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# Data Warehousing in the Nonprofit World

November 29, 2023



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# Today's Presenters



**Ben Aase**  
Principal



**Troy Hollings**  
Digital Growth Director



**Demi Habegger**  
Data Scientist Senior

# Learning Objectives

At the end of the session, you will be able to:

- Speak to trends and updates on data warehousing in the nonprofit industry
- Discuss common data warehousing challenges across nonprofits
- Know when it is likely time to consider a data warehouse, and what steps to take next



# Agenda

- Industry Trends
- Defining Our Terms
- New Developments
- Q&A/Discussion

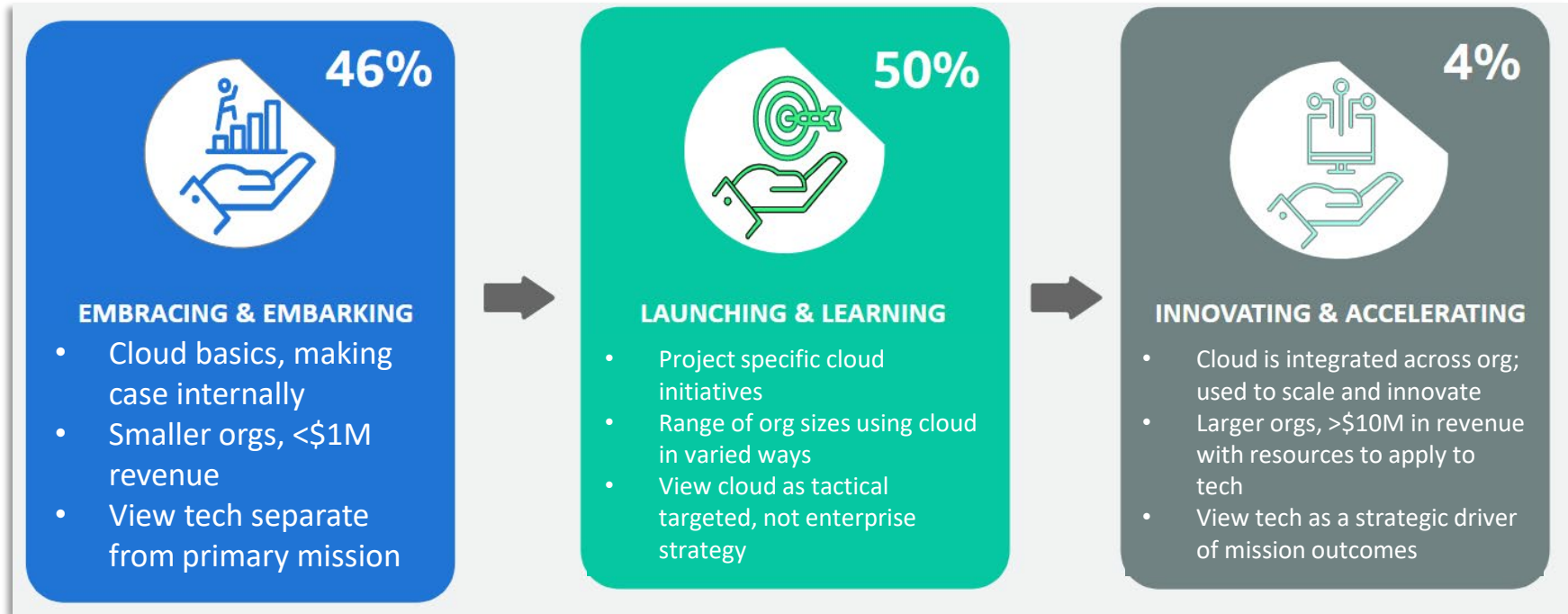


# Industry Trends

What We Saw in 2023



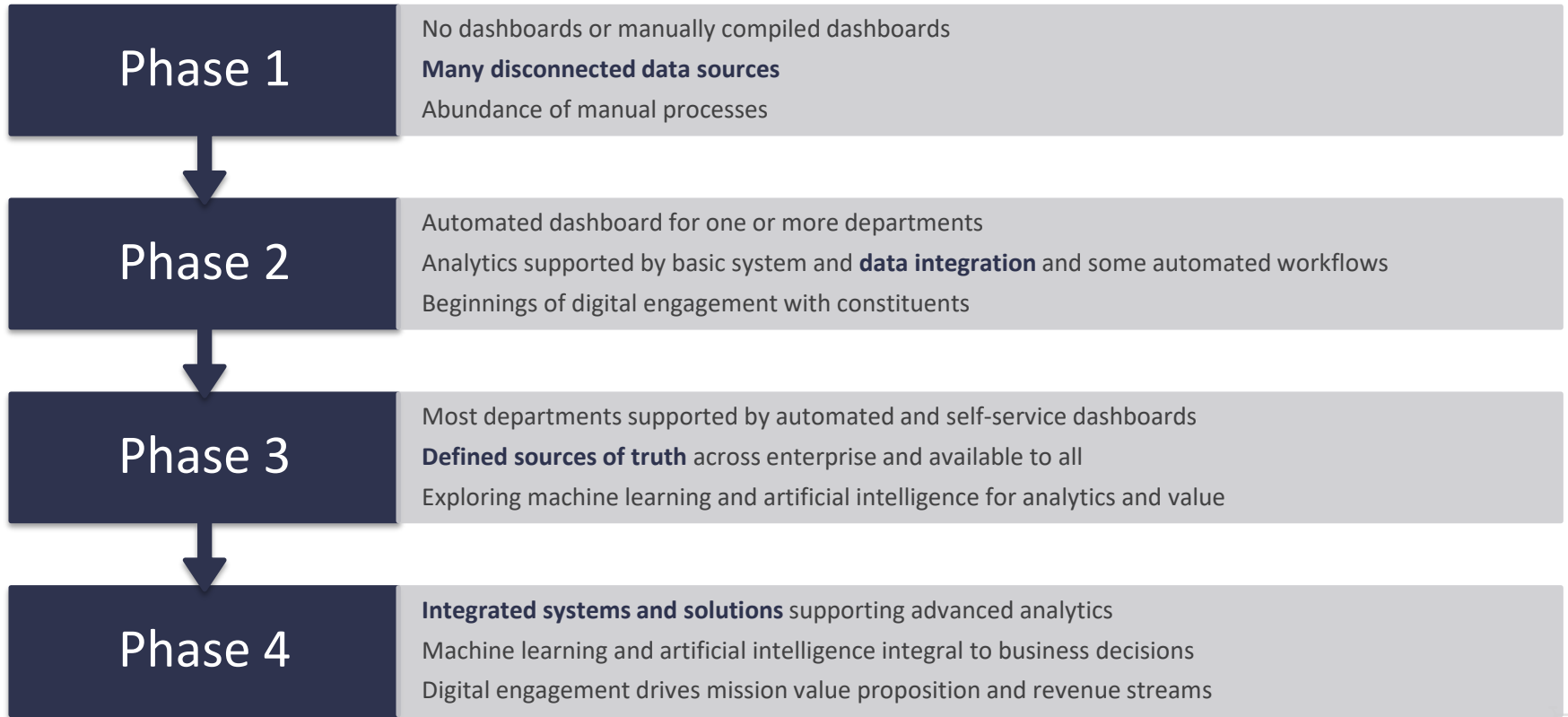
# Nonprofit Mindsets



Source: Amazon Web Services, Nonprofit Insights, March 2023.

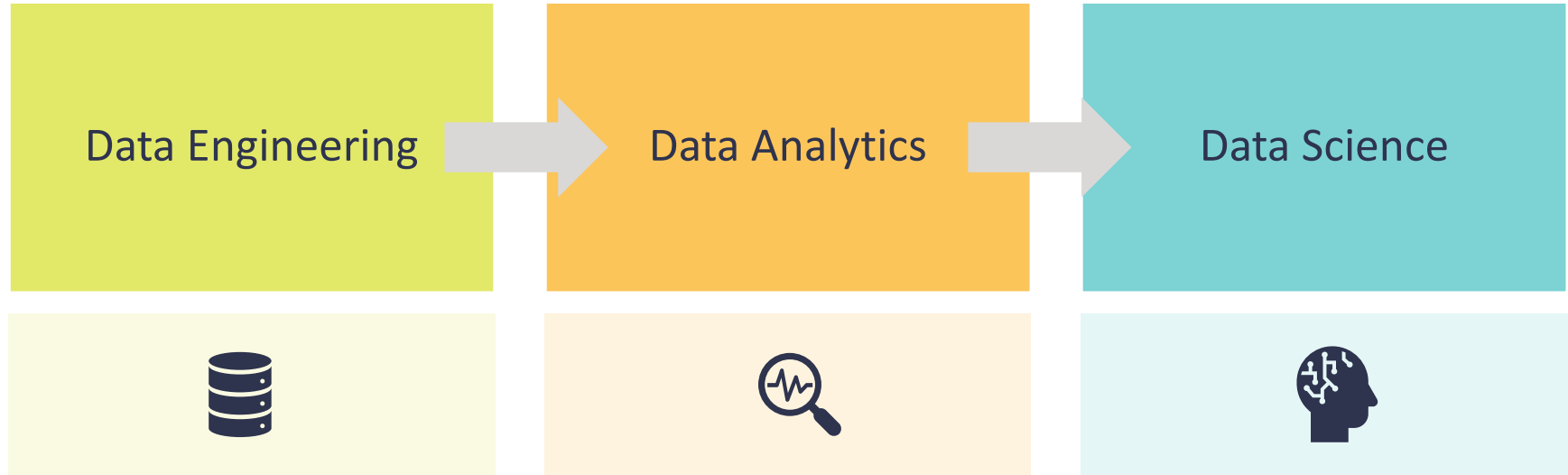


# Digital Lifecycle





# One Way to Think About Prioritizing



# Defining Our Terms

Data Lake, Data Warehouse, Data Mart – What does it all mean?



# Data Structures: Taxonomy Refresh

## 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 Marts

- Designed for specific business use cases, such as a department's view of the organization.
- Host 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.



# Let's Start With Why



## Central Source of Truth

Standardize across all platforms.  
Trust your data



## Automated Analytics

Everything integrates to your  
central data hub allowing  
continually updating analytics

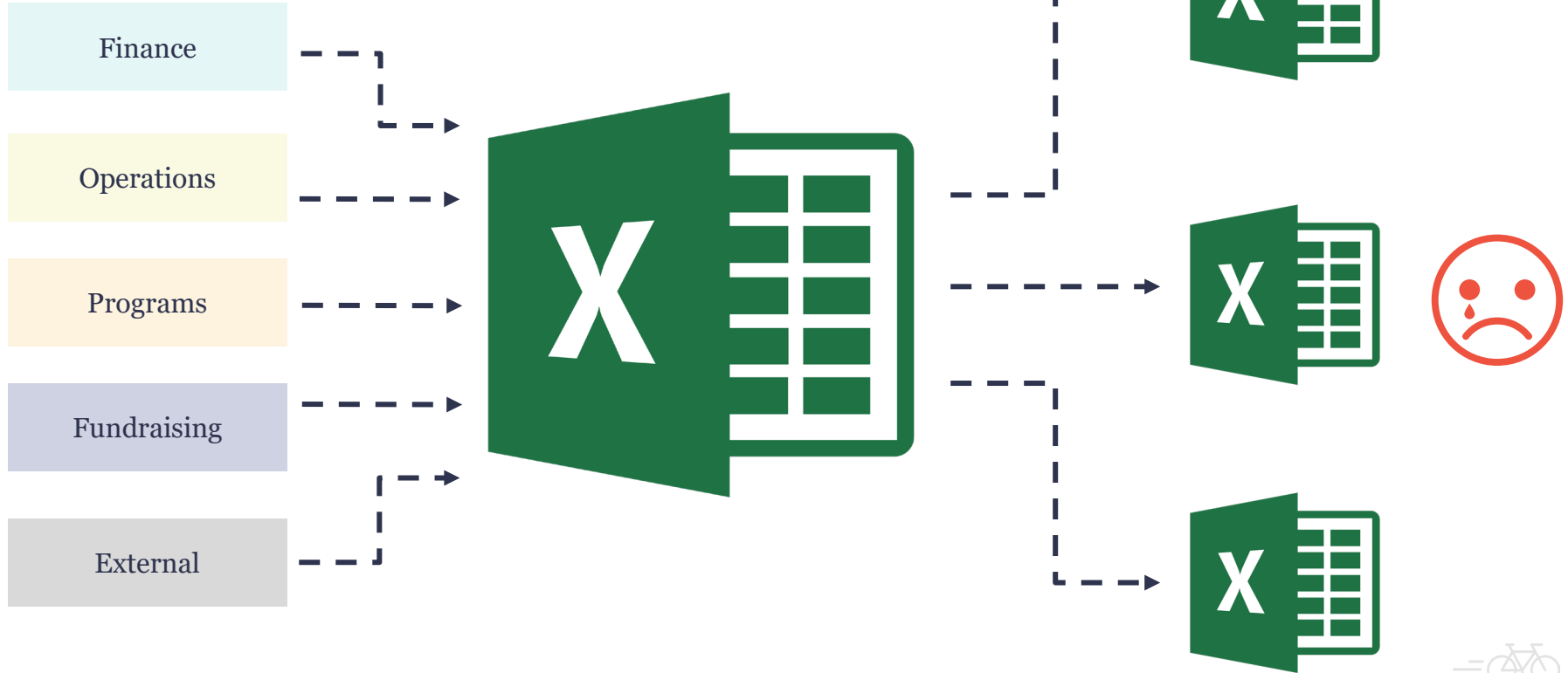


## Prepare for AI

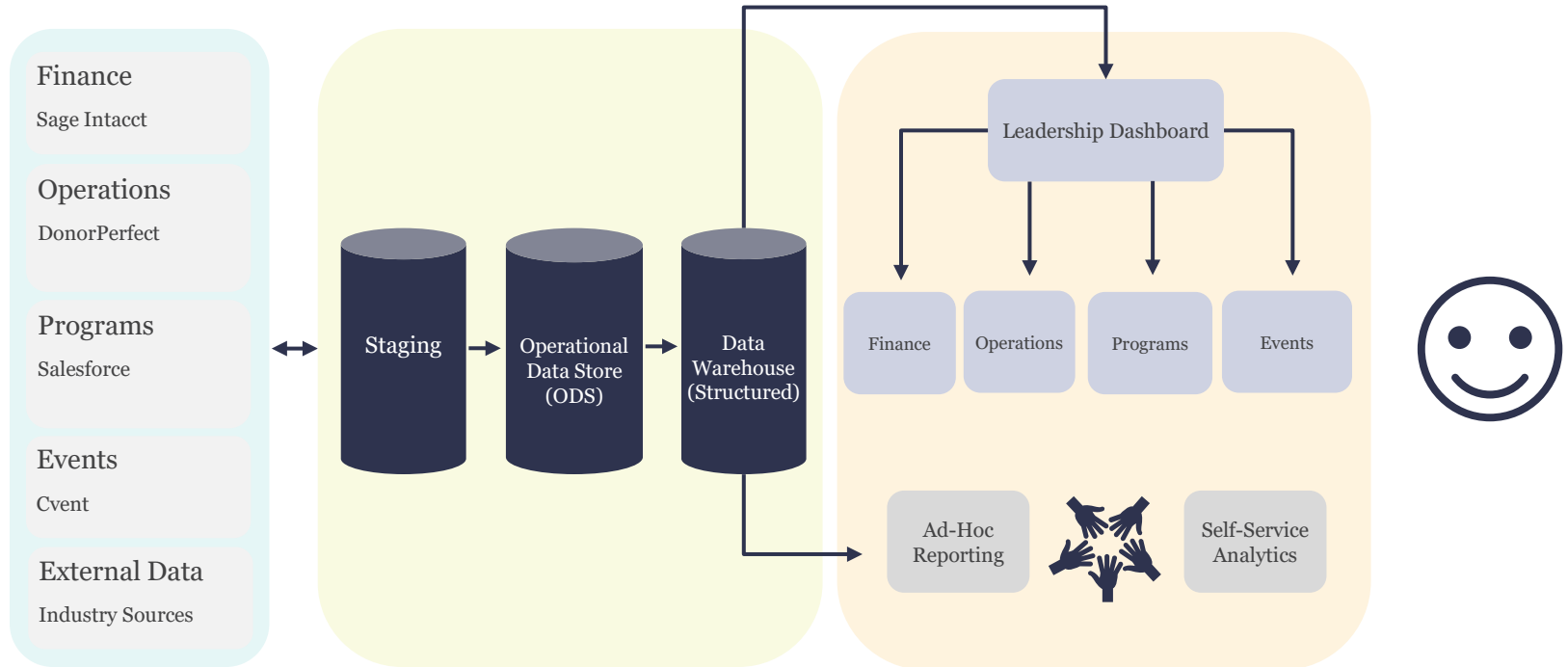
AI tools are powerful but not magic  
and require organized and  
coherent data.



# Before



# After



# How Do I Know I Need a Data Repository?



Data Siloes



Performance Issues



Inconsistent Data Quality -- "I don't trust my data"



Limited Analytic Capabilities



Difficulty in Data Integration



# Preparation and Readiness



Commitment



Scope of Project



Strategy



Governance



Scalability and Future Growth



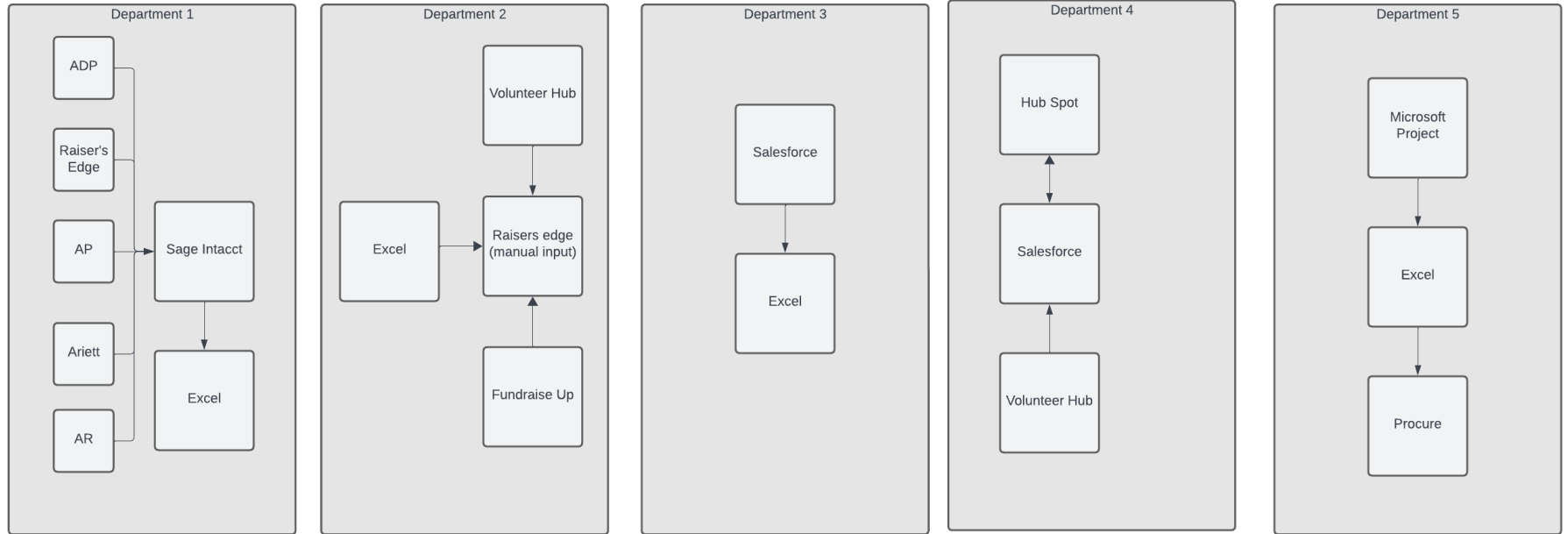
Security and Compliance



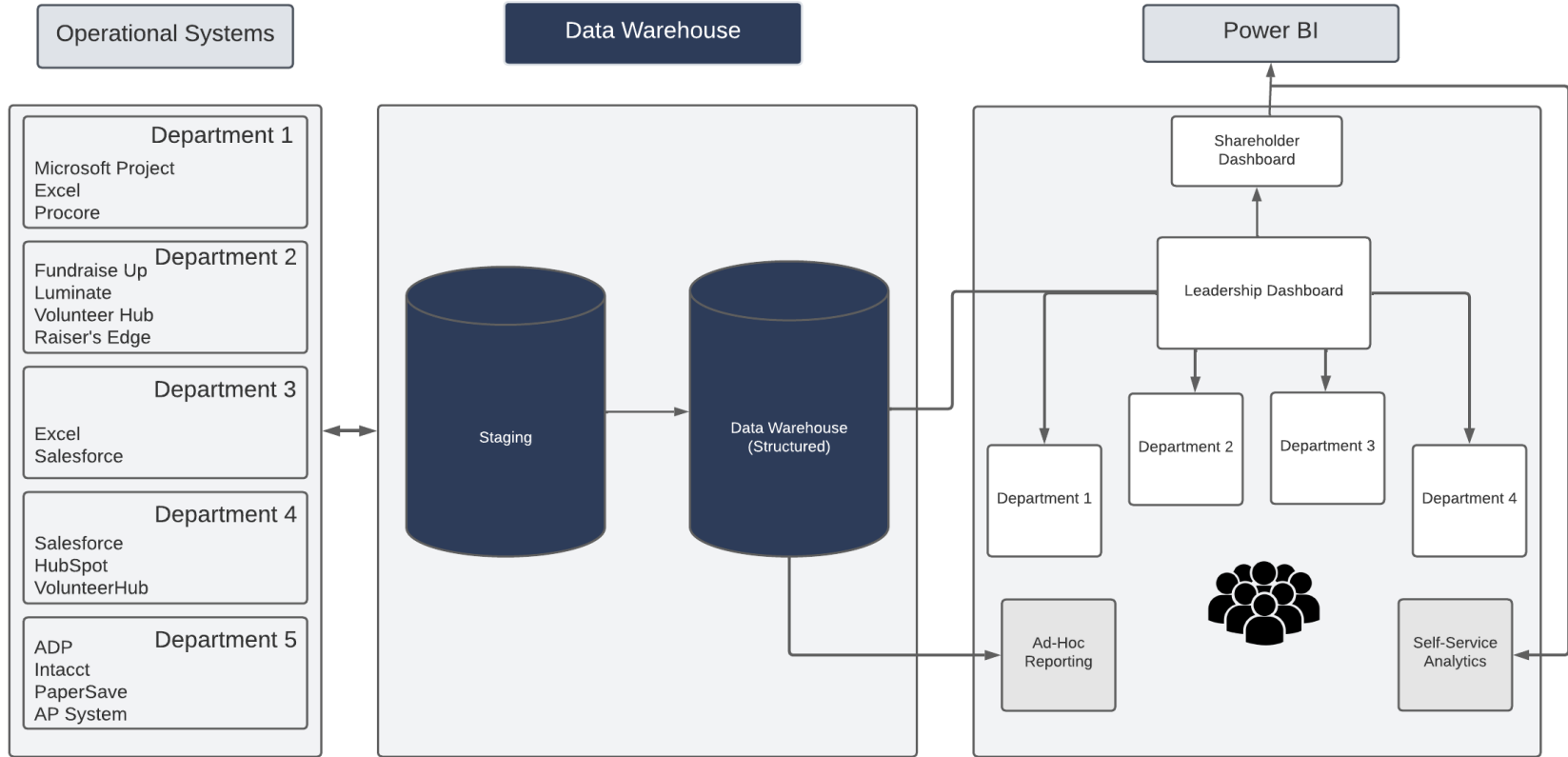


# Case Study – Current State

## Operations



# Case Study – Future State



# New Developments

What's Coming Next





# Microsoft Fabric

# WHAT IS MICROSOFT FABRIC?

A UNIFIED SaaS  
PLATFORM FOR ALL YOUR  
ANALYTICS NEEDS

## REAL-TIME ANALYTICS

INGEST & QUERY REAL-TIME DATA  
WITHIN SECONDS

STORE REALTIME DATA IN ONELake

## BI

REPORTS &  
DASHBOARDS  
WITH  
POWER BI

## DATA SCIENCE

RUN NOTEBOOKS WITHIN SECONDS  
WITHOUT MANAGING CLUSTERS  
TRAIN MODELS AND EXPERIMENT  
BETWEEN DIFFERENT MODELS VERSIONS

## DATA WAREHOUSE

POWERED BY DELTA PARQUET  
ACCESSIBLE THROUGH SQL AND SPARK  
DECOUPLED STORAGE & PROCESSING  
ORGANIZED AROUND WORKSPACES

## ONELake

UNIFIED  
LAKEHOUSE  
WITH AN OPEN  
FORMAT

## DATA INTEGRATION

USE NO-CODE OR NOTEBOOKS FOR  
ETL OR ELT JOBS  
SCHEDULE & RUN JOBS WITHOUT  
MANAGING (SPARK) CLUSTERS



UNIFIED SECURITY  
ACROSS ALL TYPES OF  
DATA STORES & ENGINES

SHORTCUTS EASY ACCESS TO DATA STORED IN OTHER CLOUDS



# ONELAKE

"THE ONEDRIVE FOR YOUR DATA"

VISUALLY EXPLAINED

ALL ANALYTICAL ENGINES CAN ACCESS ONELAKE DATA



DATA LAKE + WAREHOUSE = LAKEHOUSE

EACH FABRIC ORGANIZATION HAS ONE DATA LAKE, ENTIRELY MANAGED FOR YOU IT'S UNIFIED ACROSS ALL REGIONS & YOU PAY PER GB STORED (NO SCALING NEEDED).



## THIS IS A LAKEHOUSE

IT ALLOWS YOU TO DISTRIBUTE OWNERSHIP TO ORGANIZATIONS, AND EASILY COLLABORATE ON DATA

IT CONTAINS



A FILES AREA



A TABLES AREA



### SHORTCUTS

ALLOW YOU TO QUERY DATA FROM ONE LAKEHOUSE TO ANOTHER WITHOUT DATA MOVEMENT



WITH FABRIC, YOUR WAREHOUSE DATA IS ALSO STORED IN ONELAKE, AND ACCESSIBLE IN AN OPEN FORMAT

SHORTCUTS LINK TO OTHER CLOUDS TOO!

THE FILES AREA CAN CONTAIN UNSTRUCTURED & SEMI-STRUCTURED DATA.

IT'S NOT UNCOMMON TO ORGANIZE THEM IN THREE "AREAS": BRONZE, SILVER & GOLD

## ONELAKE

ADLS GEN2 SDK & APIS CAN NATIVELY ACCESS ONELAKE





# Deploying AI Across Your Data

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# Bringing it All Together





# Key Take Aways



Nonprofits are facing the challenge of managing and utilizing large amounts of data



Assess where you are on your data journey



Start with the why: valuable insights and informed decisions



Reinvesting in data capacity takes real resource and commitment



Outside partners can help you leverage your data effectively



The tools available to nonprofits continue to evolve rapidly





Thank you for joining us!

**Ben Aase**

Principal

[ben.aase@CLAconnect.com](mailto:ben.aase@CLAconnect.com)

612-397-3069

**Troy Hollings**

Digital Growth Director

[troy.hollings@CLAconnect.com](mailto:troy.hollings@CLAconnect.com)

317-569-6123

**Demi Habegger**

Data Scientist Senior

[demi.habegger@CLAconnect.com](mailto:demi.habegger@CLAconnect.com)

317-569-6146

