

Information Stewardship

Metadata Program - Value Proposition

Adoption of a Formal Metadata Program and Technology Strategy

November 16, 2005



Agenda

▶ Program Formation

- A formal metadata program
- Establishment of a metadata team
- Technology to manage metadata

• Technology Considerations - Metadata Repositories

- Technology Statement
- The Benefits
- The Value

• Plan

• Next Steps

The Program Formation – Formal Metadata Program

- This is an information stewardship driven *program* that will manage an underlying infrastructure for the capture, management, and presentation of information about our data and business processes.
 - Directive – Evaluate and understand possible business value
 - Strategy – Establish a metadata team to develop the program
 - Objectives
 - Scope
 - Program requirements
 - Architecture & tool options
 - Plan – Create a program plan based on scope, requirements & tools
 - Activities
 - Resources
 - Tools
 - Time
 - Execution
 - Implement plan
 - Maintain systems and processes
- **Metadata Management and Information Stewardship**
 - There is an important relationship between metadata management and information stewardship that is a vital link to making the metadata program productive and successful.

We're Here
Today



The Program Formation – Metadata Core Team (4 Roles)

- **Program Champion/Sponsor**
 - 1-4 hour per week commitment
 - Allocates resources and time commitments
 - Maintains budget to approve tools, training, etc
 - Knowledgeable or familiar with metadata and project plans; reviews status
- **Program Manager**
 - 10-40 hour per week commitment (depending on staff size)
 - Directly manages metadata program staff
 - Develops project plans and reviews status reports
 - Updates the program sponsor/champion
- **Metadata Architect/Developer**
 - 30-40 hour weekly commitment (depending on *program and project* size)
 - Understands metadata requirements and designs metadata architecture and availability
 - Develops metadata project plans
 - Designs metadata mapping and the flow/access of metadata
 - Designs metadata change management procedures
 - Designs and builds metadata interfaces including access and movement of metadata
 - Designs metadata quality management procedures
- **Metadata/Data Analyst**
 - 20-40 hour weekly commitment (depending on *project* size)
 - Understands metadata requirements, availability and architecture plan
 - Identifies metadata
 - Provides QA on the entry of metadata into sources and metadata repository

The Program Formation – Metadata Technology

- **Technology is required to collect, manage, and publish metadata**
- **Four possible architecture options exist:**
 - ④ – Centralized Repositories
 - ④ – Distributed Repositories (Federated data)
 - ④ – Non-integrated Tool Specific (e.g. Cognos, Siebel, Informatica, ERWIN)
 - Hybrid Repositories (combination of a centralized and limited federation)
- **Metadata team must research options**
 - Review Gartner Magic Quadrant
 - Select short-list (vendors of interest)
 - Evaluate products
 - Develop financial ROI model
 - Gain management approval
 - Purchase product
 - Implement

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Technology Statement – Metadata Repositories

Tools that increase business and technical understanding of data, through the capture, maintenance and presentation of information that describe the organization's data and processes.

Metadata answers questions about data:

What data exists?

Where is it being used?

How is it inter-related to other information?

What are the expectations of quality for this data?

What is its business definition?

Why do we need it?

Who is using it, and how are they using it?

What other names has it been called? (or is it being called?)

When was it updated last?

Technology Statement – Current SNI Challenge

- Associates must “track down” the information they are looking for
- They have to go to multiple sources/resources to get answers
- Then they must attempt to discern (and re-discern) the quality of the answers

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Technology Statement – Traditional Challenges

Metadata Repositories Address Business Challenges

- ▶ Key facts and understanding are locked in people's minds, or hidden in systems and documents
- ▶ Excessive time required to understand the impacts of process change which leads to excessive implementation costs
- ▶ Numerous reconciliation activities are required to ensure data integrity and understanding
- ▶ Flexibility of the enterprise is low
- ▶ Uncertainty around the business and technical impacts of change
- ▶ Information discovered during projects and other business activities is lost or buried within the organization, forcing it to be rediscovered over and over (and adding to future project costs)

Technology Statement – Industry Example

From Gartner Group – Report No. SPA-450876

50% of a Developer's time is spent "searching"

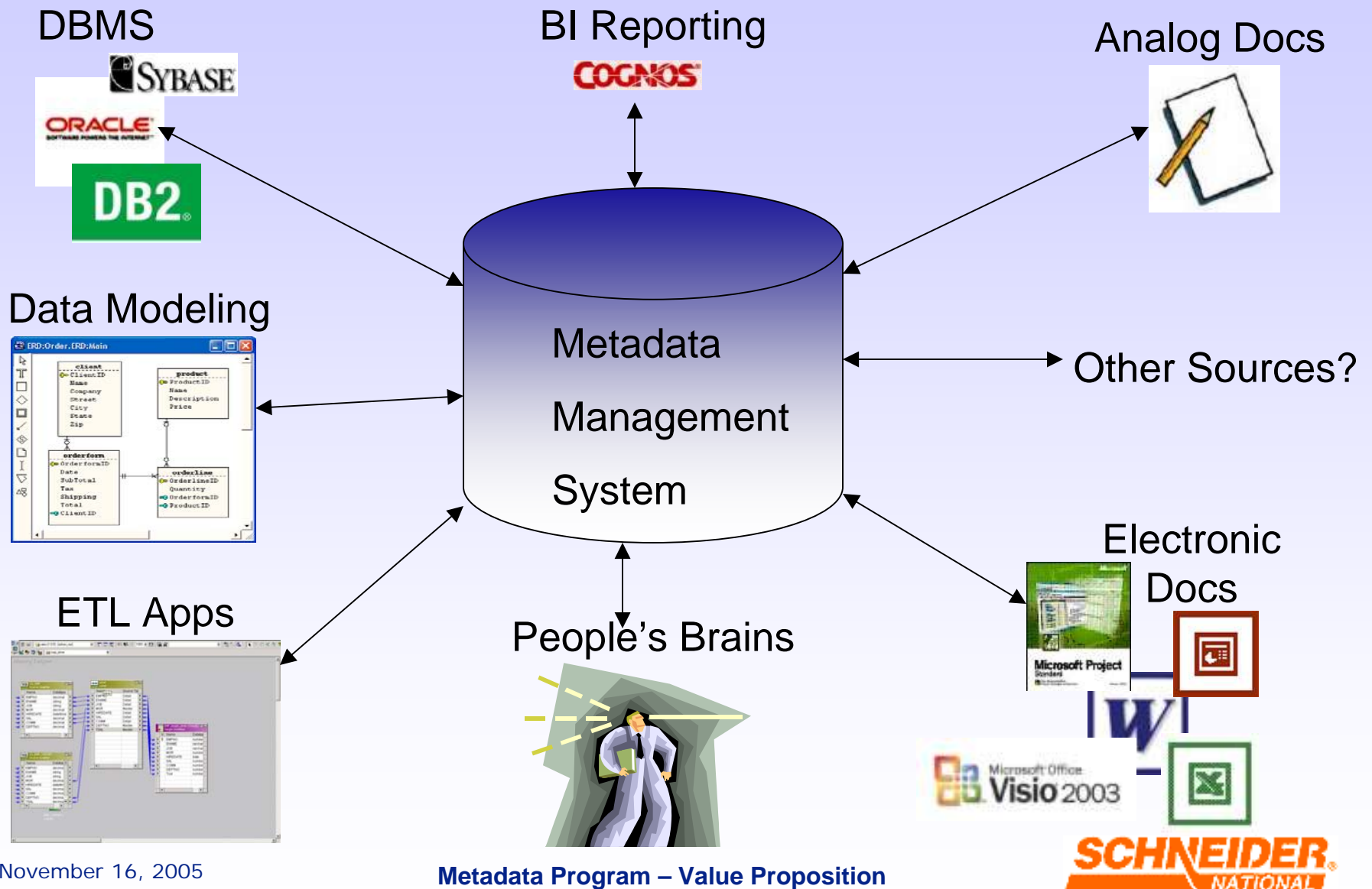
i.e. Determining the effects and depth of changes / enhancements / new development. Understanding system problems

20% of the 50% (10% overall) can easily be reduced by implementing a metadata management solution

This example came from a previous DAMA presentation by Stu Carty of Gavilan Research Associates.

EXAMPLE SAVINGS	Gartner Example
Developers/Analysts	100
Average Compensation	\$75,000
Time Saved / gained	10%
Total Savings p/year	\$750,000

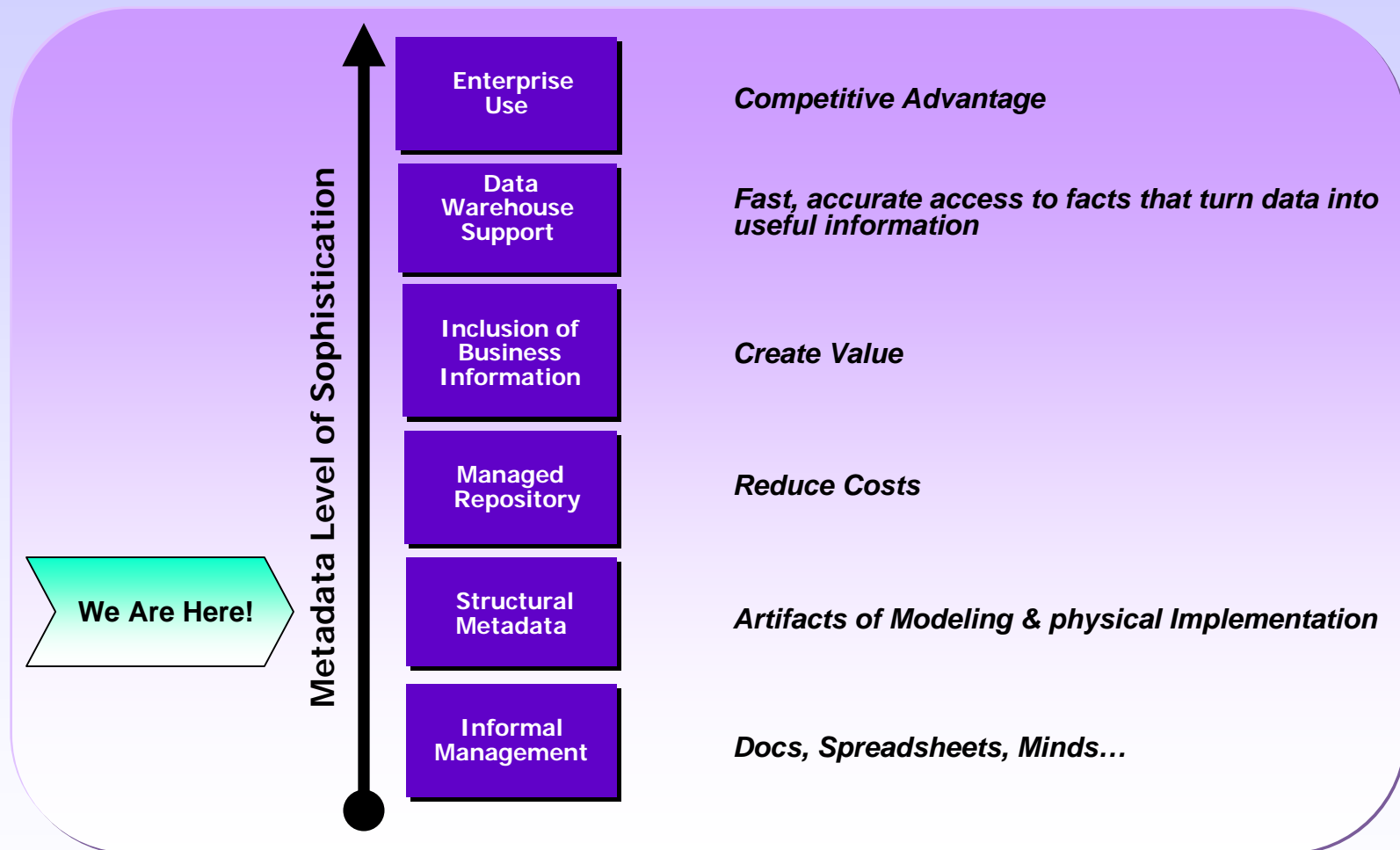
Technology Statement – Meeting the Challenge



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Metadata Program – Value Proposition

Technology Statement – Value Increases With Adoption



Impact on the Organization

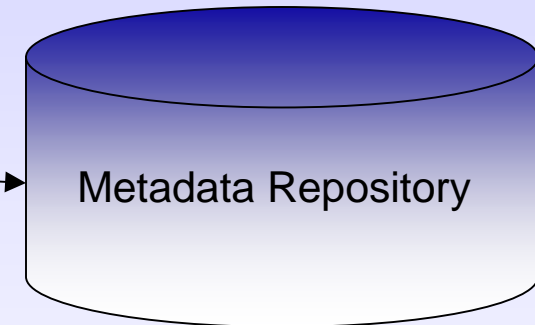
- **Enabler of Communication and Coordination (Virtual SME)**
 - Provides for the collection, management, and presentation of the single version and location of the truth (e.g. what is sales revenue?)
 - Definition
 - Context
 - Aliases
 - Sources
 - Age
- **Enabler of Enterprise Architecture Synchronization**
 - Leveraging captured information by managing it and providing it for future use
 - Contains data about our current state (HW, SW, Processes, Information, etc.)
 - Inventory profiles (What we have, How it is used, lifecycle management, etc.)
 - Strategic plans & directions
- **Enabler of Data Quality Program**
 - Contains the definitions, structures, process that act on data, expectations of quality, measurements, assessments, etc.
 - Data Profiles (Content, structure, and quality of data)
 - Provides the tools needed by Information Stewards to assess, measure and improve quality

Business Analyst Usage Example

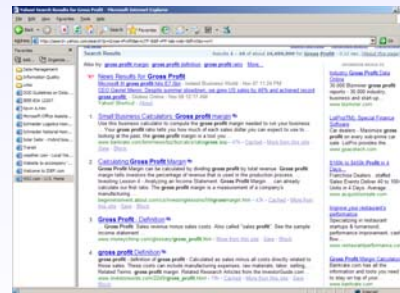
Business Analyst reviewing a BI report needs to know the background around the report data...(i.e. definitions, sources, age, etc.)



They use a search engine-like application to search the Metadata Repository to find the report name, or key report facts...



Search engine result list provides "links" to facts. Links may take the analyst to other application tools that contain the info of interest...



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The Benefits – Traditional Benefits

Improve Quality

- ▶ Metadata is the input needed to build the data profiles that are the foundation of data quality
- ▶ Provides architecture & infrastructure to maintain & present the data quality expectations, definitions, structures, processes, flow thru the enterprise, and business uses of our data
- ▶ Gartner Group Research Note – Feb 2003:
 - “Poor data quality is a significant inhibitor to the success of strategic initiatives.”
 - “Impossible to generate business value from CRM, BI or any effort requiring significant integration of data...without a focus on data quality through optimal stewarding of critical business data and process.”

Cost Reduction

- ▶ Less project hours required for legacy discovery (data structures, definitions, SIPOCs, etc.)
- ▶ Increased data quality reduces data scrap and rework
- ▶ Better decisions due to better understanding of data
- ▶ Reduced dependency on undocumented associate knowledge

Shortened Delivery

- ▶ Project legacy discovery can be automated or accessed electronically
- ▶ Reduced rework due to poor or inaccessible information
- ▶ Reduced time spent verifying the quality of information

Competitive Advantage

- ▶ Deeper insight into our customer (and ourselves) through improved data quality
- ▶ Maximize development efficiencies to create a more nimble and responsive organization
- ▶ Improved decision making through better understanding of information and processes

Customer Service

- ▶ Better understanding of customer data
- ▶ Improved data quality (reduction of duplication, incorrect data, etc.)
- ▶ Ability to get fast response to customer questions

The Benefits – Business Benefits

- **IT productivity savings passed back to the business**
- **Allows faster response to business process change requests by reducing the research, discovery, and impact analysis tasks**
- **Reduced time and effort verifying business information and metrics**
- **Consumers of information will have an interface into the single version of the truth**
- **Better business decisions due to effective descriptions of business data**

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Why should SNI Invest?

To go from **Good to Great...**

- **Out-manuever our competitors** by nimbly adapting to changing business conditions
 - Quickly identifying the “who, what, where, and when” of our information—essential information needed before solutions can even be crafted
- **Consolidation & publication of knowledge** that is spread throughout the company, improving synchronization of processes and the systems that support them
- A robust metadata repository **provides critical information needed for other enterprise initiatives**
 - Strategic Planning
 - Enterprise Synchronization of Architecture
 - Formalized data quality programs
 - Improved coordination between projects and processes
- **Providing the tools and information to define, assess and measure data quality expectations and improvements**
 - Critical upstream input required to implement an effective data quality program
 - Collection of the downstream results needed to measure results

The Value – The Pre-ROI Ground Rules

- **“...A substantial portion of the initial costs occur (or should occur) before a software solution is even selected...All of these efforts take time and involve resources, internal and often external.” Adrienne Tannenbaum - DBDS Inc.**
- **An effective Metadata Repository ROI is Based on the following:**
 - **ROI Value = Benefits – Costs**
 - We’re starting to know the benefits
 - But, we don’t know the true costs
- **We’ll look at industry examples and then illustrate a few simple examples of productivity improvement based on a sampling of SNI activities that are affected by the use of metadata**

The Value - Industry Examples

Actual Return On Investment (From Gavilan Research Associates LLC) – From Major Financial Company in NYC

This example came from a previous DAMA presentation by Stu Carty of Gavilan Research Associates.

EXAMPLE ACTUAL SAVINGS	Fin. Co Example	SNI
Developers /Business Analysts	1100	Your #'s Here
Weighted Average Compensation	\$75,000	
Time Saved / gained	5%	
Total Savings p/year	\$4,125,000	

The Value - Industry Examples

Actual Return On Investment (From Gavilan Research Associates LLC)

- Major Banking Company – Toronto, ON
 - Internal research determined that **employees averaged one hour (60 minutes) in their search for a “corporate data definition” or “corporate data location”**
 - Metadata solution **statistics recorded 50,000 “search & finds” for corporate data elements in one year**

This example came from a previous DAMA presentation by Stu Carty of Gavilan Research Associates.

EXAMPLE ACTUAL SAVINGS	Banking Co. Example	SNI
Metadata Searches	50,000	50,000
Average Compensation p/hr.	\$60	Your #'s
Total Savings p/year	\$3,000,000	Here

The Value - SNI Examples

- Sampling of two Associates Who Take CSR Help Desk Questions:

SNI Associate Testimony	Metadata Related Calls p/wk	Approx. hours spent on each call	Total Hours p/wk	Rate	Cost p/wk	Cost p/mo (4 wks)	Cost p/yr (48 Wks)	10% cost reduction by Implementing metadata repository
(Peregrine Calls)	15	2	30					
(Direct calls from CSRs)	3	1	3					
Total Help Call Testimonies			33					

Your #'s Here

- The example shows the costs and savings from legacy discovery tasks on a couple of recent SNI projects.

SNI Project	Legacy Discovery Hours	Discovery Hours less Savings (10%)	Hours Saved	FTE Rate	Actual Cost	Cost w/Metadata Repository	Potential Savings
UCM Phase 1	2003	1803	200				
Intermodal Performace Reporting Project	60	54	6				
Total Savings			206				

Your #'s Here

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The Plan - Phased Approach

- **Phase I - Design Program**
 - Determine Scope and Objectives
 - Create Program-Level Requirements
 - Develop Technology Strategy
 - Conduct Tool/Vendor evaluations
 - Develop Program Strategy
 - Build Financial ROI based on technology selection, scope, and objectives
- **Phase II - Develop Program**
 - Develop Standards, Policies, and Procedures & Processes
 - Standard tasks required to implement collection & maintenance
 - Select & prioritize metadata targets of opportunity
 - Develop Communication, Resource, and Project plans
- **Phase III - Implement Program**
 - Infrastructure implementation (tools, etc.)
 - Enable/rollout standards, policies, procedures & processes (via tools)
 - Execute project plans for priority targets (quick, but value-add wins)

The Plan – Estimated Core team Costs

- Planned Core team costs based on hours required to staff the formal metadata program

Cost Description	Range of Hrs p/Wk	Best Case	Worst Case	Rate	Best Case p/yr	Worst Case p/yr
Program Champion/Sponsor	1-4	1	4	Your #'s Here		
Program Manager	10-40	10	40			
Metadata Architect/Developer	30-40	30	40			
Metadata/Data Analyst	20-40	20	40			
Total (year 1) Team Resource Costs						

The Plan – Placeholder for Implementation Costs

- Hardware/software and other implementation costs

Cost Description	Range of Hrs p/Wk	Best Case	Worst Case	Rate	Best Case p/yr	Worst Case p/yr
Software Costs (Gartner Report G00129274)	N/A	N/A	N/A	N/A	\$75,000	\$500,000
Hardware Costs	N/A	N/A	N/A	N/A	\$5,000	\$75,000
Infrastructure Personnel	4-15	4	15			
Consulting Services	20-40	10	40			
Total (year 1) Technology Implementation Costs					Your #'s Here	

- ❖ The above costs are “guesstimates” based on Gartner reports and intuition. They are meant as a “best guess” placeholder of the technology costs that will be detailed by the Metadata Program Core Team during Phase I.
- ❖ These costs will be revised based on the program objectives, scope, requirements, and technology strategy.

The Plan – Total Estimated Costs

Cost Description	Range		Rate	Best Case p/yr	Worst Case p/yr
	of Hrs p/Wk	Best Case			
Program Champion/Sponsor	1-4	1	4	Your #'s Here	
Program Manager	10-40	10	40		
Metadata Architect/Developer	30-40	30	40		
Metadata/Data Analyst	20-40	20	40		
Total Team Resource Costs					
Software Costs (Gartner Report G00129274)	N/A	N/A	N/A	N/A	\$75,000
Hardware Costs	N/A	N/A	N/A	N/A	\$5,000
Infrastructure Personnel	4-15	4	15	Your #'s Here	
Consulting Services	20-40	10	40		
Total Technology Implementation Costs					
Total All (year 1) Costs					

The Plan - Critical Success Factors

- **Executive Sponsorship**
- **Managerial Support and Enforcement**
- **Clearly Defined Metadata Steward Roles, Responsibility, Time commitments, Tasks**
- **Selecting or Identifying the Correct Stewards**
- **Defined Business and Technical Goals, Objectives, Requirements**
- **Selecting the Right Metadata to Manage**
- **Development of a Detailed Plan**
- **Well Defined Policies, Procedures, and Processes for Governance**
- **Solid Change Management Processes**
- **Defined Metrics and Measurements of Success**

The Plan – Areas At Risk if We Don't Invest

- **Efficient synchronization across the enterprise**
 - This requires common understanding of our processes and information across product offerings, and customer segments. Common understanding means: common definitions of data, processes, and business expectations.
- **Ability to develop a sustainable data quality program**
 - Data quality requires a deep understanding of data expectations, structures, definitions, processes, and business needs in order to create processes that will produce consistent quality. This understanding of the data *is* metadata.
- **Ability to efficiently integrate new processes and systems**
 - Currently, the understanding of our business information is scattered throughout the company in many different minds, and in many different systems and formats. In order to leverage (through integration) and build new capabilities quickly, we must manage this information to provide a consistent view and understanding.
- **Ability to capture current & future business redesign information**
 - As projects are completed valuable metadata is produced, but not captured and maintained for future consumption and use.

The Plan – Measuring Success

- **Documenting our ability to provide information previously unavailable**
- **Utilize Project management data to track costs and compare to historical costs**
- **Use savings from successful implementations to pay for additional infrastructure**
- **All Measurements maintained in the Repository!**

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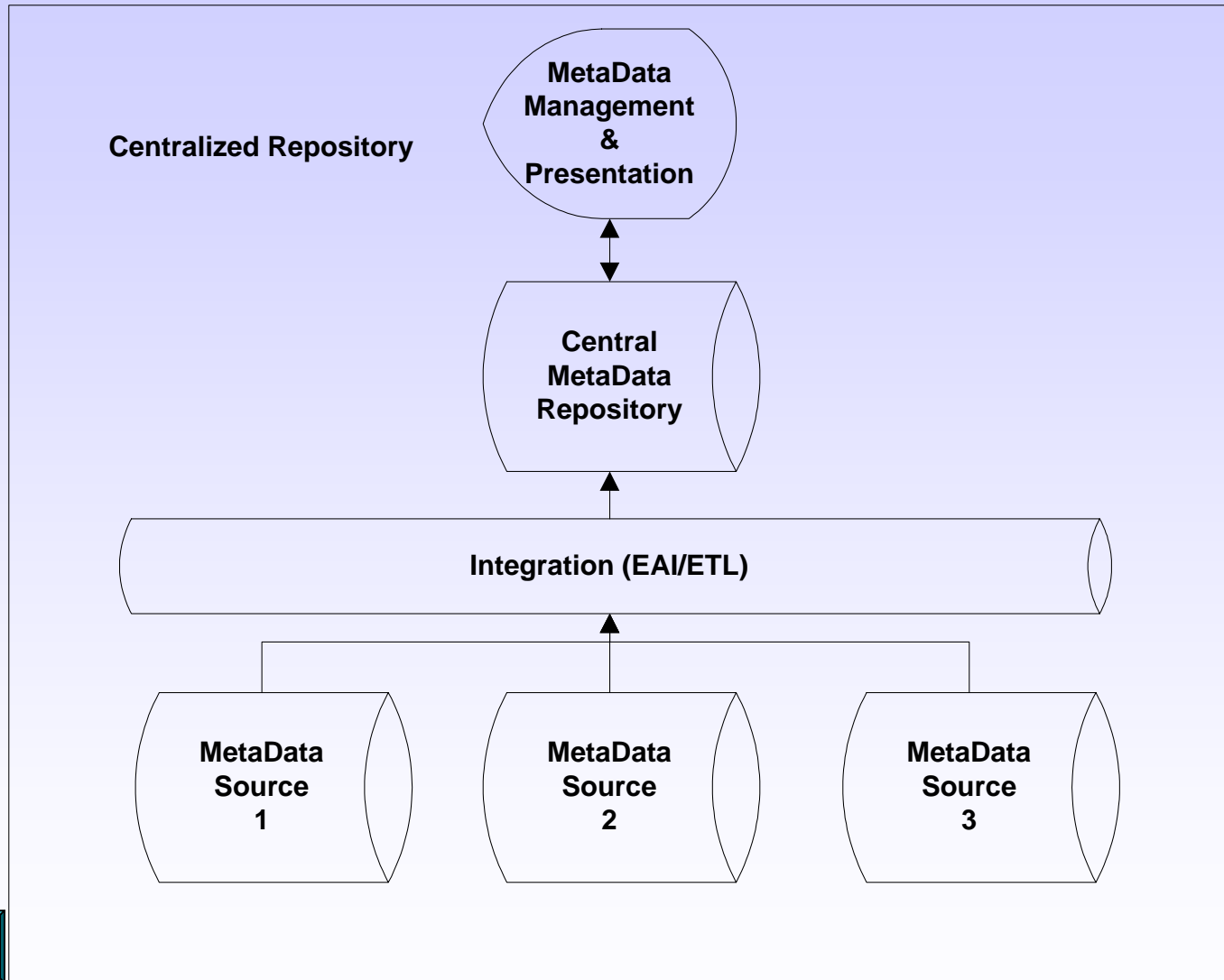
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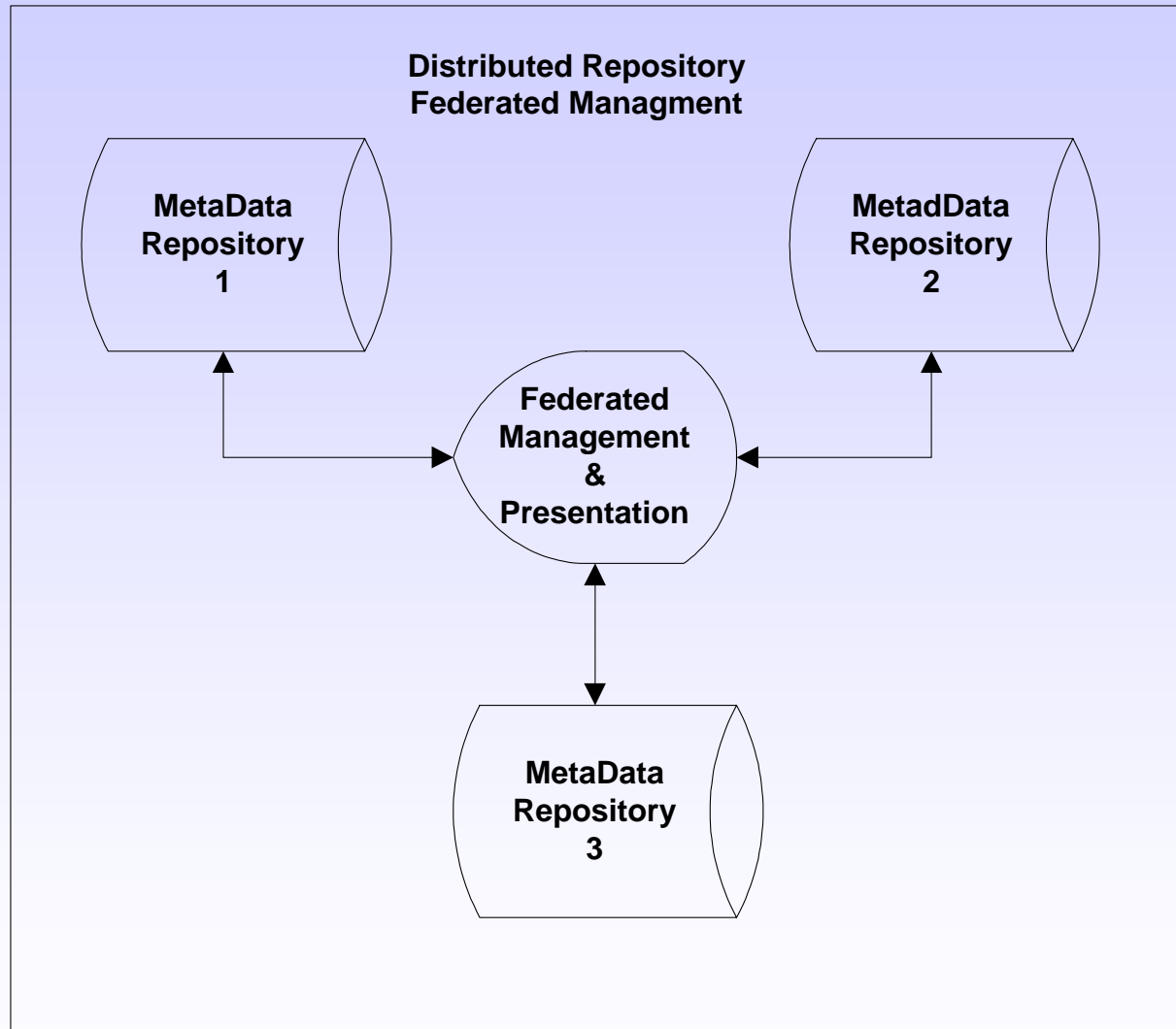
Next Steps

- **Gain management commitment to establish a formal program and pursue a metadata repository**
- **Begin Phase I to design program**
 - Determine objectives, scope, and requirements
 - Evaluate technology solutions and make a recommendation
 - Develop a business case and ROI model to demonstrate business value
- **Scope next phase based on business case and ROI**
- **Based on business case from Phase I**
 - Begin Phase 2 to develop the program (Build-out)
 - Begin Phase 3 to implement the program
 - Evaluate each implementation to track actual value to proposed value

Metadata Technologies – Centralized Repositories



Metadata Technologies – Distributed Repositories



Metadata Technologies – Tool Based Repositories

