An Overview of Data Management

Recognition of Contribution

Table of Contents

Executive Summary

Data management plays a significant role in an organization's ability to generate revenue, control costs and mitigate risks. Successfully being able to share, store, protect and retrieve the ever-increasing amount of data can be the competitive advantage needed to grow in today's business environment.

Management of data generally focuses on the defining of the data element, how it is structured, stored and moved. Management of information is more concerned with the security, accuracy, completeness and timeliness of multiple pieces of data. These are all concerns that accountants are trained to assess and help manage for an organization.

Most organizations today are inundated with data, the volume of which is increasing at an alarming rate. It is vital, therefore, to determine which data are most relevant and essential from an enterprise-wide perspective. Identification and classification of the enterprise's critical data should be performed by a team of senior-level representatives from each line of business or department. These team members must have knowledge of the relevant contributing business systems and processes, and the requirements of their respective stakeholders, systems and processes, and the requirements of their respective stakeholders.

Primary data management functions include:
1. Data Governance
2. Data Architecture Management
3. Data Development
4. Database Operations Management
5. Data Security Management
6. Reference & Master Data Management
7. Data Warehousing & Business Intelligence Management
8. Document & Content Management
9. Meta Data Management
10. Data Quality Management

Accountants can play a key role in enabling Data Governance, and ensuring that it is aligned with an organization's overall corporate governance processes. Data Governance principles include:
1. Integrity
2. Transparency
3. Auditability
4. Accountability
5. Stewardship
6. Checks-and-Balances
7. Standardization
8. Change Management

Accountants already are familiar with applying many of the principles above to the financial data that they work with in a regular basis. Becoming involved in a data management or data governance initiatives provides the opportunity to apply these principles into other parts of the organization.

This document provides an overview to help accountants understand the potential value that data management and data governance initiatives can provide to their organizations, and the critical role that accountants can play to help ensure these initiatives are a success.

What is Data Management and Why is It Important?

The definition provided by the Data Management Association (DAMA) is: "Data management is the development, execution and supervision of plans, policies, programs and practices that control, protect, deliver and enhance the value of data and information assets."[1]

Data management plays a significant role in an organization's ability to generate revenue, control costs and mitigate risks. Successfully being able to share, store, protect and retrieve the ever-increasing amount of data can be the competitive advantage needed to grow in today's business environment.

Managing customer data results in improved customer relationships, which ultimately drives revenues. While expanded data storage requirements have increased equipment investments; there also are many other hidden costs associated with data management. Some of these costs include power consumption, cooling requirements, installation, cabling, backup management and data recovery. Inherent within all of these costs is the need for more time and space leading to increases in payroll and occupancy expenses.

Lastly, but just as important, data management plays a key role in helping an organization mitigate risks. For example, establishing a formal data retention policy can help decrease storage costs and reduce litigation risks.

How Does Data Management Compare to Information Management?

Data are just facts. In IT processes, data are generally represented as content in a field. Data, for example, can be the amount of money for a check, a bank balance or an amount for an income statement or balance sheet account. Data become information when they are structured to provide context and meaning. Information for a payment is the combination of the data for the amount paid, date of the transaction, bank account charge and the payee.

Management of data generally focuses on the defining of the data element and how it is structured, stored and moved. Management of information is more concerned with the security, accuracy, completeness and timeliness of multiple pieces of data. These are all concerns that accountants are trained to assess and help manage for an organization.

---

[1] The DAMA Guide to the Data Management Body of Knowledge (DAMA-DMBOK), 1st Edition 2009, p.4

What Are the Functions of Data Management?

Per DAMA, the following are 10 primary functions related to a comprehensive data management program[2]:

1 *Data Governance:* The exercise of authority, control and shared decision-making (planning, monitoring and enforcement) over the management of data assets (See What is Data Governance? on page 6 for more detail)

2 *Data Architecture Management:* The development and maintenance of enterprise data architecture within the context of all enterprise architecture, and its connection with the application system solutions and projects that implement enterprise architecture

3 *Data Development:* The data-focused activities within the system development lifecycle (SDLC), including data modeling and data requirements analysis, design, implementation and maintenance of databases and data-related solution components

4 *Database Operations Management:* Planning, control and support for structured data assets across the data lifecycle, from creation and acquisition through archival and purge

5 *Data Security Management:* Planning, implementation and control activities to ensure privacy and confidentiality and to prevent unauthorized and inappropriate data access, creation or change

6 *Reference & Master Data Management:* Planning, implementation and control activities to ensure consistency of contextual data values with a "golden version" of these data values

7 *Data Warehousing & Business Intelligence Management:* Planning, implementation and control processes to provide decision support data and support knowledge workers engaged in reporting, query and analysis

8 *Document & Content Management:* Planning, implementation and control activities to store, protect and access data found within electronic files and physical records (including text, graphics, image, audio and video)

9 *Meta Data Management:* Planning, implementation and control activities to enable easy access to high quality, integrated meta data

10 *Data Quality Management:* Planning, implementation and control activities that apply quality management techniques to measure, assess, improve and ensure the fitness of data for use

While many of the above functions may appear to be technical (i.e., needs to be done by the IT department), note that all of the functions except Data Architecture Management (No. 2) and Data Development (No. 3) include a reference to the word control in their description. Thus each of the areas involves assessment of risk of the function and design of control points to help manage the processes — all areas where an accountant can help provide expertise.

---

[2] Ibid., pp.337-338

How Can an Organization Understand What Data It Needs to Manage?

Most organizations today are inundated with data, the volume of which is increasing at an alarming rate. It is vital, therefore, to determine which data are most relevant and essential from an enterprise-wide perspective. Yet, surprisingly few have performed a data inventory or documented the locations where their important data are stored.

Data exist in a variety of formats, and include information found in business documents such as contracts and invoices, customer data, employee records, financial data and intellectual property.

Some of this has been captured in an electronic format and resides within an application data file on a corporate network server. It may also be stored in a spreadsheet or file on an employee's desktop computer or on a corporate laptop. Some data may only exist in hard copy format stored in a file cabinet and accessed infrequently.

How Does an Organization Know What Data Are Important?

To help identify data that are vital to the enterprise, consider the following questions. Additions or modifications may be made as needed to meet an organization's circumstances due to relevant privacy and security considerations.

- Are the data used in performing a major system-wide operation, role or responsibility?

- Are the data relevant to the strategic planning needs of the company?

- Are the data needed for corporate decision making?

- Are the data included in an official system-wide report?

- Are the data required by regulatory authorities?

- Are the data used to derive an element used in one of the previous criteria?

- Are the data disseminated internally only or made available outside the organization?

Identification and classification of the enterprise's critical data should be performed by a team of senior-level representatives from each line of business or department. These team members must have knowledge of the relevant contributing business systems and processes, and the requirements of their respective stakeholders.

Executive sponsorship also is important to ensure that the effort aligns with the enterprise's strategic business plans and to demonstrate management's recognition of, and commitment to, the importance of this undertaking. The project team should categorize and prioritize data according to what is currently most important to the organization.

How Does an Organization Document Its Data?

It is important to organize the information gathered about the organization's data in documents that can be easily updated and maintained, and that will aid in making the data management information actionable.

Spreadsheets or tabular formats are frequently utilized for this purpose. Suggested documentation may include:

- *Data Requirements Matrix:* Identifies data and reporting requirements by constituency

- *Data Category Analysis:* Identifies existing reports, data sources and nature/usage

- *Report Matrix:* Identifies data elements, documents computations or derived data, and network paths/servers/files or other locations where the data is stored

As the information is gathered, it should be validated against the organization's business rules and policies. Requirements should be prioritized, planned future data identified and any data inconsistencies remediated. Software tools may be utilized to aid in the data validation process. These deliverables will be useful in designing comprehensive enterprise data retention policies and procedures and in assessing compliance with those policies.

What is Data Governance?

Accountants can play a key role in enabling Data Governance, and ensuring that it is aligned with an organization's overall corporate governance processes.

DAMA defines Data Governance as: "The exercise of authority, control and shared decision-making (planning, monitoring and enforcement) over the management of data assets. Data Governance is high-level planning and control over data management."[3] The objectives of data governance are to:

A. Enable better decision-making

B. Reduce operational friction

C. Protect the needs of data stakeholders

D. Train management and staff to adopt common approaches to data issues

E. Build standard, repeatable processes

F. Reduce costs and increase effectiveness through coordination of efforts

G. Ensure transparency of processes

According to the Data Governance Institute, "Data Governance is a system of decision rights and accountabilities for information-related processes, executed according to agreed-upon models which describe who can take what actions with what information, and when, under what circumstances, using what methods."[4]

Both definitions essentially focus on the high-level process by which decisions related to the management of data are made, and the use of its associated information.

What Are the Functions of Data Governance?

Under the DAMA model, Data Governance represents two primary functions:

1. Data Management Planning
- Identify Strategic Enterprise Data Needs

- Develop & Maintain the Data Strategy

- Establish the Data Management Professional Organizations

- Identify & Appoint Data Stewards

- Establish Data Governance & Stewardship Organizations

- Develop, Review & Approve Data Policies, Standards and Procedures

- Review & Approve Data Architecture

- Plan and Sponsor Data Management Projects & Services

- Estimate Data Asset Value & Associated Data Management Costs

2. Data Management Supervision & Control
- Supervise the Data Management Professional Staff & Organizations

- Coordinate Data Governance Activities

- Manage & Resolve Data Related Issues

- Monitor & Ensure Regulatory Compliance

- Monitor Conformance with Data Policies, Standards and Architecture

- Oversee Data Management Projects & Services

- Communicate & Promote the Value of Data Assets

Note that like Data Management functions, Data

---

[3] The DAMA Guide to the Data Management Body of Knowledge (DAMA-DMBOK), 1st Edition 2009, p.19

[4] Data Governance Institute, datagovernance.com/adg_data_governance_definition.html

Governance functions are primarily non-technical in nature and similar to the normal corporate governance functions that many accountants are used to facilitating.

What Are the Principles of Data Governance?

The following principles are imbued in all successful Data Governance and Stewardship programs, processes and projects. They are the principles that help stakeholders come together to resolve the types of data-related conflicts that are inherent in every organization.[5]

1 *Integrity:* Data Governance participants will practice integrity with their dealings with each other; they will be truthful and forthcoming when discussing drivers, constraints, options and impacts for data-related decisions.

2 *Transparency:* Data Governance and Stewardship processes will exhibit transparency; it should be clear to all participants and auditors how and when data-related decisions and controls were introduced into the processes.

3 *Auditability:* Data-related decisions, processes, and controls subject to Data Governance will be auditable; they will be accompanied by documentation to support compliance-based and operational auditing requirements.

4 *Accountability:* Data Governance will define accountabilities for cross-functional data-related decisions, processes and controls.

5 *Stewardship:* Data Governance will define accountabilities for stewardship activities that are the responsibilities of individual contributors, as well as accountabilities for groups of Data Stewards.

6 *Checks-and-Balances:* Data Governance will define accountabilities in a manner that introduces checks and balances between business and technology teams as well as between those who create/collect information, those who manage it, those who use it, and those who introduce standards and compliance requirements.

7 *Standardization:* Data Governance will introduce and support standardization of enterprise data.

8 *Change Management:* Data Governance will support proactive and reactive Change Management activities for reference data values and the structure/use of master data and metadata.

Accountants already are familiar with applying many of the principles above to the financial data that they work with in a regular basis. Becoming involved in a data management or data governance initiatives provides the opportunity to apply these principles into other parts of the organization.

[5] Data Governance Institute, http://datagovernance.comdg_data_governance_goals.html

What AICPA Resources Are Available to Guide a Data Management Initiative?

AICPA IMTA Section members have the following additional resources available:

- Information: A Company's Most Valuable, Yet Mismanaged Asset, Robert Green, CPA.CITP and Scott Cooper, CMC, 2007 (article)

- IMTA Governance — The Role of Internal Audit, Scott Kenny, CISA, CPA and Cheryl Strackeljahn, 12/9/2010 (archived webcast)

- Ensuring Data Quality and Auditability in Business Reporting, Donny Shimamoto, CPA, CITP and Rob Fisher, CPA, CITP, 9/29/2009 (archived webcast)

- Closing the Privacy GAPP — Best Practices to Protect Your Data, Don Sheehy, CPA and Nancy Cohen, CPA, CITP, 3/23/2011 (archived webcast)

Archived webcasts are available for IMTA Section members on this page.

For more information about the AICPA IMTA Section membership, please visit aicpa.org/IMTA.