UHY

Building Better Data Integrity

Relevant, Reliable, and Timely Data

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Instructors

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Learning Objectives

- Explore best practices for implementing governance policies that promote data consistency, accountability, and trust.
- Learn how you can ensure both financial and non-financial data remain relevant and reliable.
- Discover the role of internal controls in identifying risks and preserving the quality of organizational data.
- Uncover why consistent data classification is essential for long-term usability and meaningful reporting.

What is Data Integrity?

Data integrity is the accuracy, consistency, and reliability of data throughout its lifecycle.

Elements of Data Integrity

- Completeness
- Timeliness
- Validity
- Accuracy

Supports confident decision-making

Builds stakeholder trust

Ensures meaningful reporting

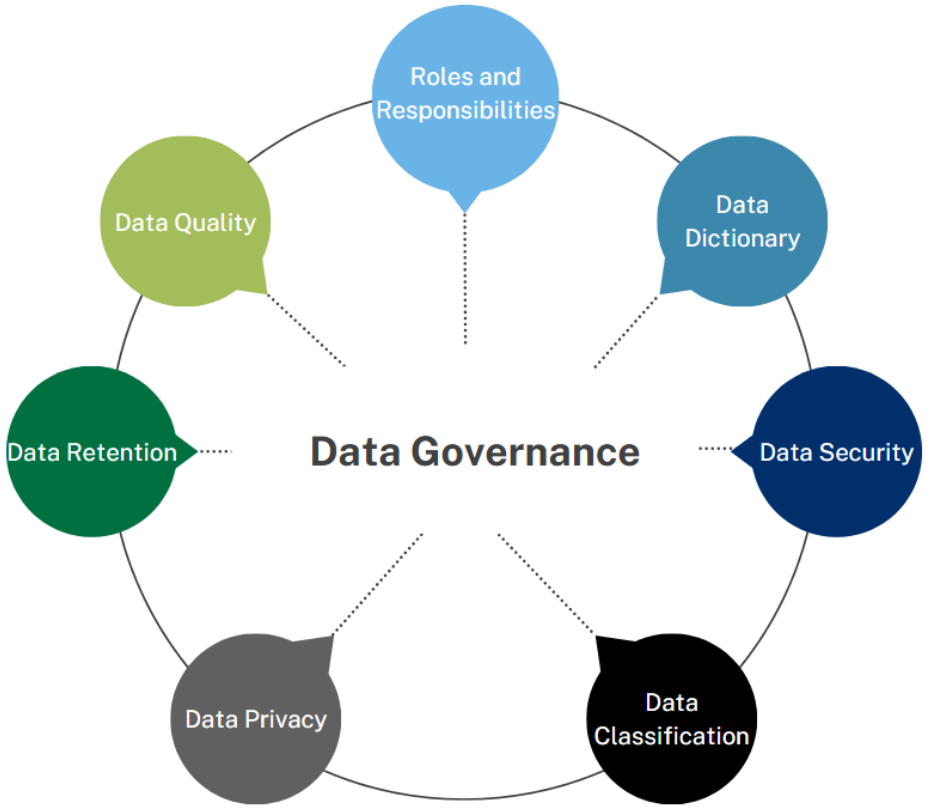
Data Governance

Data Governance Policies and Procedures

Data governance is crucial for ensuring your data is accurate, secure, compliant, and consistent.

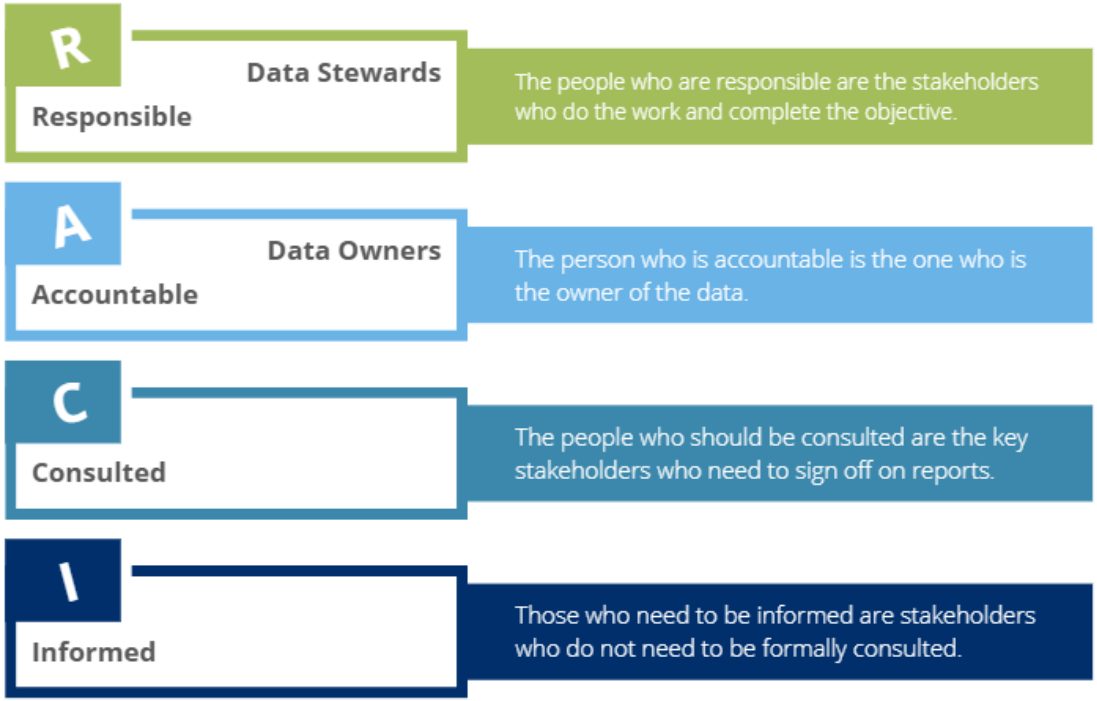
Why it Matters

- Improves data quality
- Protects sensitive data
- Promotes data consistency
- Reduces risks



Roles and Responsibilities

- Establish data owners and stewards
- Clarify who can create, edit, access, and approve data
- Develop a Responsibility Matrix, or RACI, to correlate with this policy
- This policy encourages ownership, accountability, and reduces ambiguity



Data Inventory

A comprehensive catalog of an organization’s datasets, providing a clear understanding of what data exists, where it’s stored, and how it’s used.

- Data Owner
- Data Steward
- Nature of Data
- Data Subject(s)
- Data Classification
- Data Format
- Source
- Scope of Data
- Data Repository
- Retention Period
- Security
- Purpose and Usage of Data
- Transfer of Data

Data Dictionary

- Use a data dictionary to ensure everyone speaks the same “data language”, promoting consistency
- Utilize the data inventory to further detail your datasets
- Elements of a data dictionary:
  - Listing of Data Objects
    - Name
    - Description
  - Expected or Allowed Values
  - Data Type
  - Data Entry
  - Classification

Data Security

- Protection of sensitive data from unauthorized access and breaches
- This policy includes:
  - Guidelines for protecting data
  - Access control
  - Security awareness training
- Data Security policies correlate with the Data Classification policies and procedures

Data Classification

Public Data

- Freely available and accessible to anyone, causing no harm if disclosed.
- Examples include website content, press releases, and publicly available financial data.

Internal Data

- For internal use within an organization and is not intended for public disclosure.
- Examples include internal policies, procedures, and communications.

Confidential Data

- Sensitive and requires strict protection.
- Examples include personal information of employees and customers, financial records, and vendor contracts.

Restricted Data

- The most sensitive data, requiring the highest level of security.
- Examples include trade secrets, intellectual property, and Personally Identifiable Information (PII).

Data Privacy

- Ensures compliance with regulations
- Addresses how and what personal data is collected, used, and shared
- Data is subject to classification according to the Data Classification policy
- Promotes transparency and trust between local governments and their residents

Data Retention

- Records Retention Policy
- Outlines how long different types of data should be kept and how it will be archived or deleted
- Leverage the Data Classification policy for data types not covered within the policy
- Should align with your State’s regulations or code for Local Government Record Retention Schedules

Data Quality

- Standards for data accuracy, completeness, consistency, and timeliness
- Granular and broad within an organization
- Outlines required controls to reduce the risk of erroneous or incomplete data
- Create a data flow diagram to assist in identification of potential and existing risks and controls

Other Best Practices

- Conduct regular data quality audits
- Provide data literacy training
- Well-documented policies and procedures
- Continuous process improvement

Relevant and Reliable Data

Relevance of Data

Decision-makers depend on **accurate, up-to-date** data to assess both performance and risk for an organization. Data can be accurate and irrelevant at the same time.

To ensure your data is relevant, perform the following:

- Align your data collection and analysis with strategic goals and key performance indicators
  - If a goal is to answer all customer service calls within 60 seconds, relevant data may include the daily average speed of answer rate for each customer service representative and service line.
- Each dataset should serve a defined purpose, such as financial forecasting
- Conduct periodic reviews of the data to determine if it is still relevant
- Consult with data owners and stewards to identify weak areas within the data

Reliability of Data

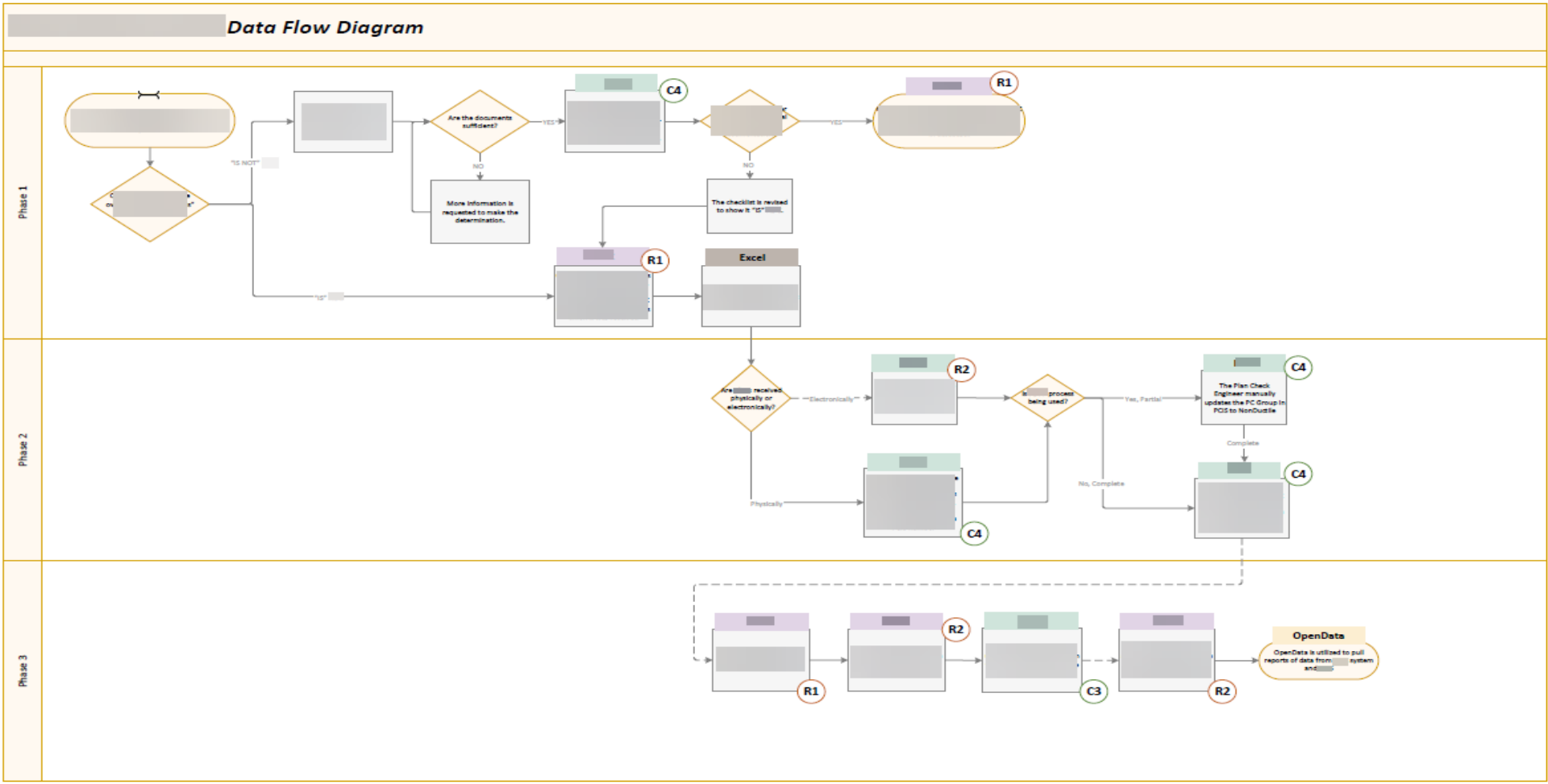
Decision-makers depend on **accurate, up-to-date** data to assess both performance and risk for an organization. Data cannot be inaccurate and relevant at the same time.

- What is a significant difference between financial and non-financial data?

To ensure your data is reliable, perform the following:

- Identify data sources and movement
- Identify potential and existing risks to data integrity
- Determine if controls are designed and operating effectively to mitigate risks
- Assess the results of internal assessments on data integrity
- Review procedures for end users to ensure data follows a standard format
- Ensure the dataset is captured within the data governance documentation

Data Flow Diagram



Legend

Automation

R Risk

C Control

R1 Data/reporting is inaccurate and/or incomplete due to a lack of oversight for manual data entry.

C1 Control does not exist.

R2 Data/reporting is inaccurate and/or incomplete due to interface/syncing issues.

C2 Control does not exist.

R3 Data/reporting is inaccurate and/or incomplete.

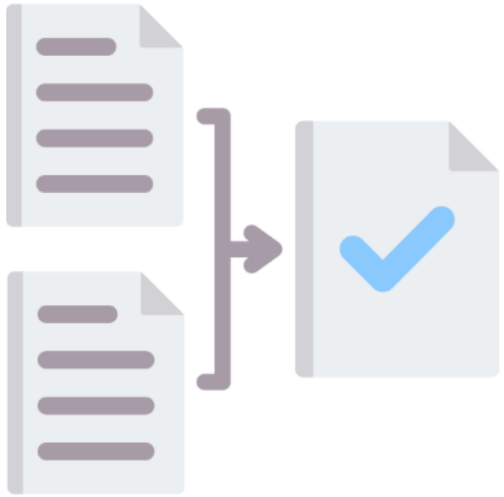
C3

R4 Data/reporting is inaccurate and/or incomplete due to a lack of oversight for manual data entry.

C4

Normalize the Data

- Scrub the data for use through:
  - Formatting
  - Relationship mapping between datasets
  - Identification of known errors, missing values, duplicates, and anomalies
- Preserve the originally collected dataset
- Maintain an audit trail of changes and procedures performed



Internal Controls

The Role of Internal Controls

Internal controls are policies, procedures, and activities put in place to ensure the accuracy and completeness of data.

Control Type	Example	Purpose
Access Control	Role-based access to systems	Prevent inappropriate data changes
Segregation of Duties	Independent review of manually entered data	Reduce risk of fraud or errors
Validation Rules	Data-type constraints, duplicate detection	Prevent incorrect data entry
Reconciliations	Comparison of manually created reports or dashboards to source data	Identify inconsistencies
Audit Trails	Track and document changes to data	Reduce risk of fraud or errors
Exception Reports	Highlight anomalies or missing data	Detect potential data quality issues

Management of Risks

Operational Risks

- What can go wrong?
  - Incomplete vendor or HR data
  - Duplicate payments to vendors, ghost employees, false vendors
- How controls help:
  - Implementation of field validations, workflow approvals, and audit logs
  - Monitor exception reports for inconsistencies

Financial Risks

- What can go wrong?
  - Inaccurate reporting to stakeholders
- How controls help:
  - Audit trails for all changes to financial records
  - Reconciliation of reports to source data for accuracy

Management of Risks

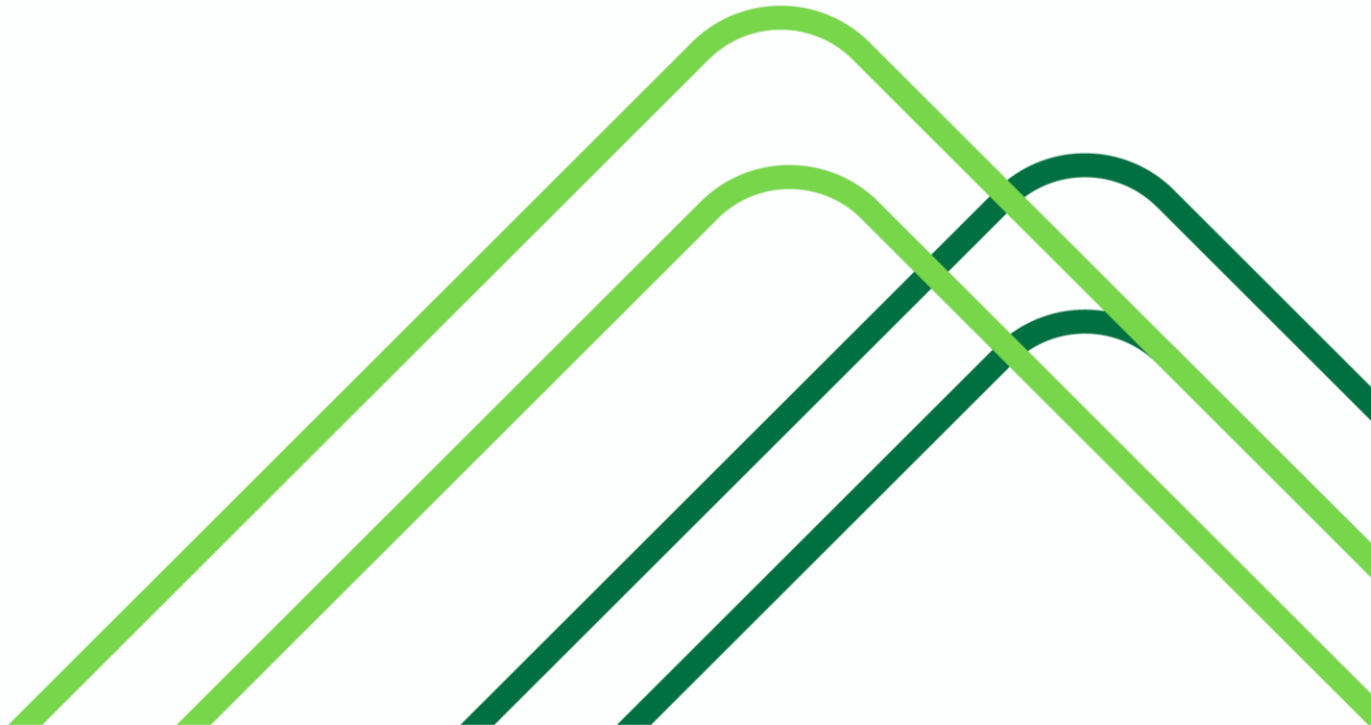
Compliance and Legal Risks

- What can go wrong?
  - Violation of data protection regulations, such as HIPPA
- How controls help:
  - Role-based access controls and encryption for sensitive data according to data classification standards
  - Retention schedules to ensure timely data deletion

Strategic and Reputational Risks

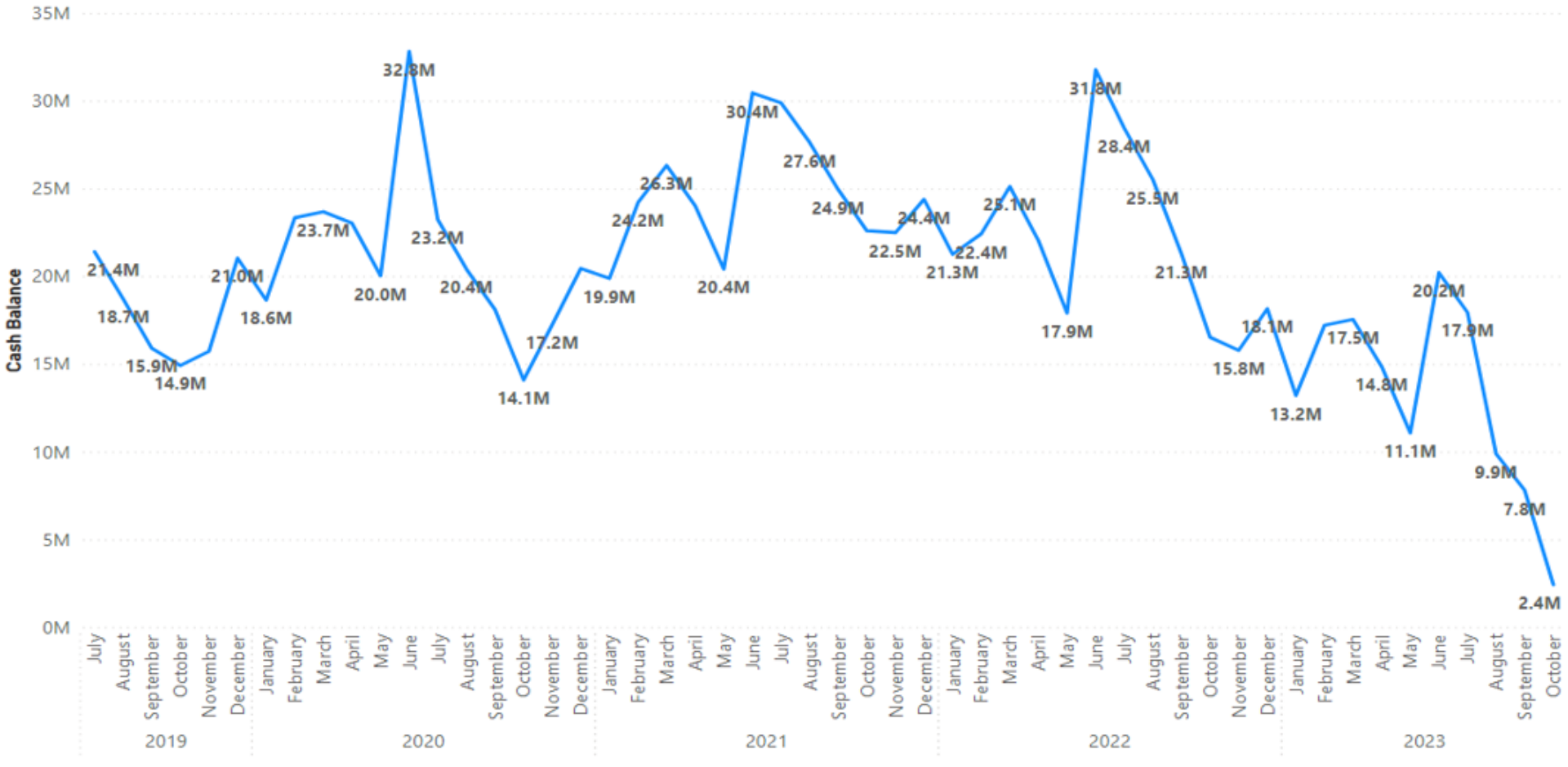
- What can go wrong?
  - Leadership making decisions based on flawed reports
- How controls help:
  - Data governance policies ensure reliability before reporting

Case Study



Case Study: Importance of Internal Controls

An organization went from having an average of $20-30M in its bank account at any given time, to now having only $2M. They are at risk of not being able to pay vendors or employees. The organization has hired you to come in and determine **1) what happened, 2) why it happened, 3) what will happen if they continue down this path, and 4) what steps they can take to redirect**.



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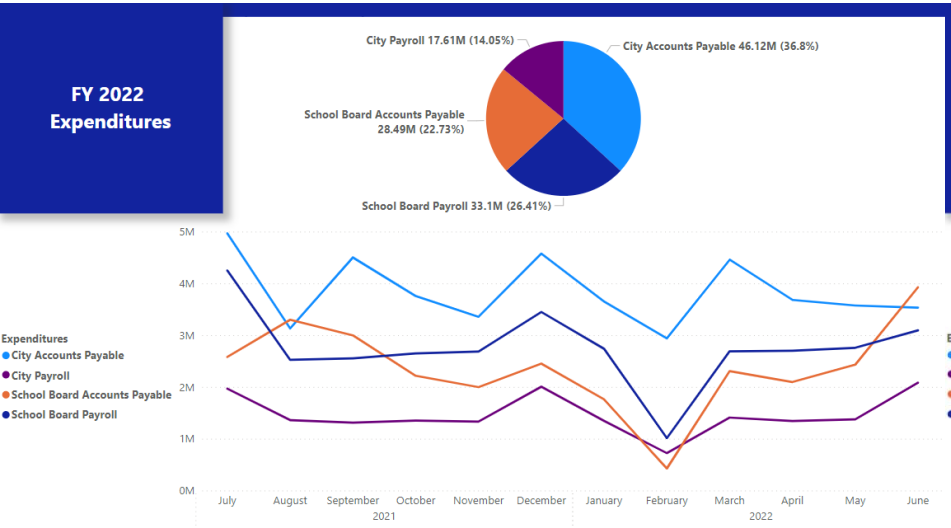

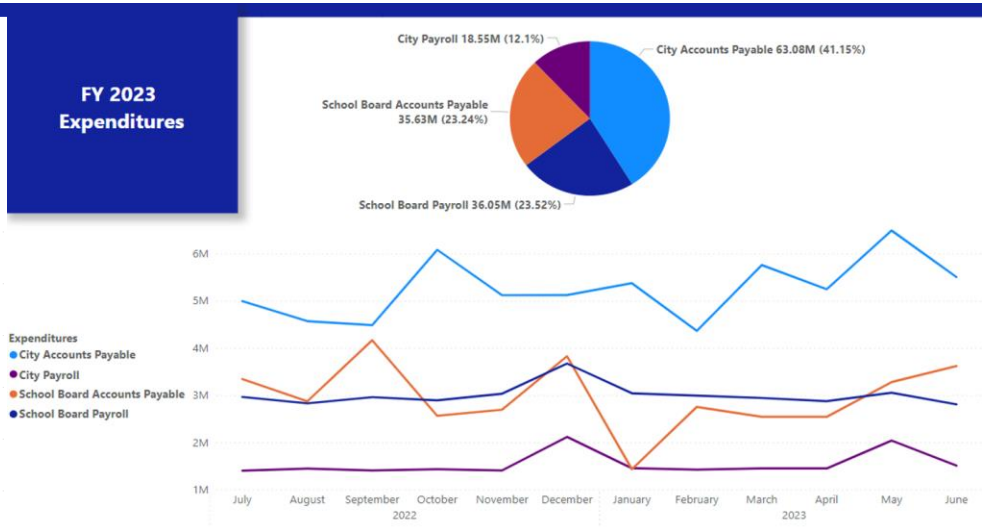

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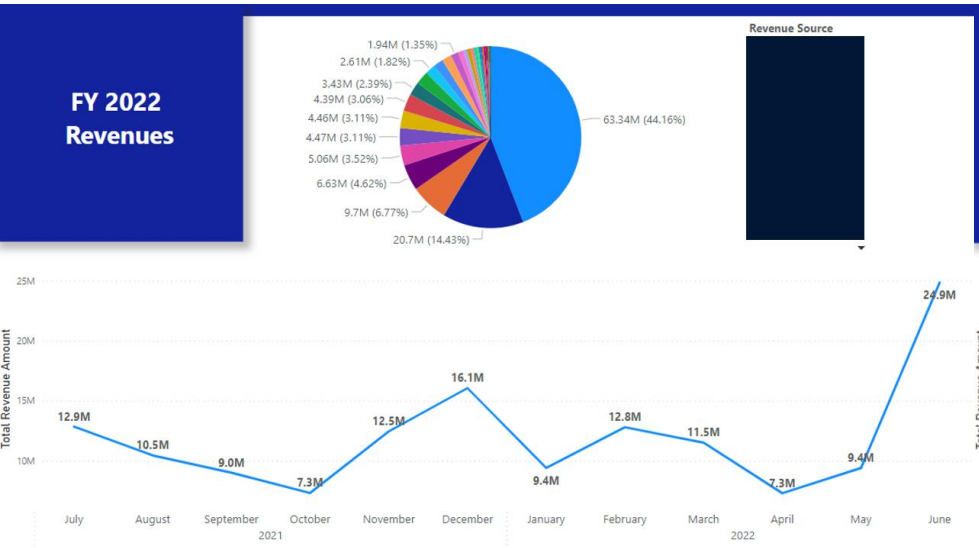

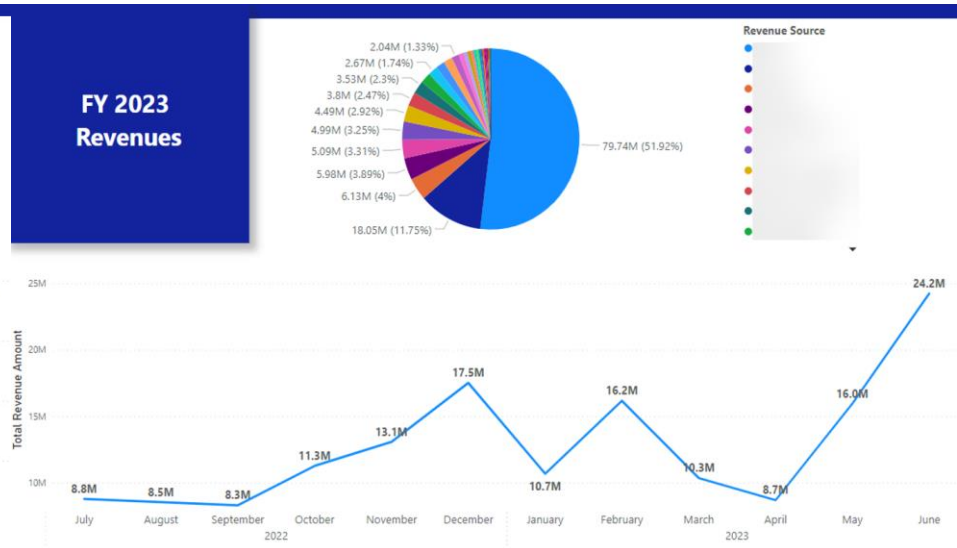

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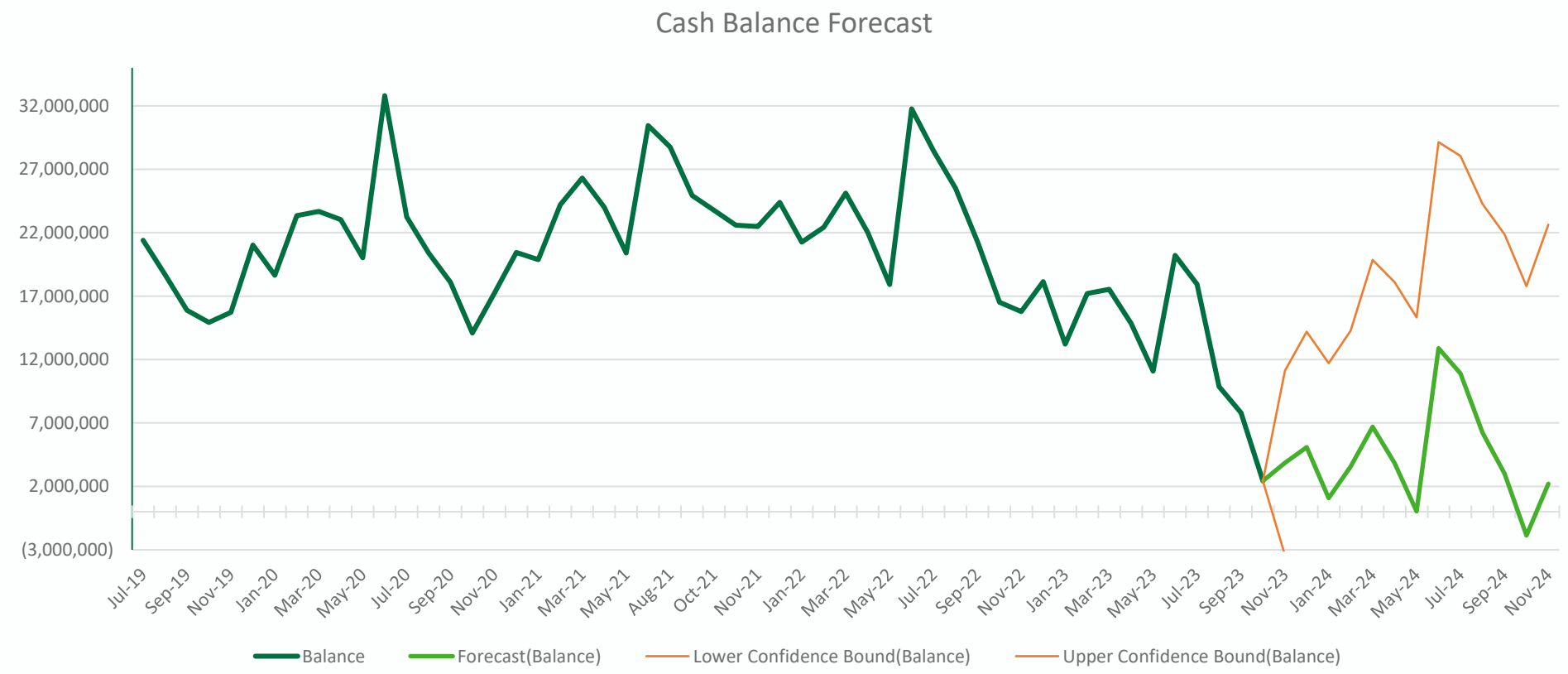

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- What steps should we take to keep this from happening?
- Utilizing the data, visualizations, and additional root cause analyses to make an informed, data-driven decision/recommendation

Root Cause:

- The analyst performing the billing for a major revenue source left the position, and the activity was never picked up and learned.
- The organization began buying materials at $750K per month due to a production component no longer working within their plant, requiring the organization to implement a “quick fix” to continue production.

Consistent Data Classification

What is data classification?

It’s the process of **organizing data into categories** based on sensitivity, value, usage, or other characteristics.

Common categories include:

- Restricted, Confidential, Internal, Public
- Personnel, Operational, Financial
- Structured and Unstructured

Benefits of Consistent Data Classification

Consistent classification isn't just about control—it's about unlocking the **long-term usability, visibility, and value** of your data.

Benefits include:

- Improved Discoverability
- Greater Reporting & Analysis
- Stronger Data Security
- Efficient Data Management
- Regulatory Compliance

Inconsistent classification leads to:

- Data duplication
- Conflicting reports and definitions
- Increased risk of non-compliance or exposure

Keys to a Successful Data Classification Strategy

- Collaborative Taxonomy
  - Finance, Legal, HR, and Operations
- Embedded within Workflows
  - Integrate into daily processes
- Supported by Technology
  - AI-driven Tools
- Governance and Culture
  - Empower staff and foster a culture of data responsibility

Key Takeaways

- Governance is the foundation of data integrity
- Reliable data fuels confident decision-making
- Internal controls minimize risk and support reporting
- Consistent classification ensures long-term usability and compliance
- Data integrity is a continuous commitment

About UHY

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