

# Real-World Data Governance

## Metadata Management's Impact on Data Governance

Monthly Webinar Series Hosted by DATAVERSITY

Robert S. Seiner – KIK Consulting

April 18, 2024 – 11:00 a.m. PT / 2:00 p.m. ET



# Metadata Management's Impact on Data Governance

## Introduction

### Real-World Data Governance – Monthly Webinar Series

**May 16, 2024:** How Generative AI and LLMs Shape Data Governance

Third Thursday each Month @ 2pm EST – Register at TDAN.com, KIKconsulting.com, DATAVERSITY.net

### Upcoming Events

**Data Governance & Information Quality Conference West (DGIQW)** – San Diego, California – June 3 – 7, 2024

### Non-Invasive Data Governance / Non-Invasive Data Governance Strikes Again Books

**2014:** ISBN 9781935504856 / TechnicsPub.com / Amazon.com

**2023:** ISBN 9781634623599 / TechnicsPub.com / Amazon.com

### Non-Invasive Data Governance / Metadata Governance Online Learning Plans

**Being Recorded:** How to Setup a Data Governance Framework

**Popular:** Business Glossaries, Data Dictionaries and Data Catalogs

DATAVERSITY Training Center – <https://training.dataversity.net>

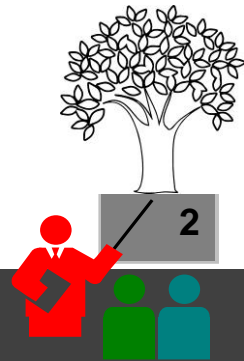
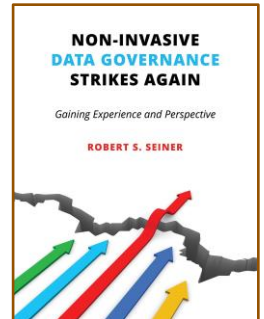
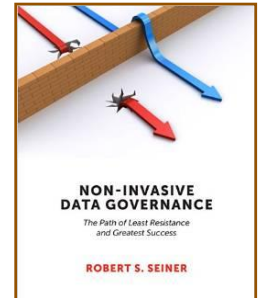
### KIK Consulting & Educational Services

[KIKConsulting.com](https://www.kikconsulting.com)

The Home of Non-Invasive Data Governance™

### Carnegie Mellon University (CMU)

**Adjunct:** Heinz College Executive Education – Chief Data Officer (CDataO) Certificate Program



# Metadata Management's Impact on Data Governance

## Abstract

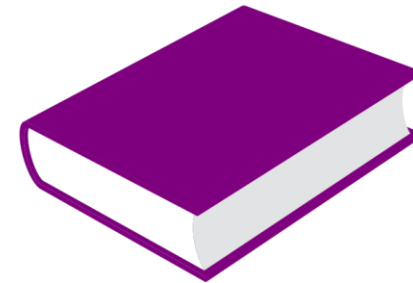
- In this webinar, I will share ...
  - The Relationship Between Metadata Management and Effective Data Governance Practices
  - How Metadata Enriches Lineage, Providing Insights into Data Origins and Transformations
  - Techniques for Integrating Metadata into Your Data Governance Framework
  - Leveraging Metadata to Improve Data Quality, Lineage, and Regulatory Compliance
  - Cases That Showcase the Transformative Impact of Metadata-Driven Data Governance



# Metadata Management's Impact on Data Governance

## Definitions

- **Data Governance** – The execution and enforcement of authority over data.
- **Data Stewardship** – Formal accountability for data.
- **Data Steward** – A person held formally accountable for their relationship to the data.
- **Data Management** – Refers to the comprehensive process of acquiring, organizing, storing, securing, processing, analyzing, and maintaining data to ensure its accuracy, accessibility, reliability, and relevance throughout its lifecycle within an organization.
- **Metadata** – Data stored in tools that improves business and technical value of data and data-related assets.
- **Metadata Management** – Involves organizing, storing, and controlling access to metadata to ensure its accuracy, consistency, and usability across an organization.



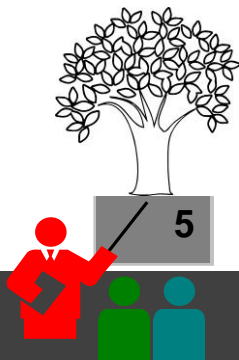
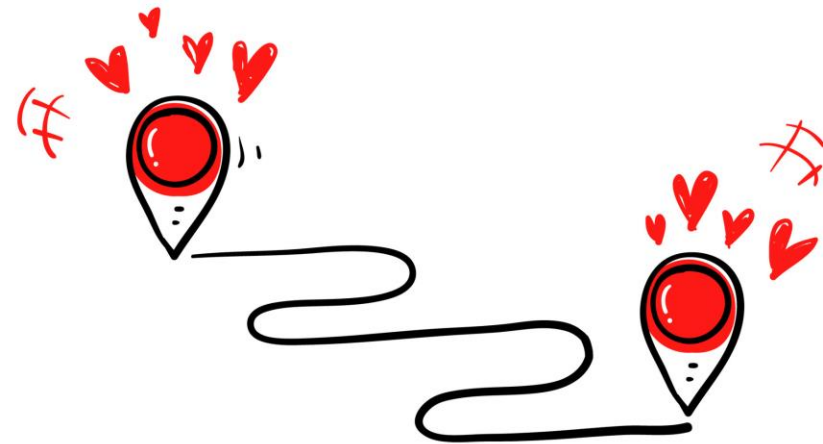
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# Metadata Management's Impact on Data Governance

## The Relationship Between Metadata Management and Effective Data Governance Practices

- Establishing a Common Data Language
- Enhancing Data Quality and Consistency
- Facilitating Data Lineage and Traceability
- Supporting Compliance and Risk Management
- Improving Data Usability and Accessibility

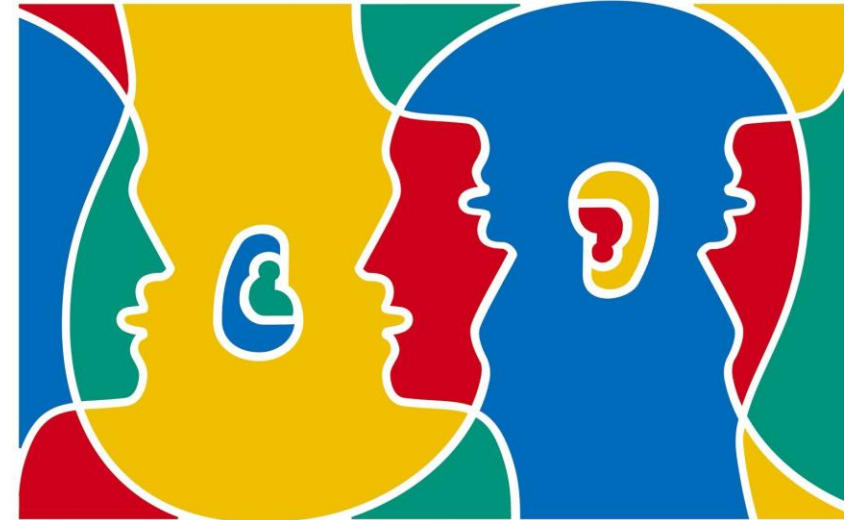




# Metadata Management's Impact on Data Governance

## The Relationship Between Metadata Management and Effective Data Governance Practices

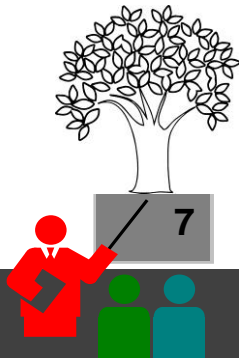
- Establishing a Common Data Language
  - Defining Standard Data Terminology
  - Aligning Business and Technical Metadata
  - Facilitating Cross-Departmental Communication
  - Ensuring Consistent Interpretation of Data
  - Supporting Unified Data Reporting and Analysis



# Metadata Management's Impact on Data Governance

## The Relationship Between Metadata Management and Effective Data Governance Practices

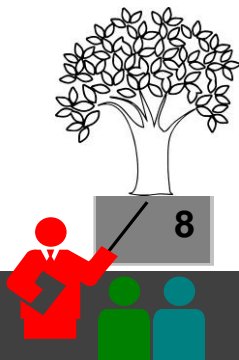
- Enhancing Data Quality and Consistency
  - Implementing Metadata Standards for Data Validation
  - Automating Data Cleansing Processes Using Metadata
  - Monitoring Data Quality Metrics Through Metadata Analysis
  - Identifying and Resolving Data Discrepancies
  - Enforcing Data Consistency Across Systems



# Metadata Management's Impact on Data Governance

## The Relationship Between Metadata Management and Effective Data Governance Practices

- Facilitating Data Lineage and Traceability
  - Documenting Data Sources and Transformations
  - Tracing Data Movement Across Systems
  - Revealing Dependencies and Impacts of Data Changes
  - Supporting Root Cause Analysis in Data Quality Issues
  - Enhancing Transparency in Data Processing and Usage

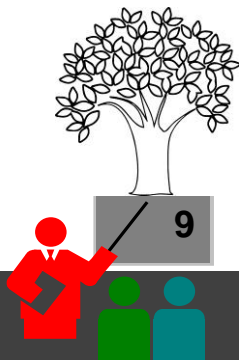




# Metadata Management's Impact on Data Governance

## The Relationship Between Metadata Management and Effective Data Governance Practices

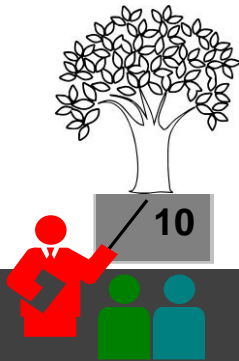
- Supporting Compliance and Risk Management
  - Mapping Regulatory Requirements to Data Assets
  - Identifying Sensitive Data Through Metadata Classification
  - Facilitating Data Retention and Deletion Policies
  - Enabling Rapid Response to Audit and Compliance Queries
  - Assessing and Mitigating Data Privacy Risks



# Metadata Management's Impact on Data Governance

## The Relationship Between Metadata Management and Effective Data Governance Practices

- Improving Data Usability and Accessibility
  - Cataloging Data Assets for Easy Discovery
  - Enhancing Data Context with Descriptive Metadata
  - Supporting Data Democratization Across the Organization
  - Streamlining Data Integration and Interoperability
  - Facilitating Self-Service Data Analytics and Reporting



# Metadata Management's Impact on Data Governance

## How Metadata Enriches Lineage, Providing Insights into Data Origins and Transformations

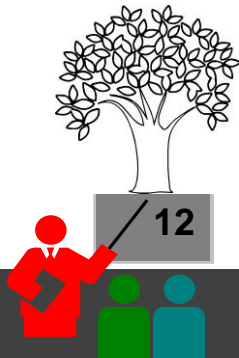
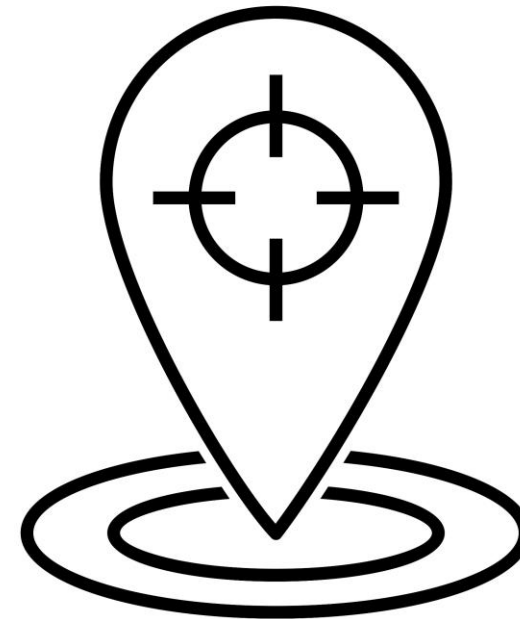
- Tracking Data Provenance
- Mapping Data Flow Across Systems
- Identifying Transformation Points
- Ensuring Transparency in Data Changes
- Supporting Audit and Compliance Efforts



# Metadata Management's Impact on Data Governance

## How Metadata Enriches Lineage, Providing Insights into Data Origins and Transformations

- Tracking Data Provenance
  - Documenting Original Data Sources
  - Capturing Creation and Modification Timestamps
  - Recording Data Owner and Source System
  - Identifying Initial Data Formats and Structures
  - Logging Initial Data Quality Metrics



# Metadata Management's Impact on Data Governance

## How Metadata Enriches Lineage, Providing Insights into Data Origins and Transformations

- Mapping Data Flow Across Systems
  - Visualizing Data Movement and Integration Paths
  - Detailing Inter-system Data Transfers and Exchanges
  - Highlighting Data Transformation Points and Processes
  - Outlining Data Dependencies and Interconnections
  - Identifying External Data Inputs and Outputs



# Metadata Management's Impact on Data Governance

## How Metadata Enriches Lineage, Providing Insights into Data Origins and Transformations

- Identifying Transformation Points
  - Documenting Data Transformation Rules and Logic
  - Highlighting Data Aggregation, Filtering, and Cleansing Steps
  - Tracking Version Changes and Updates
  - Recording Data Enrichment and Derivation Processes
  - Noting Data Segregation and Anonymization Activities

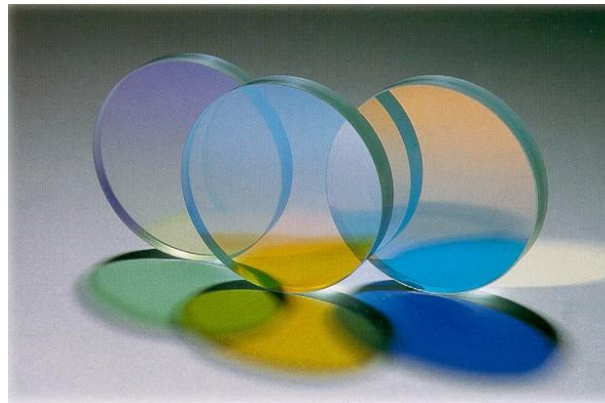




# Metadata Management's Impact on Data Governance

## How Metadata Enriches Lineage, Providing Insights into Data Origins and Transformations

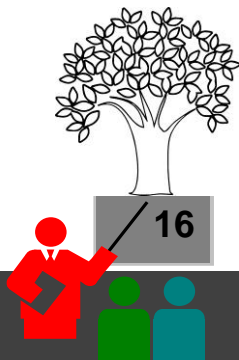
- Ensuring Transparency in Data Changes
  - Logging All Modifications and Updates to Data
  - Providing Audit Trails for Data Alterations
  - Detailing Reasons and Context for Data Changes
  - Making Data Change Histories Accessible
  - Establishing Clear Accountability for Data Modifications



# Metadata Management's Impact on Data Governance

## How Metadata Enriches Lineage, Providing Insights into Data Origins and Transformations

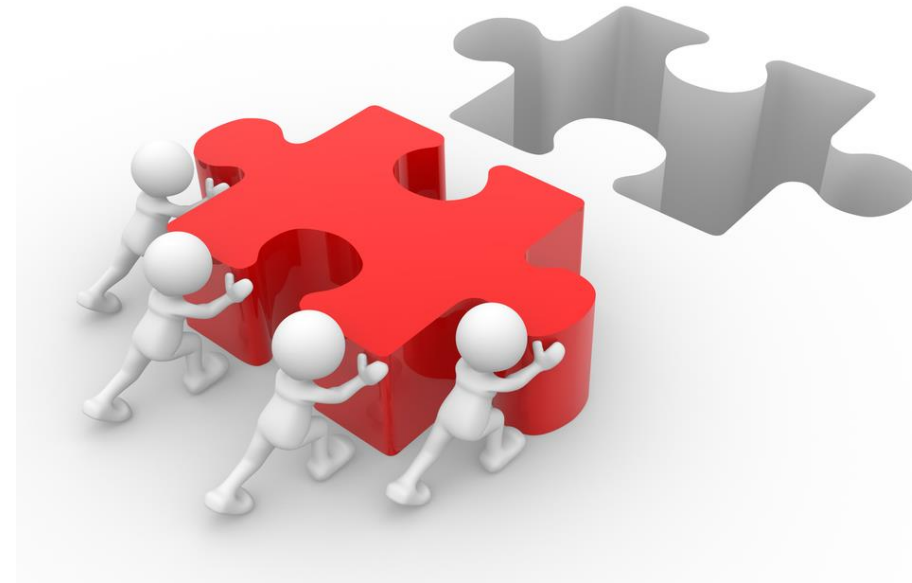
- Supporting Audit and Compliance Efforts
  - Facilitating Traceability of Data Through Its Lifecycle
  - Demonstrating Compliance with Data Regulations
  - Enabling Quick Retrieval of Historical Data Processing Information
  - Supporting Evidence-Based Responses to Audits
  - Documenting Adherence to Data Governance Policies



# Metadata Management's Impact on Data Governance

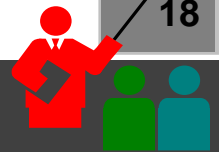
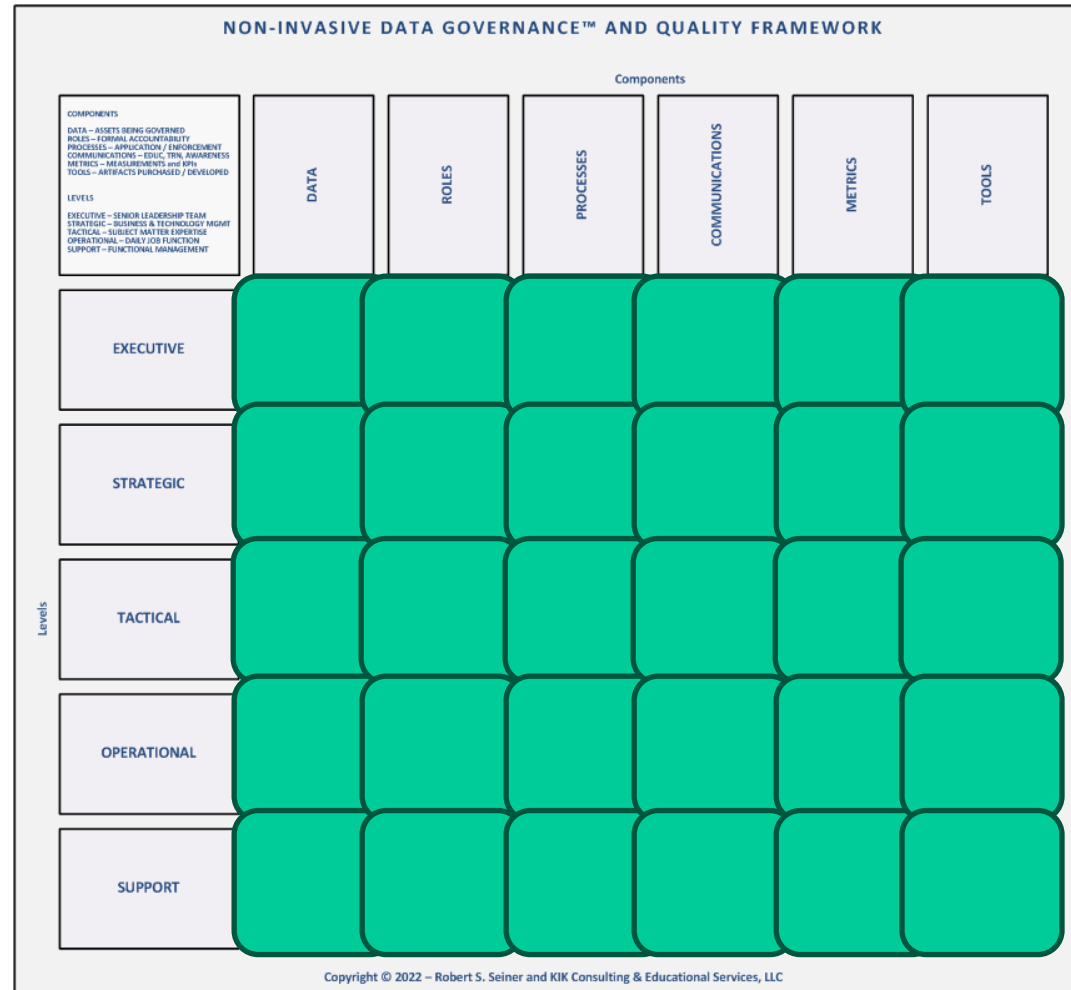
## Techniques for Integrating Metadata into Your Data Governance Framework

- Implementing Metadata Repositories
- Automating Metadata Collection
- Standardizing Metadata Across Sources
- Linking Metadata to Data Quality Metrics
- Embedding Metadata in Data Stewardship Processes



# Metadata Management's Impact on Data Governance

## Techniques for Integrating Metadata into Your Data Governance Framework



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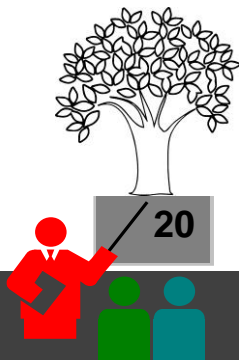
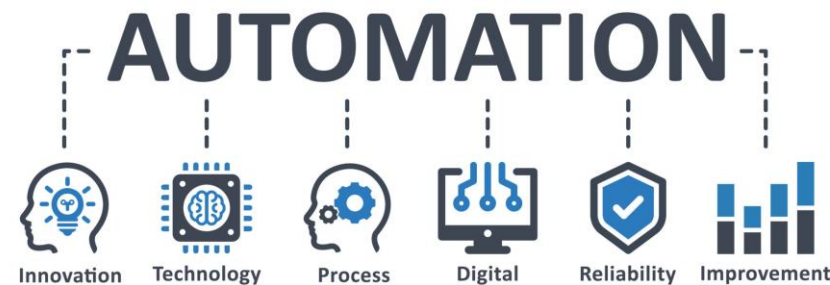
- Implementing Metadata Repositories
  - Establishing Centralized Storage for Metadata
  - Defining Access Controls and Permissions
  - Standardizing Metadata Formats and Templates
  - Ensuring Scalability and Security of the Repository
  - Integrating with Data Catalogs and Management Tools



# Metadata Management's Impact on Data Governance

## Techniques for Integrating Metadata into Your Data Governance Framework

- Automating Metadata Collection
  - Deploying Metadata Extraction Tools
  - Implementing Real-Time Metadata Capture Mechanisms
  - Configuring Data Integration Pipelines for Metadata Harvesting
  - Utilizing APIs for External Metadata Acquisition
  - Scheduling Regular Metadata Updates and Refreshes





# Metadata Management's Impact on Data Governance

## Techniques for Integrating Metadata into Your Data Governance Framework

- Standardizing Metadata Across Sources
  - Developing Metadata Naming Conventions and Standards
  - Creating Metadata Templates for Consistency
  - Harmonizing Metadata Definitions Across Systems
  - Establishing Cross-System Metadata Mapping Guidelines
  - Implementing Validation Rules for Metadata Compliance



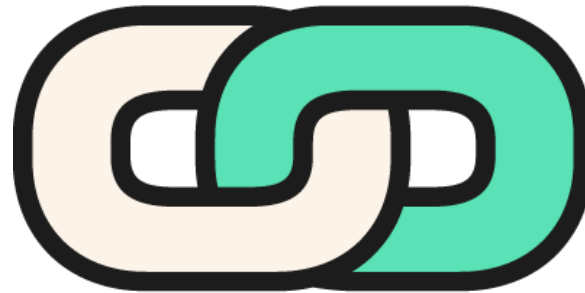
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## Techniques for Integrating Metadata into Your Data Governance Framework

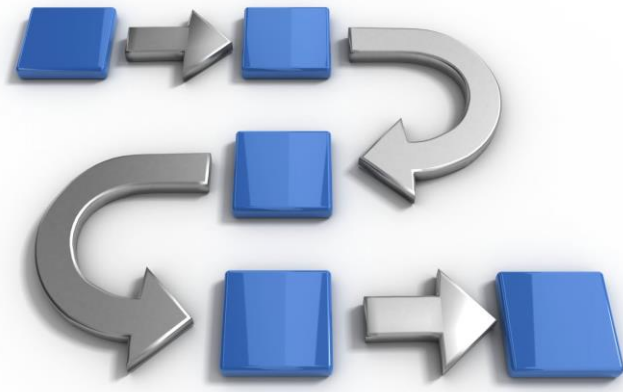
- Linking Metadata to Data Quality Metrics
  - Defining Quality Indicators within Metadata Attributes
  - Associating Metadata with Data Quality Scorecards
  - Utilizing Metadata for Data Quality Monitoring and Reporting
  - Embedding Data Quality Rules and Thresholds in Metadata
  - Tracking Data Quality Improvements over Time via Metadata



# Metadata Management's Impact on Data Governance

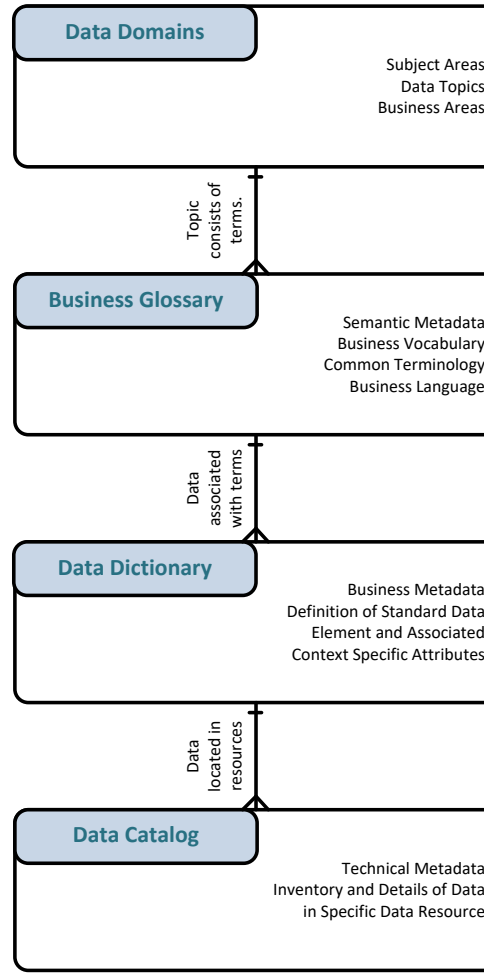
## Techniques for Integrating Metadata into Your Data Governance Framework

- Embedding Metadata in Data Stewardship Processes
  - Recognizing Metadata Ownership to Data Stewards
  - Incorporating Metadata Review in Stewardship Responsibilities
  - Using Metadata to Document Stewardship Activities
  - Integrating Metadata Updates into Data Change Management Procedures
  - Leveraging Metadata for Communication and Collaboration Among Stewards



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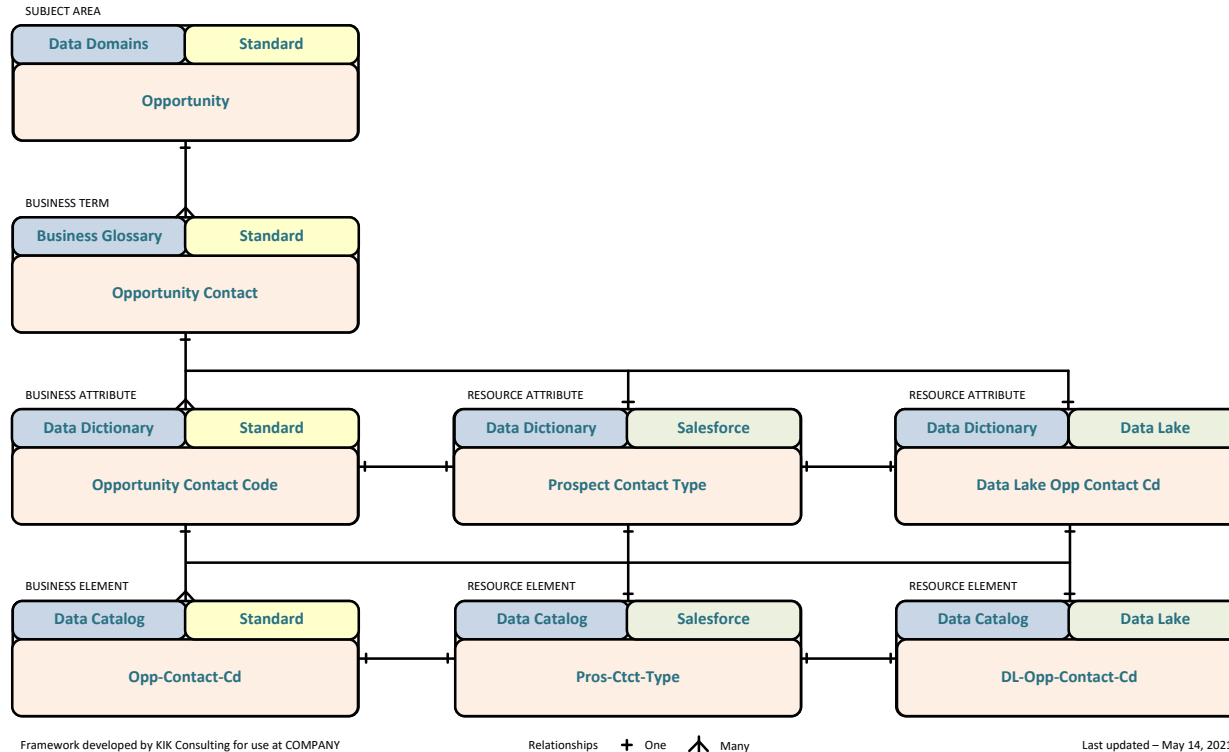
## Techniques for Integrating Metadata into Your Data Governance Framework



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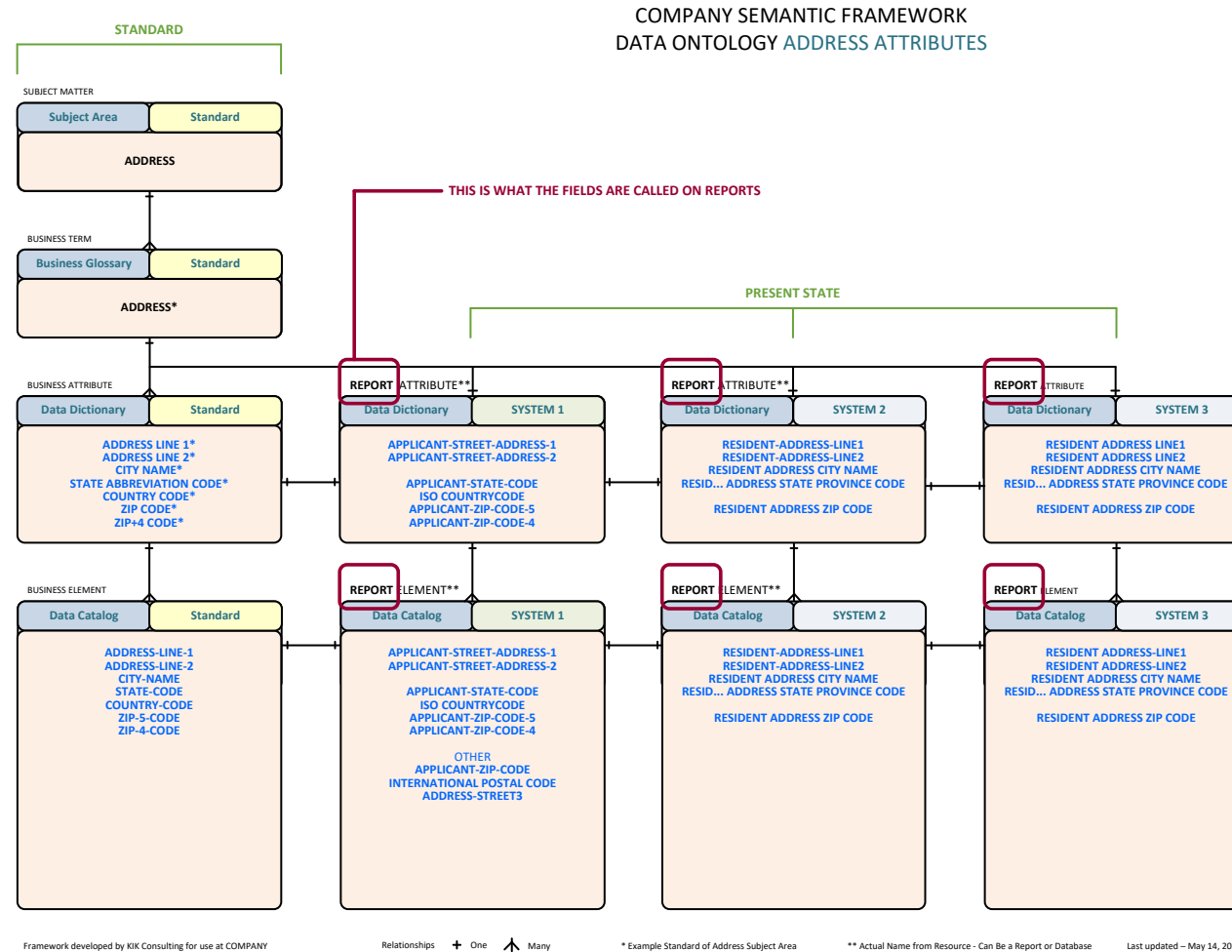
## Techniques for Integrating Metadata into Your Data Governance Framework

COMPANY SEMANTIC FRAMEWORK  
DATA ONTOLOGY EXAMPLE



# Metadata Management's Impact on Data Governance

## Techniques for Integrating Metadata into Your Data Governance Framework



Framework developed by KIK Consulting for use at COMPANY

Relationships + One ↗ Many

\* Example Standard of Address Subject Area

\*\* Actual Name from Resource - Can Be a Report or Database

Last updated - May 14, 2021

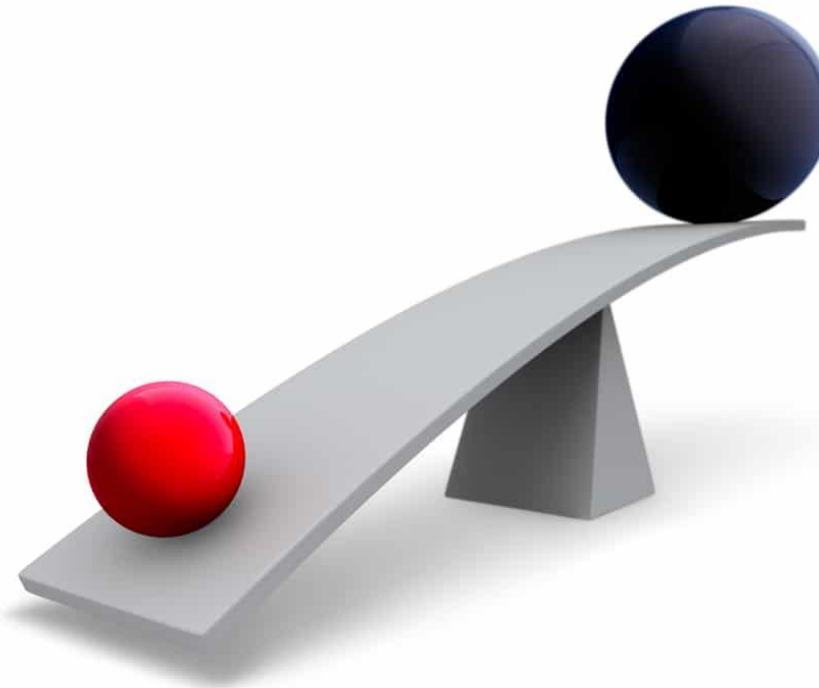




# Metadata Management's Impact on Data Governance

## Leveraging Metadata to Improve Data Quality, Lineage, and Regulatory Compliance

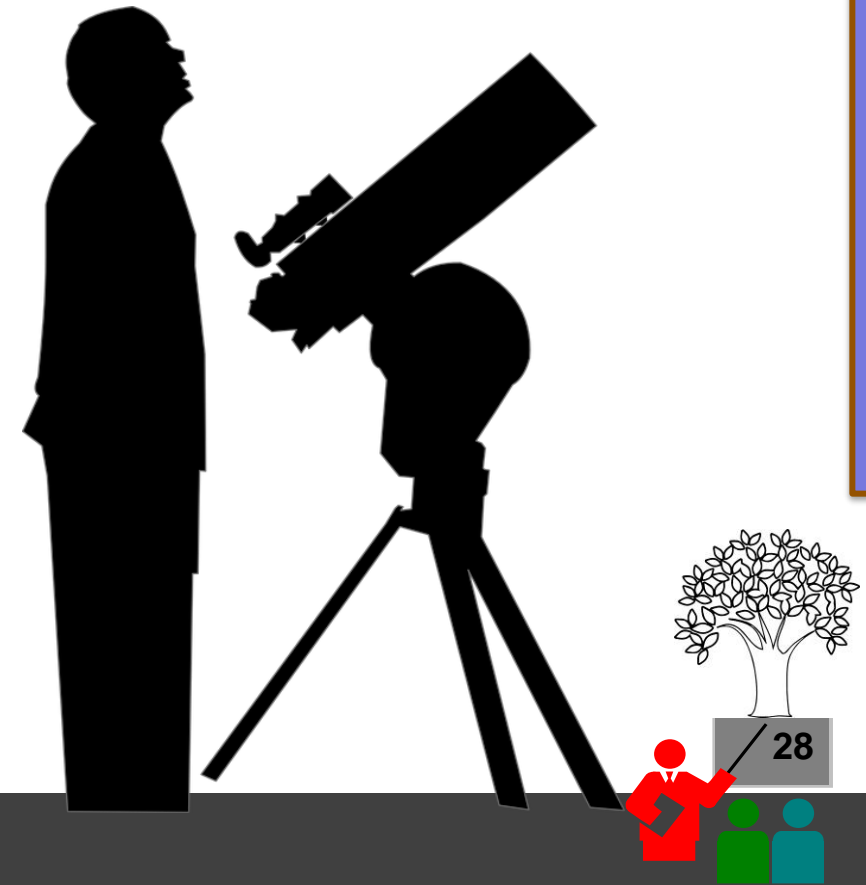
- Enhancing Data Discovery and Classification
- Enabling Precise Data Quality Assessment
- Tracing Data Lineage for Transparency
- Streamlining Compliance Reporting
- Facilitating Data Privacy Management



# Metadata Management's Impact on Data Governance

## Leveraging Metadata to Improve Data Quality, Lineage, and Regulatory Compliance

- Enhancing Data Discovery and Classification
  - Utilizing Metadata Tags for Easy Data Categorization
  - Implementing Metadata-Driven Search Capabilities
  - Applying Metadata for Automated Data Classification
  - Enriching Metadata to Support Advanced Discovery Techniques
  - Leveraging Metadata for Identifying Sensitive Data



# Metadata Management's Impact on Data Governance

## Leveraging Metadata to Improve Data Quality, Lineage, and Regulatory Compliance

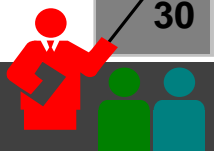
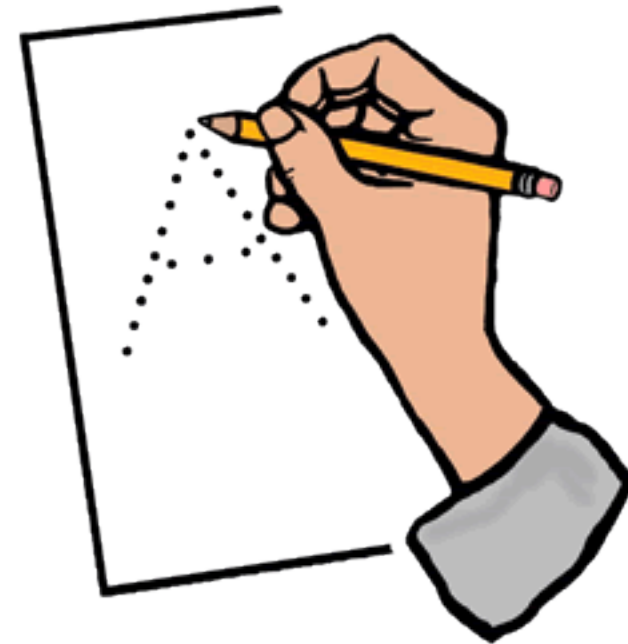
- Enabling Precise Data Quality Assessment
  - Defining Data Quality Criteria in Metadata
  - Tracking Data Quality Metrics through Metadata
  - Using Metadata for Data Quality Scorecarding
  - Automating Data Quality Checks Based on Metadata
  - Documenting Data Quality Issues and Resolutions in Metadata



# Metadata Management's Impact on Data Governance

## Leveraging Metadata to Improve Data Quality, Lineage, and Regulatory Compliance

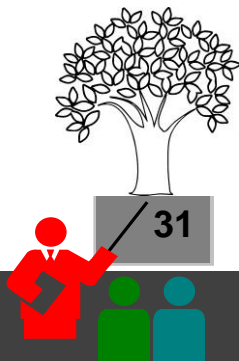
- Tracing Data Lineage for Transparency
  - Mapping Data Sources and Destinations in Metadata
  - Recording Data Transformations within Metadata
  - Visualizing Data Flow Using Lineage Metadata
  - Documenting Data Lifecycle Events in Metadata
  - Providing Audit Trails with Detailed Lineage Metadata



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## Leveraging Metadata to Improve Data Quality, Lineage, and Regulatory Compliance

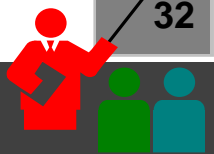
- Streamlining Compliance Reporting
  - Tagging Data with Compliance-Relevant Metadata
  - Automating Regulatory Reports Using Metadata
  - Documenting Data Handling Procedures in Metadata
  - Mapping Metadata to Specific Regulatory Requirements
  - Tracking Changes to Compliance-Critical Data in Metadata



# Metadata Management's Impact on Data Governance

## Leveraging Metadata to Improve Data Quality, Lineage, and Regulatory Compliance

- Facilitating Data Privacy Management
  - Classifying Data Sensitivity Levels through Metadata
  - Using Metadata to Identify Personal and Sensitive Data
  - Implementing Access Controls Based on Privacy Metadata
  - Documenting Consent and Data Usage Agreements in Metadata
  - Monitoring Data Privacy Compliance via Metadata Analysis

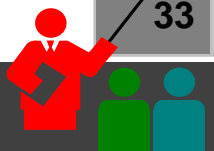
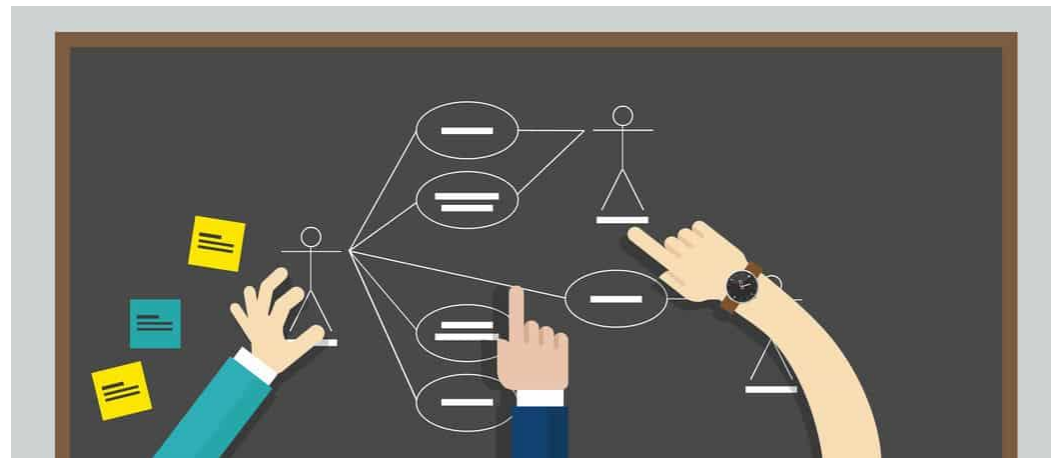




# Metadata Management's Impact on Data Governance

## Cases That Showcase the Transformative Impact of Metadata-Driven Data Governance

- Streamlined Regulatory Compliance Processes
- Accelerated Data Quality Improvement Initiatives
- Enhanced Data Lineage for Audit Trail Clarity
- Improved Decision-Making Through Data Insight Accessibility
- Efficient Data Integration and Interoperability Across Systems



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## Cases That Showcase the Transformative Impact of Metadata-Driven Data Governance

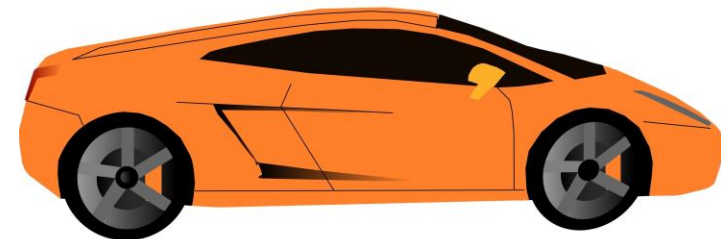
- Streamlined Regulatory Compliance Processes
  - Accelerated Data Classification for GDPR Compliance
  - Automated Reporting for Financial Regulations
  - Efficient Identification and Protection of PHI for HIPAA Compliance
  - Simplified Audit Trails for SOX Compliance
  - Enhanced Data Discovery for CCPA Data Subject Requests



# Metadata Management's Impact on Data Governance

## Cases That Showcase the Transformative Impact of Metadata-Driven Data Governance

- Accelerated Data Quality Improvement Initiatives
  - Rapid Identification and Correction of Data Anomalies
  - Enhanced Data Cleansing Operations through Metadata Insights
  - Automated Data Quality Monitoring Systems
  - Improved Data Standardization Across Sources
  - Targeted Data Improvement Projects Based on Metadata Analysis



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# Metadata Management's Impact on Data Governance

## Cases That Showcase the Transformative Impact of Metadata-Driven Data Governance

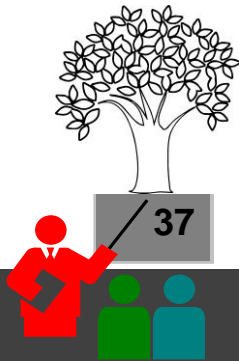
- Enhanced Data Lineage for Audit Trail Clarity
  - Comprehensive Tracking of Data Origins and Transformations
  - Clear Visualization of Data Movement Across Systems
  - Detailed Documentation of Data Changes for Auditing
  - Improved Accountability with Lineage-Based User Activity Logs
  - Streamlined Responses to Audit Queries with Precise Data Histories



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## Cases That Showcase the Transformative Impact of Metadata-Driven Data Governance

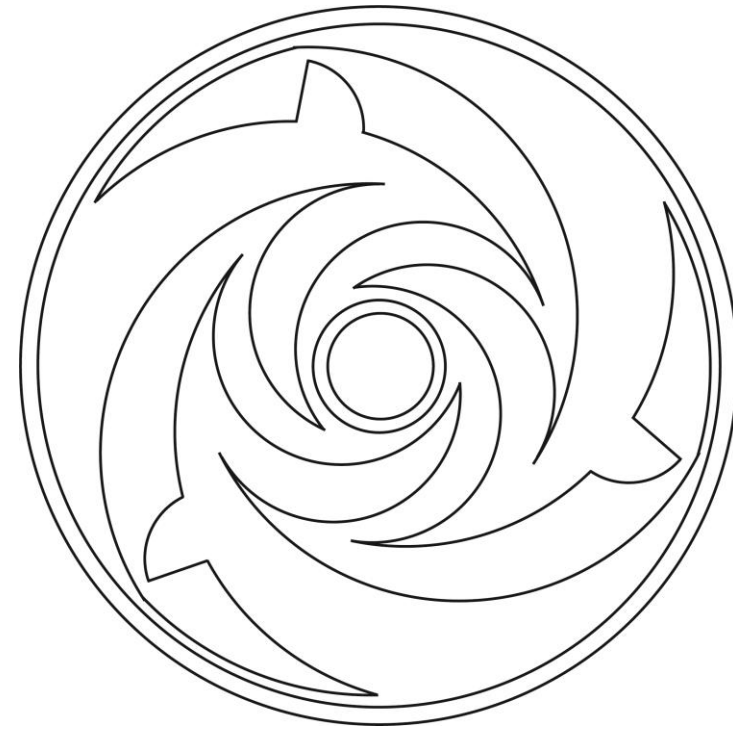
- Improved Decision-Making Through Data Insight Accessibility
  - Enhanced Data Context for Analytical Models
  - Quick Access to Relevant Data for Business Users
  - Data Trustworthiness Indicators Supporting Confident Decisions
  - Reduction in Time-to-Insight for Strategic Initiatives
  - Facilitated Cross-Departmental Data Sharing and Collaboration



# Metadata Management's Impact on Data Governance

## Cases That Showcase the Transformative Impact of Metadata-Driven Data Governance

- Efficient Data Integration and Interoperability Across Systems
  - Harmonized Data Formats and Standards
  - Automated Data Mapping and Transformation Processes
  - Seamless Data Exchange Between Diverse Systems
  - Reduced Integration Errors and Conflicts
  - Accelerated Onboarding of New Data Sources



# Metadata Management's Impact on Data Governance

## Summary

- In the webinar, I shared ...
  - The Relationship Between Metadata Management and Effective Data Governance Practices
  - How Metadata Enriches Lineage, Providing Insights into Data Origins and Transformations
  - Techniques for Integrating Metadata into Your Data Governance Framework
  - Leveraging Metadata to Improve Data Quality, Lineage, and Regulatory Compliance
  - Cases That Showcase the Transformative Impact of Metadata-Driven Data Governance



# Metadata Management's Impact on Data Governance

## Q & A - Contact Information

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[rseiner@kikconsulting.com](mailto:rseiner@kikconsulting.com) @RSeiner



*thank you!*

