Seven Steps to Effective Data Governance
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Executive Summary

Data governance is not just about technology. It’s about people taking responsibility for the information assets of their organization by looking at the processes they use to interact with information as well as how and why it’s being used.

Creating a framework to ensure the confidentiality, quality, and integrity of data – the core meaning of data governance – is essential to meet both internal and external requirements, such as financial reporting, regulatory compliance, and privacy policies. At its best, data governance roots out risk – both business and compliance risk – by increasing oversight. It enables organizations to integrate and consolidate information from vertical and horizontal lines of the business into a single source of truth, providing economies of scale and making it possible to effectively tie information policy to business strategy.

Although the need for data governance has never been greater, initiatives in many organizations have become bogged down in bureaucracy, and other organizations have not even started because they have been daunted by what can seem like an overwhelming task. The more data, applications, and people that are involved, the bigger the challenge and the need.

Taking an incremental approach using a repeatable framework is a practical, proven strategy that any size organization can implement to suit their immediate and long-term needs and budget.

This white paper provides seven steps for taking such an approach, concluding with a real world example.
Data governance is an umbrella term for an emerging discipline that encompasses a number of different practices for data quality, data management, business process management, and risk management. The goal is to ensure that data serves business purposes in a sustainable way. MDM Institute defines data governance as “the formal orchestration of people, processes, and technology to enable an organization to leverage data as an enterprise asset.” The Data Governance Institute goes a step further, stating that “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.” According to Wikipedia, “data governance encompasses the people, processes, and information technology required to create a consistent and proper handling of an organization’s data across the business enterprise. Goals may be defined at all levels of the enterprise and doing so may aid in acceptance of processes by those who will use them.”

These definitions point to the need for exercising control over how data is used in an enterprise.

**The Need for Data Governance**

Data governance enables organizations to access the full value of data, the currency of today’s networked economy, while protecting that data from risk. Data is growing across all areas of the enterprise: on the average, at the rate of 1.5 to 2.5 times a year. Laws regulating the use of data and associated compliance issues are also growing. For instance, in the U.S., the 2002 Sarbanes-Oxley Act can result in fines and even prison sentences for noncompliance to external reporting requirements.

Data quality, master data management (MDM), and data migration initiatives are booming as a result of this growth in data, demand, and regulation. As these data initiatives proliferate, they need governance to ensure they fit the needs of the enterprise and work with one another. For example, data across the enterprise needs to be properly defined as “customer” or “product” – in ways that suit individual organizations – and before more applications and initiatives are created.

Effective data governance creates a framework for the use of data that fits each individual enterprise. It improves operational efficiency, improves application effectiveness, and minimizes risk. Not only do the right people get the right information at the right time, but they also get it in the right way both for their immediate purposes and in a way that works with the data framework for the whole organization.

**Why Enterprises Struggle With Data Governance**

It has been reported that by 2008, less than 10 percent of organizations will succeed at their first attempts at data governance because of cultural barriers and a lack of senior-level sponsorship. This situation is still true.
The following are the most common barriers to success for data governance initiatives:

- **Organizational** – Different groups within an organization must communicate and coordinate well with one another.

- **Data quality, MDM, and data migration integration** – Applications and data must speak to one another, and this must be addressed up front and planned for in any integration initiative.

- **Accountability and ownership of data** – People must be held accountable for information assets and supported with technology to ensure the integrity of the assets.

- **Cost** – Data governance initiatives must be implemented in such a way that costs are recouped and business value is proven.
For most organizations, taking an incremental approach is a practical way to prove business value and build a sustainable program for data governance, avoiding the pitfalls of both over- and under-reaching. A repeatable framework for data governance makes it possible to take small, tactical steps for immediate results and still take a systematic, long-term, strategic approach to gain economies of scale across the enterprise. We have found that the following seven steps using a repeatable technological framework ensure effective data governance:

1. **Prioritize** areas for business improvement
2. **Maximize** availability of information assets
3. **Create** roles, responsibilities, and rules
4. **Improve and ensure** information asset integrity
5. **Establish** an accountability infrastructure
6. **Convert** to a master data-based culture
7. **Develop** a feedback mechanism for process improvement

**Step 1: Prioritize Areas for Business Improvement**

Although it may seem ideal to tackle all data issues at once, it’s far more effective to target specific assets to start. Implementing data governance in a targeted way sets a firm foundation for taking it across the enterprise. For starters, it helps to avoid one of the biggest historical problems with data governance: lack of follow-through. By targeting an area of the organization, such as marketing, one can work with the underlying organizational structure to take action and ensure accountability. Information objectives are clearly aligned with business strategy. The information architecture is clarified by taking inventory of the data assets – how they are managed and used as well as how they support the existing application architecture – and by evaluating and removing obstacles. Diverse stakeholders reach consensus and coordinate with one another. They determine key data entities and critical data elements and develop information policies. This is far easier to accomplish when targeting specific areas.

Consider, for example, the possibilities for data governance in customer relationship management (CRM) initiatives. It can greatly improve call center effectiveness and reduce frustration due to lost or duplicate information, multiple mailings, or delivery to wrong addresses. In sales and marketing, data governance can improve sales by solving issues with multiple, inconsistent product catalogs and inaccurate customer demographics. In risk management, it can improve auditing and reporting, solve privacy concerns, and prevent fraud. In finance and accounting, it can ensure accurate, consistent billing and provide a consistent credit picture (see Figure 1). These are just a few examples where success in one area will lead to success in others, and the organization can reap immediate measurable benefits.

The first step is to objectively assess where business improvement can bring the most benefit to the organization immediately, and establish a beachhead there. It’s critical that this assessment is objective, using an outside point of view. Work with an organization that has helped others successfully implement data governance. One that looks across the organizational silos, has a...
methodology for assessing data governance across the enterprise, and knows the key questions to ask to assess where to begin a data governance initiative. It should also understand the best data governance models, data governance and data quality processes, and ongoing organizational processes.

Figure 1: Examples of areas to target for data governance initiatives.

**Step 2: Maximize Availability of Information Assets**

To govern data assets, they first have to be available and accessible. Data needs to be looked at holistically throughout the organization. If data is not available, it will hamper the organization’s ability to make the most of all the data.

Information assets come in all shapes and sizes: in EDI transactions, data warehouses, CRM and ERP applications, legacy file structures, partner systems, and other outside systems. Sometimes it needs to be accessed in bulk, real time, or near real time. For example, it may be critical in some instances to know when the phone number of an important customer changes in real time to maintain continuous contact. On the other hand, in analyzing a month’s transactions for the same customer, one may want to move that data in bulk to a data mart for analysis. Organizations commonly struggle trying to reach data found in such a large heterogeneous environment mixed with legacy, cloud, and a multitude of other assets (see Figure 2).
The use of prepackaged integration components (adapters) simplifies this complex problem and allows organizations to address other aspects of data. As the market leader for adapters, with more than 300 available and the ability to quickly build any we do not already have, iWay Software has helped many organizations cost-effectively reach previously inaccessible data.

The technology you use to access data should enable that access, not restrict access to what the technology knows. You should also be able to access that information in ways that are comfortable to you, not based on what the technology supports. Look for technology that supports the way you work.

Figure 2: Maximize availability of information assets with an industry-standard and open integration architecture.
Step 3: Create Roles, Responsibilities, and Rules

Once the information is accessible, the organization must determine who does what with it, creating roles, responsibilities, and rules for the processes people use in working with information.

The first step is to gain an understanding of the data itself. The best place to start is with business users. Because they understand the business, we work with them using data profiling exercises to identify data elements that are incorrect or inconsistent. Business people can also analyze the impact of bad data on their organization and provide suggestions, or rules, as to what the data should look like.

These rules are then passed to IT professionals so that they can apply technology to cleanse the data based on the business professionals’ suggestions. IT professionals create the quality plans and the content-/rule-based cleansing to improve data integrity.

IT professionals then enhance the data by applying data standardization rules, de-duplicate the data where necessary, and enrich it with any additional information before it goes to the sourcing or targeted system. While business professionals constantly monitor and report the results of the various applications of rules and patterns, the roles, responsibilities, and rules are fully implemented.

This kind of cooperation between business and IT is critical. Without it, no matter the technology or how much money one spends, any data governance initiative will abjectly fail. Everyone in the organization is responsible to make sure the information assets are at their highest integrity. A data governance framework must support the needs of all participants, and all participants must work together to ensure the integrity of the data (see Figure 3).
Step 4: Improve and Ensure Information Asset Integrity

Once the roles, responsibilities, and rules are established, make the information work for you by continuously improving and ensuring the integrity of information assets in a four-step process: data profiling, parsing and standardization, data enrichment, and data monitoring.

- **Data profiling** tools analyze data sets against business-defined quality metrics that define “good” and “bad” data. Creating data profiles is not a one-time, beginning-of-the-process event. It is ongoing. To analyze quality trends, profiles must be compared continuously against previously profiled data.

- **Parsing and standardization** is a process that validates and corrects both industry-standard and organizational-standard attributes within the data, such as name formats, titles, case standardization, and address validation.

- **Data enrichment** allows you to create scoring and profiling results for the information and implement business rules for scoring and profiling. It also gives you the ability to add additional data, like geo-code information, to data that already exists.

- **Monitoring the data** over time is crucial. Although data integrity will improve with these processes, organizations need a way to easily prove it and monitor the quality of information assets. Profiling data over time makes it possible to perform trend analyses and identify areas for constant improvement. It also shows where information quality suffers, so corrective processes can be implemented sooner rather than later.

The ability to implement this four-step process in real time, with data from any system, is key for ensuring data integrity.

Step 5: Establish Accountability Infrastructure

Even with all of the processes in place to ensure information integrity, lingering questions will remain: What happens if the information is still inaccurate? What happens to those data elements that fall through the cracks of the automated processes? What if I want to make sure the changes are right before they are applied?

Processes alone do not ensure the integrity of information. People do. Establish an accountability infrastructure that holds people accountable for information assets, and provide them with the technology they need to ensure the integrity of the assets remains high.

For example, iWay Software’s Data Quality Portal enables business professionals to determine the integrity of information (see Figure 4). The technology is tightly integrated with the data quality tools themselves, providing a seamless method of assuring integrity. In addition, information issue workflows can be created and customized for each organization so that information owners can take full responsibility for the state of their information assets.
Figure 4: Establish accountability infrastructure.

**Step 6: Convert to a Master Data-Based Culture**

With the people, processes, and technology in place to ensure data integrity, the next step to true data governance is to change the culture of the organization to be master data-based rather than transaction data-based. In a master data-based culture, a discussion about a particular invoice elevates to a discussion about the customer. Most organizations today are truly transaction data-based in their perspectives, and it keeps them from leveraging the maximum potential of their data to support the business.

Master data is comprised of the essential facts that define a business – and without which the business would not exist. These facts describe core business entities: customers, suppliers, partners, products, materials, bill of materials, chart of accounts, location, and employees. It is the high value information an organization uses repeatedly across many business processes. Master data exists everywhere in an organization – in different applications, systems, transactions, data warehouses, and messages. Because of the processes you’ve already put in place, you know and trust the information.

Master data management decouples master data from individual source applications and ensures consistent master information across transactional and analytical systems. As a result, applications go to one place for consistent information about important data, and it is easy to identify those core assets, keeping them linked and synchronized. Everyone sees the same information, providing one version of the truth.
An MDM program potentially encompasses the management of customer, product, asset, supplier, and financial master data. MDM solutions are software products that support the global identification, linking, and synchronization of information across heterogeneous data sources; create and manage a central repository or a database-based system of record; and enable the delivery of a single view for all stakeholders. iWay Software has helped many organizations convert to a master data-based culture by using our master data management methodology in conjunction with our software for managing master data.

**Step 7: Develop a Feedback Mechanism for Process Improvement**

Following these steps puts the processes, people, and technology in place to maximize data availability, improve data integrity, and assign accountabilities for information assets. You will begin to see the important, or master, information in your organization more clearly and drive your business to those assets. However, the process is a cycle, and there is always room for improvement (see Figure 5).

There must be a feedback mechanism built into the process that allows for continual process improvement. Monitoring information assets over time gives a clear picture of how initiatives are performing and provides a way to graphically depict both successes and failures in the process. With the processes already in place, correcting failures can be accomplished very quickly. Our real-time monitoring tools are easy to use, highly graphical, and very effective for facilitating this feedback cycle in the organization.

The success of data governance ultimately depends on people. When people know their roles, responsibilities, and the rules; focus on master data; and are supported by technology that makes it easy for them to do their jobs, data governance works.

Figure 5: Develop a feedback mechanism for process improvement.
Real World Case Study

A major metropolitan hospital followed the seven steps and very quickly and cost-effectively achieved demonstrable success addressing the data issues in their patient systems.

Located in New York City and encompassing one of the nation’s largest and most-respected medical schools, the hospital is a large, complex medical institution that grows by acquisition. Last year, it treated nearly 60,000 inpatients and approximately 530,000 outpatients. However, the acquisition process caused challenges in the data quality of patient records. Patient records were created, updated, and exchanged across a host of systems, which caused about 20 percent of the patient data to be incorrect.

The hospital undertook a new data governance initiative to ensure that appropriate information for guiding medical decisions was available at the time and place of care. Its goal was to improve the quality of healthcare, reduce medical errors, and advance the delivery of appropriate, evidence-based medical care. It also needed to reduce healthcare costs resulting from inefficiency, medical errors, inappropriate care, and incomplete information. By addressing these challenges, they sought to promote a more effective marketplace, greater competition, and a wider availability of accurate information on healthcare costs, quality, and outcomes.

The hospital consulted with iWay Software to determine where to start for an incremental approach to data governance. iWay proposed a targeted two-part implementation process.

The first phase was a conversion of their KEANE patient management system, which contained 400,000 records. After a standardization and cleansing process, along with matching and merging of patient records, 10 percent of the data was pinpointed for investigation and pushed to iWay’s Data Quality Portal. The issues were resolved by following the workflow process illustrated in Figure 6.

![Figure 6: Data governance workflow process for issue resolution in the Data Quality Portal.](image-url)
The first phase of the data governance initiative was budgeted to take 18 months. It actually took three months with iWay’s Data Quality Portal.

The second phase is the conversion of their CERNER patient management system, which contained 2.5 million records. The processes of standardizing and cleansing the data and matching, merging, and linking records led to 20 to 40 percent of the data being targeted for investigation and pushed to iWay’s Data Quality Portal.

These steps have already improved the coordination of care, and patients’ information is secure. With the continuous monitoring of data quality initiated, the hospital can now move to working with master data.
Conclusion

Data governance is critical in today’s business environment. Internal and external demands to manage risk make it imperative to have a single version of the truth, yet the proliferation of data, applications, and technology makes it harder to achieve. Data governance gives you the power to unite business objectives, technology initiatives, and information policy. It makes sure that all stakeholders see one version of the truth, and ensures that version is actually true.

Although the task can seem daunting and expensive, it doesn’t have to be. Throughout this paper, we have shown a practical, cost-effective approach that has been used by leading organizations for immediate, measurable improvements.

For similar results, follow these seven steps:
1. **Prioritize** areas for business improvement
2. **Maximize** availability of information assets
3. **Create** roles, responsibilities, and rules
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5. **Establish** an accountability infrastructure
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7. **Develop** a feedback mechanism for process improvement

To get started, work with experts in data governance who have led others to success, and look for technology that supports these functions, enables access to data, and works with people to make the process easier.
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