How to Build & Implement “Non-Invasive©*”
Data Governance & Data Stewardship Programs

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Getting Started

• Introductions
  – Backgrounds
  – Build a Program Rather Than a Project

• Terminology
  – Data Governance
  – Data Stewardship
  – Master Data
  – Meta-Data

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Workshop Agenda

• The Non-Invasive Approach© and 3-D Approach©
• Data Governance Key Concepts
• Data Governance Best Practices
• Non-Invasive*© Data Governance Organization
• Non-Invasive*© Data Governance Roles & Responsibilities
• Non-Invasive*© Data Governance Processes
• Twelve/Ten Steps to Build/Sell a Non-Invasive*© Program
• Data Stewardship Approach to Data Governance©

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The Non-Invasive Approach© & The 3-D Approach©

- This approach focuses on taking **pragmatic & practical** steps to **formalizing accountability** for the **management of data** assets.

- The Non-Invasive Approach© …
  - Telling People What to Do **Vs.** Getting Them to Do the Right Thing
  - Assigning Data Stewards **Vs.** Identifying Data Stewards

- The 3-D Approach© …
  - De Facto
  - Discipline
  - Database
Definitions

• Data Governance is …
  “the exercise and enforcement of authority over the management of data assets and the performance of data functions.”

Why is it important to define Data Governance in STRONG words?
What does it mean to govern something?

gov·ern
v. governed, govern·ing, gov·erns

1. To make and administer the public policy and affairs of
2. To control the speed or magnitude of; regulate
3. To control the actions or behavior of
4. To keep under control; restrain
5. To exercise a deciding or determining influence on

1. To bring into conformity with rules or principles or usage
2. To direct or strongly influence the behavior of
3. To exercise authority over

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Definitions

• Data Stewardship is …
  “formalizing accountability for the management of data resources.”

• Meta-Data is …
  “management of data recorded in IT tools that improves business & technical understanding of data & data-related processes.”
Data Governance & Data Stewardship
Key Concepts

• Key Concept Overview
  – Data Governance Programs are often perceived as being “invasive” and “over-and-above” the existing work culture of an organization.
  – Follow the necessary steps to eliminate that perception.
  – Take a “practical” and “pragmatic” approach to implementing Data Governance and Data Stewardship that follows several key concepts.
  – Use the key concepts as a starting point and basis for the “selling” and “understanding” of your Data Governance and Data Stewardship programs.
Data Governance & Data Stewardship

Key Concepts

- **Sample** KEY concepts of a Data Governance Program:
  - Take a Non-Invasive Approach© to Data Governance.
  - **DO NOT** give employees new job titles and recognize that the majority of their present work will not change.
  - Data Stewards are **NOT** hired. Data Stewards **ARE** identified & engaged according to their present responsibilities.
  - A Data Steward is **NOT** a position. Becoming a Data Steward **IS** an accountability for the management of a subset of enterprise data.
  - The Data Stewardship process will **NOT** create new tasks or time commitments but instead will ensure that the appropriate Data Stewards are identified and engaged in each data related task.

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Data Governance & Data Stewardship
Key Concepts

• *Sample* KEY concepts of a Data Governance Program:
  – Data Stewards **WILL NOT** be given additional work over and above their present responsibilities.
  – Present responsibilities related to data management **WILL** be formalized & recorded to ensure consistent and complete involvement of the appropriate data stewards.
  – The time commitment of each Data Steward will depend on the number of projects and data issues which impact their area of expertise.
  – Data Stewards will be provided the knowledge, tools, forums and processes to become more effective and more efficient data managers.

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Data Governance & Data Stewardship
Key Concepts

• *Sample* KEY concepts of a Data Governance Program:
  – Data Governance **WILL** require commitment to enforcing behavioral improvements focused on maximizing the effectiveness & efficiency in which data will be managed.
  – Data Governance **WILL** formalize processes for providing pro-active and reactive data issue escalation and resolution.
  – Data Governance **WILL** become part of everyday work process.
Data Governance & Data Stewardship
Best Practices

• Best Practice Overview
  – Data Governance Best Practices are defined as the basis and guideline for the execution of a Data Governance Program.
  – Organizations that successfully implement Data Governance Programs begin by defining a limited series of best practices before assessing their present practices in comparison to the best practices.
  – Once the best practices are defined, a gap-risk assessment can be completed to identify the differences (gap) between the defined Data Governance Best Practices and the present practices.
  – This report should identify the risks (and potential risks) associated with the gap prior to defining the action plan for delivering the Data Governance Program.
Data Governance & Data Stewardship
Best Practices

- **Sample** Best Practices:
  - In order for Data Governance to be successful, there will need to be a High-Level of Senior Management Support, Understanding and Sponsorship of the activities of the Data Governance Program Team.
  - Senior Management must stand behind the activities of the Data Governance Organization, Data Governance Council and specifically the activities of the Data Governance Program Team.
  - In order to obtain that level of support, Senior Management must gain confidence and trust that the activities of the Team are practical, pragmatic and focused on solving the issues that have been defined and will be defined.
  - Data Stewards responsibilities will be identified and recognized rather than being handed to employees as “new” responsibilities.
Data Governance & Data Stewardship
Best Practices

• **Sample** Best Practices:
  
  – Data Governance should be considered a PROGRAM rather than a PROJECT based on the fact that Governance is not a temporary activity.
  
  – A group of resources (A Data Governance Program Team or otherwise named team) must be dedicated to the definition, development, execution and sustainability of the Data Governance Program on a continual basis (or for however long your organization is interested in improving and maintaining high quality data for the organization).
  
  – Data Governance and the Stewarding of data must become part of everyday business in order to develop and maintain a high quality of data and information.
  
  – Data Governance Policy will be required as the backbone of making the action and assurance of governing data "not optional". The Data Governance Policy will be approved by the Data Governance Council prior to gaining acceptance and approval of the Steering Committee (Senior Management).
Data Governance & Data Stewardship
Best Practices

• **Sample** Best Practices:

  - The goals, scope, expectations and measurements of success of the Data Governance Program will be well defined and communicated with the Business Units, the Functional Tracks (Teams), the Project Teams and the Information Technology areas of the company.

  - Roles & Responsibilities of the individuals in the Information Technology and Business Unit/Functional Areas must be clearly defined, agreed upon and approved by Senior Management (in many situations the Corporate CIO, CFO, …).

  - Data Steward Roles & Responsibilities will be part of individual’s job description but will not be the title (position name) for these individuals.

  - Individuals that are identified as filling the roles & responsibilities will be evaluated (personnel) according to their willingness, ability and capability of filling the obligations of the roles.
Sample Best Practices:

- Accountability for the management of data definition, production and usage will be the responsibility of every individual that is identified in one or more of the Roles & Responsibilities.

- The Data Governance Program Team will be provided with the responsibility and accountability for enabling the Data Governance Program and Framework into the Business Units and Functional Areas.

- Data Governance will be applied to business data, technical data, master data and meta-data consistently across the organization.

- Data Governance **IS NOT** a single process or methodology.

- Rather Data Governance **IS** authority, discipline and behavior change around the management of data.

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Data Governance & Data Stewardship

Covey: “Begin With End in Mind”

- Twelve Step Program to Set Up & Deliver
- Ten Step Program to Market & Communicate
- Best Practice Assessment & Actionable Work Plan
  - Define Custom Best Practices from Industry Practices
  - Assess Present Environment Vs. Best Practices
  - Leverage Strengths of Environment
  - Address Weaknesses / Opportunities to Improve
  - [If Applicable] Perform Gap / Risk Assessment
  - Develop Action Plan
  - Develop Communications Plan
- Incrementally Deploy Data Governance Program

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Dilbert on Data Management

You need to give me a decision.

You need to give me more information.

You need to give me funding to do a study to get the information.

You need to give me a business case to justify the funding.

You need to give me relief from my other deadlines so I can work on the funding request.

You need to give me everything to infinity.

I win! Yes!!

We might be losing our laser-like focus on the customer.

On the who?
Framing & Selling Data Governance/Stewardship Programs in a Corporate Context

• Do Not Start on Step 7 of the 12 Step Process

• Start by answering the questions –
  – What do we mean by “Data”?
  – What kind of data are we talking about?

• Be Practical – Start at the Beginning –
  – Define Sponsorship & Management
  – Define Scope
  – Define Business & Technical Audience
  – Define Goals & Objectives
  – Define Communications Plan

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Defining Measurements & Metrics of Program Success

- Business Value Measures
- Program Acceptability Measures
- Metrics Critical Success Factors:
  - Willingness to consider longer-term value alongside the immediately measurable acceptability benefits.
  - Ability to attribute the improvements in information-based capabilities to the action of the program.
Defining Measurements & Metrics of Program Success

- **Business Value Measurements**
  - Increase Revenues and Profits
  - Reduction of Duplicate Data
  - Reduction of Human Resources
  - Reduction in Application Development Costs
  - Reduction in System Integration Costs
  - Reduction in Time to Market
  - Improvement in Data Quality
  - Increase in Report-ability & Track-ability
Defining Measurements & Metrics of Program Success

- More Business Value Measurements
  - Productivity Improvement
  - Increase in Customer Intimacy
  - Number of Core Data Mapped to Corporate Data
  - Increases in ROI from Other Projects
  - Adherence to Audit & Corporate Responsibility Issues
Defining Measurements & Metrics of Program Success

• Statements of quantifiable business value:
  – “Within 1 years we will have the ability to evaluate the compliance of the organization across business units rather than by business unit as we do now.”
  – “Within 2 years we will be able to evaluate property for acquisition depending on state-wide standardized data.”
  – “Within 3 years we would like to have the ability to make customer-based decisions based on cross-departmental program area standard customer data & improved customer understanding.”
Defining Measurements & Metrics of Program Success

- Acceptability Measurements
  - People Trained as Stewards
  - People That Participate as Stewards
  - Divisions or Locations or Offices That Participate as Stewards
  - Number of Accesses of Stewardship Meta-Data
  - Number of Applications or Business Areas with Stewardship Meta-Data
Defining Measurements & Metrics of Program Success

- More Acceptability Measurements
  - Polling of Stewards & Steward Meta-Data Users
  - Positions with Stewardship Accountabilities
  - Departments & Divisions that Follow the Data Stewardship Program

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Defining Measurements & Metrics of Program Success

• Percentage / Number of:
  – Business areas where a data standard (for a specific piece of data or data element) is accepted and used
  – Information systems data elements sharing a standard
  – Business processes that utilize a data standard
  – Production reports (outputs) that utilize data standard
  – People that use data standard elements
  – Integrated business processes
### Data Stewardship Program Scorecard

**Month:** January, 2006

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<thead>
<tr>
<th></th>
<th>FY 2005</th>
<th>Monthly Actual</th>
<th>Year-to-Date Actual</th>
<th>FY 2006 Goal</th>
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<td>Business Process</td>
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<td># Business Process Team Members Trained on Stewardship</td>
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<td># Business Processes With Stewardship Meta-Data Collected</td>
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<td>Core Data</td>
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<td># Business Process Elements Identified</td>
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<td># Business Process Elements Mapped to Impact Points</td>
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<td>Data Quality Issues</td>
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<td># Business Process Elements Mapped to Information Systems</td>
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<td># Data Quality Issues Identified through Stewardship</td>
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<td># Data Quality Issues Resolved using the Stewardship</td>
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<td># Data Quality Issues Avoided through Stewardship</td>
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<td>$ Revenue Opportunities Identified through Stewardship</td>
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<td>$ Revenue Generated through Stewardship</td>
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<td><strong>Execution</strong></td>
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<td>Benefits Realized</td>
<td>Data Stewardship Revenue</td>
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<td>Data Stewardship Expense</td>
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<td>Other Productivity Gain</td>
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<td><strong>Net Benefits</strong></td>
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<td>Unit Cost</td>
<td>Stewardship Unit Cost/Business Process</td>
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<td>Revenue Loss</td>
<td>Direct Expense/Business Process</td>
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<td>% of Revenue Loss Identified as Unnecessary</td>
<td>$ of Revenue Loss Identified as Unnecessary</td>
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<td>Unnecessary Risk</td>
<td>% of Risk Identified as Unnecessary</td>
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<td>Unnecessary Rework</td>
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<td><strong>Sustainability</strong></td>
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<td>Stewardship Training</td>
<td>Business Process Owners</td>
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<td>- # Business Process Owners Trained on Stewardship</td>
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<td>- % Business Process Owners Trained on Stewardship</td>
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<td>- % Non-Business Process Owners Trained on Stewardship</td>
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<td>Data Stewards</td>
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<td>- # Data Stewards Identified to be Trained</td>
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<td>- % Data Stewards Trained</td>
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<td><strong>Total Data Stewards Trained</strong></td>
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<td>Projects</td>
<td># Projects Involving Stewards / Data Stewardship</td>
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<td># Projects Actively Engaged in Collecting Stewardship Meta-Data</td>
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<td>Stewardship Training</td>
<td># Stewards to be Trained / Educated on Stewardship</td>
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<td># Stewards Trained / Educated</td>
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Leveraging, Developing & Enforcing Data Governance Policy

• Company Data Management Policy Information
  – Does a data management/governance policy exist?
  – Is it used? Is it accessible?
  – Is it enforced? Who enforces it?
  – Are staff recognized for adherence?
  – Are data management roles & responsibilities spelled out in job descriptions?

• Augment / Leverage Existing Policy
  – Less Invasive Than Creating New Policy
  – Enforce Existing Policy Through Data Governance
Leveraging, Developing & Enforcing Data Governance Policy

• The Data Governance Policy Establishes 2 Key Directives:
  – The Data Governance Policy states a need for a Data Governance Organization (consisting of Business Unit and Functional Area representation) that maintains the authority and accountability to make responsible decisions for the betterment and improvement of data quality, data usefulness and data value.
  – The Data Governance Policy establishes the need for a Data Governance Team, separate from the Project Teams, that is responsible for being the “data watch dog” or data-auditors for the organization. This group will need to be staffed adequately to become knowledgeable of the data management practices being followed in all enterprise data integration, master data and meta-data related activities.
Leveraging, Developing & Enforcing Data Governance Policy

• Establishes the **Data Governance Organization**
  
  – The Data Governance Organization is responsible for establishing and maintaining company-wide Data Governance policies, standards, guidelines, and procedures.
  
  – The Data Governance Organization is comprised of the Steering Committee, the Data Governance Council, Data Steward Tactical Teams, Business Unit Data Steward Coordinators, Data Domain Stewards, Operational Data Stewards, Identified System Subject Matter Experts and the Data Governance Program Team.
  
  – The Data Governance Council, will be made up of Business Unit Representation (for Strategic Decision Making), Functional Track Leaders (for project-related Tactical Decision Making), Compliance & Quality Assurance Representation.
Leveraging, Developing & Enforcing Data Governance Policy

- Establishes the **Data Governance Program Team**
  - The management of the Data Governance Program is the responsibility of the Data Governance Organization and supported by a dedicated Data Governance Program Team.
  - Data Governance is defined as:
    - The execution and enforcement of authority over the management of enterprise data and enterprise data processes.
    - Data Governance requires the arrangement, utilization and balance of people, process, and technology to enable an organization to manage and leverage data as an enterprise asset.
    - Data Stewardship is the formalization of accountability for the management of definition, production and usage (i.e. Quality) of enterprise data assets.

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Leveraging, Developing & Enforcing Data Governance Policy

• Sample Governance Policy Verbiage:
  - **Purpose** – *This policy for Data Governance is designed to manage the creation, transformation, and usage of data and related information owned by or in the care of xxxxx and its subsidiaries and affiliates. This policy will direct the development of common data definitions, standards, requirements and processes; enforce lines of authority; and assure that the governance framework is fully implemented.*
  - **Policy** – *It is the policy of xxxxx to require that all data owned by or in the care of xxxxx and its subsidiaries and affiliates be managed as a corporate asset through defined Data Governance standards and procedures.*
Leveraging, Developing & Enforcing Data Governance Policy

• Sample Governance Policy Verbiage:
  – **Scope** – *This policy applies to all xxxxx employees, contractors, temporary employees, consultants, and authorized agents of the Company. Throughout this policy, the word "users" will be used to collectively refer to all such individuals. Adhering to the Data Governance policies and standards is the corporate responsibility of everyone within xxxxx. Throughout this policy, the word “xxxx” will be used to collectively refer to xxxxx and its subsidiaries and affiliates.*
  – **Policy Violations** – *Data and information is a critical component of xxxxx business. All users must maintain the quality and integrity of these resources. Violations of this policy may be considered serious breaches of trust, which can result in disciplinary action up to and including termination of employment or contract and prosecution in accordance with applicable federal, state, local laws.*
Suggestions for Contending With Organizational \textit{(In) Tolerance} for Change

- Clearly Define & Communicate the Purpose, Goals, Measures of the Data Governance Program
- Clearly Communicate the Non-Invasive Approach\textsuperscript{©}
- Clearly Define Organizational and Managerial Support
- Clearly Define Processes and Commitments Required
- Clearly Define Responsibilities and Identify “De Facto” Data Stewards
- Recognize Why Earlier Attempts Failed

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Suggestions for Contending With Organizational (In) Tolerance for Change

• Promote Through Reward and Recognition
• Effectively Transition Data Governance/Stewardship Into the Environment
• Include Steward Responsibilities With Job Descriptions
• Automate Data Steward Processes Whenever Possible
Data Governance Organization
Roles & Responsibilities

Data Governance Executive Management
Data Governance Steering Committee
Strategic Integration Committee

Data Governance Council
Data Governance Representatives
(One plus Alternate per LOB & FA)

Tactical Data Stewards
Data Steward Coordinators
(One per LOB & FA)
Data Domain Stewards

Operational Data Stewards
Data Definers
Data Producers
Data Users

Roles & Responsibilities

Operational - Line of Business/Functional Area
Tactical - Cross LOB/FA
Strategic - Enterprise
Executive

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Data Governance Organization
Intro to Roles & Responsibilities

- Business & IT Need to be Involved
  - Coordination is Required – Program Team to Manage
  - Cooperation is Required – Data Governance Not Optional

- IT Data Governance (IT)

- System Subject Matter Experts (Business/IT)

- Data Subject Matter Experts (Business/IT)

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Data Governance Organization
Introduction to Roles & Responsibilities

• Remember the Key Concepts
  – Be Non-Invasive*© in Your Approach
  – DO NOT give employees new job titles.  
    Help them to recognize that the majority of their work will not change.
  – Data Stewards are NOT hired.  
    Data Stewards ARE identified & engaged according to their present responsibilities.
  – A Data Steward is NOT a position.  
    Becoming a Data Steward IS an accountability for the management of a subset of enterprise data.

• Two Distinct Sets of Responsibilities
  – Data Governance Program Roles – Not the Stewards!
  – Data Governance Organization Roles – Stewards, Council, …

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Data Governance Organization
Roles & Responsibilities

• **Data Governance Program Management**
  – Oversee Entire Program / Architect Solution & Framework
  – Facilitate Governance Organization & Steward Involvement
  – Develop and Deliver Education & Mentoring
  – Quality Assurance – Oversight, Monitor, Report Results

• **System Subject Matter Experts (SSME) or Data SMEs**
  – Plan & Implement Data Quality Activities at Application Level
  – Build Governance & Stewardship Activities into Work Plans
  – Collaborate with Stewards to Perform Data Quality Activities

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Data Governance Organization
Roles & Responsibilities

- **Data Governance Steering Committee** (Executive)
  - Sponsor, Approve, Champion Strategic Plan & Policy
  - Communicate with LOBs Expectations & Requirements
  - Identify & Prioritize Data Quality Initiatives

- **Data Governance Council** (Strategic)
  - Provide Assurance of Enterprise Perspective & Approach
  - Provide Strategic Direction for Data Stewardship Committee
  - Resolve Escalated Problems at Strategic Level

- **Tactical Data Stewards** (Tactical)
  - Data Domain Stewards & Data Stewards Coordinators
  - Identify and Coordinate Operational Data Stewards
  - Identify and Manage-To Domains of Data
  - Resolve Escalated Problems at Tactical Level

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Data Governance Organization

Roles & Responsibilities

• **Data Definer (Stewards)** – Responsible for …
  – Defining the data that will be used by the organization, how that data will be used, and how that data will be managed.
  – Creating/reviewing/approving data definitions
  – Integrity and quality of data definition
  – Identifying data quality standards
  – Identifying and classifying data access levels
  – Identifying and documenting regulatory and legal/risk issues including data retention requirements
  – Supporting/sharing knowledge w/other stewards
  – Communicating new and changed business requirements to individuals who may be impacted
  – Communicating concerns, issues and problems with data to the individuals that can influence change
  – **Meta-Data Definers (Stewards)**
Data Governance Organization
Roles & Responsibilities

- **Data Producer (Stewards)** – Responsible for …
  - Producing, creating, updating, deleting, retiring, archiving the data that will be managed.
  - Integrity and quality of the data created or updated in their department or process.
  - Management and control of data creation.
  - Completeness and timeliness of data.
  - Communicating new and changed business production requirements to individuals that may be impacted.
  - Communicating concerns, issues, and problems with data production to individuals that can influence change.
  - **Meta-Data Producers (Stewards)**
• **Data User (Stewards)** – Responsible for…
  – Using data to perform their job and processes.
  – Integrity of data usage.
  – Communicating new and changed business data usage requirements to individuals that may be impacted.
  – Communicating concerns, issues, and problems with data usage to individuals that can influence change.
  – **Meta-Data Users (Stewards)**
**Tactical** Stewards
Domain Definition

- Data Domain Stewards (Cross LOB)
- Steward Coordinator (Per LOB)
  - Data Definers (LOB)
  - Data Producers (LOB)
  - Data Users (LOB)
- Steward Coordinator (Per LOB)

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Tactical Stewards  
Domain Definition

- **By Subject Matter**
  - Customer
  - Vendor
  - Material
  - Product, ...

- **By Tier 1 & Tier 2 Systems**
  - Operational Systems (Tier-1)
  - Integrated Data Sets (Tier-2)

- **By Organization**
  - Line of Business / Business Unit
  - Functional Area
Operational Stewards
Criteria & Traits

- Data Stewards should have a vision of what the future of data integration within the department can be and have the ability to get others to see the vision and align all data-related activities with achieving the goals of the organization.

- Data Stewards are rarely satisfied with the way data is managed. They should constantly be looking for ways to improve the status quo of how data is managed and as a result, constantly strive for improvements in how data is defined, produced, and used.

- Data Stewards should have the ability to motivate the organization to achieve data integration by including all parties that are interested (or mandated) to integrate their data.

- Data Stewards should set an example of data-related behavior for the department. They should exhibit the data-related behavior they want from the department every day and in everything they do.

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Operational Stewards
Criteria & Traits

- Data Stewards should be team players. They must develop and help achieve common goals and a shared sense of purpose regarding their specific subject matter and its linkages with organizational goals. They should be able to draw on their own strengths and look to others as a resource, and hold one another accountable where they are interdependent.

- Data Stewards should be diplomatic when dealing with other Stewards. Conflict is an inevitable part of teamwork, as people are different from one another and situations are frequently ambiguous where values may differ. An inability to come to grips with conflict is a serious limitation to a team player. Data Stewards must have the personal interest, intuitive ability and communication skills to facilitate issue resolution to achieve a “win-win.”
Process Integration
A **Key Component** of Data Governance

- Stay "Non-Invasive®" in Your Process Integration
- "Active" Data Governance
  - **Pro-**Active Governance – Through Method/Process
  - **Re-**Active Governance – Through Issue Resolution
- **Overlay** Roles & Responsibilities Over Existing Methodology & Work-Flow
- Data Conflict Types & Engaging Stewards
- Data Stewardship Conflict Resolution Paths

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Pro-Active Data Governance
Integrating With Existing Methodology

- System Development Life Cycle (SDLC)
  Application Development Life Cycle (ADLC)
  Data Development Methodology (DDM)
  DB Development Methodology (DbDM)
  - Planning (Roles, Time Commitments, Tasks)
  - Requirements
  - Analysis
  - Design
  - Development
  - Testing
  - Implementation
  - Maintenance
  - Enhancement

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# Pro-Active Data Governance
## Integrating With Existing Methodology

### DATA GOVERNANCE ACTIVITY MATRIX

<table>
<thead>
<tr>
<th>DATA DEVELOPMENT LIFE CYCLE (DDL)</th>
<th>IT</th>
<th>DATA GOVERNANCE ACTIVITY</th>
<th>OPERATIONAL DATA STEWARDS</th>
<th>DATA USER</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSTEM SMEs</td>
<td>DATA SMEs</td>
<td>DATA DOMAIN STEWARD (or designee)</td>
<td>DATA STEWARD COORDINATOR</td>
<td>DATA DEFINER</td>
</tr>
<tr>
<td>INFORMATION GATHERING (DOMAIN, SYSTEM, STEWARDS)</td>
<td>Coordinate and manage all technical aspects of system information gathering with Data Domain Stewards and Steward Coordinators. Ensure appropriate technical meta-data is recorded.</td>
<td>Coordinate and manage all technical aspects of data information gathering with Data Domain Stewards and Steward Coordinators. Ensure appropriate technical meta-data is recorded.</td>
<td>Activity initiated re: this domain, Data Domain Steward is involved in identifying and recording info related Domains, Systems, Stewards per issue or task.</td>
<td>Activity initiated re: this domain, Steward Coordinator is involved in identifying Operational Stewards in this LOB/TA that should participate in this work flow. Ensure appropriate business meta-data is recorded.</td>
</tr>
<tr>
<td>ASSESSMENT &amp; REQUIREMENTS</td>
<td>Coordinate and manage all technical aspects of system assessment &amp; requirements gathering with Data Domain Stewards and Steward Coordinators.</td>
<td>Coordinate and manage all technical aspects of data assessment &amp; requirements gathering with Data Domain Stewards and Steward Coordinators.</td>
<td>Coordinate tasks associated conducting the assessment and requirements steps.</td>
<td>Coordinate activities of Operational Stewards including project timelines, status reporting, tactical decision making. Ensure appropriate business meta-data is recorded.</td>
</tr>
<tr>
<td>PLANNING &amp; ANALYSIS</td>
<td>Coordinate and manage all technical aspects of system planning and analysis with Data Domain Stewards and Steward Coordinators.</td>
<td>Coordinate and manage all technical aspects of data planning and analysis with Data Domain Stewards and Steward Coordinators.</td>
<td>Coordinate tasks associated conducting planning and analysis steps.</td>
<td>Coordinate activities of Operational Stewards including project timelines, status reporting, tactical decision making.</td>
</tr>
<tr>
<td>SOLUTION DESIGN</td>
<td>Coordinate system design with Data Domain Stewards and Steward Coordinators.</td>
<td>Coordinate data design with Data Domain Stewards and Steward Coordinators.</td>
<td>Coordinate tasks associated conducting planning and analysis steps.</td>
<td>Coordinate activities of Operational Stewards including project timelines, status reporting, tactical decision making.</td>
</tr>
<tr>
<td>SOLUTION DEVELOPMENT</td>
<td>Coordinate and manage all technical aspects of system solution development. Ensure that appropriate technical meta-data is recorded.</td>
<td>Coordinate and manage all technical aspects of data solution development. Ensure that appropriate technical meta-data is recorded.</td>
<td>Coordinate tasks associated conducting planning and analysis steps.</td>
<td>Coordinate activities of Operational Stewards including project timelines, status reporting, tactical decision making.</td>
</tr>
<tr>
<td>SOLUTION TESTING</td>
<td>Perform EIS system testing. Assure that appropriate technical meta-data is recorded.</td>
<td>Perform EIS data testing. Assure that appropriate technical meta-data is recorded.</td>
<td>Coordinate business tasks associated with solution testing steps.</td>
<td>Coordinate activities of the Operational Stewards related to solution implementation including timelines, status, tactical decision making.</td>
</tr>
<tr>
<td>SOLUTION IMPLEMENTATION</td>
<td>Coordinate and manage all technical aspects of system solution implementation.</td>
<td>Coordinate and manage all technical aspects of data solution implementation.</td>
<td>Coordinate business tasks associated with solution implementation.</td>
<td>Coordinate activities of the Operational Stewards related to solution implementation including timelines, status, tactical decision making.</td>
</tr>
<tr>
<td>SOLUTION MONITORING &amp; MAINTENANCE</td>
<td>Coordinate and manage all technical aspects of system solution monitoring &amp; maintenance.</td>
<td>Coordinate and manage all technical aspects of data solution monitoring &amp; maintenance.</td>
<td>Coordinate business tasks associated with solution monitoring &amp; maintenance.</td>
<td>Coordinate activities of the Operational Stewards related to solution monitoring &amp; maintenance including timelines, status, tactical decision making.</td>
</tr>
</tbody>
</table>

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# Pro-Active Data Governance

## Integrating With Existing Methodology

### Meta-Data Action Plan Mapped to Roles

<table>
<thead>
<tr>
<th>Process Step</th>
<th>Program Manager</th>
<th>Project Manager</th>
<th>Subject Manager</th>
<th>Data Definer</th>
<th>Data Producer</th>
<th>Data User</th>
<th>Business Modeling</th>
<th>Outcome / Deliverables</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop Conceptual Model / Data Taxonomy</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Conceptual Model of Taxonomy</td>
</tr>
<tr>
<td>2. Further Develop Logical Model Including Attribution of Entities</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Attributed Logical Model of Taxonomy</td>
</tr>
<tr>
<td>3. Specify Which Taxonomy Attributes Will Be Included in the Repository</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Data List Per Business Requirements</td>
</tr>
<tr>
<td>4. Conduct Data Analysis of Attributes Using Data Analysis Template</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Data Analysis for Data Listed in Step 3</td>
</tr>
<tr>
<td>5. Map Sources of Source Data to Repository Data Structures</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Mapping of Source Data to Data</td>
</tr>
<tr>
<td>7. Selection of the “Best” Source for the Data</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Documentation Validating “Best” Source</td>
</tr>
<tr>
<td>8. Design and Develop the Data “Engine” and User Interface</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Data Movement, User Interface &amp; Functional Development</td>
</tr>
<tr>
<td>9. Validate and Test Data</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>Sign Off of Data Validation in the Repository</td>
</tr>
</tbody>
</table>

Legend: Gray Block w/Bold X = Active Participant, Block w/Dull X = Optional Participant. * See Appendix for Template

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# Pro-Active Data Governance
## Integrating With Existing Methodology

<table>
<thead>
<tr>
<th>Information System Development Methodology</th>
<th>Data Stewardship Management</th>
<th>Participating Stewards</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step / Task</td>
<td>Stewardship Manager</td>
<td>Program-Area Manager</td>
<td>MSC</td>
</tr>
<tr>
<td>1. Project Proposal Phase</td>
<td>X</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>2. Strategy Phase</td>
<td>X</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>3. Needs Evaluation Phase</td>
<td></td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

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Re-Active Data Governance

Resolving Data Conflicts

• Reactive Data Governance Focuses On:
  – Resolving Known Data Quality Issues
  – Resolving Discrepancies in Data Definition
  – Improving Data Integration
  – Cleaning & Collecting Meta-Data
Re-Active Data Governance
Resolving Data Conflicts

• Is a Data Conflict a Data Conflict?
  – Are All Data Conflicts Created Equally?
  – Resolved Equally?

• Data Conflicts Often Coincide with Steward Roles ...
  – Data Definition Conflicts
  – Data Production Conflicts
  – Data Usage Conflicts

• Re-Active Governance Through:
  – Issue Resolution
  – Data Quality Initiatives

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Re-Active Data Governance

Data Definition Conflicts

• Defining Data Definition Conflicts
  A Data Definition Conflict is a divergence of business and/or technical opinion about the definition or requirements for or about specific data that will be used to support business activities.

• Defining Data Production Conflicts
  A Data Production Conflict is a divergence of business and/or technical opinion about the production of specific data that will be used to support business activities.

• Defining Data Usage Conflicts
  A Data Usage Conflict is a divergence of business and/or technical opinion about the usage of specific data that will be used to support business activities.
Re-Active Data Governance
Resolving Conflicts

- Data Quality Methodology
  - Qualify & Prioritize Data Issue
  - Identify Affected Data Domain
  - Identify Affected Data Stewards
  - Conduct Data Systems & Data Resource Discovery
  - Conduct Root Cause Analysis
  - Conduct Cost-Benefit Analysis
  - Analyze & Recommend Resolution
  - Gain Approval, Funding, Resources
  - Resolve Data Issue

- Cross Reference DQ Methodology & Resources
  - **Who** does **What** and **When**?

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Re-Active Data Governance
Resolving Conflicts

• Invoking Roles & Responsibilities
  – Who identifies the conflict?
  – Who directs the formal resolution effort?
  – Who engages the pertinent data stewards?
  – What will be the decided upon outcome?

• Define Escalation Paths & Decision Making

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Conflict Resolution Paths
Pyramid Diagram

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Managing Data Governance Meta-Data
Conceptual Meta-Model

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### Managing Data Governance Meta-Data

#### Common Data Matrix / Data Sharing Matrix

<table>
<thead>
<tr>
<th></th>
<th>DM &amp; IT</th>
<th>CREDIT</th>
<th>INVESTMENT</th>
<th>FINANCE</th>
<th>MARKETING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DATA MANAGEMENT</strong></td>
<td><strong>PROGRAM LEAD:</strong> xxxxx <strong>LEAD ANALYST:</strong> xxxxx</td>
<td><strong>CIO COUNCIL REP:</strong> xxxxx <strong>DATA STEWARD COORDINATOR:</strong> xxxxx</td>
<td><strong>CIO COUNCIL REP:</strong> xxxxx <strong>DATA STEWARD COORDINATOR:</strong> xxxxx</td>
<td><strong>CIO COUNCIL REP:</strong> xxxxx <strong>DATA STEWARD COORDINATOR:</strong> xxxxx</td>
<td><strong>CIO COUNCIL REP:</strong> xxxxx <strong>DATA STEWARD COORDINATOR:</strong> xxxxx</td>
</tr>
<tr>
<td><strong>IT DATA GOVERNANCE</strong></td>
<td><strong>PROGRAM LEAD:</strong> xxxxx <strong>LEAD ANALYST:</strong> xxxxx</td>
<td><strong>BUS UNIT IT ANALYST:</strong> xxxxx</td>
<td><strong>BUS UNIT IT ANALYST:</strong> xxxxx</td>
<td><strong>BUS UNIT IT ANALYST:</strong> xxxxx</td>
<td><strong>BUS UNIT IT ANALYST:</strong> xxxxx</td>
</tr>
<tr>
<td><strong>OPERATIONAL SYSTEMS (Tier 1)</strong></td>
<td><strong>SOME (IT):</strong> xxxxx <strong>DSME (IT):</strong> xxxxx</td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
</tr>
<tr>
<td><strong>MARKETONE</strong></td>
<td><strong>SOME (IT):</strong> xxxxx <strong>DSME (IT):</strong> xxxxx</td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
</tr>
<tr>
<td><strong>CUSTOMER FILE SYSTEM</strong></td>
<td><strong>SOME (IT):</strong> xxxxx <strong>DSME (IT):</strong> xxxxx</td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
</tr>
<tr>
<td><strong>INTEGRATED SYSTEMS (Tier 2)</strong></td>
<td><strong>SOME (IT):</strong> xxxxx <strong>DSME (IT):</strong> xxxxx</td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
</tr>
<tr>
<td><strong>ERP</strong></td>
<td><strong>DOMAIN STEWARD:</strong> LOB/FA:</td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
</tr>
<tr>
<td><strong>EDW</strong></td>
<td><strong>DOMAIN STEWARD:</strong> LOB/FA:</td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
<td><strong>DATA STEWARD(S):</strong></td>
</tr>
</tbody>
</table>
Developing an Action Plan to Build a Data Governance/Stewardship Program

- Twelve-Step Action Plan

1. Define Data Governance & Best Practices
   Define Drivers of, and Need for, Governance & Stewardship

2. Perform Assessment of Existing Practices Vs. Best Practices

3. Identify Strengths, Opportunities for Improvement
   Communicate Gaps & Risks Associated with Gaps
   Develop Data Governance Action Plan
Developing an Action Plan to Build a Data Governance/Stewardship Program

• Twelve-Step Action Plan (continued)

4. Frame & Sell the Data Governance/Stewardship Program
   Define Key Concepts & Key Terms
   Specify Goals, Objectives, Measures, Communications

5. Define, Identify & Document Data Governance Organization
   Include Business & Technical Roles & Responsibilities
   Include Time Commitments, Workflow Integration
   Define Domains & Cross-LOB Coordination

6. Select Steward Meta-Data to Manage
   Develop Data Governance Tools
   Plan for Sourcing Steward Meta-Data

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Developing an Action Plan to Build a Data Governance/Stewardship Program

- Twelve-Step Action Plan (continued)

7. Develop Data Governance/Stewardship Roll Out Plan, Resource Plan and Communications Plan

8. Populate Steward Meta-Data Tool
Identify “De-Facto” Data Stewards Through Existing Initiatives

9. Identify & Educate Data Governance Organization
Attach to Meaningful Data Integration Efforts
Use Pro-Active & Reactive Data Governance Processes

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Developing an Action Plan to Build a Data Governance/Stewardship Program

- Twelve-Step Action Plan (continued)

10. Engage Data Governance Council
   Engage Data Domain Stewards & Operational Stewards
   Turn Steward Meta-Data Over to Production

11. Enhance Data Governance/Stewardship Program
    With New or Changed Requirements

12. Evaluate Data Governance/Stewardship Program
    Monitor & Report Usage
Developing an Action Plan to Market Data Governance/Stewardship

- Ten-Step Marketing Action Plan
  1. Select a Project or Projects for Data Governance & Data Stewardship Program to Focus Initial Support
  2. Develop Use Cases to Identify Ways That Data Governance & Data Stewardship will be Used to Support the Project
  3. Educate Project Teams on the Uses of the Data Governance & Data Stewardship Program

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Developing an Action Plan to Market Data Governance/Stewardship

• Ten-Step Marketing Action Plan (continued)

  4. Educate Project Teams on Expectations, Skills, Tasks, Tools

  5. Measure and Report Results of Data Governance & Data Stewardship Project to Project Teams

  6. Promote Measurements and Successes Via Newsletters, Emails, Memos, Announcements
Developing an Action Plan to Market Data Governance/Stewardship

- **Ten-Step Marketing Action Plan (continued)**

7. Provide On-Call Data Governance/Stewardship Program Hot-Line and Support-Line


9. Provide Classroom and/or Individual Education and Training

10. Provide Brown-Bag Lunches to Educate/Attract Potential Data Governance/Stewardship Users
Wrap Up & Discussion

- Final Summary
  - Keep Your Solution Practical & Pragmatic
  - Consider the Key Concepts Suggested Earlier
  - Stay Non-Invasive*© in Your Approach
  - Remember the 3-D’s of Data Governance & Data Stewardship
  - Emphasize the Use of Meta-Data to Support the Program

- Questions & Case Discussion (if time is available)
  - Financial Company in Atlanta
  - State Government in Florida
  - Manufacturing & Retail Company in Mexico City

- Thank you for selecting this session.

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