The First Step in Master Data Management

Sustainable Data Governance Tutorial
Why We’re Here?

Purpose:
Drive Data Governance Foundation
Understanding and Value

Outcome:
- Understanding Data Governance Foundation
- Understanding Data Governance Value
- Understanding Success criteria through metrics and KPIs
## Table of Contents

- FSFP’s Perspective on Data Governance
- Enterprise Information Management (EIM) Framework
- Ensuring Success
- Data Governance Framework
  - Organization
  - Strategy
  - Policies, Processes & Standards
  - Measurements
  - Technology
  - Communication
- Case Study
- Close
[ FSFP’S PERSPECTIVE ]
Enterprise Information Management Framework

Provides a holistic view of data in order to manage data as a corporate asset
Enterprise Data Management

Ensure data is available, accurate, complete and secure

Data Governance
Master Data Management
Data Architecture
Metadata Management
Data Quality
Data Retention/Archiving
Privacy/Security

Develop and execute architectures, policies and procedures to manage the full data lifecycle
Data Governance is the organizing framework for establishing strategy, objectives and policy for effectively managing corporate data.

It consists of the processes, policies, organization and technologies required to manage and ensure the availability, usability, integrity, consistency, audit ability and security of your data.

A Data Governance Program consists of the inter-workings of strategy, standards, policies and communication.
## Current Business Data Challenges

<table>
<thead>
<tr>
<th>LOB</th>
<th>Data Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales and Marketing</td>
<td>• Inaccurate, dated catalogs and offers</td>
</tr>
<tr>
<td></td>
<td>• Distributed customer attributes</td>
</tr>
<tr>
<td></td>
<td>• Duplicated customer data</td>
</tr>
<tr>
<td></td>
<td>• Inconsistent demand management</td>
</tr>
<tr>
<td>Finance and Operations</td>
<td>• Multiple general ledgers</td>
</tr>
<tr>
<td></td>
<td>• Invalid code assignments</td>
</tr>
<tr>
<td></td>
<td>• Data proliferation through acquisition</td>
</tr>
<tr>
<td></td>
<td>• Lack of data documentation</td>
</tr>
<tr>
<td>Product Development</td>
<td>• Dynamic SKU’s</td>
</tr>
<tr>
<td></td>
<td>• Inconsistent, out of-sync Bill of Materials (BOM)</td>
</tr>
<tr>
<td></td>
<td>• Distributed product attributes</td>
</tr>
<tr>
<td></td>
<td>• Inconsistent product nomenclature</td>
</tr>
<tr>
<td>Procurement and Supply Chain</td>
<td>• Inconsistent categorization</td>
</tr>
<tr>
<td>Management</td>
<td>• Inconsistent part numbering</td>
</tr>
<tr>
<td></td>
<td>• Multiple vendor master files</td>
</tr>
<tr>
<td></td>
<td>• Paper transactions</td>
</tr>
</tbody>
</table>

*Lack of enterprise data management constrains business capabilities and strategic initiatives*
Why is Data Governance Important?

- Increasing customer demands, new regulations
- Streamlines and unifies approach to managing data
- Ensures the right people are involved in determining standards, usage and integration of data across projects, subject areas and lines of business
- Balances silo-ed short-term project delivery focus
- Traditional projects don’t give enough focus to data management
- Systems are becoming more challenging to manage
- Data quality issues are persistent

*Data is a valuable Corporate Asset*
Business and IT Drivers

- Increasing organizational efficiency
- Compliance with financial regulations, audit requirements, etc.
- Increased data volumes and complexity
- More efficient technology implementation
- Reduction of risk through greater transparency
- Increasing revenue
- Customer Optimization

IT

- Poor data quality
- Failed implementation
- Infrastructure Optimization and Consolidation
- Major Application Roll-out/Upgrade
- Technical challenges associated with BI/DW (environment)
- Growth of unstructured content

Any of these apply?
**Data Governance Value Proposition**

**Barriers to Data Governance**
- Data Ownership and other territorial issues
- Lack of cross-business unit coordination
- Lack of data governance understanding
- Poor state of data management infrastructure
- Resistance to change or transformation
- Lack of executive sponsorship and buy-in
- Resistance to accountability
- Lack of business justification
- Inexperience with cross-functional initiatives

**Benefits to Data Governance**
- Quality of data
- Consistent data definitions
- Data as an enterprise asset
- Appropriate use of data
- Collaborations among teams, business units, etc..
- Accountability for data use
- Quality of master and meta data
- Sharing of data
- Visibility into the enterprise via data
- Change management processes for data use and management
- Data security
- Data Lineage

## Prioritizing Value - Business & IT

### Value to Business

- Single Source of Truth
- Speed to delivery of client solution
- Ability to view and manage multiple client definitions and Hierarchies
- Focus on value added activities
- Improved productivity of client sales and servicing
- Reduced time spent on identifying, reconciling data discrepancies, and resolving data issues
- Ability to perform an update once, and have it perpetuated elsewhere
- Consistency in reporting
- Ability to view lifecycle of customer and account
- Efficient support processes
- Adherence to Regulation

### Value to IT

- Operational cost saving - elimination of point to point interface cost and support
- Data brokerage architecture
- Single source of truth
- Speed to delivery of technical solution
- Ability to store multiple client definitions
- Reduced redundant feeds and interfaces
- Improved system performance
- Decreased data maintenance costs
- Sustainable architecture
- Centralized data security
Data Governance & Technology Work Together

Governance

- Standardized Methods and Data Definitions
- Roles and Responsibilities
- Decision Rights
- Arbiters and Escalation
- Statistics / Analysis / Monitoring

Provide Guidance
Create & Enforce Policies
Track Progress
Provide Feedback

Technology

- Discovery and Profiling
- Cleansing
- Duplicate Detection
- Data Maintenance and Management
- Measurement and Monitoring
- Data Sharing
- Workflow
### Governance (People & Processes)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define and publish definition of Customer</td>
<td>Provide Guidance</td>
</tr>
<tr>
<td>Assign Ownership and accountability of Customer definition</td>
<td>Create &amp; Enforce Policies</td>
</tr>
<tr>
<td>Assign DGWG roles and responsibilities and decision rights at it pertains to Customer definition</td>
<td>Track Progress</td>
</tr>
<tr>
<td>Define &amp; validate match rules</td>
<td>Provide Feedback</td>
</tr>
<tr>
<td>Data Stewards perform manual matches</td>
<td></td>
</tr>
<tr>
<td>Escalate to DGWG if decision cannot be reached</td>
<td></td>
</tr>
<tr>
<td>Data Stewards (DSs) monitor addresses over time and provide analysis and statistics</td>
<td></td>
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</tbody>
</table>

### Technology

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Discovery and Profile</td>
<td>(Customer Source Systems)</td>
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<tr>
<td>Standardize addresses</td>
<td></td>
</tr>
<tr>
<td>Implement match rules for Duplicate Detection</td>
<td></td>
</tr>
<tr>
<td>Tune match rules</td>
<td></td>
</tr>
<tr>
<td>Create LOB Views (Marketing, Product, Finance, etc.)</td>
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</table>
What Else is Needed?

An MDM/DQ initiative is an important component of a Data Governance Strategy

Technology alone will not solve the problem

You can’t “do” MDM without Data Governance

Must Have “Tools”...

- Documented & enforced governance policies and processes
- Clear accountability, ownership and escalation mechanisms
- Continuous measurement and monitoring of data quality & adoption
- Executive support to create a culture of accountability around the quality of the data...it’s everyone’s concern
- Solid alignment between business & IT
- Really know your data before diving into an MDM “Project”
Typical Data Governance Decisions for MDM

• Entity Types
  o What type of data will be managed in the MDM Hub
  o What are the agreed upon definitions of each type
  o What is the required cardinality between the entity types
  o What constitutes a unique instance of an entity

• Key Data Elements
  o Purpose, definition and usage of each data element

• Hierarchies & Relationships
  o Purpose, definition and usage of each hierarchy / relationship structure

• Data Contributors
  o What type of data do they supply
  o Why is this needed
  o At what frequency should they supply it
  o What should be taken for Initial load vs ongoing

• Data Quality Targets
  o How good does the data have to be
  o Root cause analysis

• Data Consumers
  o Who needs the data and for what purpose
  o What do they need and at what frequency

• Audit Trails and History
  o How long do we have to keep track of changes
  o Survivorship
  o What should happen when...

• Lookups
  o Which attributes are lookup attributes
  o What are the allowable list of values per attribute
  o How different are the values across the applications and how do we deal with inconsistencies

• Types of users & security
  o What types of users have to be catered for
  o Can they create, update, delete, search
  o Can they merge, unmerge

• How should deletes be managed

• Privacy and Regulatory Issues
Some Warning Signs

Limited business involvement: We know what the business wants to do, we can involve them later in testing…

Not recognizing the importance of Data Stewardship: We can deal with the concept of Data Stewards at a later date…

No clear understanding of what data is needed to support the business objectives: Bring all the data just in case…

Not enough thought given to metrics and measurement: How will we know when we have achieved our objective?

Inability to reach a clear decision: Definitions, Input Sources, Survivorship, KDE’s, lookup values, exception management processes, data quality targets etc

Value not understood: I’m not sure that this new piece of technology will actually help me in any way…

How do you know when you’re heading for trouble?
Keys to Success

Successful MDM Implementation

Failed MDM Implementation!
DATA GOVERNANCE FRAMEWORK
Data Governance Framework

- Operating Model
- Arbiter's & Escalation points
- Data Governance Organization Members
- Roles and Responsibilities
- Data Ownership & Accountability

- Vision & Mission
- Objectives & Goals
- Alignment with Corporate Objectives
- Alignment with Business Strategy
- Guiding Principles

- Policies & Rules
- Processes
- Controls
- Data Standards & Definitions
- Metadata, Taxonomy, Cataloging, and Classification

- Statistics and Analysis
- Tracking of progress
- Monitoring of issues
- Continuous Improvement
- Score-carding

- Collaboration & Information Life Cycle Tools
- Data Mastering & Sharing
- Data Architecture & Security
- Data Quality & Stewardship Workflow
- Metadata Repository

- Business Impact & Readiness
- IT Operations & Readiness
- Training & Awareness
- Stakeholder Management & Communication
- Defining Ownership & Accountability

- Communication Plan
- Mass Communication
- Individual Updates
- Mechanisms
- Training Strategy
Wikipedia: An Operating Model describes the necessary level of business process integration and data standardization in the business and among trading partners and guides the underlying Business and Technical Architecture to effectively and efficiently realize its Business Model. The process of Operating Model design is also part of business strategy.

- Outlines how Data Governance will operate
- Forms basis for the Data Governance organizational structure - but isn’t an org chart
- Ensures proper oversight, escalation and decision making
- Ensures the right people are involved in determining standards, usage and integration of data across projects, subject areas and lines of business
- Creates the infrastructure for accountability and ownership
Types of Operating Models

• Centralized
  ▪ Similar to a top down project model

• Decentralized
  ▪ Flat structure, more virtual/grassroots in nature

• Hybrid
## Data Governance Design Principles

<table>
<thead>
<tr>
<th>Principle</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be clear on purpose</td>
<td>Build governance to guide and oversee the strategic and enterprise mission</td>
</tr>
<tr>
<td>Enterprise thinking</td>
<td>Provide consistency and coordination for cross functional initiatives. Maintain an enterprise perspective on data</td>
</tr>
<tr>
<td>Be flexible</td>
<td>If you make it too difficult, and people will circumvent it. Make it customizable (within guidelines), and people will get a sense of ownership</td>
</tr>
<tr>
<td>Simplicity and usability are the keys to acceptance</td>
<td>Adopt a simple governance model people can use. A complicated and inefficient governance structure will result in the business circumventing the process</td>
</tr>
<tr>
<td>Be deliberate on participation and process</td>
<td>Select sponsors and participants. Do not apply governance bureaucracy solely to build consensus or to satisfy momentary political interest</td>
</tr>
<tr>
<td>Enterprise wide alignment and goal congruence</td>
<td>Maintain alignment with both enterprise and local business needs. Guide prioritization and alignment of initiatives to enterprise goals</td>
</tr>
<tr>
<td>Establish policies with proper mandate and ensure compliance</td>
<td>Clearly define and publicize policies, processes and standards. Ensure compliance through tracking and audit</td>
</tr>
<tr>
<td>Communicate, Communicate, Communicate!</td>
<td>Frequent, directed communication will provide a mechanism for gauging when to “course correct”, manage stakeholder and effectiveness of the program</td>
</tr>
</tbody>
</table>
Keys to a Successful DG Organization

• Governance team must contain members from multiple lines of business
  • Ensures cross functional buy-in and ownership
  • Key lines of business must be represented

• Team members must represent both business and IT
  • IT needs to be able to implement per the governance policies and the business needs to be aware of IT limitations...

• Team needs to meet on a regular basis
  • Business is constantly changing
  • Discuss new and emerging programs
  • Current IT activities and their effect on the data
  • Review policies and study measurement output

• Agreed upon fundamentals that serve as the Guiding Principles
  • If this doesn’t exist, the first mandate is to create this
  • Standards are mechanisms for tie-breaking

• Clear lines of communication
  • Regular interaction with executive management
  • Ensure communication methods to enforce policies at the steward and stakeholder level
  • Invite stewards, project managers, stakeholders etc to provide status updates on critical initiatives that affect the data

• Ensure the operating model fits the culture of the company
Style: Centralized

Pros:
- Formal Data Governance executive position
- Data Governance Steering Committee reports directly to executive
- Data Czar/Lead - one person at the top; easier decision making
- One place to stop and shop
- Easier to manage by data type

Cons:
- Large Organizational Impact
- New roles will most likely require Human Resources approval
- Formal separation of business and technical architectural roles
Style: Decentralized

Pros:
- Relatively flat organization
- Informal Data Governance bodies
- Relatively quick to establish and implement

Cons:
- Consensus discussions tend to take longer than centralized edicts
- Many participants compromise governance bodies
- May be difficult to sustain over time
- Provides least value
- Difficult coordination
- Business as usual
- Issues around co-owners of data and accountability
Style: Hybrid

Pros:
• Centralized structure for establishing appropriate direction and tone at the top
• Formal Data Governance Lead role serving as a single point of contact and accountability
• Data Governance Lead position is a full time, dedicated role - DG gets the attention it deserves
• Working groups with broad membership for facilitating collaboration and consensus building
• Potentially an easier model to implement initially and sustain over time
• Pushes down decision making
• Ability to focus on specific data entities
• Issues resolution without pulling in the whole team

Cons:
• Data Governance Lead position is a full time, dedicated role
• Working groups dynamics may require prioritization of conflicting business requirements
• Too many layers
Operating Model Roles and Responsibilities

**Data Governance Steering Committee**
- Provides overall strategic vision
- Approves funding, budget and resource allocation for strategic data projects
- Establishes annual discretionary spend allocation for data projects
- Adjudicates intractable issues that are escalated
- Ensures strategic alignment with corporate objectives and other business unit initiatives

**Data Governance Office**
- Chairs the Data Governance Steering Committee and Data Governance Working Group
- Acts as the glue between the Data Governance Steering Group and the Working Committee
- Defines the standards, metrics and processes for data quality checks, investigations, and resolution
- Advises business and technical resources on data standards and ensures technical designs adhere to data architectural best practices to ensure data quality
- Adjudicates where necessary, creates training plans, communication plans etc

**Data Governance Working Group**
- Governing body comprised of data owners across Business and IT functions that own data definitions and provide guidance & enforcement to drive change in use and maintenance of data by the business
- Validates data quality rules and prioritizes data quality issue resolution across the functional areas
- Trains, educates, and creates awareness for members in their respective functional areas
- Implements data business processes and are accountable to decisions that are made
Sample Operating Model

**Direction**
- Executive Team

**Executive Sponsor Business**
- Data Governance Leadership Team
  - Finance
  - Commercial Effectiveness
  - BioPharm
  - IT
  - Diabetes Marketing

**Data Governance Office**
- Data Governance Lead(s)
- Data Governance Coordinator

**Management**
- Business Steward Leads
  - Market Effectiveness
  - Managed Markets
  - Diabetes Portfolio Marketing
  - Sales Force Effectiveness
  - Bio Pharm Comm Ops and Eff
  - Strategic Sourcing
  - Compliance

- Data Stewards
  - Centralized Data Steward Pool

**Data Management IT Support Group**
- Data Quality Lead
- Metadata Lead
- Enterprise Architect
- Data Architect
- Business Analyst
- Data Analyst
- IT Security
- MDM Lead

**Strategic Level**
- Provides overall strategic direction, budget and resource approvals
- Forum for issue escalation

**Executive Level**
- Provides budget and resource approvals. Forum for issue escalation

**Management Level**
- Crafts the enterprise data strategy, including policies, processes and standards to ensure that data is managed as an asset

**Tactical Level**
- Stewards data within their BU to ensure that the enterprise policies are applied

DG Working Group
Some Typical Deliverables:

- Documented DG Strategy, Vision, Mission, Objectives
- Documented DG Guiding Principles
- Documented roles & responsibilities of the various members
- Up to date Operating Model
- RACI matrices
- Templates for Policies and Processes
- Templates for capturing metrics and measurement requirements
- Templates for steering committee meetings
- Training Plans
- Communication Plans
- Template for regular DG communication
- Templates for logging issues needing escalation and eventual resolution
- Templates for new DG service requests
- Checklists for new projects to ensure adherence to DG standards
Some important documents will need to be developed in the early stages of implementing Data Governance at NNI. Following are descriptions of these keys elements.

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Explanation</th>
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</thead>
</table>
| Data Charter       | • The contract explaining the corporate decision to place importance on data governance and the guiding principles that must be followed  
                     • Answers the “why”                                                                 |
| Data Policies      | • The rules to effectively govern and manage data  
                     • Identifies the guidelines which must be put into place to mitigate risk  
                     • Describes how compliance will be measured and monitored  
                     • Answers the “what”                                                                 |
| Data Processes     | • The procedures/processes necessary to comply with/implement the policies  
                     • Answers the “how”                                                                 |
| Data Standards     | • The requirements for items used by the. DG Program Examples include:  
                     • Charter  
                     • Policies  
                     • Processes  
                     • SOPs (Standard Operating procedures for data)  
                     • Corporate definitions  
                     • List of valid values  
                     • Hierarchies  
                     • Business rules  
                     • Results in a consistent look and feel throughout the organization. The key is that they encompass the enterprise  
                     • Provide an objective set of structures that are used to ensure consistency throughout the enterprise  
                     • Standards should provide examples that illustrate good and bad usage. The examples assist users in knowing whether or not they have complied with the standards  
                     • Enforced throughout the organization; not a guideline                                                                 |
| Corporate Definitions | • Describes the meaning of a data element/Attribute, Entity, etc.                                     |
• **Metric**
  - A metric is any standard of measurement
    - Number of business requests logged
    - Number of data owners identified
    - Percentage business requests resolved within agreed SLA, etc.

• **Key Performance Indicator (KPI)**
  - A Key Performance Indicator (KPI) is a quantifiable metric that the DG Program has chosen that will give an indication of DG program performance.
  - A KPI can be used as a driver for improvement and reflects the critical success factors for the DG Program

• A metric is not necessarily a KPI
Types of Metrics

- DQ Metrics
- DQ KPIs
- DG Program Metrics
- DG Program Key Performance Indicators (KPIs)
Metrics/KPIs examples

**People**
- # of DGWG decisions backed up by the steering committee
- # of approved projects from the DGWG
- # of issues escalated to DGP and resolved
- # of data owners identified
- # of data managers identified
- DG adoption rate by NNI personnel (Survey)

**Process**
- # of data consolidated processes
- # of approved and implemented standards, policies, and processes
- # of consistent data definition
- Existence of and adherence to a business request escalation process to manage disputes regarding data
- Integration into the project lifecycle process to ensure DG oversight of key NNI initiatives

**Technology**
- # of consolidated data sources consolidated
- See metrics/KPI spreadsheet for more
Data Governance Tools

- Collaboration & Information Life Cycle Tools
- Data Mastering & Sharing
- Data Architecture & Security
- Data Quality & Stewardship Workflow
- Metadata Repository
Stakeholder Stages of Engagement

Using this framework enables clear gaps in stakeholder engagement to be identified and subsequent change strategies to be put in place to enable the gaps to be closed.

- **Contact**: I’ve heard about this program/project.
- **Awareness**: I know the concepts.
- **Positive Perception**: I understand how Program/project positively impacts and benefits me and the organization.
- **Understanding**: I understand what this means to me and the organization as a whole.
- **Adoption**: I am willing to work hard to make this a success.
- **Institutionalization**: This is how we do business.
- **Internalization**: I’ve made this my own and will constantly create innovative ways to use it.
What is a Communication Plan?

• Communication Plan Definition
  ▪ A written document that helps an organization achieve its goals using written and spoken words.
  ▪ Describes the What, Why, When, Where, and How

• Importance of a Communication Plan
  ▪ Gives the working team a day-to-day work focus
  ▪ Helps stakeholders and the working team set priorities
  ▪ Provides stakeholders with a sense of order and controls
  ▪ Provides a demonstration of value to the stakeholders and the business in general
  ▪ Helps stakeholders to support the DG Program
  ▪ Protects the DG Program against last-minute demands from stakeholders
• Bringing it all together

- Who do we need to communicate to?
- What information will be important to them?
  - Metrics that map to their professional and personal goals
- How frequently should they be updated?
- What is the method of communication?
- Who should be communicating to them?
## Components of a Communication Plan

<table>
<thead>
<tr>
<th>Communication Plan</th>
<th>Stakeholder: XXX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Qualitative Information</strong></td>
<td>Any general qualitative information that I would like to receive related to this deliverable</td>
</tr>
<tr>
<td><strong>Quantitative Information</strong></td>
<td>Of the quantitative metrics that have been defined, which are the ones I would like to be informed about AND how do I want the metric communicated to me to make the message pertinent</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>How often do I want to be informed about progress</td>
</tr>
<tr>
<td><strong>Method</strong></td>
<td>What is my preferred mechanism of receiving the information</td>
</tr>
<tr>
<td></td>
<td>Deliverable 1</td>
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<td>------------------</td>
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</tr>
<tr>
<td>Qualitative</td>
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<tr>
<td>Quantitative</td>
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<tr>
<td>Frequency</td>
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<td>Method</td>
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