Effective Data Governance

Abstract

Data governance is no more just another item that is good to talk about and nice to have, for global data management organizations. This PoV looks into why data governance is now on the core agenda of next-generation organizations, and how they can implement it in the most effective manner.
Why is data governance important and challenging now?

Data has grown significantly
Over time the desire and capability of organizations to collect and process data has increased manifold. Some of the facts that came out in various analyst surveys and research suggest that:

- **Structured data** is growing by over 40% every year
- **Traditional content** types, including unstructured data, are growing by up to 80% every year\(^1\)
- Global data will grow to 40 zettabytes (ZB) by 2020 \(^2\)
- 85% of this data growth is expected to come from new types; with machine-generated data being projected to increase 15 times by 2020\(^2\)

Variety of data and increase in sandboxing culture
The next-generation analytics utilize data from all kinds of social networks and blogspheres, machine-generated data, Omniture / clickstream data, as well as customer data from credit management and loyalty management. Alongside this, organizations have now set up sandboxes, pilot environments, and adopted data discovery tools and self-service tools. Such data proliferation and the steep increase in data consumption applications demands stringent and effective data governance.

More stringent regulations and compliance
The growing regulatory and compliance requirements are making effective data governance a must have for industries like financial services and healthcare. The regulatory requirements are now more demanding around data privacy, personal information protection, data security, data lineage, and historical data.

This makes data governance top priority for Chief Information Officers (CIOs). In fact, a survey by Gartner suggested that by 2016, 20% of CIOs in regulated industries would lose their jobs for failing to implement the discipline of Information Governance, successfully \(^3\).

Data to insights to actions: Need for accurate information
Today’s managers use data for decisions and actions. In our experience, many managers feel that the data they are accessing is inaccurate or incomplete, and hence, both confidence and adoption of business intelligence and analytics systems is low. Hence, data governance initiatives need to generate good confidence in the data managers see and use for decision-making.

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What are organizations doing to establish effective data governance?

Role of the chief data officer (CDO)
Gartner predicts that 50% of all companies in regulated industries will have a CDO by 2017 \(^4\). The CDO will be responsible for enterprise data management, enterprise data governance, data consumption applications like data warehousing, business intelligence and analytics systems, data quality, metadata management, master data management, data strategy, and data life cycle.

Collaborative Data Governance Organizations
It is important for Chief Data Officers to engage the right teams in the Data Governance Organization, to align data governance and business goals. Business teams are important to define vision, identify data to be governed, support the implementation of DG policies, while actively participating in change management and monitoring. IT teams are responsible for the management of data and measurement of data quality, as well as collection and management of metadata and master data. They also provide tools and technologies for implementation of the related tools and technologies.
Articulate tangible benefits from data governance initiatives

In order to keep all the stakeholders engaged and ensure continuous investments in data governance initiatives, it is important to articulate the value generated by data governance initiatives via the right metrics. A dashboard with relevant metrics can be an easy tool to assess the impact of data governance initiatives, such as improvement in data quality parameters, improvement in dollar-value impact because of improved data quality, and the ability to rationalize enterprise metrics to data definition standardization. Such tools play an important role in monitoring and controlling adherence to the data governance policies.

Sum of parts is greater than the whole – seamless data governance

Organizations are now looking at data governance holistically. The Data governance strategy includes policy and rules for data quality management, metadata management, master data management, as well as data security. The implementation of each of these individual disciplines presents the intended benefits. However, data governance strategies and implementations that drive common goals and integrate outcomes across these disciplines enjoy benefits like improved reliability, traceability, and authenticity of data. This will also provide a common communication platform across all the stakeholders.

Figure 1: Role of Business Teams in Data Governance

Figure 2: Benefits of Seamless Data Governance
Big data user ratings are replacing traditional data quality (DQ) metrics

Ratings by data consumers are replacing traditional means of measuring data accuracy for non-traditional data such as sentiments and opinions. Most of the leading data platform providers such as Cloudera, Hortonworks, and Informatica (BDE) offer ways of capturing the usage of data from data lakes and user ratings about the usefulness and quality of the information.

Effective Data Governance at Infosys

Infosys holistic service offerings help next-generation organizations to implement effective data governance.

The goal of data governance initiative is to manage data for delivering timely, trustworthy, and relevant information to make informed business decisions. However, data governance is not only about data, but also about enabling clear ownership, business rules, operational requirements, tools and business processes, easy decision-making process, stakeholder interaction, and business access.

Once an enterprise establishes the above process of enabling informed business decisions as the collective aim of data governance, it becomes significantly easier to define the goals and priorities for any initiative. Good data governance paves the way for enterprise policies, people, and processes to launch that initiative.

Infosys Offerings for Effective Data Governance

Enterprise Data Governance

Enterprise data governance framework including processes, organization, and Infosys Data Governance technology solution. Setting data life cycle management policies.

Data Quality Management

Data quality assessment, profiling, monitoring, transformation framework, and toolkit backed up by pre-built solutions and accelerators.

Master Data Management

Leverages Infosys deep experience on master data management implementation, and unique methodology.

Metadata Management

Frameworks, accelerators backed up by deep competency in industry-leading tools and technologies.

Data Protection

Deploy data security across the enterprise with cost-effective, scalable solution, ensuring data protection and privacy, as a service.

Data Strategy & Diagnostics

Data Assessment Toolkit to identify optimization areas in data landscape, redundancy, simplification, and data life cycle management.

The focus now turns to the tools and technologies to implement and ensure compliance with data governance requirements in accordance to business access.

Infosys Data Governance Solution offers a robust framework and technology solutions that leverage partnerships with leading product vendors in this space.
Infosys Data Governance Framework with measurable KPIs efficiency and efficacy

This framework helps next-generation organizations to assess the data governance maturity and needs, define the strategy accordingly, and subsequently implement the same.

Data Governance Maturity Assessment

- Understand data assets of an organization
- Understand data-spread across, on premise, and Cloud
- Understand master data management, metadata management processes, data quality processes, and data security setup and processes

Figure 4: Infosys Data Governance Framework

![Diagram of Data Governance Framework]

**People - RACI**
- Data Owners / Custodians, Stewards
- IT Solution Technologists
- Data Creators and Consumers

**Processes and Policies**
- Standardization Definition, and Reuse
- Data Quality Mgmt
- IT Systems CRUD – SDLC Management

**Execution Model**
- Scope and Mandate
- Centralized / Federated
- Funding and Budgeting

**Tools and Technologies**
- Metadata / Data Quality
- Classification, Security Audits, and Masking
- Reference and Master Data

**Measured By**
- Efficiency and Efficacy KPIs / SLAs / Metrics

**Figure 5: Data Governance Maturity Phases**

- Chaotic
  - No standards
  - Reactive approach
  - No master data plan
  - No strategy

- Reactive
  - Standards established
  - Basic DQM process established
  - Master data plan identified
  - Strategy defined and communicated

- Defined
  - KPIS identified & measured
  - Data dictionary and rule dictionary documented and maintained
  - N-Tiered stewardship established
  - Master data plan executed
  - Supporting technology framework deployed
  - Root cause for issues being tracked and measured

- Proactive
  - Continuous improvement feedback loops operating
  - Root cause analysis feeding into feedback process
  - Proactive approach to management of data and rules dictionary
  - DQM process automating measurement of function performance
  - All information silos fully integrated with master data systems

- Predictive
  - Process feedback loops are tuning as opposed to fixing
  - DQM processes fully automated with complete audit trail
  - Top-down strategy fully in tune with the bottom up application of stewardship=> complete cultural alignment across the enterprise
  - People, Process, and Technology operating in harmony
Complementary to industry-leading metadata management, master data management, and data quality management tools

- Infosys data governance tool has connectors to popular third party metadata management (MM) and data quality (DQ) management tools. It integrates lineage data available from MM tools, with data quality metrics from DQ tools to enable analytics for various stakeholders.
- Covers unhandled data quality issues from support tickets.

Big data governance

Most of the leading vendors in the information management space, such as Informatica and IBM have string offerings around data profiling, cleansing, lineage, master data management, and metadata management. These vendors have already introduced, or are in the process of enhancing the capabilities of their technology stacks to address the challenges of big data.

Big data platform vendors such as...
Cloudera, Hortonworks, and MapR are offering components that provide capabilities around metadata management (like LOOM and HCatalog), data lineage, and data security (like Sentry, Ranger, and Knox).

The Infosys data governance solution offers a holistic approach to manage big data governance with connectors to these leading tools, and establishing traditional data quality metrics, as well as user ratings.

**Leverage Strategic Partners**

Infosys works with leading technology vendors in data governance, data quality, metadata management, master data management, data security, and data diagnostics like Informatica, IBM and Collibra to name a few – to bring the best of solutions and services to our customers. These partnerships help us provide truly integrated solutions and accelerate implementations.

**Success Stories**

**Infosys helped one of the world’s leading financial services company that provides asset management, portfolio management, and mutual fund services, to realize their enterprise data governance vision. We achieved this by implementing the Infosys Data Governance Solution, data quality management tools, and metadata management tools. The customer was able to visualize metadata, data quality, and the impact of data quality in a much better way; thereby improving operation efficiency and saving a lot of effort in data quality check.**

**Infosys helped a leading bank in South East USA to automate data quality checks for auditing data for FR FY14 compliance reporting to the Federal. The solution was then extended to other lines of business and BI applications. Infosys managed to deliver compliance reporting in time, with about 300+ rules configured, and executed using Ab Initio BRE, in a very short span of time. The customer benefited hugely from the improvement in the regulatory compliance reporting, reinforced confidence, and credibility.**

**For a leading national cable television operator in the US, Infosys defined and implemented a total data quality solution across data from sales and marketing, commercials, and finance lines of business. The solution monitored the health of the data landing in the enterprise data warehouse, and raised alarms in case of threshold breaches. Timely capture of key metrics variances between sources and corresponding targets, and timely automated communications across stakeholders when thresholds were met, helped in raising the confidence in data.**

**References**

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