

Real-World Data Governance

How to Select the “Right” Metadata to Govern

Monthly Webinar Series Hosted by DATAVERSITY

Robert S. Seiner – KIK Consulting

November 16, 2023 – 11:00 a.m. PT / 2:00 p.m. ET



How to Select the "Right" Metadata to Govern

Introduction

Real-World Data Governance – Monthly Webinar Series

December 21, 2023: Why is Governing Data Quality So Hard?

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

Upcoming Events

Data Governance and Information Quality East: Dataversity Conference – Washington, DC – December 4th – 8th

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

2014: ISBN 9781935504856 / Technics Publications / Amazon.com

May 2023: ISBN 9781634623599 / Technics Publications / Amazon.com

Non-Invasive Data Governance / Metadata Governance Online Learning Plans

Latest: Business Glossaries, Data Dictionaries and Data Catalogs

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

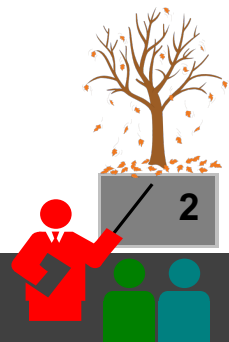
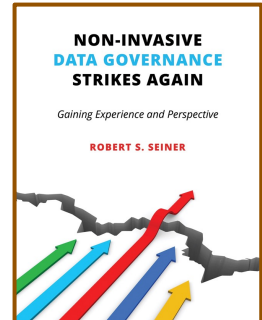
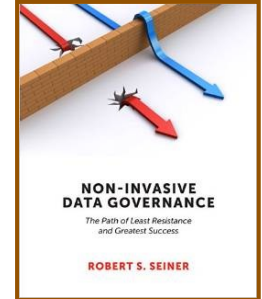
KIK Consulting & Educational Services

KIKConsulting.com: Knowledge is King

The Home of Non-Invasive Data Governance™

Carnegie Mellon University (CMU)

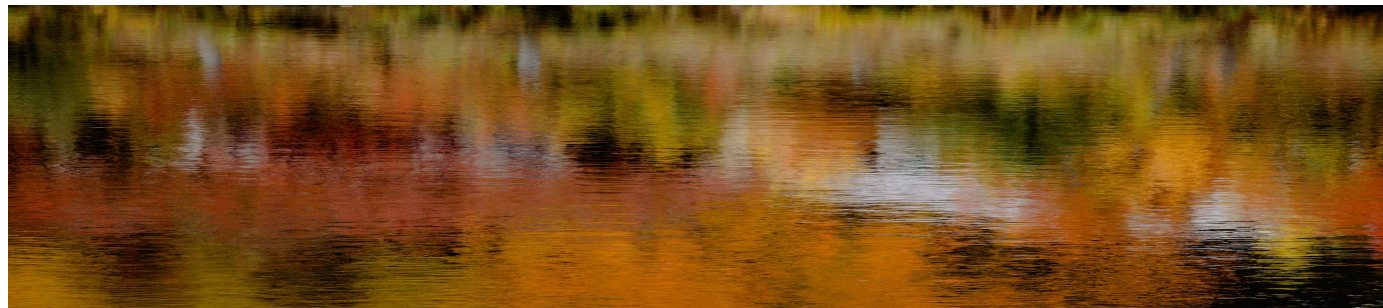
Adjunct: Heinz College Chief Data Officer (CDataO) – Executive Education



How to Select the "Right" Metadata to Govern

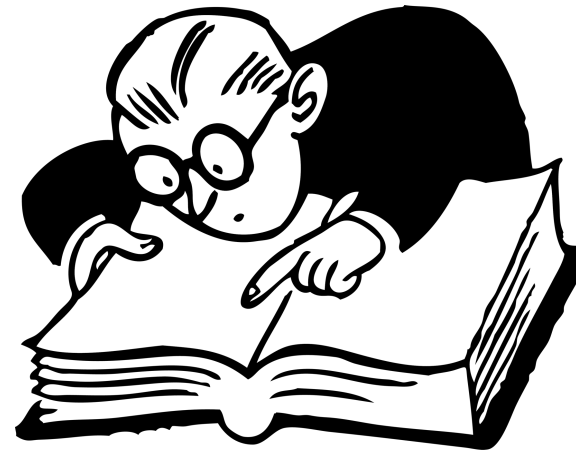
Abstract

- In this webinar, I will share ...
 - What It Means to Govern Metadata
 - Categories of Metadata to Consider
 - Inventorying Metadata You Already Have (and Its Value)
 - Prospecting for Business and Technical Metadata Requirements
 - Selecting the “Right” Metadata to Govern (While Building Data Literacy)



How to Select the "Right" Metadata to Govern 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.
- **Metadata** – Data, stored in IT tools, that improves both the business and technical understanding of data and data-related assets. Data about data.



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

- Does Metadata Need to Be Governed?
- Execute and Enforce Authority Over Metadata
- Formalize Accountability for Metadata
- Recognize Metadata Stewards
- The Metadata Will Not Govern Itself

**The
Big
Question?**



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

- Does Metadata Need to Be Governed?
- The Answer is Most Definitely Yes
 - To Assure Metadata Quality and Accuracy
 - To Assure Metadata Discoverability and Accessibility
 - To Assure Metadata Compliance and Regulatory Requirements
 - To Assure Metadata Lineage and Provenance
 - To Assure Metadata Integration and Interoperability



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

- Does Metadata Need to Be Governed?
- The Answer is Most Definitely Yes

The metadata will not **define** itself!
The metadata will not **produce** itself!
The metadata will not **use** itself!
The metadata will not govern itself!



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

- **Execute and Enforce Authority Over Metadata**

- Establishing clear guidelines, processes, and responsibilities for managing metadata throughout its lifecycle within an organization.
 - **Definition of Metadata:** Defining metadata involves specifying what types of information about data are considered important and relevant for the organization. This includes details such as data lineage, data ownership, data quality, and other attributes that provide context and understanding of the data.
 - **Production of Metadata:** This involves the creation and collection of metadata. It includes processes for capturing metadata at various stages of the data lifecycle, such as when data is created, modified, or ingested into a system. This may involve automated tools, manual documentation, or a combination of both.
 - **Use of Metadata:** Using metadata involves leveraging it for various purposes, such as data discovery, analysis, reporting, and compliance. It allows stakeholders to understand the meaning, context, and relationships of data, enabling them to make informed decisions and ensure data quality.



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

- Execute and Enforce Authority Over Metadata
 - **Authority and Governance:** Executing authority means establishing clear ownership and accountability for metadata management. This involves assigning roles and responsibilities to individuals or teams who are responsible for defining, producing, and using metadata. It also entails setting policies and standards for metadata management.
 - **Enforcement of Policies:** Enforcing authority means ensuring that the defined policies and standards for metadata management are followed consistently across the organization. This may involve implementing technical controls, conducting audits, and providing training and guidance to staff.



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

- Execute and Enforce Authority Over Metadata
 - **Compliance and Monitoring:** Monitoring metadata activities is crucial to ensure compliance with established policies. This includes regular reviews of metadata definitions, production processes, and usage practices to identify any deviations or non-compliance.
 - **Resolution of Discrepancies:** When discrepancies or issues with metadata arise, it's important to have a process in place to address and resolve them. This may involve clarifying definitions, updating metadata records, or implementing corrective actions to ensure accurate and consistent metadata.
 - **Continuous Improvement:** Authority over metadata is an ongoing process. It requires a commitment to continuous improvement by adapting to changes in data environments, technologies, and organizational needs. This may involve periodic reviews of metadata management practices and making adjustments as necessary.



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

- **Formalize Accountability for Metadata**

- Formalizing accountability for the definition, production, and use of metadata in the context of data governance involves establishing clear roles, responsibilities, and processes within an organization to ensure that metadata is managed effectively and consistently.
 - **Definition of Metadata:** Formalizing accountability for the definition of metadata means designating individuals or teams responsible for specifying what types of information about data are considered important and relevant for the organization.
 - **Production of Metadata:** This entails assigning specific roles and responsibilities for the creation, collection, and maintenance of metadata. Individuals or teams responsible for metadata production are accountable for capturing relevant metadata at various stages of the data lifecycle.
 - **Use of Metadata:** Formalizing accountability for the use of metadata involves designating individuals or teams responsible for leveraging metadata for various purposes, such as data discovery, analysis, reporting, and compliance.



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

- Formalize Accountability for Metadata
 - **Role Assignments:** This step involves explicitly assigning roles related to metadata management. For example, a Data Steward or Metadata Manager may be responsible for overseeing the definition, production, and use of metadata. Data Owners or Subject Matter Experts may also play crucial roles in defining metadata attributes and ensuring their accuracy.
 - **Documentation of Responsibilities:** It's important to document the specific responsibilities associated with metadata management roles. This documentation should outline the tasks, expectations, and authorities of individuals or teams involved in defining, producing, and using metadata.
 - **Establishment of Policies and Standards:** Formalizing accountability also requires setting policies and standards for metadata management. These policies provide clear guidelines for how metadata should be defined, produced, and utilized, ensuring consistency and alignment with organizational objectives.



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

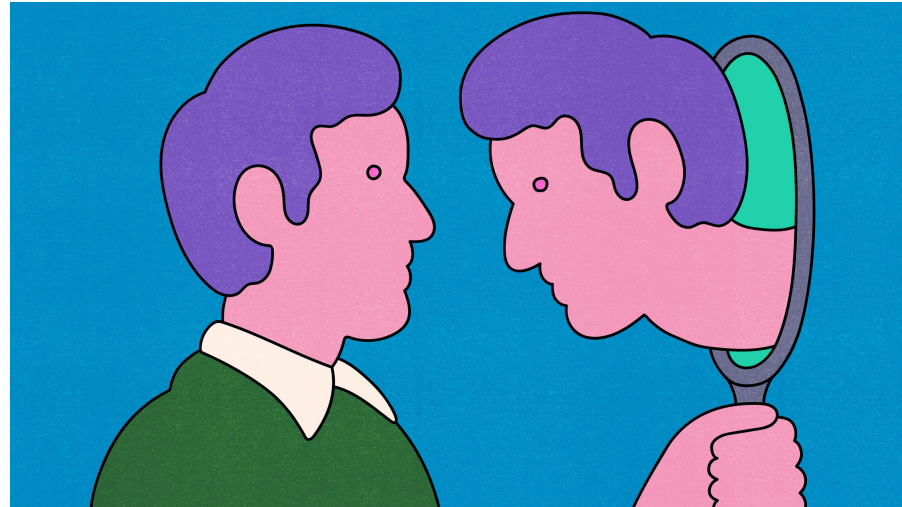
- Formalize Accountability for Metadata
 - **Training and Education:** Those entrusted with accountability for metadata management should receive appropriate training and education. This equips them with the necessary knowledge and skills to carry out their responsibilities effectively. Training may cover topics such as metadata best practices, tools, and compliance requirements.
 - **Oversight and Governance:** Formalized accountability includes mechanisms for oversight and governance of metadata activities. This may involve regular reviews, audits, and quality checks to ensure that metadata is being managed in accordance with established policies and standards.
 - **Monitoring and Reporting:** Accountability also implies monitoring the performance and compliance of metadata management activities. This may involve tracking key metrics related to metadata quality, completeness, and timeliness, and generating reports to provide visibility into the effectiveness of metadata processes.



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

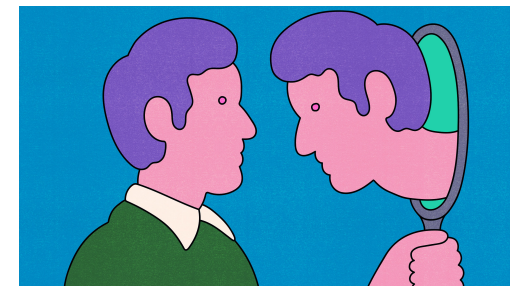
- Recognize Metadata Stewards
 - People Already Defining Metadata
 - People Already Producing Metadata
 - People Already Using Metadata



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

- Recognize Metadata Stewards
 - Do these people exist?
 - How can they be held formally accountable?
 - Should we assign metadata stewards?



How to Select the "Right" Metadata to Govern

What It Means to Govern Metadata

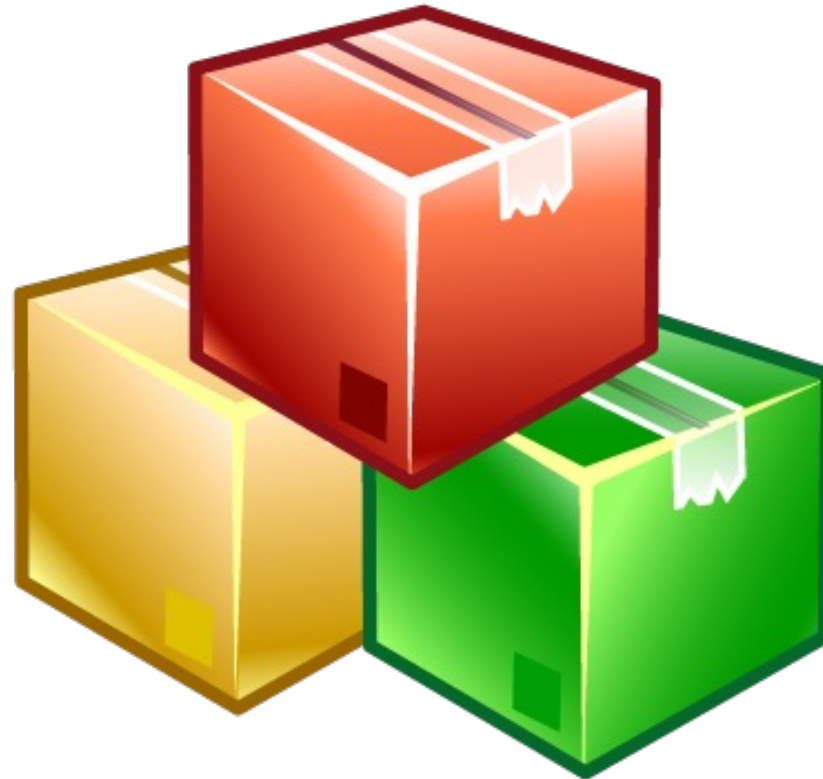
- The Metadata Will Not Govern Itself
 - One of my favorite statements ... along with ...
 - The data will not govern itself.
 - Everybody is a data steward. Get over it.
 - Apply governance to data process.
 - 35 years is a long time to put up with a person.



How to Select the "Right" Metadata to Govern

Categories of Metadata to Consider

- Data Definition Metadata
- Data Production Metadata
- Data Usage Metadata
- Metadata Stewardship Metadata
- Metadata Process Metadata



How to Select the "Right" Metadata to Govern

Categories of Metadata to Consider

- Data Definition Metadata
 - Examples of **Data Definition Metadata**
 - Data Element Name
 - Data Type
 - Data Length or Size
 - Data Format
 - Description or Definition
 - Data Domain
 - Constraints
 - Relationships
 - Source or Origin
 - Author or Creator
 - Version or Revision History
 - Usage Notes
 - Data Owner
 - Data Classification or Sensitivity
 - Data Governance Tags
 - Data Validations



How to Select the "Right" Metadata to Govern

Categories of Metadata to Consider

- Data Definition Metadata
 - Data Definition Metadata can be found in ...
 - Database Schemas
 - Data Modeling Tools
 - Data Dictionaries
 - Data Integration Platforms
 - Business Intelligence (BI) Tools
 - Data Warehouses and Data Marts
 - Data Catalogs
 - Data Governance Platforms
 - Data Management Platforms
 - Data Profiling Tools
 - API Documentation
 - Data Source Documentation
 - Data Stewardship Records
 - Data Version Control Systems
 - Data Management Policies and Procedures



How to Select the "Right" Metadata to Govern

Categories of Metadata to Consider

- Data Production Metadata
 - Examples of **Data Production Metadata**
 - Data Creation Date
 - Data Modification Date
 - Data Producer or Creator
 - Data Last Modified By
 - Data Version or Revision Number
 - Data Extraction Source
 - Data Ingestion Timestamp
 - Data Transformation Details
 - Data Quality Assessment Results
 - Data Processing Logs
 - Data Storage Location
 - Data Backup and Archiving Information
 - Data Export Details
 - Data Encryption Status
 - Data Compression Details
 - Data Replication Information
 - Data Access Logs
 - Data Retention Policy Information
 - Data Purge or Deletion Details
 - Data Refresh Frequency



How to Select the "Right" Metadata to Govern

Categories of Metadata to Consider

- Data Production Metadata
 - Data Production Metadata can be found in ...
 - Sensor Readings
 - Log Files
 - Data Ingestion Timestamps
 - Data Capture Systems
 - File Attributes
 - Data Collection Forms
 - Data Generation Algorithms
 - Data Collection Logs
 - Data Transmission Records
 - Data Source Documentation
 - Metadata from Data Providers
 - Machine Logs
 - Data Extraction Details
 - Data Transformation Records
 - Data Acquisition Tools



How to Select the "Right" Metadata to Govern

Categories of Metadata to Consider

- Data Usage Metadata
 - Examples of **Data Usage Metadata**
 - Data Access Timestamp
 - Data Access Method
 - User or Application ID accessing the data
 - Purpose of Data Access
 - Data Usage Statistics
 - Data Extracted or Consumed
 - Data Analysis or Reporting Details
 - Data Visualization Details
 - Data Exported or Shared
 - Data Filtering or Selection Criteria
 - Data Join or Relationship Details
 - Data Aggregation or Summarization Details
 - Data Transformation Details
 - Data Export Format
 - Data Export Destination
 - Data Permissions or Access Control Details
 - Data Masking or Redaction Information
 - Data Encryption Status during Access
 - Data Auditing Details
 - Data Retention for Accessed Data



How to Select the "Right" Metadata to Govern

Categories of Metadata to Consider

- Data Usage Metadata
 - Data Usage Metadata can be found in ...
 - Database Logs
 - Application Logs
 - Audit Trails
 - Data Access Logs
 - API Logs
 - User Activity Tracking
 - Data Usage Analytics
 - Data Exploration Tools
 - Data Transformation Logs
 - Query Histories
 - Data Sharing Records
 - Data Export Records
 - Data Access Permissions
 - Usage Patterns in Reports and Dashboards
 - Session Logs
 - Data Sharing Agreements



How to Select the "Right" Metadata to Govern

Categories of Metadata to Consider

- Metadata Stewardship Metadata
 - Who defined, produced, and used the data? ... the metadata?
 - When was the last time the steward was formalized?
 - How has the stewardship changed over time?
- Metadata Process Metadata
 - What process is in place to define, produce, and use metadata?
 - Who participates in the process?
 - When does the process take place?



How to Select the "Right" Metadata to Govern

Inventorying Metadata You Already Have (and Its Value)

- Most Common Places Metadata Already Exist
- Uncommon Places to Look for Metadata
- Characteristics of Valuable Metadata
- Benefits of Inventorying Your Metadata
- What It Means to Govern Existing Metadata



How to Select the "Right" Metadata to Govern

Inventorizing Metadata You Already Have (and Its Value)

- **Most Common Places** Metadata Already Exist
 - File Systems
 - Document Management Systems
 - Databases
 - Email Systems
 - Photos and Multimedia Files
 - Web Pages and HTML
 - Library Catalogs
 - Music Files and Streaming Services
 - Geographic Information Systems



How to Select the "Right" Metadata to Govern

Inventorizing Metadata You Already Have (and Its Value)

- Most Common Places Metadata Already Exist
 - Content Management Systems (CMS)
 - Digital Asset Management (DAM) Systems
 - Data Warehouses and Data Lakes
 - Cloud Storage and Collaboration Platforms
 - Software Development Environments
 - Social Media Platforms



How to Select the "Right" Metadata to Govern

Inventorizing Metadata You Already Have (and Its Value)

- **Uncommon Places** to Look for Metadata
 - Scientific Research Databases
 - Art and Museum Catalogs
 - Legal Case Management Systems
 - Medical Imaging and PACS Systems
 - Digital Forensics
 - Archival and Records Management Systems
 - Environmental Monitoring Systems
 - Supply Chain and Logistics Systems



How to Select the "Right" Metadata to Govern

Inventorizing Metadata You Already Have (and Its Value)

- Uncommon Places to Look for Metadata
 - Criminal Justice Information Systems
 - Language Translation Tools
 - Cultural Heritage and Digital Libraries
 - Energy Grid Management Systems
 - Financial Trading Platforms
 - Aerospace and Aviation Systems
 - Industrial Control Systems



How to Select the "Right" Metadata to Govern

Inventorizing Metadata You Already Have (and Its Value)

- Characteristics of Valuable Metadata
 - Accuracy
 - Relevance
 - Completeness
 - Consistency
 - Timeliness
 - Accessibility



How to Select the "Right" Metadata to Govern

Inventorizing Metadata You Already Have (and Its Value)

- Benefits of Inventorizing Your Metadata
 - Improved Data Understanding and Context
 - Enhanced Data Governance and Compliance
 - Facilitated Data Discovery and Retrieval
 - Support for Data Lineage and Impact Analysis
 - Improved Data Quality and Consistency
 - Efficient Data Integration and Interoperability
 - Enhanced Collaboration and Knowledge Sharing



How to Select the "Right" Metadata to Govern

Inventorizing Metadata You Already Have (and Its Value)

- **What It Means to Govern Existing Metadata**
 - Defining Metadata Policies and Standards
 - Assessing Metadata Quality and Completeness
 - Establishing Data Stewardship Roles
 - Implementing Metadata Documentation and Cataloging Tools
 - Enforcing Data Governance Policies



How to Select the "Right" Metadata to Govern

Inventorizing Metadata You Already Have (and Its Value)

- What It Means to Governing Existing Metadata
 - Addressing Data Lineage and Impact Analysis
 - Implementing Change Management Processes
 - Monitoring and Auditing Metadata Activities
 - Maintaining Metadata Documentation
 - Adapting to Evolving Data Needs



How to Select the "Right" Metadata to Govern

Prospecting for Business and Technical Metadata Requirements

- What Can't You Do ...
- What Would Your Be Able to Do ...
- Raising the Data Confidence Level (DCL)
- Getting in Bed With the Business
- Turning Prospects Into Customer



How to Select the "Right" Metadata to Govern

Prospecting for Business and Technical Metadata Requirements

- **What Can't You Do ...**
 - Make informed decisions based on accurate and complete information.
 - Conduct meaningful data analysis or reporting for strategic planning.
 - Identify and address data quality or accuracy issues in their analyses.
 - Understand the context and relationships between different data elements.
 - Conduct effective data-driven communication with stakeholders.
 - Leverage data for optimizing business processes and operations.



How to Select the "Right" Metadata to Govern

Prospecting for Business and Technical Metadata Requirements

- What Can't You Do ...
 - Implement data-driven marketing or customer engagement strategies.
 - Monitor and track key performance indicators (KPIs) for business goals.
 - Identify trends, patterns, or anomalies in their business operations.
 - Ensure compliance with data privacy and regulatory requirements.
 - Maximize the value of their data assets for business growth and innovation.



How to Select the "Right" Metadata to Govern Prospecting for Business and Technical Metadata Requirements

- What Would You Be Able to Do ...
 - Make well-informed decisions based on accurate and reliable information.
 - Conduct meaningful data analysis and generate insightful reports.
 - Identify and address data quality issues for improved accuracy.
 - Understand the context and relationships within their datasets.
 - Communicate effectively using data-driven insights and evidence.
 - Optimize business processes and operations using data-driven approaches.



How to Select the "Right" Metadata to Govern

Prospecting for Business and Technical Metadata Requirements

- What Would You Be Able to Do ...
 - Implement targeted marketing and customer engagement strategies.
 - Monitor and track key performance indicators (KPIs) for business goals.
 - Identify trends, patterns, or anomalies to inform business strategies.
 - Ensure compliance with data privacy and regulatory requirements.
 - Innovate and drive business growth through data-driven initiatives.



How to Select the "Right" Metadata to Govern

Prospecting for Business and Technical Metadata Requirements

- Raising the Data Confidence Level (DCL)
 - **Providing Clarity:** Clear metadata definitions and documentation increase understanding and confidence in the data's meaning and context.
 - **Ensuring Accuracy:** Accurate metadata assures users that they are working with reliable and trustworthy information.
 - **Enabling Efficient Searches:** Well-defined metadata attributes facilitate easy and precise data discovery, boosting confidence in data accessibility.



How to Select the "Right" Metadata to Govern

Prospecting for Business and Technical Metadata Requirements

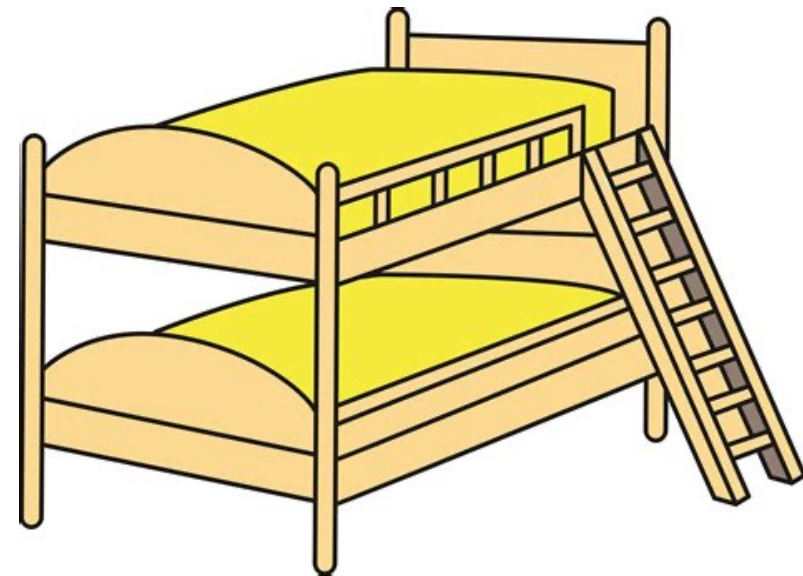
- Raising the Data Confidence Level (DCL)
 - **Supporting Data Lineage:** Understanding the source and transformations of data builds confidence in its reliability and validity.
 - **Facilitating Compliance:** Metadata requirements ensure that data meets regulatory and compliance standards, increasing confidence in its legality and integrity.
 - **Enhancing Data Quality:** Metadata helps identify and address data quality issues, improving confidence in the overall data quality.



How to Select the "Right" Metadata to Govern

Prospecting for Business and Technical Metadata Requirements

- Getting in Bed With the Business
 - Contextual Understanding
 - Alignment with Business Goals
 - Effective Data Governance
 - Accurate Data Definitions
 - Improved Data Quality
 - Enhanced Data Lineage and Impact Analysis
 - User Adoption and Trust
 - Smoother Implementation and Adoption
 - Optimized Data Management Investments
 - Faster Issue Resolution



How to Select the "Right" Metadata to Govern

Prospecting for Business and Technical Metadata Requirements

- **Turning Prospects Into Customer**
 - **Education and Training:** Provide comprehensive training and education on the importance of metadata, how to access and interpret it, and its relevance to their specific roles and responsibilities within the organization. Offer workshops, webinars, or training sessions tailored to their needs.
 - **User-Friendly Metadata Access:** Ensure that businesspeople have user-friendly and easily accessible tools to search, browse, and retrieve metadata. Implement user interfaces or metadata catalogs that are intuitive and require minimal technical expertise.
 - **Contextual Integration with Applications:** Integrate metadata directly into the applications and tools that businesspeople use daily. This allows them to access relevant metadata seamlessly within their existing workflows, eliminating the need for separate searches or queries.



How to Select the "Right" Metadata to Govern

Prospecting for Business and Technical Metadata Requirements

- Turning Prospects Into Customer
 - **Customized Metadata Views:** Tailor metadata views to align with the specific needs and interests of different business roles. Provide options to filter and display metadata attributes that are most relevant to their functions, ensuring they receive information that directly supports their activities.
 - **Engagement and Feedback Loop:** Foster an ongoing dialogue with business users to understand their specific metadata needs and challenges. Actively seek their feedback on the usability and relevance of metadata tools and adjust based on their input.



How to Select the "Right" Metadata to Govern

Selecting the “Right” Metadata to Govern (While Building Data Literacy)

- With all the different types of metadata that are available ...
- With all the different places that metadata exist out there ...
- With all the different applications of metadata to “improve both the business and technical understanding of data and data-related assets” that are possible ...

How do we select the “Right” metadata to govern?

Talk to the people that need to understand the data.
Ask them what metadata will be most useful to them.
Educate them on metadata availability and effort.



How to Select the "Right" Metadata to Govern

Selecting the “Right” Metadata to Govern (While Building Data Literacy)

- Build Data Literacy with Metadata
 - Provides Context and Meaning to Data
 - Clarifies Data Relationships and Dependencies
 - Facilitates Data Discovery and Access
 - Supports Data Lineage and Provenance
 - Ensures Data Quality and Accuracy



How to Select the "Right" Metadata to Govern

Selecting the “Right” Metadata to Govern (While Building Data Literacy)

- Build Data Literacy with Metadata
 - Guides Data Usage and Interpretation
 - Assists in Regulatory Compliance
 - Enhances Collaboration and Communication
 - Enables Effective Data Governance
 - Boosts Confidence in Data Use and Analysis



How to Select the "Right" Metadata to Govern

Summary

- In the webinar, I shared ...
 - What It Means to Govern Metadata
 - Categories of Metadata to Consider
 - Inventorying Metadata You Already Have (and Its Value)
 - Prospecting for Business and Technical Metadata Requirements
 - Selecting the “Right” Metadata to Govern (While Building Data Literacy)

SUMMARY



How to Select the "Right" Metadata to Govern

Q & A - Contact Information

- Robert S. Seiner

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thank you

