

Business Performance & Data Quality Metrics



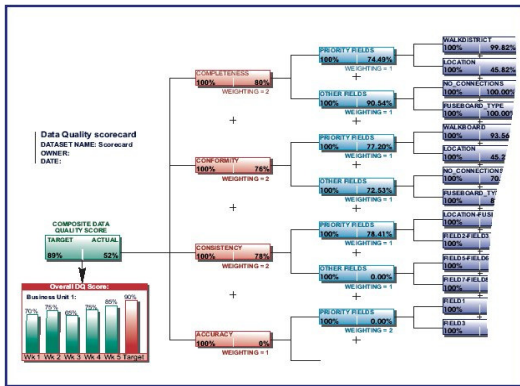
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Does Data Integrity Imply Business Value?

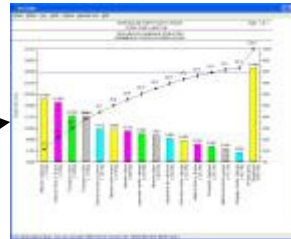
- Assumption: improved data quality, “Master Data,” and integrated reference data sets all imply business value
- However,
 - How are data quality metrics tied to business performance?
 - How do you distinguish high impact from low impact data integrity issues?
 - How do you isolate the source of the introduction of data flaws to fix the process instead of correcting the data?
 - How do you correlate business value with source data integrity?
 - What is the best way to employ data integration best practices to address these questions?

Managing Data Quality Benefits the Enterprise

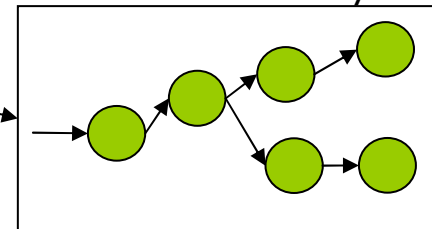
Data Quality Scorecard



Prioritizing Impacts



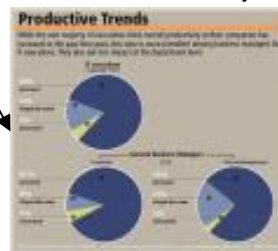
Root Cause Analysis



Decision-making

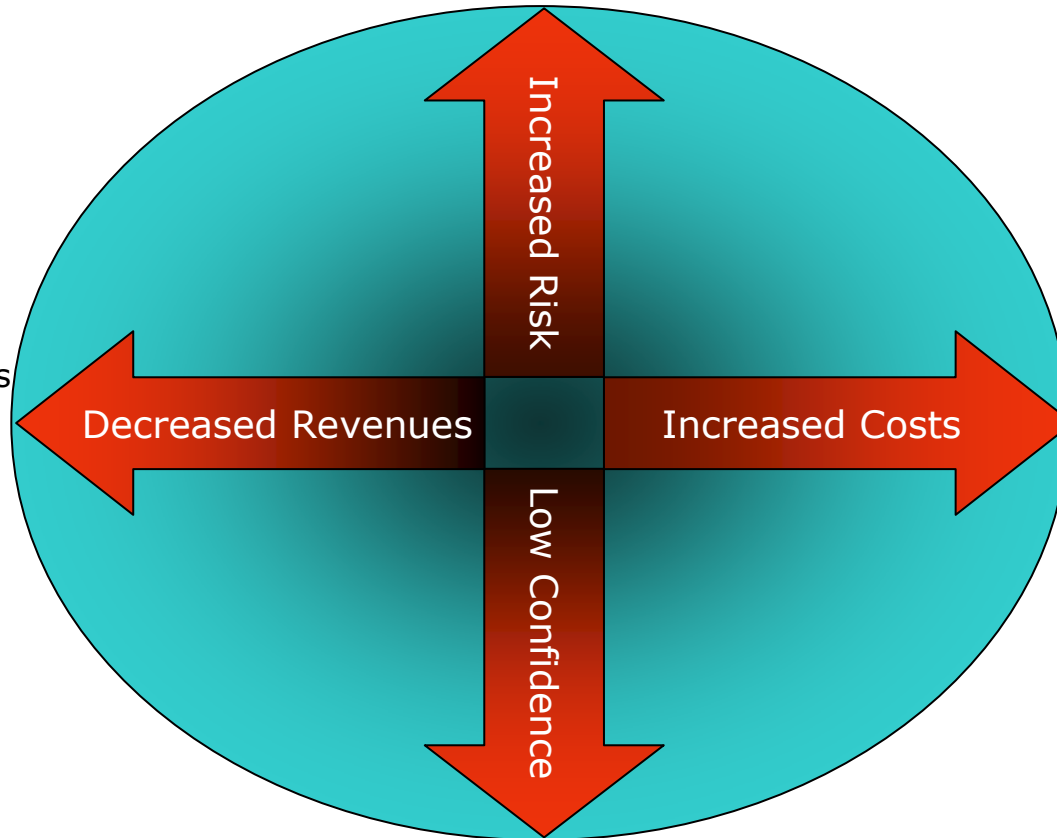


Productivity



Business Impacts

- Regulatory or Legislative risk
- System Development risk
- Information Integration Risk
- Investment risk
- Health risk
- Privacy risk
- Competitive risk
- Fraud Detection



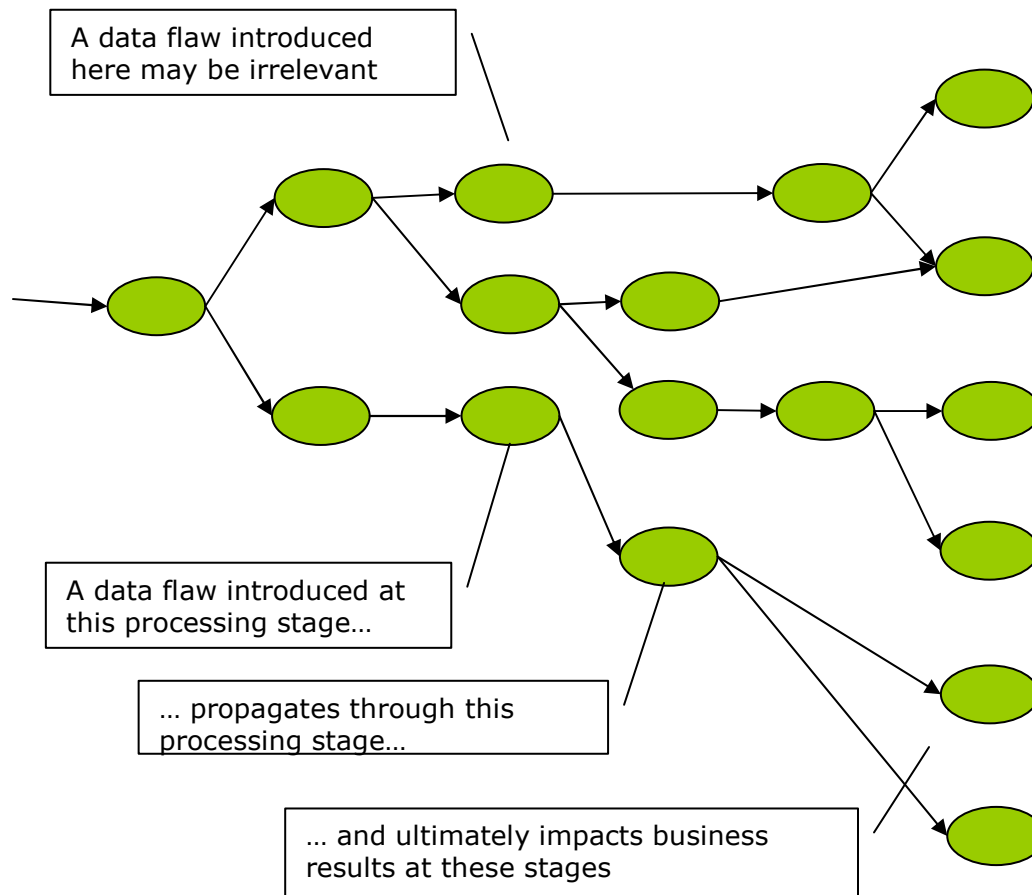
- Delayed/lost collections
- Customer attrition
- Lost opportunities
- Increased cost/volume

- Detection and correction
- Prevention
- Spin control
- Scrap and rework
- Penalties
- Overpayments
- Increased resource costs
- System delays
- Increased workloads
- Increased process times

- Organizational trust issues
- Impaired decision-making
- Lowered predictability
- Impaired forecasting
- Inconsistent management reporting

Compounded Effects

The Information Flow Graph

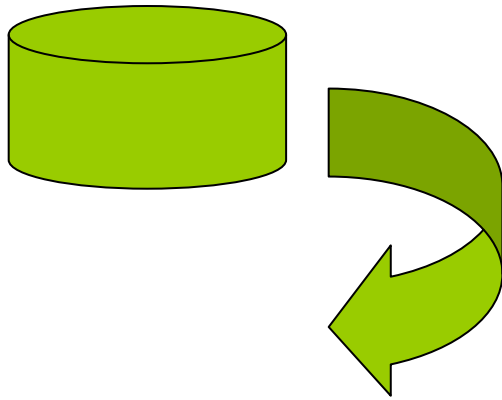


Determining the value of fixing the process where the flaw is introduced must be correlated to the cost of the eventual business impacts.

But you also have to find out where the flaw is introduced!

Business Expectations and Data Quality

Data Quality Rules



Duplicates

Inconsistencies

Missing values

Unusable data

Business Expectations

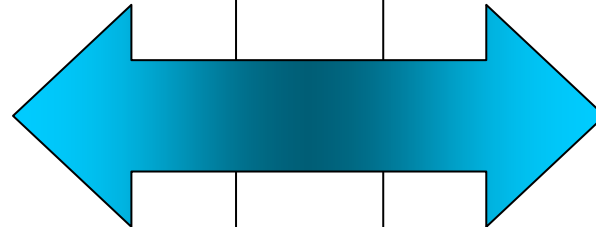


Throughput

Scrap/rework

Failed transactions

Response to opportunities



Business Expectations and Data Quality

- Data quality expectations are expressed as rules measuring completeness, consistency, validity of *data values*
 - *What data is missing or unusable?*
 - *Which data values are in conflict?*
 - *Which records are duplicated?*
 - *What linkages are missing?*
- Business expectations are expressed as rules measuring performance, productivity, efficiency of *processes*
 - *How has throughput decreased due to errors?*
 - *What percentage of time is spent in scrap and rework?*
 - *What is the loss in value of transactions that failed due to missing data?*
 - *How quickly can we respond to business opportunities?*
- Yet, to determine the true value added by data integrity programs, conformance to business expectations should be measured in relation to its component data integrity rules

This requires collaboration between the technical and business teams, supported by senior management sponsorship

Challenges

- ❑ Consumer data validation of supplied data provides little value unless supplier has an incentive to improve its product
- ❑ Does acquiring data from a third-party add value?
- ❑ Data errors introduced within the enterprise drain resources for scrap and rework, yet the remediation process seldom results in long-term improvements
- ❑ Reacting to data integrity issues by cleansing the data does not improve productivity or operational efficiency
- ❑ Ambiguous data definitions and lack of data standards prevents most effective use of centralized “source of truth” and limits automation of workflow
- ❑ Proper data and application techniques must be employed to ensure ability to respond to business opportunities
- ❑ Centralization of integrated reference data opens up possibilities for reuse, both of the *data* and the *process*

Turning Data Quality into Process Quality

- ❑ Institute a data governance framework
- ❑ Use business-driven data validity assessment to baseline current state and to measure ongoing improvement
- ❑ Establish data quality issues tracking to improve internal remediation within an accountability chain
- ❑ Develop a services-based approach to your centralized reference master(s)
- ❑ Establish best practices for data management for other enterprise data sets

Data Governance

- ❑ Overseeing the people, processes, and technology to enable an organization to make best use of their information as a valuable resource
- ❑ Coordinate:
 - Correlation of data quality and achievement of business objectives
 - Directing best practices for information management
 - Standardization of semantics, policies, and protocols across the enterprise
 - Measuring and reporting of qualification metrics of enterprise data

Finding Business Relevance

- ❑ Identify key business performance criteria related to information quality assurance
- ❑ Review how data problems contribute to each business impact
- ❑ Determine the frequency that each impact occurs
- ❑ Sum the measurable costs associated with each impact incurred by a data quality issue
- ❑ Assign an average cost to each occurrence of the problem
- ❑ Validate the evaluation within a data governance forum

Root-Cause Analysis

- ❑ Impacts are typically associated with the *discovery location* of a data quality problem
- ❑ In fact, one impact may be related to a combination of problems
- ❑ Alternately, a single problem may have multiple impacts
- ❑ A key to improving information quality is to identify the root cause of problems and eliminate them at their sources
- ❑ A key to managing information quality include:
 - Setting policies for data quality issue remediation
 - Establishing best practices for data management
 - Describing protocols and service level agreements for documenting, tracking, and eliminating data quality issues

Developing Metrics

- Develop metrics based on relationship of information to relevant business activities
 - Master reference information
 - Human capital productivity
 - Business productivity
 - Sales channel
 - Service level compliance
 - Vision compliance
 - Behavior
 - Risk

Key Information Quality Indicators

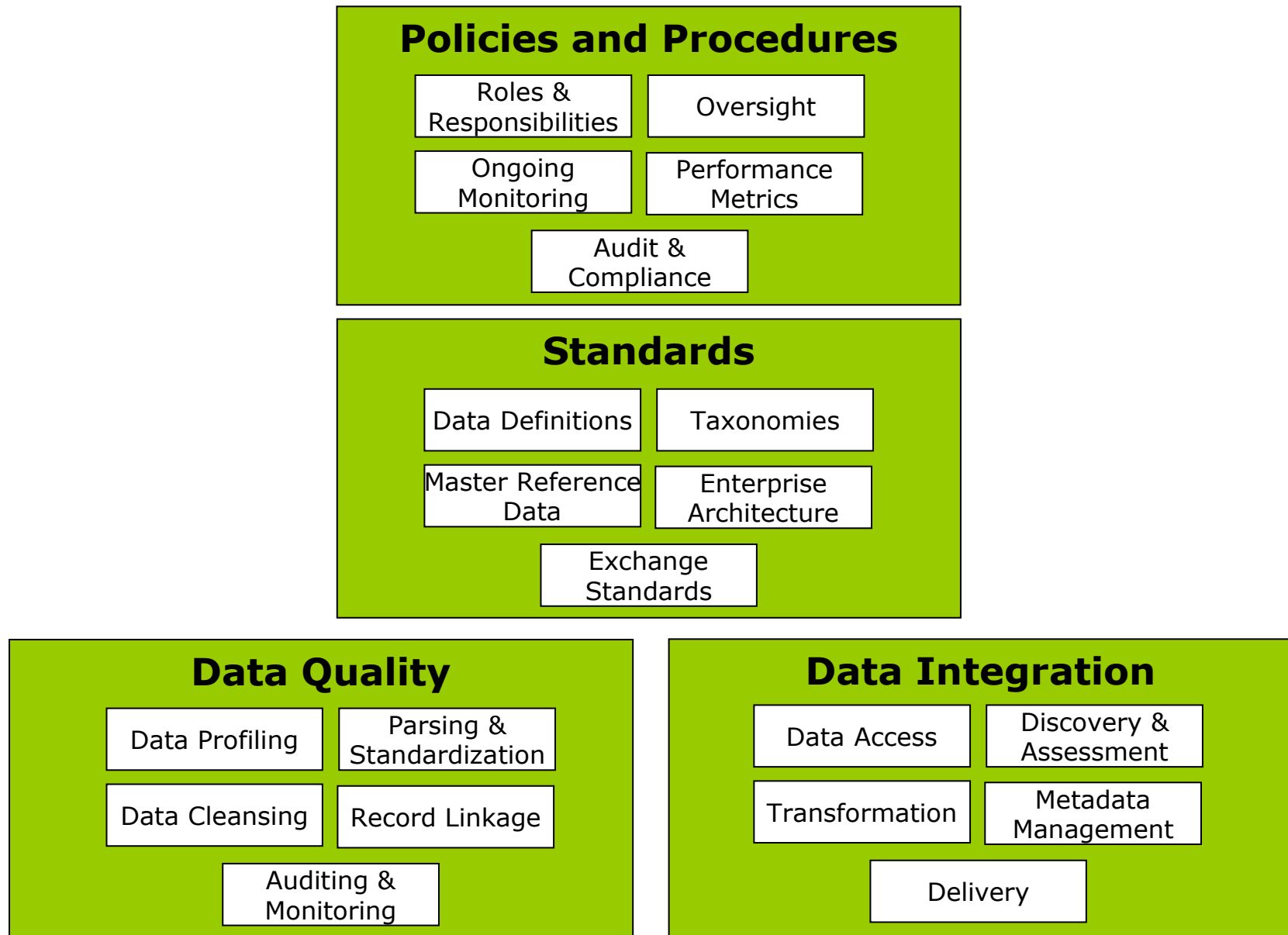
- A key indicator reflects a rolled-up summary of some important aspect of the current state of the organization's information quality
- Sample indicators:
 - Number of unique reference data objects (e.g., customers, vendors, products) vs. duplicate entries
 - Number of transaction "back outs"
 - Financial inconsistencies
 - Null or missing data values
 - Exposures to risk
 - ...

Data Governance: Providing Oversight

The processes, policies, standards, and technologies required to manage and ensure the availability, accessibility, quality, consistency, auditability, and security of data within the organization

Accessibility	All enterprise data relevant to the application can be accessed regardless of source, structure, or format
Availability	Data is available to data consumers and applications no matter when, where, and how needed
Quality	The accuracy, completeness, and validity of the data meets or exceeds user expectations
Consistency	Data semantics and values are consistent and reconcilable across applications, processes, and organizations
Auditability	There is an audit trail captured on the data
Security	Access is secure and limited to approved users and applications

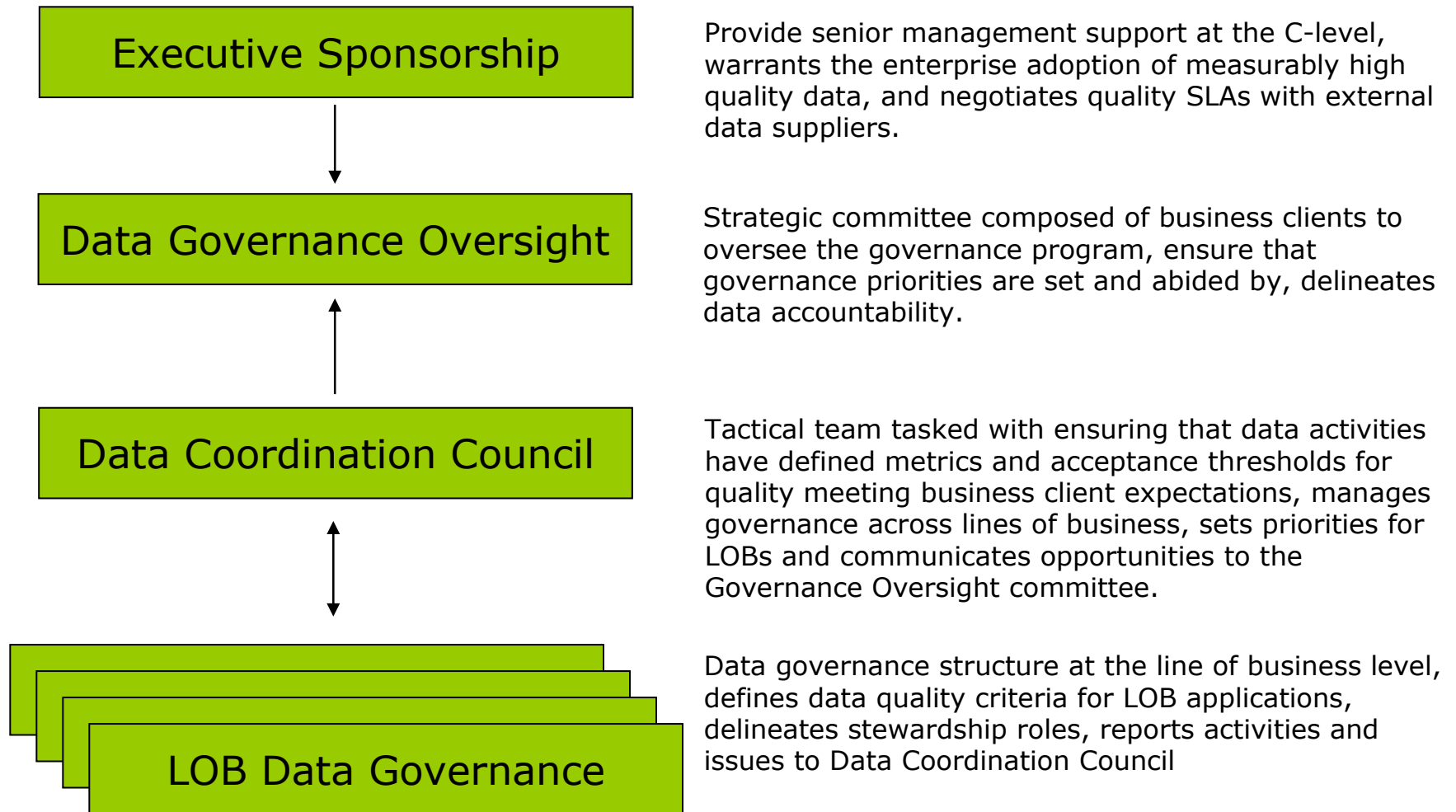
Data Governance Landscape



Roles and Responsibilities

- ❑ Data Governance Oversight Board
- ❑ Data Coordination Council
- ❑ Data Stewards

Roles and Responsibilities



Data Governance Oversight Board

- ❑ Guides activities
- ❑ Approves governance policies
- ❑ Oversees proper compliance with governance
- ❑ Reviews and Endorses/Approves policies and protocols

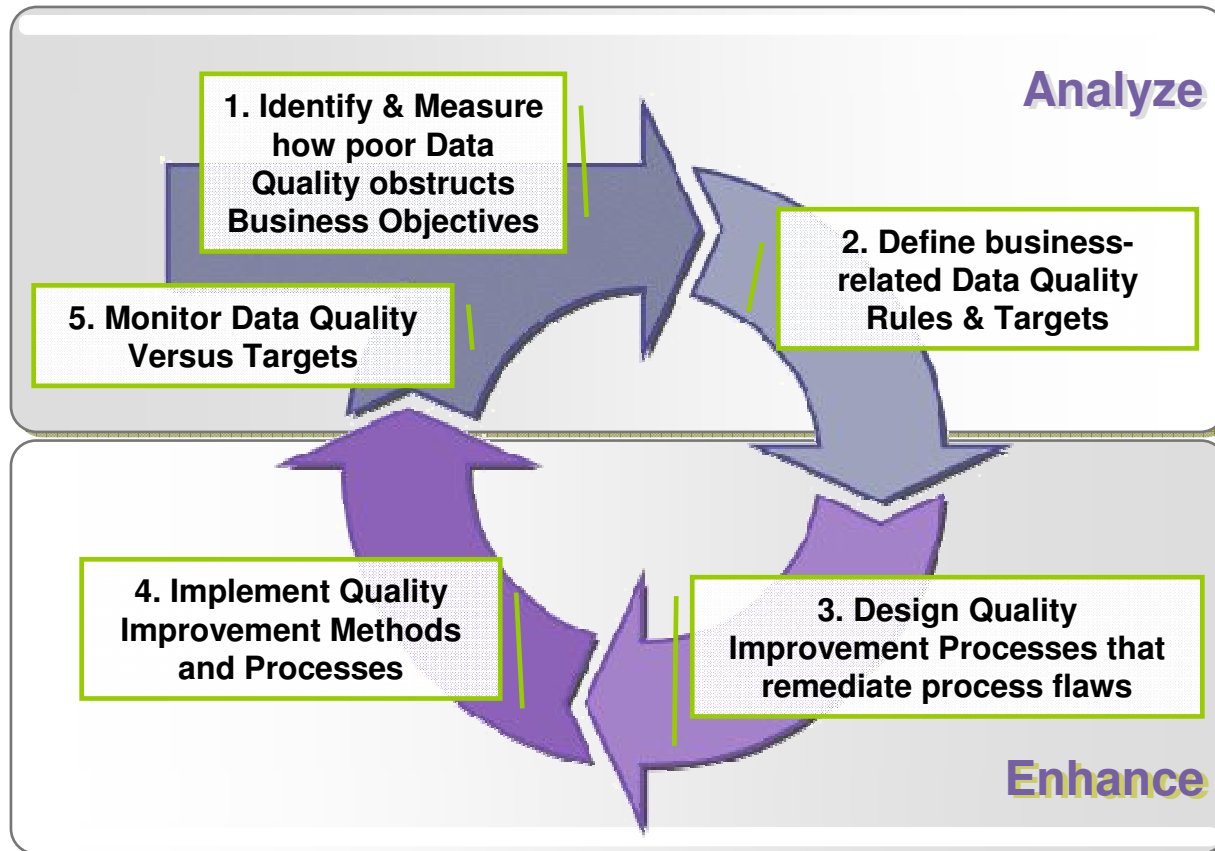
Data Coordination Council

- ❑ Provides direction to those tasked with standards development
- ❑ Authorize workgroup activities
- ❑ Provide direction for development of semantics, taxonomies, and ontologies
- ❑ Recommend standards to the Oversight Board

Data Steward

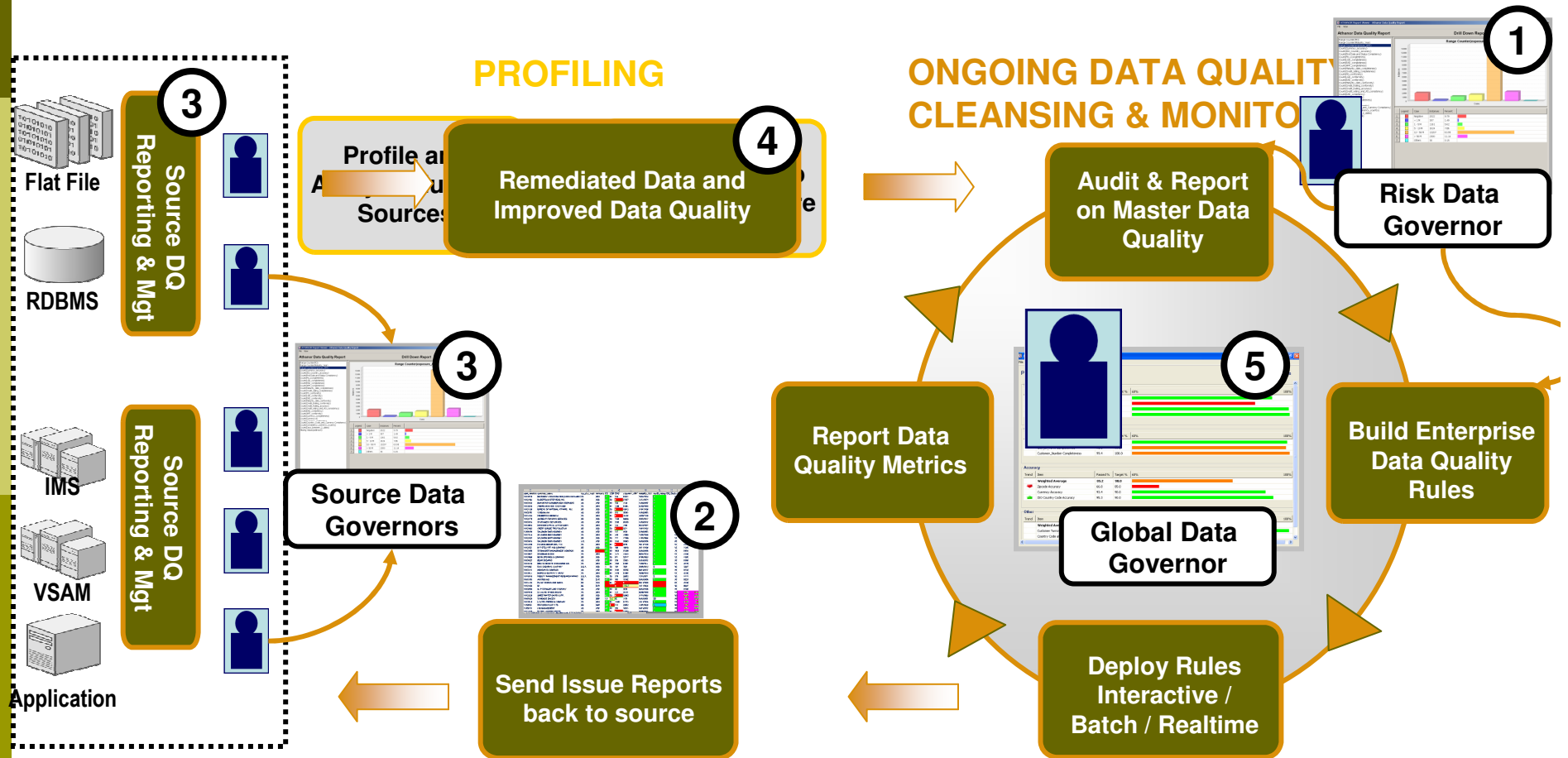
- Tasked with:
 - Determining the relevant data sets that are relevant to the business
 - Identifying correlation between data quality and achievement of business objectives
 - Managing data quality – techniques, tools, dimensions, tracking, reporting
 - Documenting, communicating, and tracking issues and concerns to relevant stakeholders
 - Verifying the metadata
 - Assume accountability for managing the quality of data

A Process-Driven Approach to Data Quality

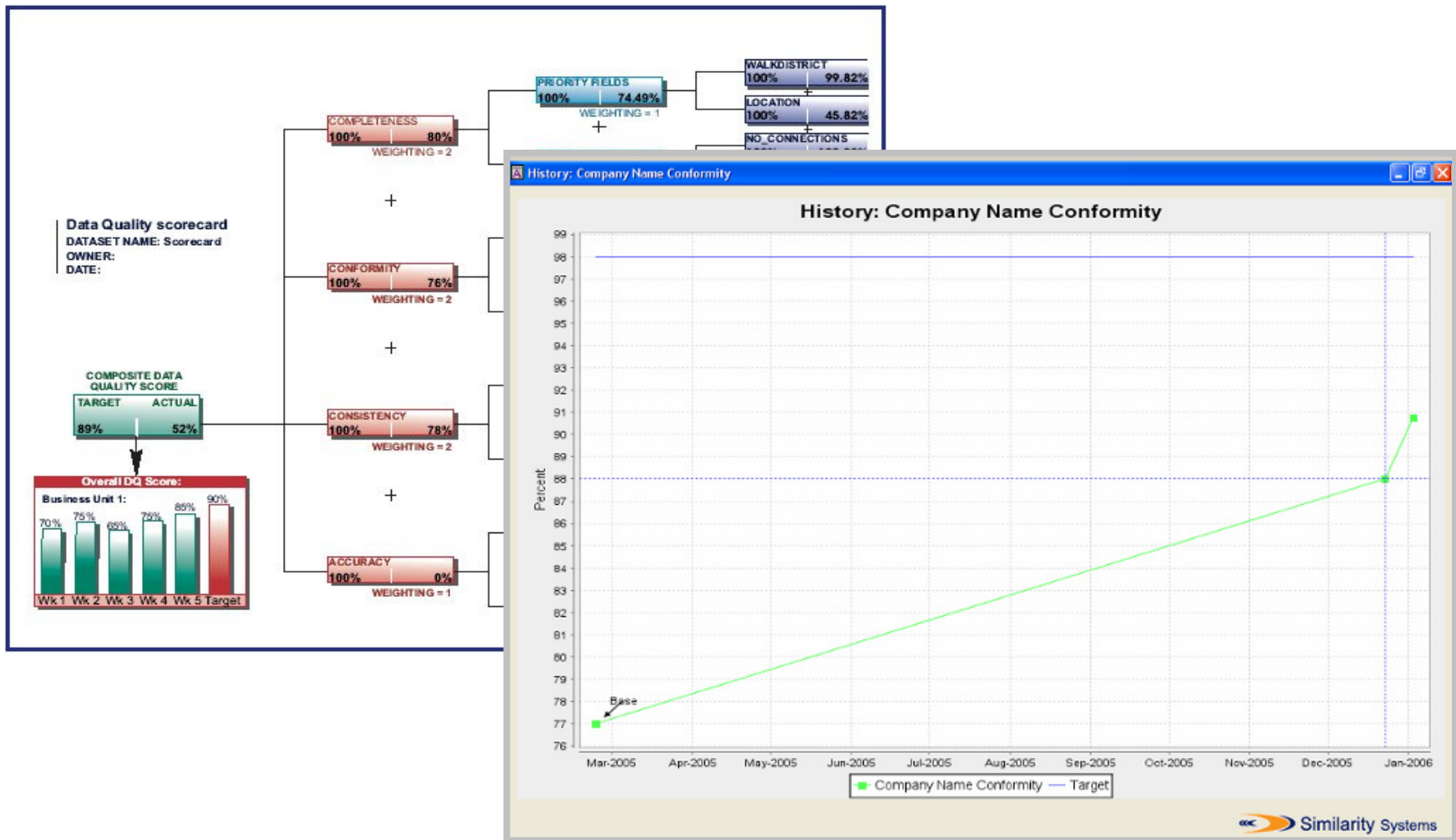


Data Quality Remediation & Data Governance

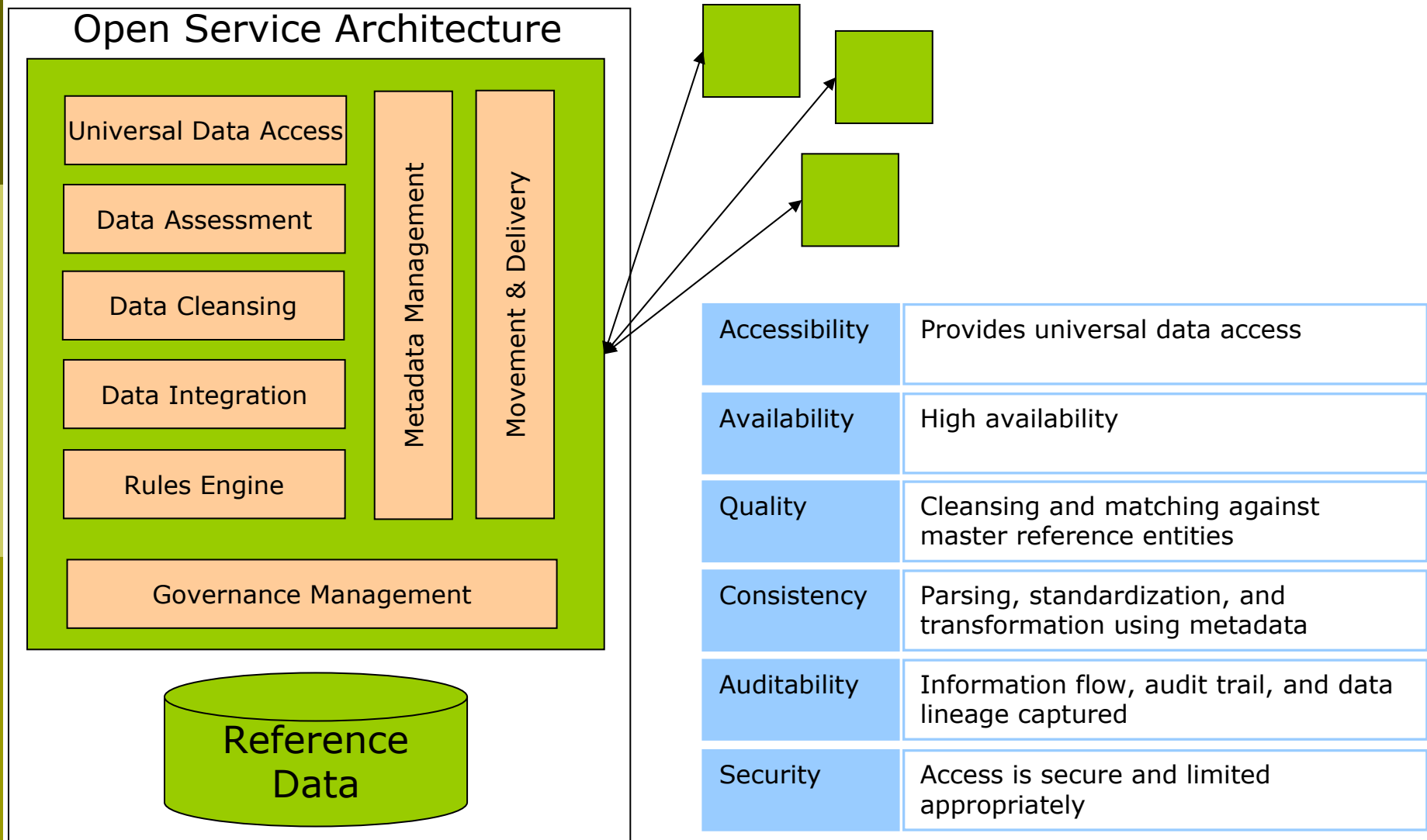
Ongoing



Link a "DQ Scorecard" to Business Performance



The Service-Oriented Approach



Business Data Quality Management Initiatives

- ❑ Establishing data quality monitoring and improvement as a business imperative
- ❑ Acquiring, then deploying the proper tools, methods, and expertise to improve the exploitation of reference information
- ❑ Transitioning from a reactive to a proactive organization with respect to data quality
- ❑ Prepare the organization to be a high-quality Master Data Integration environment

Getting Started

- ❑ With senior management sponsorship, pilot the identification of 5 business objectives impacted by the quality of data
- ❑ For each of those business objectives:
 - Determine performance metric to be communicated upward
 - Correlate expectations for achieving that objective with a list of data validity or integrity rules
 - Review rules with senior management for agreement and sign-off on key metrics and data rules
- ❑ Apply rules using proper tools to assess baseline metrics
- ❑ Identify and prioritize performance improvement targets, and select most beneficial one to pilot
- ❑ Using proper tools and methods, embed data quality monitoring and improvement within enterprise processes
- ❑ Monitor ongoing process improvement & correlate to business objectives

Questions?

- If you have questions, comments, or suggestions, please contact me

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