

A Flash-light into the Dark: The Starters Guide to Data Governance

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DATA MANAGEMENT

*DATA SERVERS, DATA WAREHOUSE
AND DATA ARCHIVING (PRINCETON)*



ENTERPRISE CONTENT MANAGEMENT

INCLUDING FILENET PRODUCT PORTFOLIO



INFORMATION INTEGRATION & MASTER DATA MANAGEMENT

*PREVIOUSLY KNOWN AS ASCENTIAL,
DWM, SRD & TRIGO.*



BUSINESS INTELLIGENCE & PERFORMANCE MANAGEMENT

COGNOS

Audience Question



Agenda

- **What is Data Governance?**
- **Trends and Directions**
- **Key Pain Points**
- **Six things you can do today to get started**
- **Use case example**

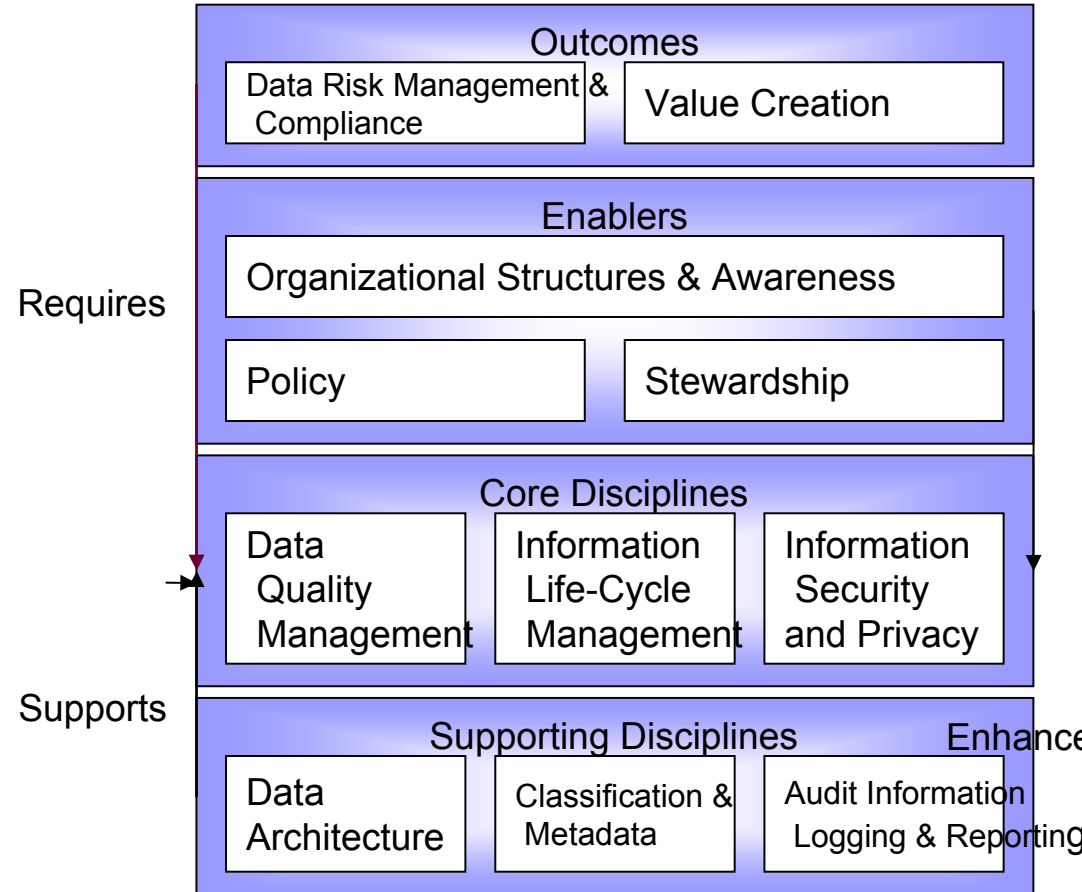


What is Data Governance?

- **Data Governance is a quality control discipline for managing, using, improving and protecting organizational information. Effective data governance enhances the quality, availability, integrity, and protection of a company's data by fostering cross-organizational collaboration and structured policy-making. Data governance balances factional silos with organizational interest, directly impacting the four factors every organization cares about most:**

- Increasing revenue
- Lowering costs
- Reducing risks
- Increasing data confidence

- It is an outcome oriented approach to treating data as a balance sheet
 - asset (value)
 - liability (risk)





Data Governance Council was formed in 2004 to define market requirements and enable members to succeed with DG

Data Governance Council Members

Customers	Business Partners	Academia
Abbott	IBM CIO Office	Nova Southeastern
American Express	Key Bank	Bucerius Law School
Bank of America	MasterCard	
Bank of Montreal	Merrill Lynch	
Bank of Tokyo/Mitsubishi	Novartis	
Bell Canada	Nordea Bank	
BITS	PFG	
Cadence Design	TIAA-CREF	
Citigroup	TeliaSonera	
Danske Bank	VP Securities Services	
Deutsche Bank	Washington Mutual	
Discover Financial	Wachovia	
Equifax	The World Bank	
Fannie Mae		



Key Pain Points – Outcomes & Enablers

- Outcomes
- **Risk Management**
 - Non Standard
 - Speciality Discipline
 - Expensive
 - underutilized
- **Value Creation**
 - Data quality metrics
 - internal charges for DQ
 - top-level reporting
- Enablers
- **Organizational Structures**
 - Organizational participation and awareness
 - Charters & Power Delegation
- **Stewardship**
 - Definition, roles, and responsibilities
 - What does DG look like when it happens?
 - Tools and technologies to support
- **Policy**
 - Change Management



Key Pain Points – Core & Supporting Disciplines

- Core Disciplines
- **Data Quality**
 - Assessments & Certification
 - Metric costs of poor data quality
- **ILM**
 - Retention & Discovery
- **Security & Privacy**
 - End-user computing
 - Trusting Data
- Supporting Disciplines
- **Data Architecture**
 - Business Process & Change Management
 - Tools & Technologies
- **Metadata**
 - Provenance of Mortgage Data
 - Resources & Maintenance
- **Audit & Reporting**
 - Assessing DG for each project
 - Audit aggregation for risk management



How to Get Started with Data Governance

- **Identify your enterprise' hot buttons and drivers and list your stakeholders**
- **Build consensus around understanding what Data Governance in your organization**
- **Identify your Data Governance culture**
 - Identify existing Data Governance roles and structures
 - What's working today and how does it work?
 - Where can you integrate Data Governance for maximum initial success?
 - Who is your sponsor?
- **Assess your known data assets, quality, security, and risk issues**
 - Custodial obligations for these assets
- **Focus on execution**
 - Build DG into management PBCs
 - Investing in stewardship
 - Searching for select enabling technologies
- **Pick a project to show results in < 6 months**



Six Questions to Get Started with Data Governance Today

1. Do we have a Government?

- Who is responsible for governing?
- How do we share accountability across the enterprise?

▪ How do we assess our situation?

- Are benchmarks available?
- How do we measure our Maturity?

1. What is our Strategy?

- !! How do we get from here to there?
- !! What does our CEO and Board want?

2. What is our data worth?

- How much revenue is it producing?
- How much does low quality data cost?

3. What are our vulnerabilities?

- How do we calculate risk?
- Which risks do we accept, mitigate, transfer?

4. How do we measure progress?

- What do audits tell us?
- How do we report results that matter?

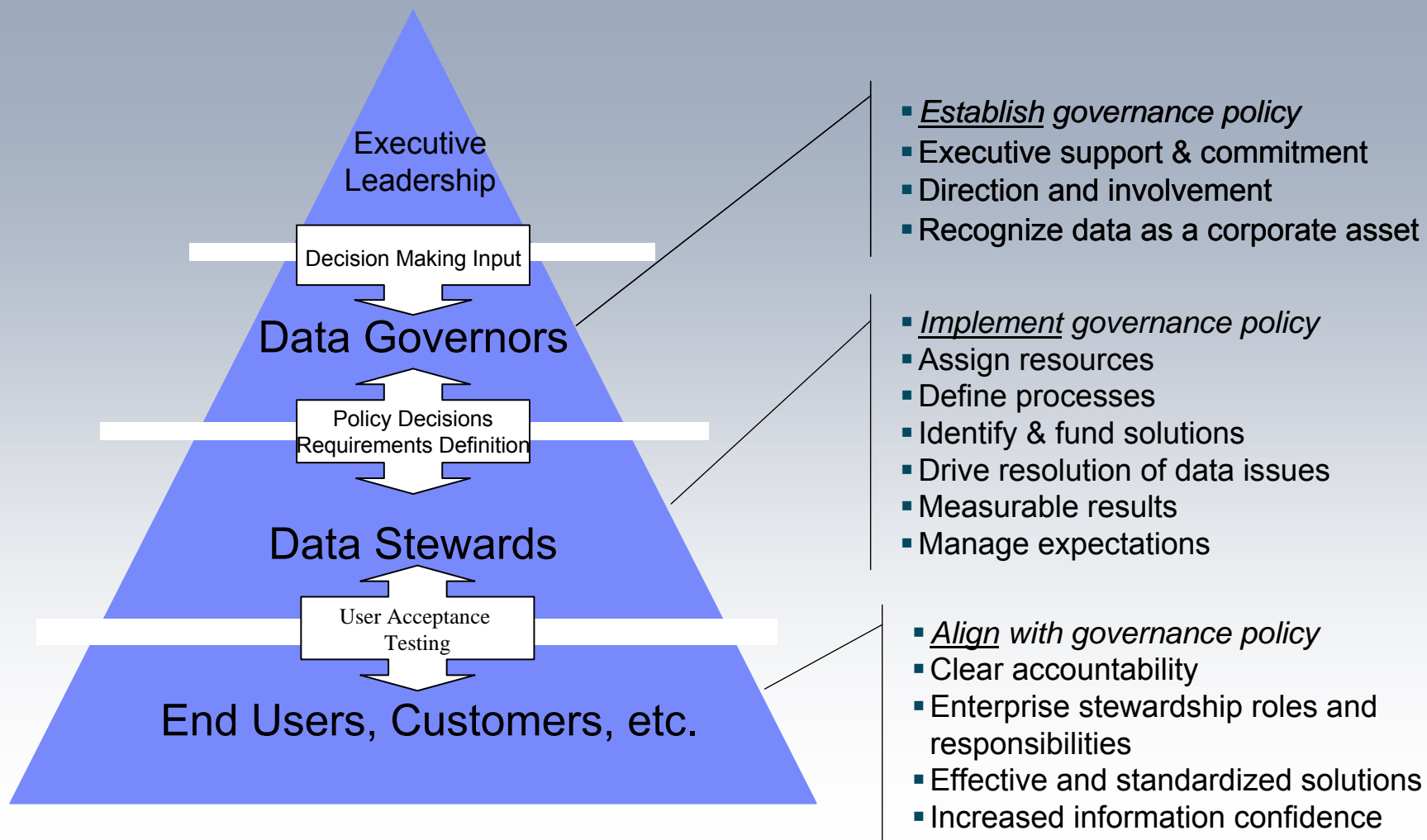


1. Do we have a Government?

- Who are the leaders?
- What does the DG Committee look like?
- What power centers should be at the table?
- How many business representatives are in the Council?
- What is the charter of the group?
- How are issues raised, discussed, and resolved?
- How are requirements gathered?
- How are policies communicated?
- What are our legislative powers?
- How do we govern?



One Data Governance Structural Option



2. How do we assess our situation?

- **Assessment criteria**
- **Benchmarks**
- **Categories or Disciplines**
- **Periodic or regular assessments**
- **Scope of effort**
- **Motivations for change**



Motivations for change

- **Organizational Events**

- Data Breach

- A data breach at your company is an opportunity to affect organizational change rapidly
 - Without a breach, research and compare breaches in your industry especially among close competitors

- Regulatory drivers

- SOX, Basel II, PCI, and other programs may require organizational changes that you can leverage for Data Governance

- Crisis

- Sub-Prime Credit Losses

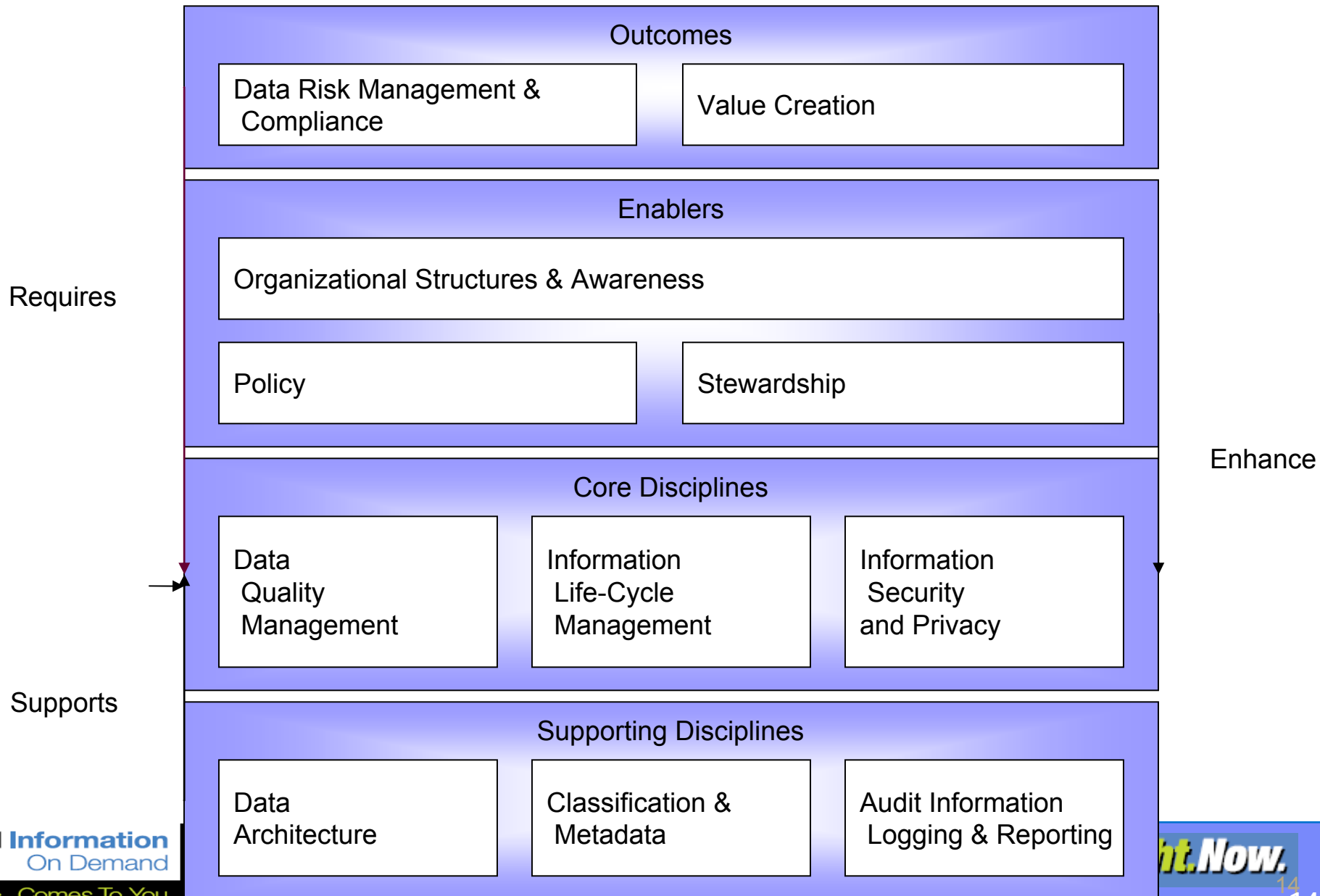
- Acquisition & Divestiture

- **We want systemic solutions**

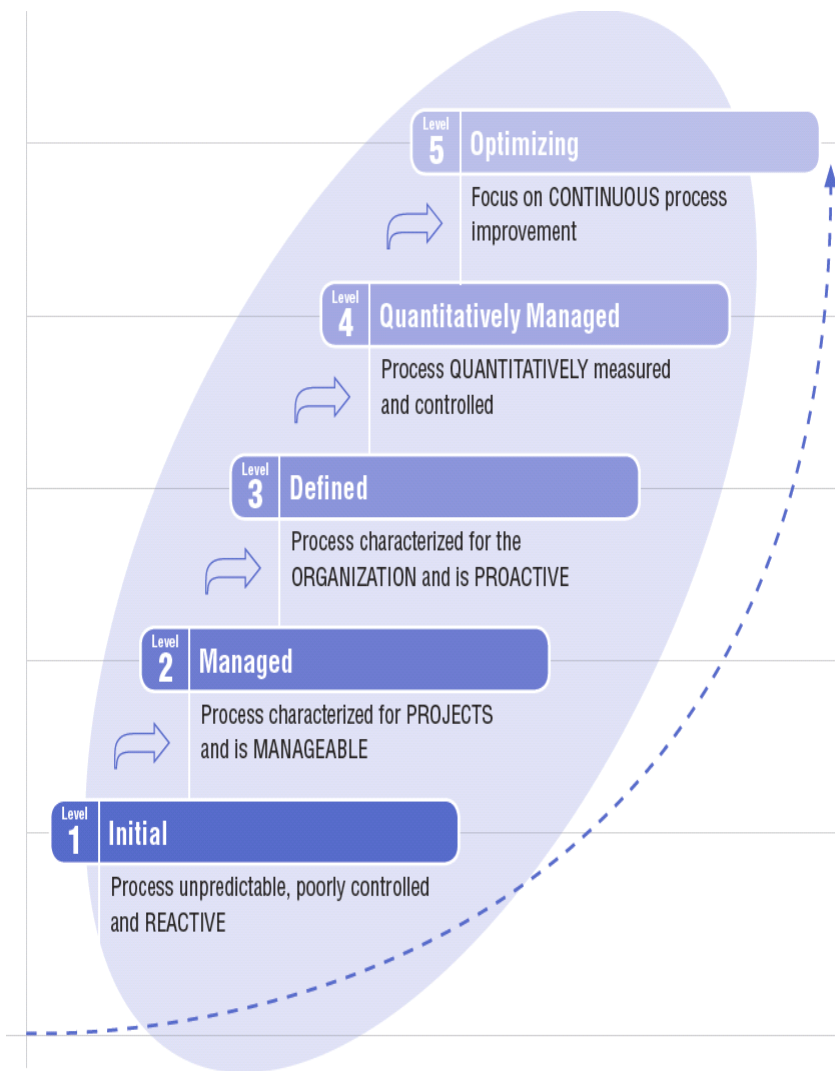
- Move away from episodic crises, bespoke solutions, audit failures and adhoc governance by exception to systemic solutions and governance by rules.



Elements of effective Data Governance



Data Governance Council Maturity Model



Category	Description
1 Organizational Structures & Awareness	Describes the level of mutual responsibility between business and IT, and recognition of the fiduciary responsibility to govern data at different levels of management.
2 Stewardship	Stewardship is a quality control discipline designed to ensure custodial care of data for asset enhancement, risk mitigation, and organizational control.
3 Policy	Policy is the written articulation of desired organizational behavior.
4 Value Creation	The process by which data assets are qualified and quantified to enable the business to maximize the value created by data assets.
5 Data Risk Management & Compliance	The methodology by which risks are identified, qualified, quantified, avoided, accepted, mitigated, or transferred out.
6 Information Security & Privacy	Describes the policies, practices and controls used by an organization to mitigate risk and protect data assets.
7 Data Architecture	The architectural design of structured and unstructured data systems and applications that enable data availability and distribution to appropriate users.
8 Data Quality Management	Methods to measure, improve, and certify the quality and integrity of production, test, and archival data.
9 Classification & Metadata	The methods and tools used to create common semantic definitions for business and IT terms, data models, types, and repositories. Metadata that bridge human and computer understanding.
10 Information Lifecycle Management	Management A systemic policy-based approach to information collection, use, retention, and deletion.
11 Audit Information, Logging & Reporting	The organizational processes for monitoring and measuring the data value, risks, and efficacy of governance.



3. What is our Strategy?

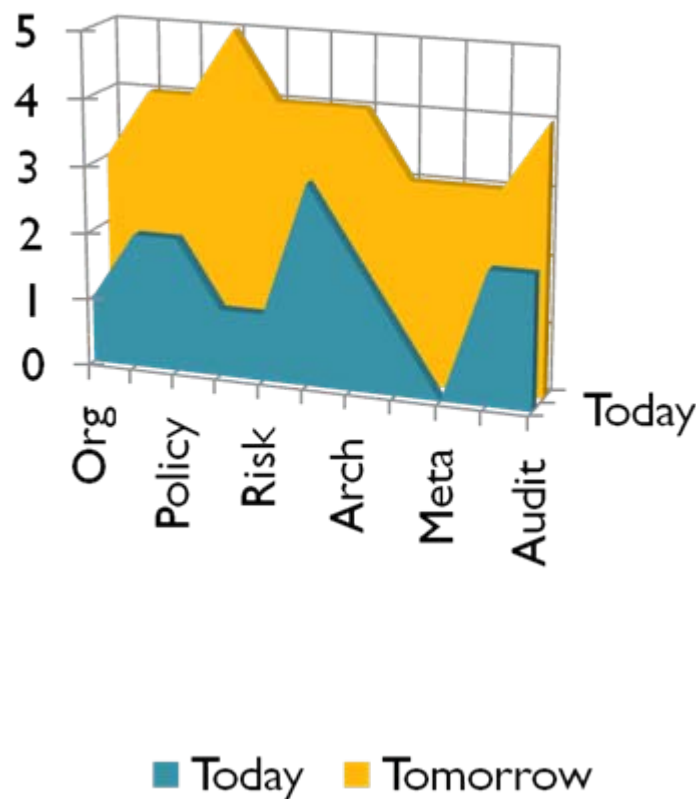
- Where do you want to be in 3 years?
- What is the gap between where you are today?
- What milestones, specific tactics, and KPI's?
- How to get organizational support?
- How to get Board support?



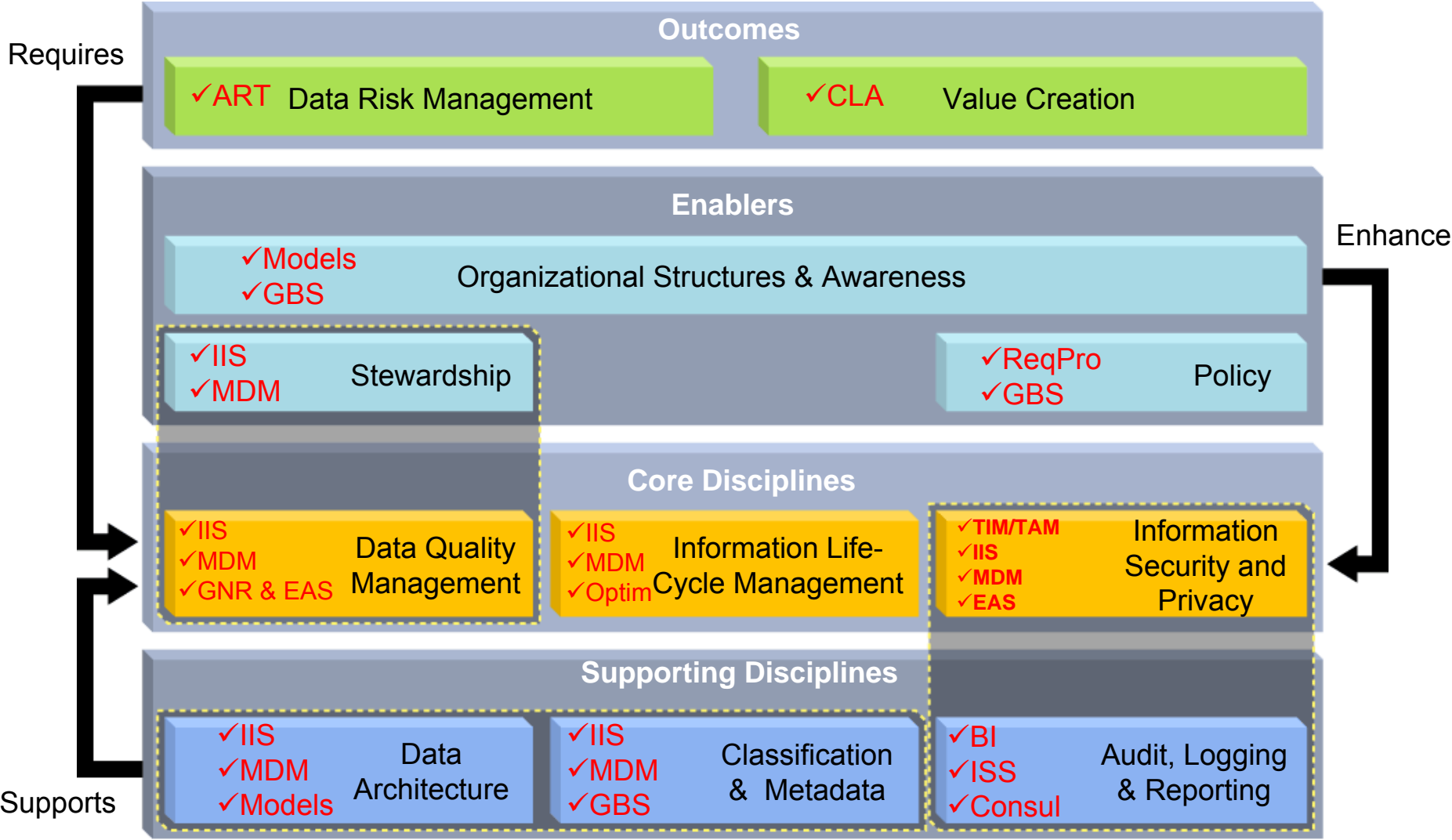
After the assessment, you need to benchmark where you are and where you want to go

Maturity Levels	
0	Incomplete
1	Elements of practice in the category may be present but are localized in individual departments and are for the most part performed on an ad hoc basis.
2	Elements of practice are for the most part defined at an enterprise level but implementation is not complete
3	Elements of practice are defined and implemented at an enterprise level but no formal processes are established to ensure continuous improvement
4	Elements of practice are defined and implemented across the enterprise and repeatable processes and metrics are used to monitor and track progress to ensure continuous improvement.
5	Elements of practice are implemented, monitored and used proactively across the enterprise to reduce risk, continuously improve data governance practices and to gain a competitive advantage in the market place.

Category	Maturity Stage						
1 Organizational Awareness	0	1	2	3	4	5	
2 Stewardship	0	1	2	3	4	5	
3 Policy	0	1	2	3	4	5	
4 Value Creation	0	1	2	3	4	5	
5 Risk Calculation	0	1	2	3	4	5	
6 Security / Privacy / Compliance	0	1	2	3	4	5	
7 Data Architecture	0	1	2	3	4	5	
8 Data Quality	0	1	2	3	4	5	
9 Data Classification / Metadata	0	1	2	3	4	5	
10 Information Lifecycle Management	0	1	2	3	4	5	
11 Audit & Reporting	0	1	2	3	4	5	



IBM Technology and Solutions enhance your Data Governance



Build an Internal Sales Guide by Entry Point

- List key questions to ask each stakeholder about drivers
- Interview stakeholders and capture action items and recommendations
- Use the DG Maturity Model to build stakeholder interviews
- Recognize what is already being done
- Perform risk assessment of interview results
- Map gaps between current practices and desired state
- Organize stakeholder meeting and share interview results
- Build common mindshare around next steps and plans
- Recognize different decision-making models



IBM Data Governance Pilot

- Initial limited DG pilot
 - Once you have general recognition on the need to build a DG program, suggest a limited pilot to evaluate methods and models
 - Use one element in the DG Maturity Model to assess your organization
 - Looking at current state and evaluating against the Maturity Model and developing a go-to point and developing a plan to get there
- Focus the pilot on Outcomes
 - Improve Data Quality for enhanced Value Creation
 - Protect critical data elements for Risk Mitigation
- Report results in business terms
- Adjust focus on different levels of maturity based on perceived benefits
 - Gain consensus within DG Committee to either:
 - Look at one or two additional DG categories and build DG slowly
 - Build a formal DG program and go after the entire Maturity Model



4. What are our data assets worth?

- How do we measure data quality?
- What is the data landscape?
- What is the data model?
- What is metadata?
- How does data contribute to business results?
- How can we measure the ROI of data improvement projects?



The Value of Data is Dependent Upon the Value of IT

- **Value is dependent on Price**
 - You can't tell the value of something if it doesn't have a market price
- **IT is run like a Command Economy.**
 - Budgets are allocated centrally
 - Projects are managed based on labor value and infrastructure cost allocation
 - ROI is impossible to derive because there are no market mechanisms to determine the price of IT.



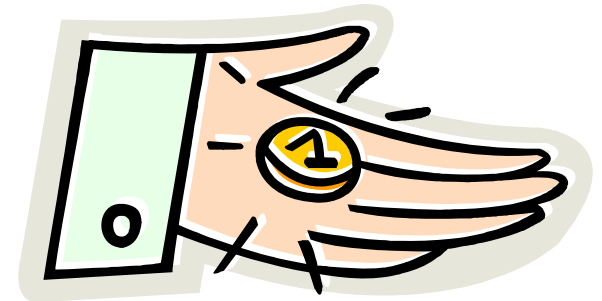
In the Perfect World...

- IT would buy hardware, software, and services from other vendors at cost, mark them up, and resell those products to the business.
- The business would negotiate prices with IT and each division would pay new project, operational, and maintenance prices on all IT services.
- IT would only have an investment budget based on business needs.
- This would create an internal market for IT services similar to the real-world external market.
- The Value of IT would therefore be based on the utility of IT services.
- The value of data could also be measured using Utility Theory, because data management costs would be factored into IT prices.



What is the value of Data?

- **Data is worth whatever someone wants to pay for it:**
 - \$1 for the NY Times
 - \$93 for a stolen identity
 - \$259 for Windows Vista
 - \$20 for a book on Amazon
 - \$1.29 for a song on iTunes
- **How do you calculate the value of enterprise data?**
 - Build an enterprise marketplace and let data supply and user demand set the internal price
 - Measure Data Quality as an index and calculate marginal value created
 - Record the revenue generated with use of the data and subtract the utility price paid to calculate the net earnings on data (EOD)



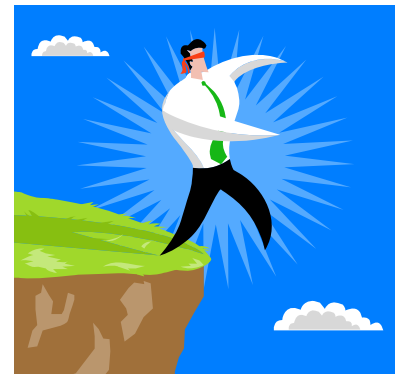
IBM Data Governance Pilot: Value Creation

- **Build a Governance Board**
- **Assess your situation with the Data Governance Maturity Model**
- **Create a strategy based on your desired maturity level**
- **Improve your data quality with IBM Information Server**
- **report your ROI in 6 months**



5. What are our vulnerabilities?

- **Security Risks**
- **Regulatory Concerns**
 - Different approaches in laws
 - Related documentation and administration
 - Bringing regulations and reality together
- **Reputation Risks**
 - Data leakage
 - Protected data
 - “sensitive data”
 - Misuse of data
 - Loss of Data
 - Risk of “bad” data



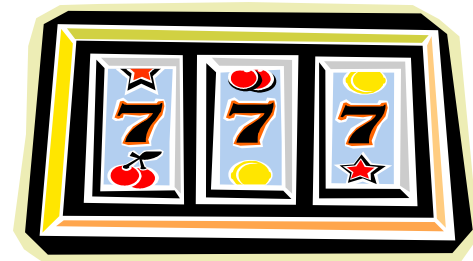
Other Risks

- **IT Project Risk?**
 - Defect Errors
 - Process Mistakes
 - Governance risks
- **Implementation Risks?**
 - Interoperability
- **Deployment?**
 - Business Continuity
 - Service Level Agreements
- **Globalization Risks?**



Calculating Risks

- **Qualitative Analysis**
 - Assessment
 - Prioritization
 - Weighting
 - Scoring
- **Quantitative Analysis**
 - Causes and Trends
 - Incidents & Occurrences
 - Events
 - Claims
 - Losses
 - Probability Analysis



IBM Data Governance Pilot: Risk Mitigation

- **Build a Governance Board**
- **Assess your situation with the Data Governance Maturity Model**
- **Create a strategy based on your desired maturity level**
- **Control your data exposures with Optim data transformation solutions**
- **report your ROI in 6 months**



6. How do we measure progress?

- Processes for capturing requirements
- Processes for managing change
- Processes for implementing policy
- Using User Acceptance Test to measure how policy maps to requirements
- Monitoring policy compliance
 - Link to operational risk

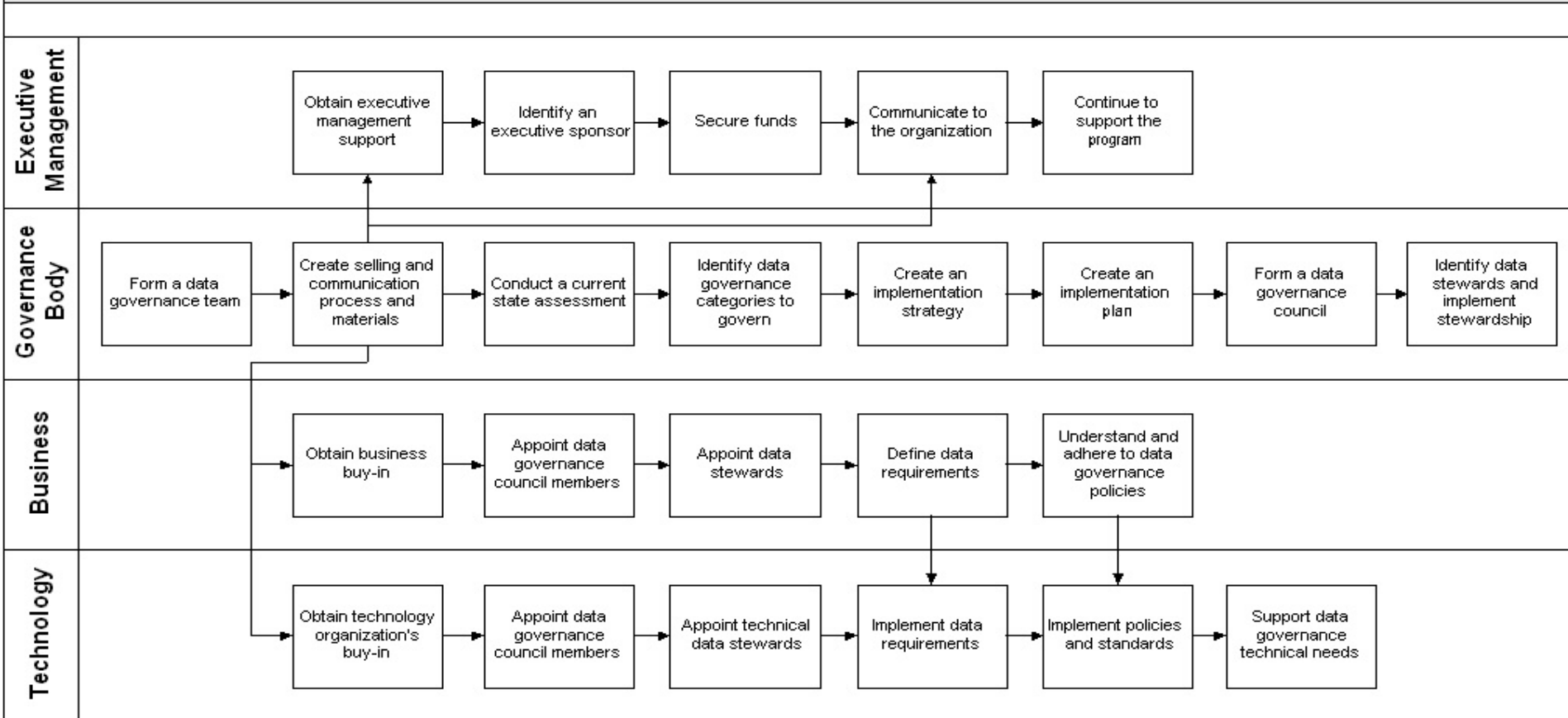


Data Governance Balanced Scorecard

Element	Current Maturity	Desired Maturity	KPIs	Outcome
Organization	•Traditional Structure (2)	•community based self-governance (4)	•# new ideas implemented	•78% employee satisfaction rate
Stewardship	•Data Stewards only (2)	•Stewardship in every discipline (3)	•# stewardship communities	•125% more stewards
Policy	•Ad-hoc policy management (1)	•Structured policy management (3)		•45% increase in reg. compliance
Data Quality	•Spreadsheet-based DQ program (1)	•Process oriented DG program (4)	•Data utility index •Price of data	•24% reduction in fraud
Architecture	•Stovepipes of data (1)	•Federated and integrated (4)	•Data availability index	•Lower data management costs
Metadata	•No metadata management (0)	•End-to-end metadata	•Business glossary •Metadata elements	•12% reduction in policy failure
Security	•Enterprise Access Control	•Context-based entitlements	•# Incidents	• 98% Customer satisfaction
Risk	•Faith-based Risk Management (1)	•Fact-based Risk Forecasting (4)	• \$ Capital Reserve • # Losses	•12% net underwriting profit
Value	•Command Economy •Labor Theory (1)	•Demand Economy •Utility Theory (5)	•Efficiency of IT service pricing	•8% Net IT operating profit
ILM	•Enterprise Backup (2)	•Policy-based backup (3)	•Retention/deletion ratio	•23 Terabytes saved
Audit	•Quarterly Audits (1)	•Automated self-assessments (5)	•# Failures reported •# audits passed	•24% reduction in IT project failure



Data Governance Program Implementation Process



- Assumptions:**
- An evangelist starts the initial conversations, identifies the needs, and obtains support to form a data governance team
 - Business or organizational drivers to support data governance program have been identified
 - Business or organizational value of the program is identified
 - Knowledge of what data governance is and how it can be implemented is researched and understood
- Tools:**
- Data Governance Maturity Model can be used as a roadmap for the program
 - Data Governance Maturity Model assessment tool can be used to measure current maturity level of an organization
 - Data quality tools
 - Data profiling tools
 - Policy implementation and enforcement tools



How to get Started with Data Governance

- **Six things everyone can do today:**

1. Define your desired outcomes from Data Governance
2. Be clear about the problems you are solving
3. Define a realistic organizational structure for your environment
4. Focus on a DG pilot program that can deliver outcomes with business benefits
5. Take advantage of best practices and models from organizations like the Data Governance Council
6. Be real with organizational challenges, funding requirements, scope and duration of deliverables



Executive Summary

- **Globalization, and convergent business challenges, will continue to pressure companies to adopt Data Governance**
 - regulatory compliance applies globally
 - competition forces adoption of innovation in every market
 - In worsening economic conditions, companies are cutting costs and optimizing business operation through IT
 - a focus on fixing data quality issues systemically in every business process
 - and at a time when we want to trust our data more, cybercrime and fraud challenge trust
- **The Data Governance Maturity Model is a durable framework**



Audience Question

