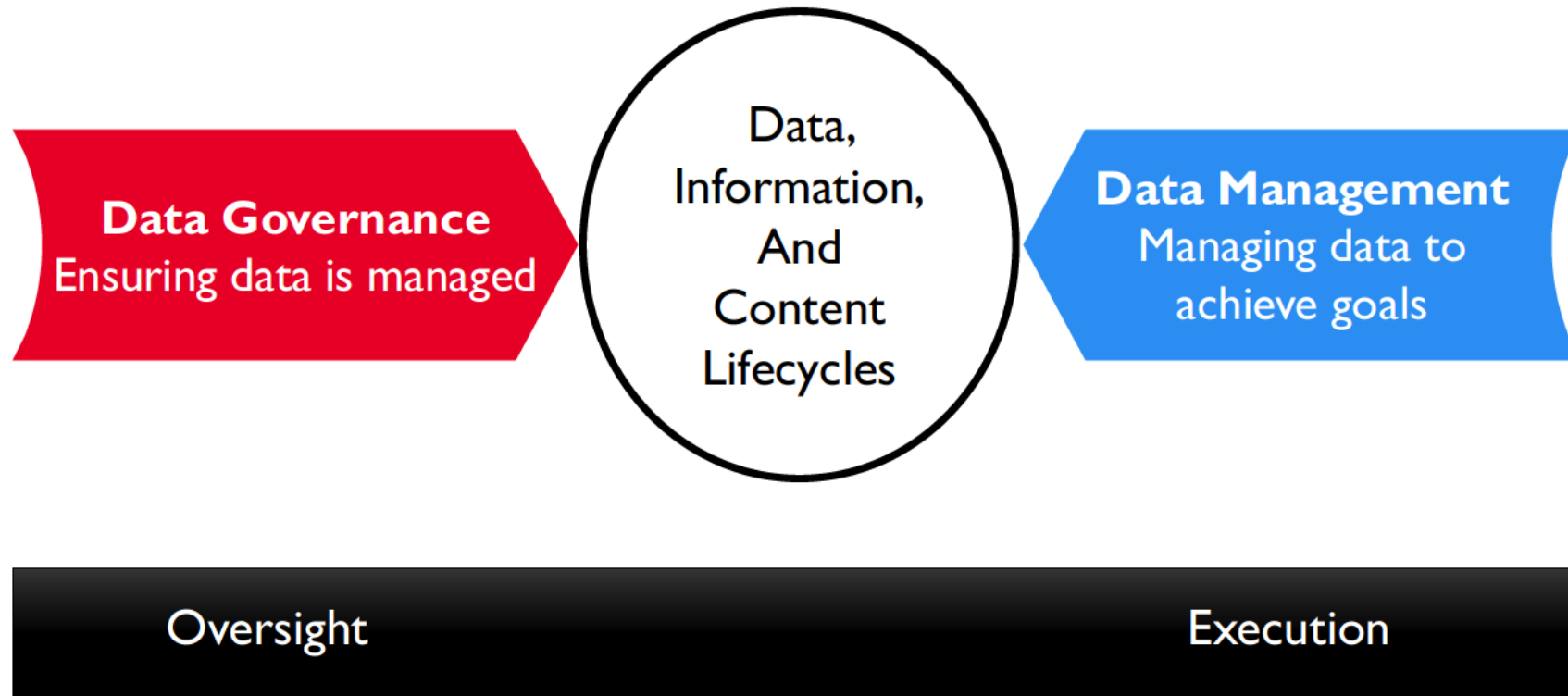# What is Data Governance

- Data Governance (DG) is the exercise of authority and control over the management of data assets
  - Managing data assets intentionally to increase value to the agency
  - Managing data properly and according to policies and best practices
- DG depends on the organizational culture and the ability for the organization to accept and manage change

What is Data Governance

Poll

Does your agency currently have an established data governance structure (a DG committee, policies, standard operating procedures, etc.)?
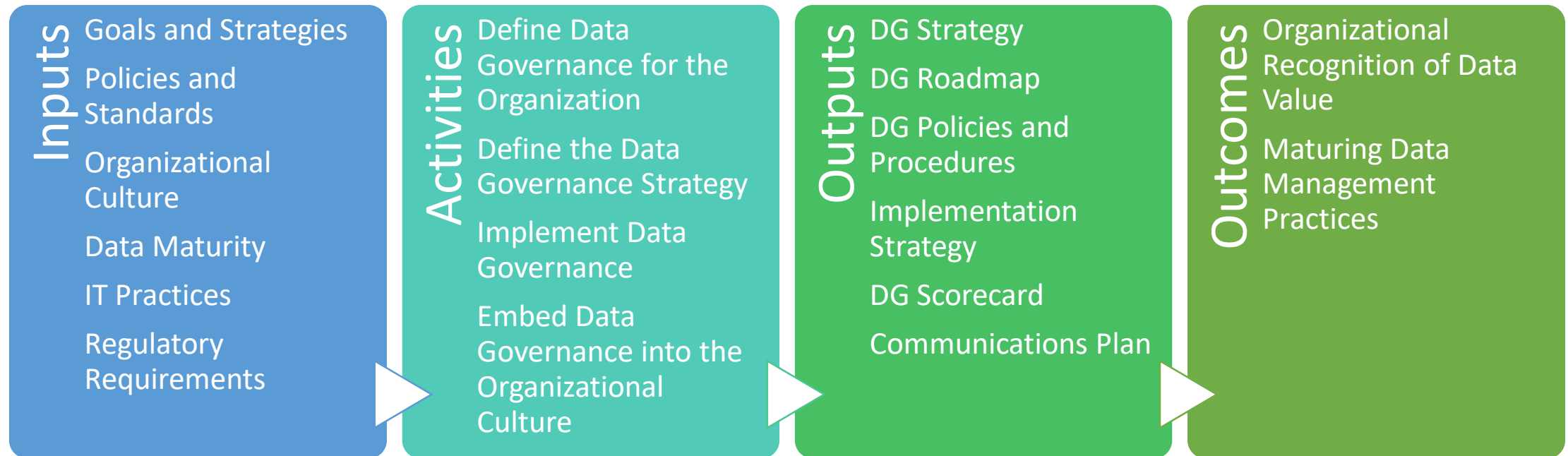
Yes

No

I don't know

In the chat box indicate if you play an active role in data governance for your agency.
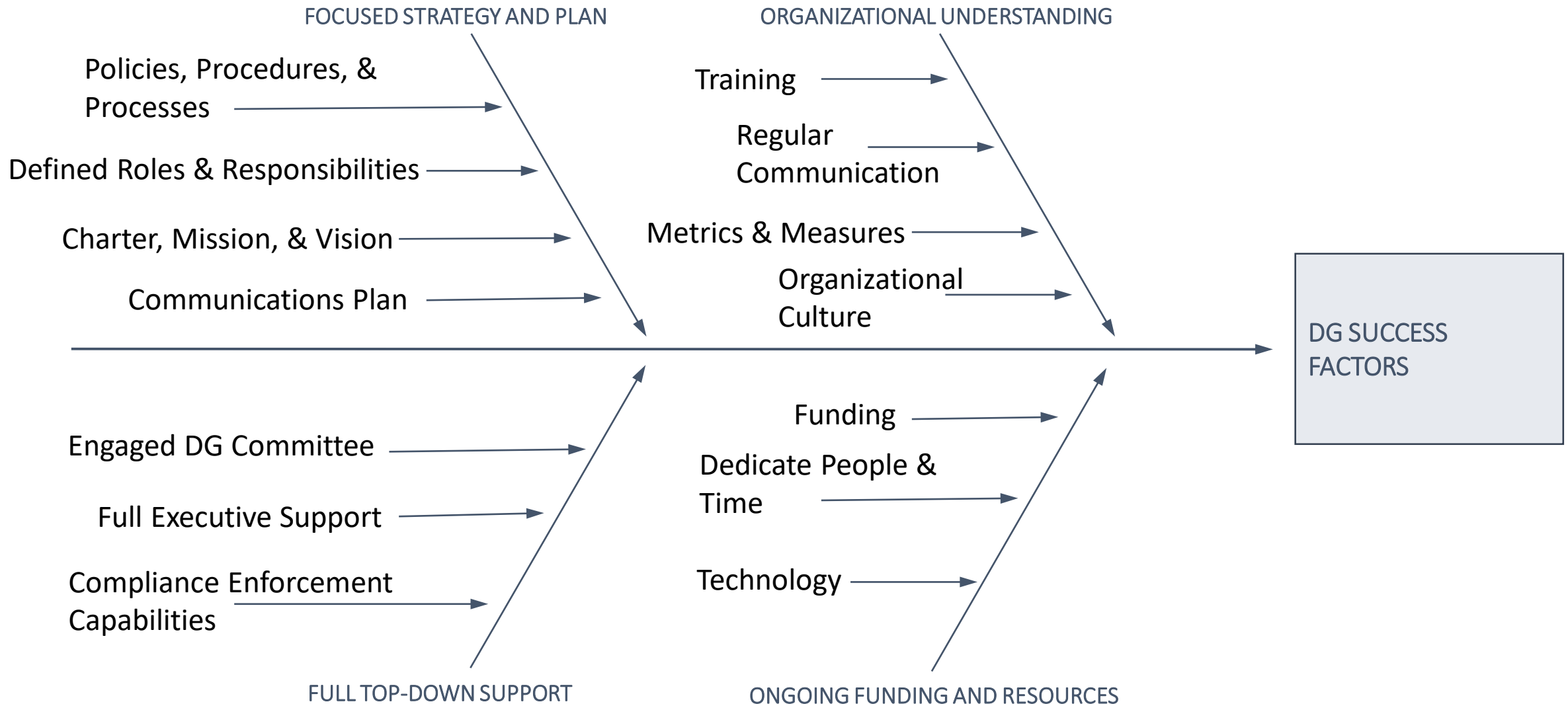
Data Governance Goals

- Managing data as an asset

- Implementing principles, procedures, metrics, tools, and responsibilities for DM

- Monitoring policy compliance, data usage, and DM activities

Data Governance and Stewardship

A Logic Model...

Inputs	Activities	Outputs	Outcomes
Goals and Strategies Policies and Standards Organizational Culture Data Maturity IT Practices Regulatory Requirements	Define Data Governance for the Organization Define the Data Governance Strategy Implement Data Governance Embed Data Governance into the Organizational Culture	DG Strategy DG Roadmap DG Policies and Procedures Implementation Strategy DG Scorecard Communications Plan	Organizational Recognition of Data Value Maturing Data Management Practices

Building a Data Governance Strategy

FOCUSED STRATEGY AND PLAN

ORGANIZATIONAL UNDERSTANDING

Policies, Procedures, & Processes

Defined Roles & Responsibilities

Charter, Mission, & Vision

Communications Plan

Training

Regular Communication

Metrics & Measures

Organizational Culture

DG SUCCESS FACTORS

Engaged DG Committee

Full Executive Support

Compliance Enforcement Capabilities

Funding

Dedicate People & Time

Technology

FULL TOP-DOWN SUPPORT

ONGOING FUNDING AND RESOURCES

Participant Response

In the chat box please answer the following question…

As mentioned previously, organizational culture and the ability to manage and embrace change are important aspects in governing and managing data.

Do you feel your organization is has a culture that supports and manages change well?

Data Warehousing Tools and Techniques

What is a Data Warehouse

A ***Data Warehouse*** is a large store of data accumulated from a wide range of sources within an organization and is used to guide management decisions
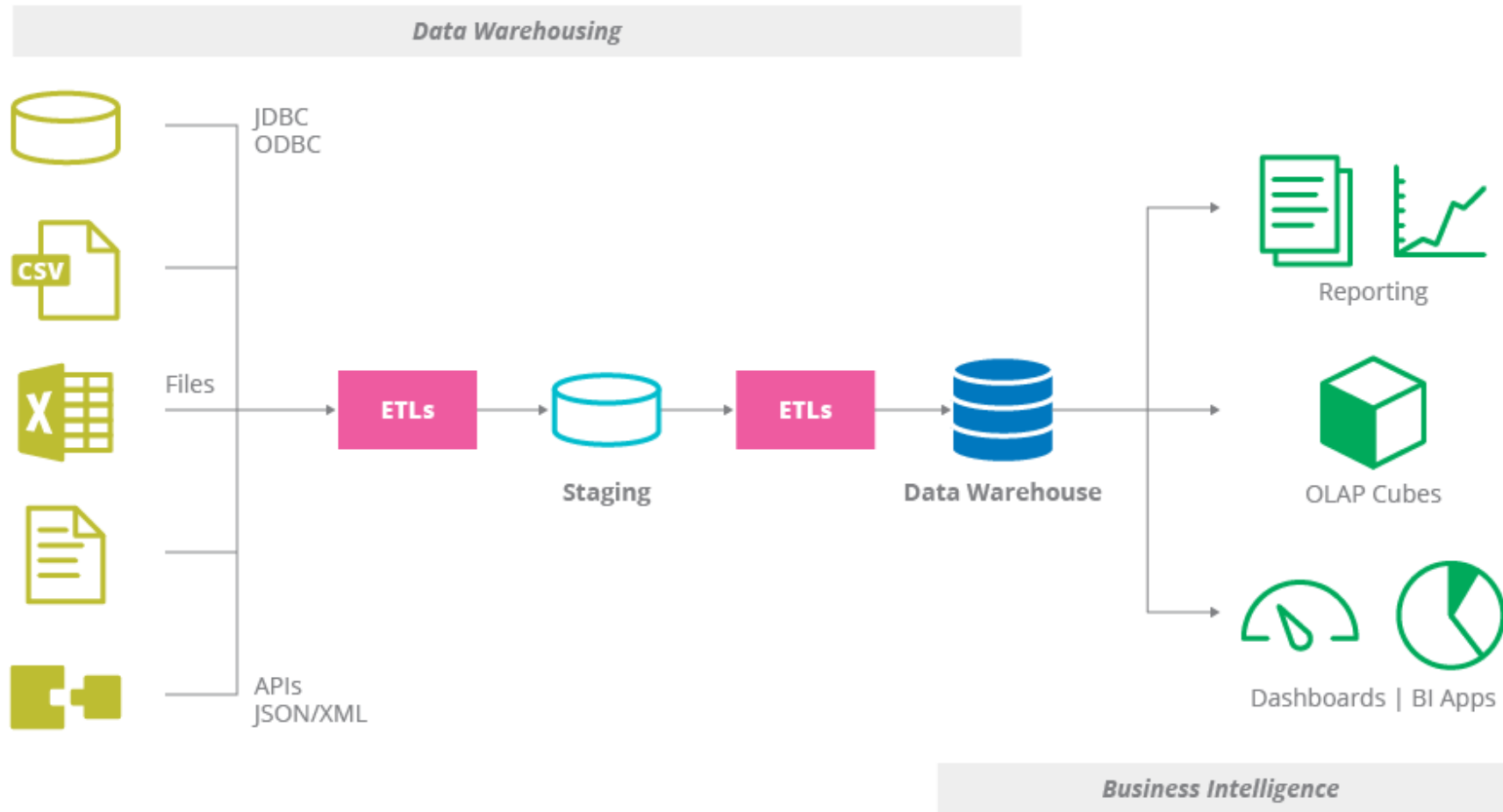
- Supports Business Intelligence activities
- Enables effective business analysis and decision making
- Supports innovation based on insights from warehoused data

What is a Data Warehouse

Two Primary Components:

1. Integrated decision support database

2. Related software programs used to collect, cleanse, transform, and store data from a variety of operational and external sources

What is a Data Warehouse

Poll

Does your agency currently utilize an <u>enterprise-wide</u> data warehouse?

Yes

No

I Don't Know

Data Warehouse Tools and Techniques

Jurisdictional Example

Anthony Hancock, Tennessee

Data Warehouse Tools and Techniques

- Metadata Repository
  - Data Dictionary/Glossary – describes data in business terms and includes other information needed to use the data
  - Data and Data Model Lineage – includes the data's origins, what happens to it and where it moves over time an also provides visibility while greatly simplifying the ability to trace errors back to the root cause in a data analytics process
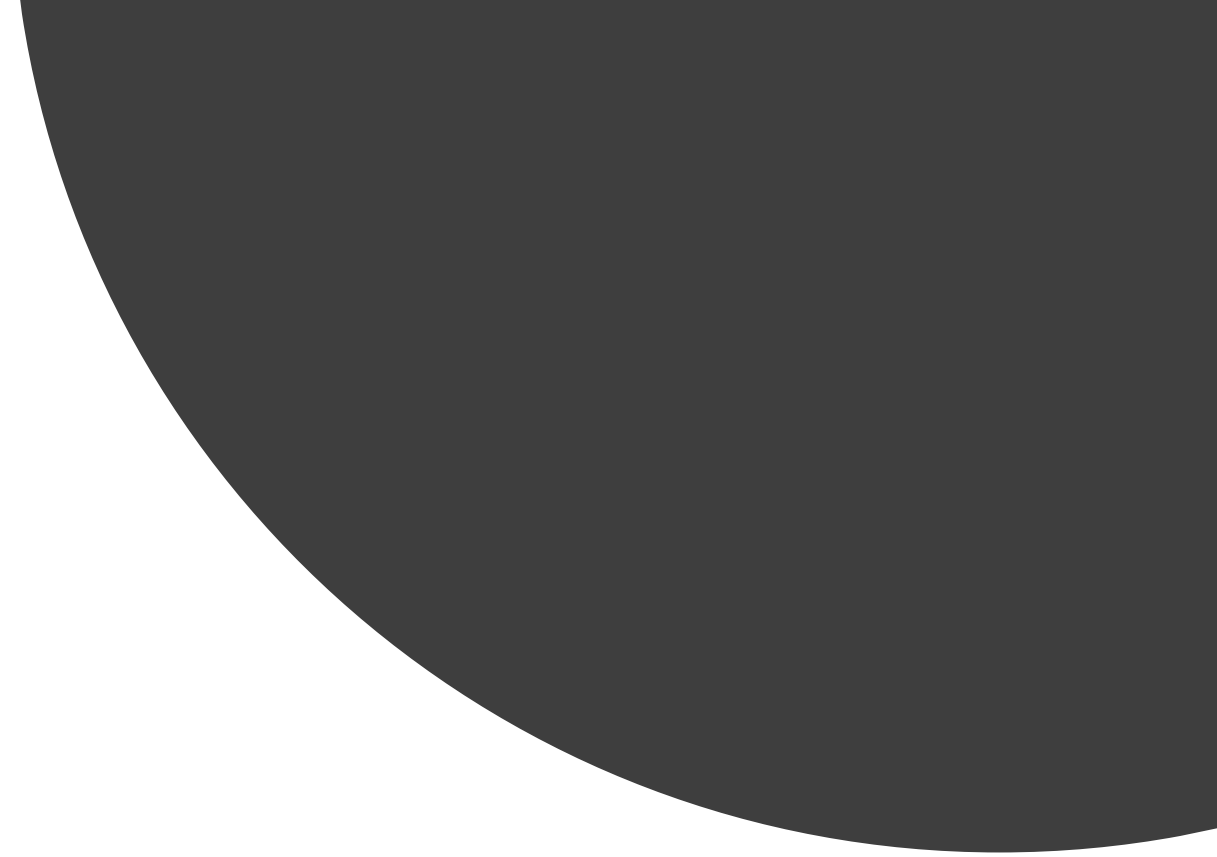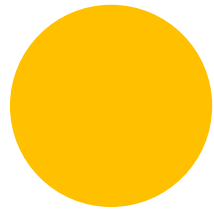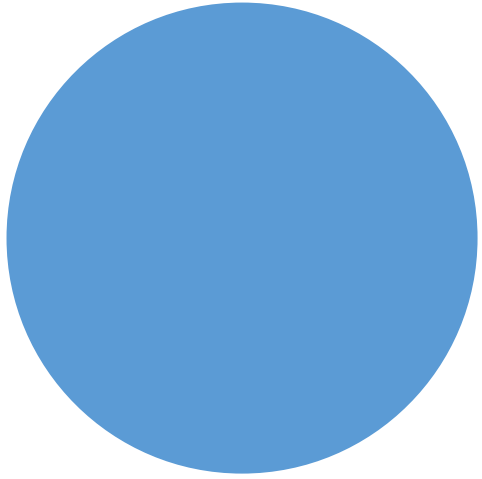- Data Integration Tools

Data Warehouse Tools and Techniques

- Business Intelligence Tools
  - Operational Reporting – analyze business trends, both short- and long-term.
  - Business Performance Management – formal assessment of metrics aligned with organizational goals and objectives
  - Descriptive Analytics – guiding decision-making in near real-time

Questions

Upcoming Webinars

Thank You