THE ELEMENTS OF DATA GOVERNANCE

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PREFACE

The increased focus and attention given to an organization's data assets have been the impetus for new strategies with which to manage these resources. Data governance is one method that can make better use of the information that drives business. We intend this paper to educate readers on the subject of data governance and its advantages to the business world.

WHAT IS DATA GOVERNANCE?

We can define data governance as a set of practices and procedures used to manage an organization's data assets formally. It defines the rights and responsibilities related to a comprehensive model of an enterprise's information resources. Data governance designates the personnel that can access specific information and describes when, how, and with what methods they may use it.

Based on the context, data governance can refer to:

- Organizational bodies responsible for driving the initiative;

- Policies, standards, and business rules that guide the process;

- Accountabilities and responsibilities necessary to implement the program;

- Methods to enforce compliance with the policies as people and information systems interact with enterprise data.

Any discussion of data governance must include the methods, technologies, and behaviors that contribute to effective data management.

WHY IS DATA GOVERNANCE NEEDED?

Data governance and other competing methods of managing enterprise information have become more critical due to the convergence of several factors. These diverse elements have come together to make it vitally important that an organization has a thorough understanding of their data resources and how they are being used.

- Big data and the incredible volume of information generated from the Internet of Things (IoT) presents challenges that require a new mindset to handle appropriately. Coherently incorporating multiple data streams cannot be done in an ad hoc manner.

- The growing use of analytics to provide insight into business decisions makes it imperative that an enterprise uses its data assets productively. An organization's data is an irreplaceable resource, and data governance can help extract its maximum value. Using it wisely can give a business a substantial competitive edge over its rivals.

- Increased concern over the privacy and security of digital data demands effective methods of ensuring data is protected throughout its life cycle. Implementing data governance helps create an enterprise-wide view that emphasizes the importance of securing information assets.

GOALS OF A DATA GOVERNANCE PROGRAM

Organizations may have many reasons for instituting data governance, but there are general goals that apply to the process. They include:

- Fostering better decision-making regarding data across the enterprise;

- Creating standardized, transparent, and repeatable processes revolving around information assets;

- Training the whole organization to support a common approach to data-related issues;

- Improving communication between different parts of an organization by developing a consistent language concerning its data;

- Protecting the needs of data stakeholders;

- Reducing costs and improving productivity through collaboration and coordination.
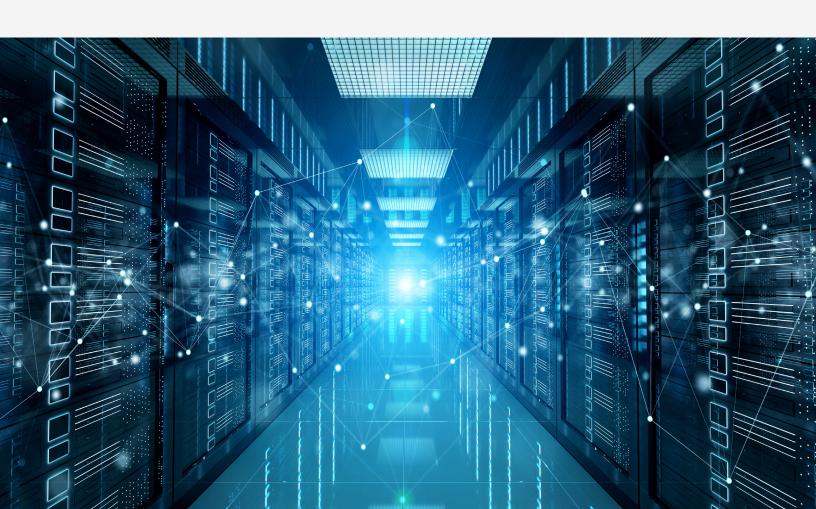
Specific objectives determined by the particular business, or infrastructure under review may supplement these universal goals. Goals should be set realistically and may need to be modified during the project. A viable data governance program should evolve as it matures and becomes an intrinsic part of the corporate culture.

DATA GOVERNANCE PRINCIPLES

Achieving the goals of a data governance initiative requires that all associated stakeholders and participants operate with the same set of guiding principles. Failure to get buy-in from the entire enterprise minimizes the potential benefits of the program. Here are the guidelines that should inform everyone involved in implementing data governance.

- Integrity and truthfulness are essential when discussing the underlying reasons and impacts of data-related decisions. Transparency is necessary regarding how, when, and why procedures and controls are incorporated in the overall process.

- Accountability for decisions regarding data backed up by a system of checks and balances needs to be embraced by all participants. These checks and balances include the ability to audit data activities for internal and external compliance.

- The responsibilities of the various roles involved in data governance need to be understood and agreed upon by all parties. Clarifying roles can minimize inadvertent crossover, which can lead to disputes over policies and procedures.

- Standardization of data terms and definitions needs to be adopted across the organization. A robust change management process must be followed when making modifications to these entities and the way they are used.

WHAT ARE THE BENEFITS OF DATA GOVERNANCE?

Attaining the goals selected when implementing data governance can provide an organization with many tangible benefits. These advantages can impact both the internal organizational processes and interactions with clients, customers, and partners.

- Data governance results in enhanced data quality due to its standardization and increased consistency. This standardization and increased consistency enable the information to be used throughout the enterprise with confidence that it accurately represents the collected data assets. Higher quality data, combined with greater transparency and elevated communication across the organization, leads to better decision-making and business planning.

- The framework implemented in a data governance program designs more accurate procedures and policies, ensuring compliance with data privacy and security regulations. Sensitive data should be identified and protected at every stage of its life by every member of the organization. Attempting to avoid the rising fines and negative publicity surrounding data breaches is one of the main reasons that organizations choose to implement data governance. The costs of compromised data far outweigh the price tag associated with developing a robust data governance program.

- Governance increases the value of an organization's data assets by using them more efficiently. A consistent view of data enables it to be put to more productive use for analytics to find innovative business strategies. In the data-driven world of modern commerce, the way information is used can be what separates market competitors. Governance enables the maximum value to be extracted from enterprise data resources resulting in new avenues for revenue growth.

- Enhanced productivity is an outgrowth of governance with all levels of the enterprise using the same data language and procedures. Inter-departmental communication is streamlined as conflicts in terminology, or the usage of data elements are eliminated. Data silos that have propagated over time are eliminated as everyone treats corporate data in the same way and with the same definitions. The benefits ripple throughout an organization as less time-consuming mistakes are made when processing data that may have been inconsistently defined before governance was put in place.

The value of enterprise data cannot be overstated, and managing and handling it effectively and efficiently can be the defining factor in business success. The concrete benefits afforded by data governance cannot be ignored and should be a part of every organization's long and short-term strategy.

DATA GOVERNANCE ROLES AND RESPONSIBILITIES

A successful data governance program needs to be embraced throughout an organization. It requires the support of employees at all levels of the enterprise. Upper management must understand the value of the initiative and be willing to commit the resources necessary to implement it effectively. One of the first steps when instituting the process is the creation and staffing of a data governance team.

Organizations that are serious about data governance should appoint a Chief Data Officer (CDO) to lead the team. This position may also be known as the company's data evangelist. They are responsible for guiding the team and ensuring the project stays on course. One of the CDO's duties is to assign a data governance leadership team from diverse departments that span the enterprise.

The primary roles and responsibilities of the members of a data governance team are best looked at as a hierarchy.

EXECUTIVE LEVEL

This level is made up of the data governance steering committee or senior leadership team. They are senior-level executives who have in-depth knowledge regarding the program and its goals. These individuals are responsible for identifying the members of the data governance council, who will make up the strategic level of the hierarchy. The members of the executive level do not engage in day-to-day data governance activities but are expected to support the program and stay updated about its progress and status.

STRATEGIC LEVEL

Leaders of each business unit or department make up the strategic level. They are tasked with becoming educated in the details of the governance program and disseminating this information to members at the tactical level. These department leaders need to push the idea of data governance in their areas and actively promote the practice of data governance.

Other duties that are handled at the strategic level include approving policies, tools, and methods used to implement data governance. These individuals need to use their expertise to communicate to the executive level regarding how governance will be applied to specific areas such as risk management and compliance. Identifying and approving the individuals who make up the tactical level is another responsibility handled at this level of the hierarchy.

TACTICAL LEVEL

Data domain stewards and data steward coordinators make up the tactical level. Domain stewards are subject matter experts and are responsible for the management of data under their purview. At the tactical level, data definitions are ironed out across business units. Classification, compliance, and business rules about specific data domains are developed and communicated to all associated stakeholders.

Steward coordinators are responsible for disseminating information relevant to their domain to the operational data stewards in their business unit. Coordinators need to understand the basics of how information is used in their domain and are tasked with identifying the proper personnel to fill the roles of operational stewards. They also work with the operational team to resolve issues that arise in the process.

OPERATIONAL LEVEL

This level is inhabited by operational data stewards who may also be referred to as data owners or trustees. Data users, definers, and producers are also grouped in the operational level of the data governance hierarchy. Some responsibilities of this group include defining the data elements that the organization will use and how they are man-aged. The role of data producers is to create, update, delete, archive, and retire enterprise data. Users interact with the data to perform their jobs and are required to maintain the integrity of the data.

Knowledge regarding data resources obtained at the operational level needs to be communicated up the hierarchy. That way, decisions can be made at the tactical and strategic levels regarding how it is managed. Details such as retention requirements and other issues that may impact compliance are often better understood at the operational level. Also, they need to be shared with the rest of the governance team.

DATA GOVERNANCE IN PRACTICE

Successfully introducing a data governance program requires time and a multi-phase plan. It is not something that can just be sprung fully formed on an organization. Effective data governance is attained through hard work and the collaborative efforts of many individuals throughout an enterprise.

Here is an outline of the steps required to institute a viable program of data governance for compliance. A different focus will necessitate some modification of this plan.

- Defining the high-level policies, standards, and controls that will be used when implementing the program is the first step. Members of the executive and strategic levels are involved in this part of the process. These policies need to address the potential business uses of data resources and find ways that these can be complemented with new and better methods and procedures.

- Developing a shared language concerning the enterprise's data assets forms the foundation of the whole initiative. This shared language is a collaborative undertaking conducted by members of the strategic and tactical levels of a governance program. Tools that foster collaboration and cross-team communication are essential components of this phase of the program.

- Assigning and confirming data stewards or owners. These roles need to be documented to ensure accountability for the development of data definitions and their communication throughout the enterprise.

- Identifying valuable datasets and elements. Classification can be done using various criteria based on the enterprise data assets that are in scope. This classification is a critically important step as incorrectly classifying data can result in poor handling of sensitive information. This incorrectly classified data can be where the conditions that make a data breach possible begin to take shape as data is not adequately protected.

- Defining data collection and usage standards is an essential part of instituting data governance. This phase needs to consider regulatory standards that speak to the rights of individuals over their private data. Certain data elements exist that should not be used. For instance, customer email addresses may be in the system but are not available for enterprise use due to individuals opting out. These standards need to evolve as more privacy regulations are rolled-out.

Conducting assessments regarding the way data protection will impact the business eliminates unpleasant surprises down the road. Modifying procedures to protect data assets adequately may necessitate changes to many internal processes that are better understood before implementing governance. Assessments should include vendors who may use enterprise data to ensure that they are maintaining the same high standards of data protection.

Data lineage and life cycle need to be managed effectively to conform to compliance standards. Organizations are required to demonstrate the method in which they obtained data, how they use it, and where it is going. Data elements need to be managed from their creation through their destruction with auditable reports available to prove compliance. This managing of data elements encompasses concepts such as the right to be forgotten as specified in the European Union's General Data Protection Regulations (GDPR). Procedures need to be included. The ability to handle individual requests to have sensitive data removed from an enterprise's data resources need to be put in place as part of the data governance plan.

TOOLS FOR DATA GOVERNANCE

Using the right technology is essential to a successful data governance program. Centralized repositories are needed for effective collaboration across the enterprise. These tools need to fulfill several functions, including:

- Managing key artifacts such as data glossaries and models;

- Tracking and maintaining data lineage and change history;

- Creating and managing metadata;

- Providing document classification and life cycle management;

- Assigning data governance roles and policies.

In addition to the tools used to implement data governance, supplementary instruments are required to perform tasks such as identifying the sensitive information residing in an organization's systems and databases. Without an accurate picture of what needs to be protected, it is impossible to enact a viable data governance program.

The advantages of data governance are clear. It is a mandatory part of an intelligent business strategy when faced with the data-centric of our world. Data governance offers organizations a way to use their information resources in a way that provides value to the enterprise while protecting them from misuse.

IDERA'S SOLUTION

ER/Studio Enterprise Team Edition is the leading business-driven data architecture solution that combines multi-platform data modeling, business process modeling, and enterprise metadata for organizations of all sizes. With an extensive feature set, the ER/Studio suite provides robust logical and physical modeling with ER/Studio Data Architect, business process and conceptual modeling with ER/Studio Business Architect, business glossaries with ER/Studio Team Server, and more, to build the foundation for data governance programs.

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