

# How to transform the landscape of analytics with data governance

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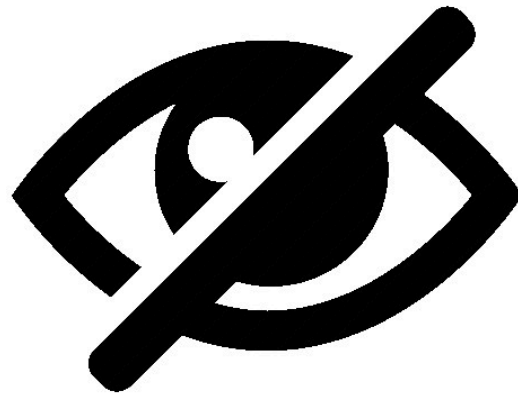
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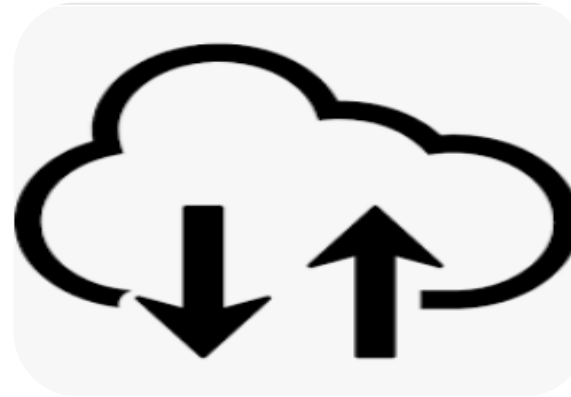
# Data governance is a strategic priority



Proliferation of  
data and  
applications



Privacy  
expectations/  
regulations



Cloud data  
mobility



Fair and  
ethical use

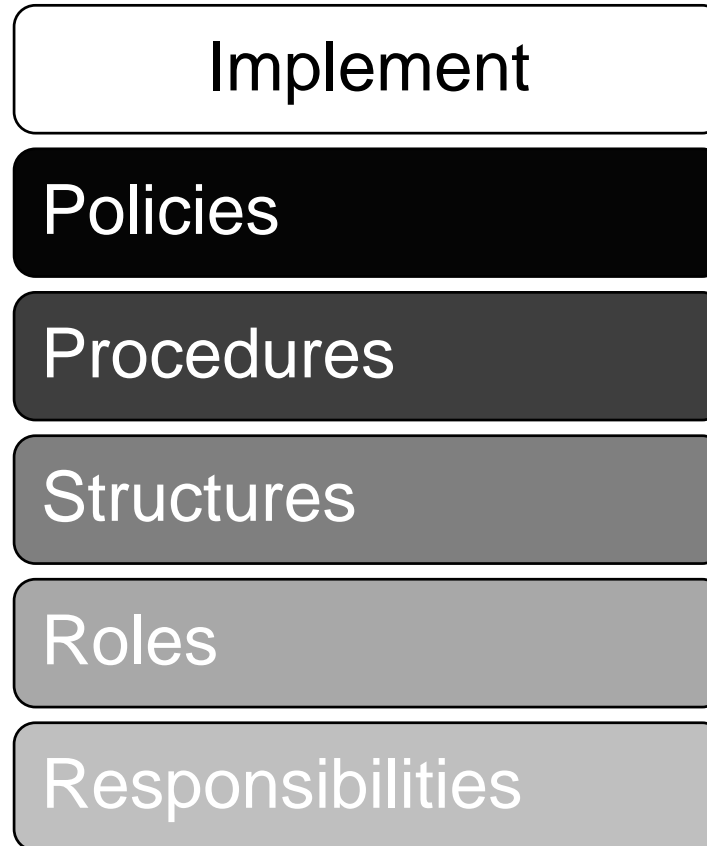
# The 5-second elevator definition

Data  
governance  
is ...

- a set of guidelines for how people behave and make decisions about data

# What is Data Governance?

**John Ladley –**  
Data governance is the organization and implementation of policies, procedures, structure, roles, and responsibilities which outline and enforce rules of engagement, decision rights, and accountabilities for the **effective management of information assets.**



# Important characteristics of DG definitions

## Data governance IS

- More about people and behavior than data
- A system that requires and promotes shared agreement
- Formal (i.e. written down)
- Adds value by supporting institutional mission/goals

## Data Governance IS NOT

- IT's responsibility
- Solved by technology
- Equally applied across all data assets

# Complementary Elements of Data Governance



# Why Do We Need Data Governance?

Maximize  
Data  
Investments

Gain Deeper  
Insights

Promote  
Efficiency

Ensure Trust

Reduce Risk

Improve the  
Experience

# Principles of Data Governance

**Consistency**  
of data in its sourcing  
and in its vocabulary,  
definitions, and  
taxonomies

**Quality**  
which is proactively  
assessed and  
standards applied

**Responsibility**  
and accountability  
defined across the data  
lifecycle and recorded in  
the information asset  
register

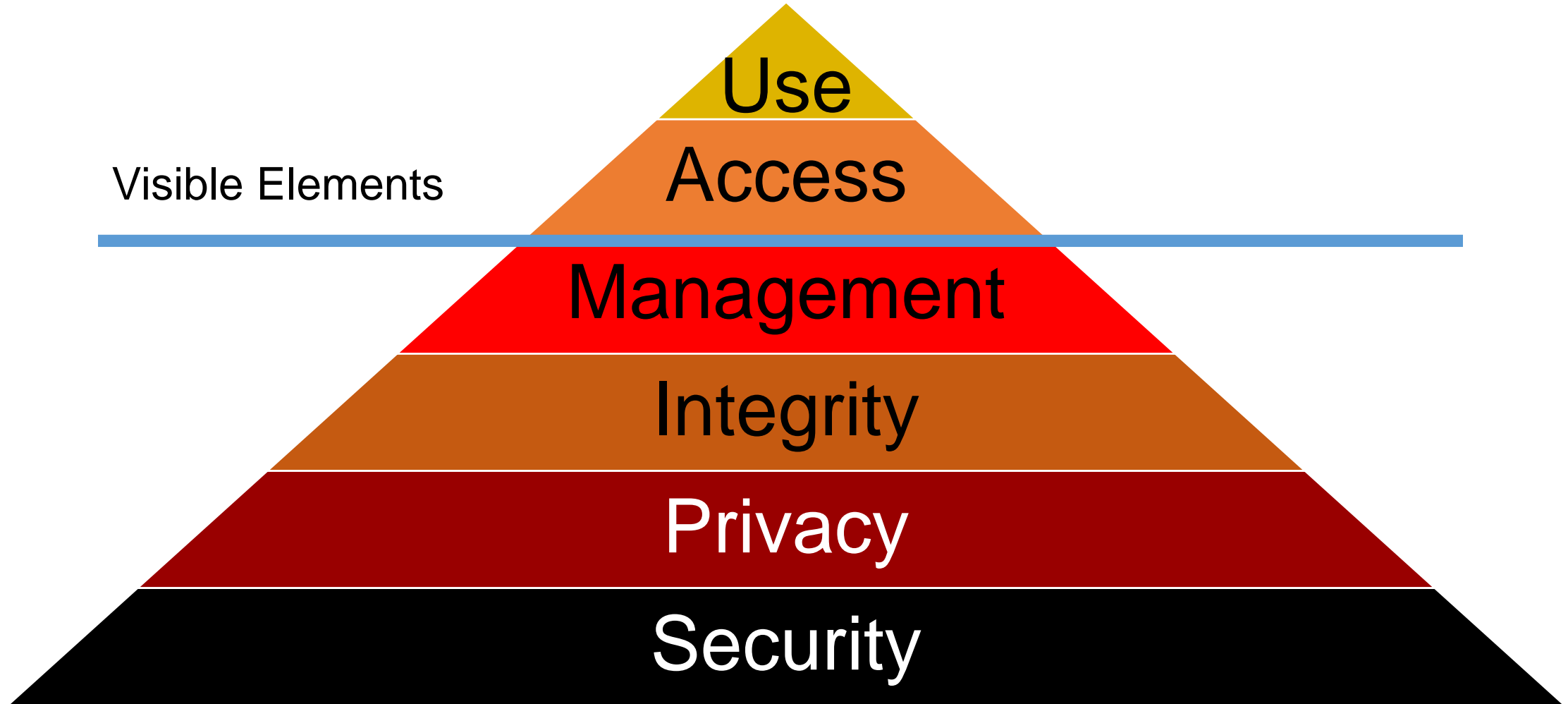
**Business  
alignment**  
which ensures that data is  
regarded and treated as a key  
business asset

**Secure access**  
to relevant users, kept  
secure through access  
control

**Insight**



# What are the Data Dimensions



# What Data are we Governing?

## **Administrative** ERP Data and Operational Data

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- SIS, HR, Financials, CRM, Departmental, Organizational Performance Data

## **Teaching & Learning** Instructor and Student Performance

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- LMS, Lecture Capture, Clickers, Attendance, Engagement, Grades, Progression, and Course and Faculty Evaluations

## **Research** Data on Researchers, Research & Grants

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- Publication and Citation Histories, Proposals Submitted, Research Content & Results, Grant Dollars, PI and Co-PI data, Graduate and Undergraduate Research

## **Other Types** Both Internal and External Data

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- Meta-data, Unstructured Data, Geo-location, Event Attendance, Organization Involvement, Social Media, Sentiment Analyses, Survey Data, Business Transactions, Vendor Data

# Key features of data governance systems

## Documents

- Charter / framework
  - Principles & values
  - Purpose & scope
  - Roles & responsibilities
- Written & published policies
- Data dictionaries
- Communication strategies

## Groups

- Senior leadership [buy-in]
- Policy council
- Data steward council(s)
- Information security council/program
- Positions/office to support DG

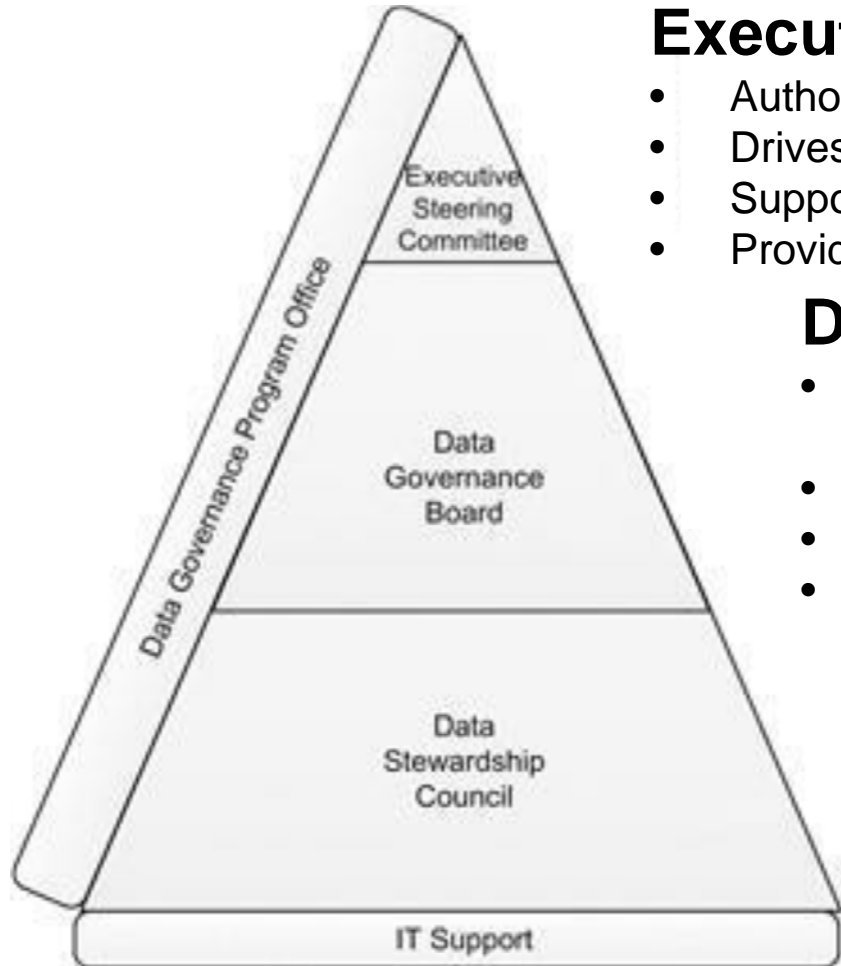
## Individual roles

- Data stewards
- Data custodians/caretakers
- Data users

# Common Elements of the Structure

Committees	Executive/Steering – Senior officials focused on holistic goals of institution
	Data Strategy – Occasionally separate from above focused on better data use
	Operational Governance – Responsible for executing policies and procedures
	Data Standards – Maintains data elements and monitors quality and delivery
Roles	Chief Data Officer (CDO) – Often oversees the execution of institutional goals
	Data Trustees – Subject matter owners responsible for data integrity and clarity
	Data Stewards – Responsible for assigning access and assuring standards met
	Data Custodians – Usually IT maintaining security, backups, recovery, availability
	Data Consumers – Functional staff who interact with data and report on data

# Structure – Generic Example



## Executive Steering Committee

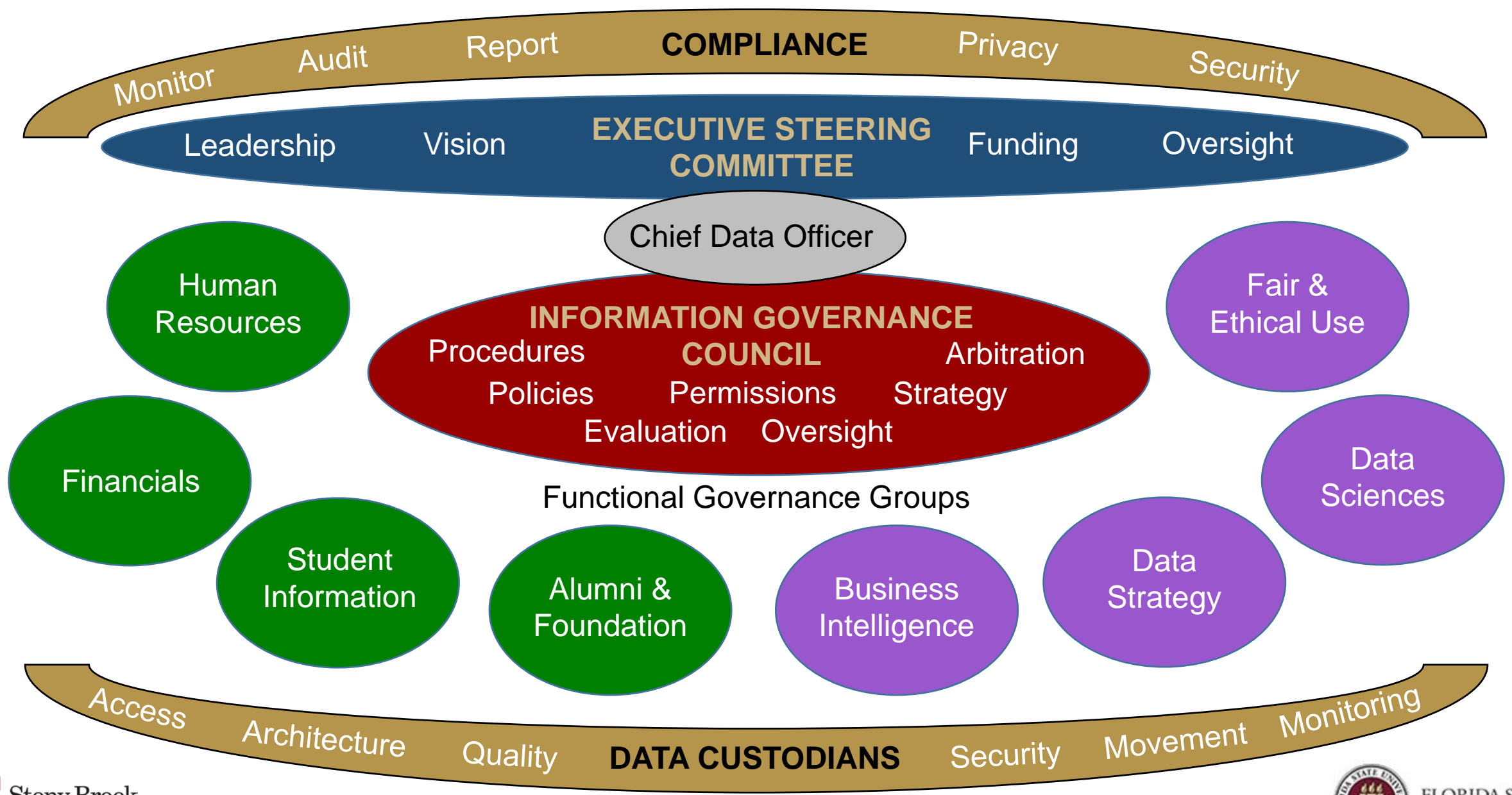
- Authorized to change the organization
- Drives cultural change
- Supports the program enterprise-wide
- Provides funding for the Data Governance Program

## Data Governance Board

- Made up of high-ranking representatives of data- owning business functions who can make decisions about data for the company
- Assign members of the Data Stewardship Council
- Approve decisions of the Data Stewardship Council
- Approve data-related policies

## Business Data Stewards

- Experts on use of their data domain data
- Able to reach out to SMEs to gather information and make decisions
- Typically someone who others come to as the most knowledgeable about the meaning of the data (and how it is calculated)
- Makes recommendations on data decisions and write data-related procedures



# Information Governance Council Purpose

Create a data governance imperative

Promote a data-engaged campus

Create and update policies

Create access control mechanisms

Manage conflict resolution

Promote shared data management

Authorize data movement and storage

Reinforce reporting controls

Define and arbitrate fair and ethical use

Evaluate and assess effectiveness

# Data Steward Responsibilities

- **Oversee management of selected data assets**
- **Participate in data governance and carry out decisions**
- **Assist in creation and maintenance of data dictionaries, metadata**
- **Document rules, standards, procedures, and changes**
- **Ensure data quality and manage specific issues**
- **Communicate appropriate use and changes**
- **Manage access and security**



# Functional Data Stewardship Council/Committees

**Coordinate**  
data stewards in  
related area

**Set / review**  
definitions, data  
quality rules,  
creation/usage  
rules, metadata

Consider and  
approve  
**changes to  
code sets**

**Enforce**  
data dictionary  
standards in area

**Review data  
quality**  
in functional area;  
identify practices  
promoting data  
quality

**Respond to  
inquiries**  
about process,  
content, limitations  
and uses of data,  
especially in cross-  
functional settings

**Elevate  
issues**  
that require  
resolution

**Communicate**  
proceedings,  
including notice of  
changes and  
decisions

# Data users

Expectations should be set for data users. Example formal responsibilities (Stony Brook)

Recognize that institutional data are potentially complex.

**Make efforts to understand** the source, meaning and proper use of the data

**Include information** about the data source and criteria to guard against misinterpretations of data.

**Respect the privacy** of individuals whose records they may access.

Ensure that **passwords** or other security mechanisms are used for sensitive data

**Report data quality issues** to appropriate data steward

# Keys to Implementation

Create value  
statement for  
DG

Prepare a  
roadmap

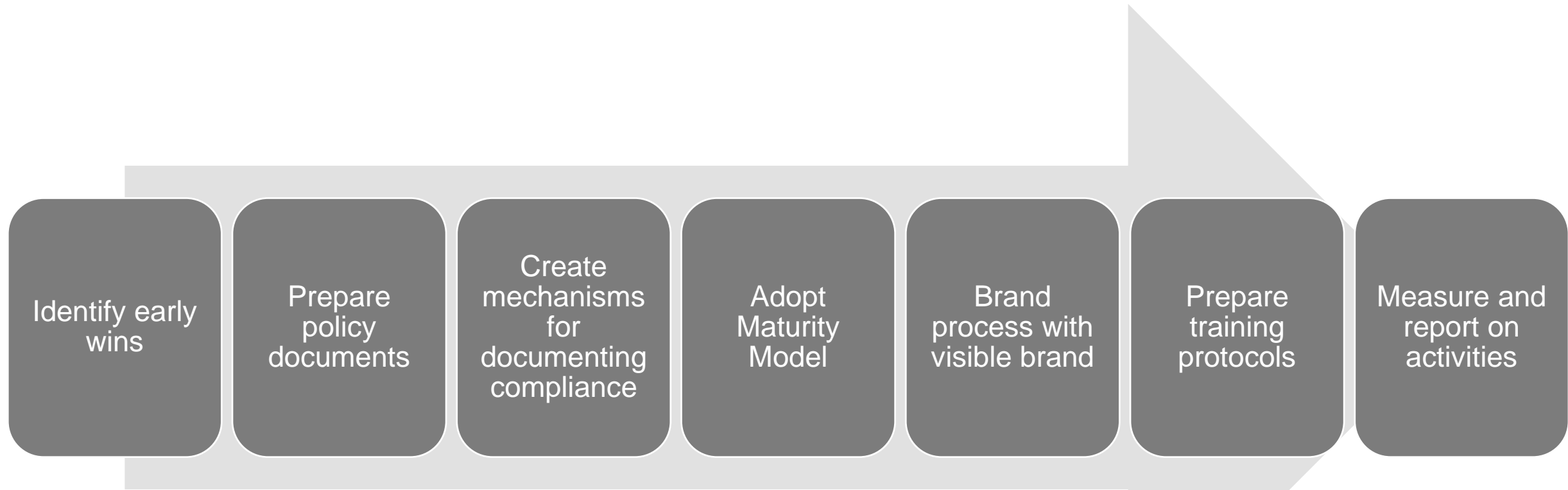
Design the  
program

Identify  
rough costs  
and staffing

Identify  
structure and  
roles on  
governance  
committees

Plan  
meetings and  
document via  
shared  
media

# Additional Keys to Implementation



# Technology applications for data governance

**Technology**  
can support data  
governance

Data dictionary management

Data quality analysis

Master data management

Issue and process management



**Technology**  
will not

Build organizational structures,  
responsibilities, accountabilities

Mend dysfunctional organizations

Implement organizational or cultural  
change



# Example Data Governance Maturity Model

	Level 1	Level 2	Level 3	Level 4	Level 5
	Informal	Developing	Adopted and Implemented	Managed and Repeatable	Integrated and Optimized
Organizational Structures	Attention to Data Governance is informal and incomplete. There is no formal governance process.	Data Governance Program is forming with a framework for purpose, principles, structures and roles.	Data Governance structures, roles and processes are implemented and fully operational.	Data Governance structures, roles and processes are managed and empowered to resolve data issues.	Data Governance Program functions with proven effectiveness.
Culture	Limited awareness about the value of dependable data.	General awareness of the data issues and needs for business decisions.	There is active participation and acceptance of the principles, structures and roles required to implement a formal Data Governance Program.	Data is viewed as a critical, shared asset. There is widespread support, participation and endorsement of the Data Governance Program.	Data governance structures and participants are integral to the organization and critical across all functions.
Data Quality	Limited awareness that data quality problems affect decision-making. Data clean-up is ad hoc.	General awareness of data quality importance. Data quality procedures are being developed.	Data issues are captured proactively through standard data validation methods. Data assets are identified and valued.	Expectations for data quality are actively monitored and remediation is automated.	Data quality efforts are regular, coordinated and audited. Data are validated prior to entry into the source system wherever possible.
Communication	Information regarding data is limited through informal documentation or verbal means.	Written policies, procedures, data standards and data dictionaries may exist but communication and knowledge of it is limited.	Data standards and policies are communicated through written policies, procedures and data dictionaries.	Data standards and policies are completely documented, widely communicated and enforced.	All employees are trained and knowledgeable about data policies and standards and where to find this information.
Roles & Responsibilities	Roles and responsibilities for data management are informal and loosely defined.	Roles and responsibilities for data management are forming. Focus is on areas where data issues are apparent.	Roles and responsibilities are well-defined and a chain of command exists for questions regarding data and processes.	Expectations of data ownership and valuation of data are clearly defined.	Roles, responsibilities for data governance are well established and the lines of accountability are clearly understood.

# Person Roles

- CDO – Chief Data Officer
- CISO – Chief Information Security Officer
- Chief Privacy Officer
- Chief Compliance Officer
- Institutional Data Administrator
- Data Stewards
- Data Custodians
- Data Manager

# Key Policies

- Strategic Vision/Policy for Data Use
- Information Privacy
- Data Access and Use
- Data Management (includes 3rd Party)
- Cybersecurity
- Email and Media Use
- Survey Administration
- Data & Device Security
- Fair and Ethical Use



# Takeaways

- Data governance is more about people than data
- All higher ed change management principals apply
- Process and written documents are essential
  - Leadership support
  - Broad-based consultation, including faculty
  - Opportunity for consultation
  - Representation
- Software can help, but it won't fix broken processes or organizations
- Starting data governance is hard work; sustaining it is harder

# Questions?

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