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OF TECHNOLOGY & INNOVATION

# Data Management

CT051-3-M

## Topic 9 – Data Security and Governance

# Topic & Structure of Lesson

- Data Governance and IT Governance
- Key pillars of a Data Governance Program
- Challenges Faced
- Similarities between Data Governance and Internal Audit
- Collaboration

# Defining Data Governance



- Data governance specifies the framework for decision rights and accountabilities to encourage desirable behavior in the use of data.
- The purpose of a Data Governance program is to ensure that data assets are overseen in a cohesive and consistent enterprise-wide manner.

# Defining IT Governance



- Assists in the achievement of corporate success by both efficiently and effectively deploying secure and reliable information through the application of technology.



# Is there are difference?

- How do we define data governance and IT governance ?

What's the relationship between data and information technology?



Collaboration

Alignment

Balance

# Why do we need Data Governance?



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- Evolving regulatory requirements
- Lack of trust in the integrity of data
- Lack of a centralized documentation on the use and meaning of data
- Data silos and multiple sources of data
- The use and amount of data in organizations has increased exponentially.



# Answering these common questions



A Data Governance Program can capture and share the answers to these types of common data questions ...

# Who's responsible for better data?







## Information Owner

- approve data transfers both internal and external
- prioritizing data integrity issues and engaging resources to resolve them
- approving data definitions and business terms
- participate in Data Governance activities as requested



## Data Steward

- Create and maintain data/business definitions
- Assist with defining data access rules, data mappings, and data aggregation methods
- Assist with Master Data Management trust rule definitions
- Maintain reference tables for codes, descriptions, mappings, and groupings



## Application Steward

- Named for each application
- Populate and maintain an application inventory
- Enhance application data collection processes to reduce data integrity issues
- Enhance testing/validation of outbound data
- Assist with Master Data Management trust rule definitions



## Analytics Steward

- Named for each reporting
- Populate and maintain a solutions inventory
- Reduce duplication of solutions
- Define rules for use of standard definitions and report documentation guidelines
- Define data release processes and guidelines



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# Executing a plan...

YEAR THREE

## Engagement

- Council drives priorities
- Begin policy/guideline approval
- Information owners govern
- Publish data quality metrics
- Deploy master data
- Deploy metadata

YEAR TWO

## Awareness

- Communicate, communicate
- Educate (make it personal)
- Begin a data glossary
- Begin data profiling
- Begin master data efforts
- Fill roles for initial efforts

YEAR ONE

## Define and Build

- Establish council and office
- Define roles aligned with policy
- Educate council and staff
- Define initial priorities
- Acquire and implement tools
- Engage Human Resources

# Data Governance tasks at a glance

## Data integrity

- Ensure data sources are complete and accurate
- Define business rules / quality thresholds
- Data Integrity Scorecards
- Cleanse data at the source

## Master Data Management

- Customer / Product attributes
- Facilities/ Location models
- Customer/ Product/ Vendor relationships
- Code mapping across source systems

## Metadata Management

- Define terms and definitions across the organization
- Define and build data lineage
- Reporting initiatives

## Policy / Guidelines

- Information Ownership
- Business Glossary Change Management
- Self-Service use of data
- Data Movement
- Report Documentation

# Data Integrity



- Data Profiling is analyzing what the current state of a system's data IS compared to what it ideally SHOULD be.

92% of businesses feel their data is inaccurate in some way.


- W In addition, unreliable, incomplete, or poor-quality data cost organizations between 15% and 20% of their operating budgets – *2013 survey by US Insurance Data Management Association.*

- ✓ Sets the foundation for exception reporting, Invalids = Errors or Warnings.
- ✓ Helps us determine “Is this data fit for use?”

# Data Integrity



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Source System A - Column Profiling					
Name	Unique Values	% Unique	NULL	% NULL	Drill Down
Gender Code	3	0.02	245	1.56	

Questions to the  
business/ application

Are nulls okay or  
expected?

Values	
Values	
M	9,071
F	6,389
NULL	245

Values	Patterns	
Patterns	Frequency	Percent
X	15,466	98.44
NULL	245	1.56

# Metadata Management

What is the associated reference data

What is the definition of the data element

Are there synonyms or aliases

What source did this data originate from

Are any business rules applied to the data

Are there related terms





# Master Data Management



<u>SSN</u>	<u>First Name</u>	<u>MI</u>	<u>Last Name</u>	<u>Address</u>	<u>City</u>	<u>State</u>	<u>Zip</u>	<u>Phone</u>	<u>Marital Status</u>
****6789	John	M.	Smith	600 Grant Street	Pittsburgh	PA	15219	4126475000	Married

Customer  
Gold Record

Fields with the highest trust  
score survive in the final  
consolidated "gold" record.



<u>SSN</u>	<u>First Name</u>	<u>MI</u>	<u>Last Name</u>	<u>Address</u>	<u>City</u>	<u>State</u>	<u>Zip</u>	<u>Phone</u>
123456789	John	M	Smith	200 Lothrop St.	Pittsburgh	PA	15213	4126478345

System A



<u>SSN</u>	<u>First Name</u>	<u>MI</u>	<u>Last Name</u>	<u>Address</u>	<u>City</u>	<u>State</u>	<u>Zip</u>	<u>Phone</u>	<u>Marital Status</u>
123456789	John	M	Smith	600 Grant Street	Pittsburgh	PA	15219	4126475000	S

System B



<u>SSN</u>	<u>First Name</u>	<u>MI</u>	<u>Last Name</u>	<u>Address</u>	<u>City</u>	<u>State</u>	<u>Zip</u>	<u>Phone</u>	<u>Marital Status</u>
123456780	Jon		Smith	601 Grant Street	Pittsburgh	PA	15219	4126475100	Married

System C



# Reference Table Management

System A - Gender Code Set	
Local Gender Code	Local Gender Description
1	Male
2	Female
3	Unknown

System B - Gender Code Set	
Local Gender Code	Local Gender Description
M	Man
W	Woman
N	Not Known

System C - Sex Code Set	
Local Gender Code	Local Gender Description
M	Male
F	Female
U	Unknown
F.	Female

MDM - Gender Reference Table				
Standard Gender Code	Standard Gender Description	System A - Local Gender Code	System B - Local Gender Code	System C - Local Gender Code
M	Male	1	M	M
F	Female	2	W	F
U	Unknown	3	N	U
				F.

Standardization



# Challenges

Engage the organization, but **avoid hype**.

**Name only** those you plan to engage soon.

Continuously **communicate** and **educate**.

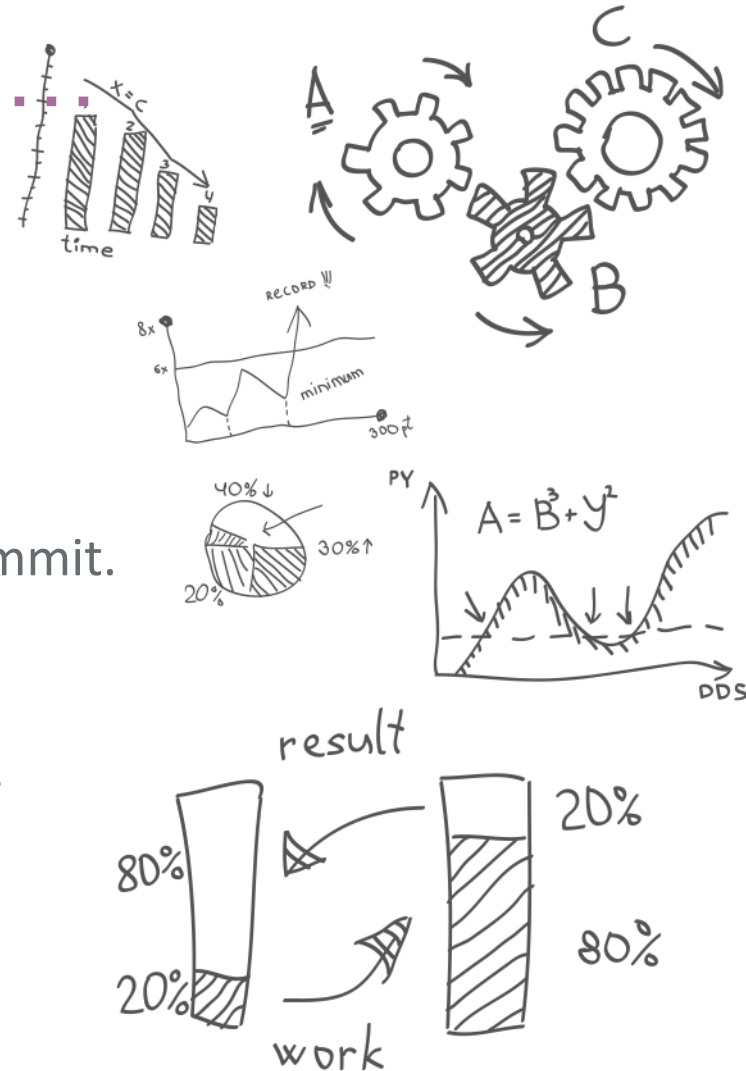
**Diversify early** but be careful not to overcommit.

Use **real data examples** to educate.

Senior Executives must be **actively engaged**.

**Be resilient**, this is a program, not a project.

**Don't quit**. **Passion** works.



# Data Governance and Internal Audit

A comprehensive and effective **data governance** program encompasses people, processes, policies, controls and technology. In addition, a critical element of a **data governance** program involves educating key stakeholders about the benefits of **data governance** and the risks associated with poor data quality, integrity, and security.

A comprehensive and effective **internal audit** program encompasses people, processes, policies, controls and technology. In addition, a critical element of a **internal audit** program involves educating key stakeholders about the benefits of **internal audit** and the risks associated with poor data quality, integrity, and security.

# Data Governance and Internal Audit

- Knowledgeable of IT and operational aspects of the organization
- Developing and maintaining relationships
- Communication and Education
- Managing push back/ culture shift
- Dealing with data-related risk

# Collaboration with Internal Audit

- Data Governance Program Maturity
- Enhancing Program scope and objectives
- Development of Policies and Standards
- Example of a two ways Internal Audit and Data Governance can collaborate

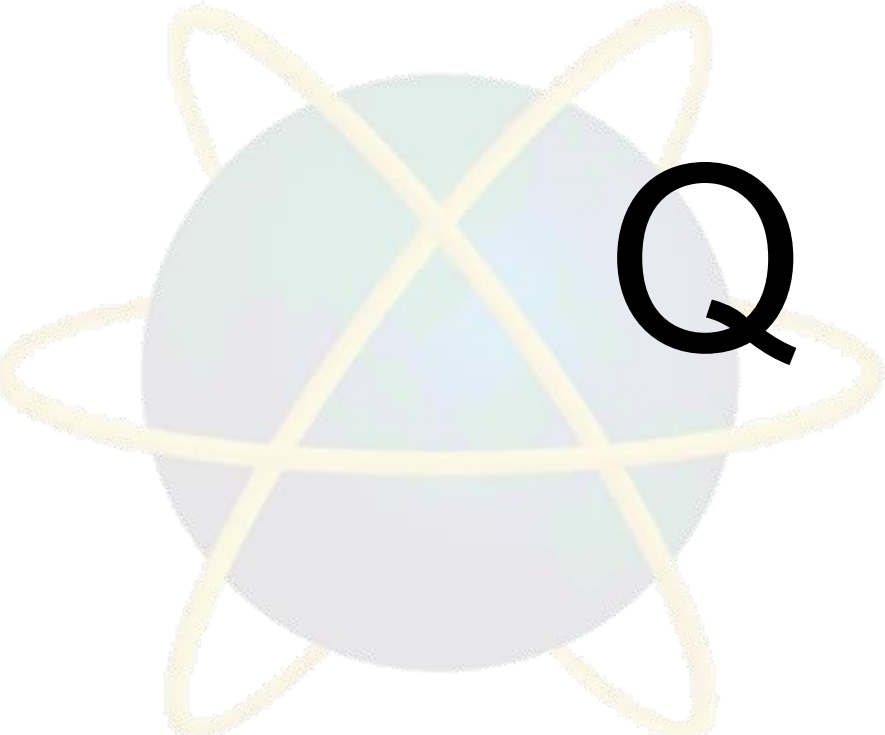


# Summary Recap

- How do we define Data Governance and its relationship to IT Governance.
- What are some of the key pillars of a Data Governance Program.
- What challenges does a Data Governance Program face early on.
- How can Data Governance and Internal Audit collaborate or leverage each other.

Better Data for Everyone's  
Job

# Question & Answer Session



Q & A