



Data Quality Management

Everything You Need To Know



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Abstract

Over the past decade, the significance of data in all walks of life has grown tremendously. In the pre-internet era, data was something you frequently associated with research, innovation, and science. And while not much has changed when it comes to the core use cases of data, the use of data has paved its way into several other areas of business, daily life, and society's general development as well.

Organizations of all sizes and natures use data extensively to interpret information, monitor efficiency, and productivity, and even make strategic business decisions. The growing use of data has opened several new areas for researchers or data analysts to work and discover new possibilities for improving human life. Across all possible use cases of data being used as the tool for creating new opportunities, data quality has a crucial and critical role. And thus, a new stream in data quality management was born.

Data quality management is a dedicated stream of data management that measures and analyzes the data quality to mark it as business-ready or research-ready to avoid any imprecisions or fallacies in the outcome. This eBook has been developed with the sole purpose of understanding data quality management along with different aspects of it thoroughly. We will touch on several topics, processes, strategies, and terms associated with B2B data quality management to help you understand the entire universe of data management and leverage it towards achieving your demand gen, vor other business goals.



Introduction

What is Data Quality?

Every data set has a purpose, whether to help make business decisions or deduce conclusions on prolonged research. Data quality is the measure of the data set's ability to serve the purpose attached to it. In simple terms, data quality is the measure of the accuracy and usefulness of the data.

Data quality determines the accuracy and usefulness of the outcome expected of it. If you have high-quality data, your outcome will reflect the same and vice-versa.

Now, while this is a straightforward definition of data quality, other purposes differ in quantitative or qualitative approaches to defining data quality.

Quantitative Approach

The quantitative approach to defining data quality is more straightforward as it defines data quality as the fitness of the data to be able to serve the purpose attached to it. This approach was described by J. M. Juran and is also denoted as “fitness for use.” This approach is based on Juran’s five principles, that are -

- Who uses the data?
- How is the data used?
- Is there a risk to human safety?
- What are the economic resources of the users and the generators of the data?
- What are the characteristics that have been taken into account by the users at the time of defining the fitness for use?

Qualitative Approach

The qualitative approach to defining data quality draws attention to different aspects of the data, also referred to as dimensions. In broad terms, these dimensions can be divided into four categories, namely: intrinsic, contextual, representational, and access data quality. However, each of these dimensions has been further subcategorized below -

Category	DQ Dimension
Intrinsic	Accuracy
	Objectivity
	Reputation
Contextual	Completeness
	Appropriate amount
	Value added
	Relevance
	Timeliness
	Actionable
Representational	Interpretable
	Easily understandable
	Consistent
	Concisely represented
	Alignment
Access	Accessibility
	Security
	Traceability



The Importance of Data Quality Management

Data Quality Management is the process of introducing, monitoring, and managing the best practices and policies to safeguard and maintain the accuracy and access of the data. The method comprises several steps, each of which incorporates checks and balances to ensure the sanctity of data handling and usage. The process begins with data acquisition, its implementation to distribution, and finally, analyzing it. The goal is to get a legitimate and error-free data set ready to use.

Data has emerged as the key to unlocking intelligent insights for business expansion, product development, wise decision-making, and other strategies. However, for the data to be used for the aforementioned use cases, you need high-quality data, facilitating faster and better insights for business intelligence and analytics.

Even in general, data is a precious asset to any institution or individual in general. Governments all over the globe have brought in checks and balances to safeguard the data of their citizens and to regularize the usage of data collected by businesses through various channels during their interaction with the end user. It has become essential for companies to take care of the quality of data they ingest, store, organize, or maintain. This is why data quality management is so important for companies of all sizes and in nature.



Data Quality Management Frameworks

Data quality management is essential in making sense of data. An efficient data quality management framework is the cornerstone of all fruitful business initiatives. Having unreliable or outdated data can have dire consequences, which is why every organization must have a data quality management program that establishes a framework to enforce and provide a set of rules for data quality management. Although there are several prominent data management frameworks developed and used by organizations across the globe, some of the most popular frameworks are -



**DAMA DMBOK's
Data governance Model**



**Oracle's Data Quality
Management Process**

A data quality management framework is a set of processes defined to consistently check data for any possible error, preventing the error from entering the decision-making process/research. Thus, this framework can always be designed around the business need and can always leverage the tools and techniques necessary to monitor and improve the data quality.

Data Quality Management Techniques

A robust and effective data quality management framework or system comprises several data quality management techniques that can contribute towards identifying, correcting, and understanding the errors in the data. The primary data quality management techniques that businesses worldwide use include:



Data Cleansing

Data cleansing deals with correcting unidentifiable data types, eradicating duplication, and improving the poor data standard. Data cleansing also sets the hierarchy and customization needed to make data meet the data requirement of any organization.



Data Monitoring

Data monitoring ensures compliance with data usage policies (GDPR and CCPA) and alerts data administrators if there is a drop in data quality. It also ensures that organizations comply with the law and are on top of their data usage.



Profiling

Data profiling deals with establishing trends and discovering any inconsistencies in the data set. Data profiling is a combination of data cleansing and data monitoring.



Data Parsing

Data parsing enforces the data set to follow a recognizable pattern. The data parsing tools automatically identify when a data set fails to match an identifiable pattern.



Data Enrichment

Data enrichment involves enriching the data with any possible incomplete data to ensure that the data matches the set standards for data quality. Data enrichment usually is done by combining the existing data with data from another source.

Each data quality management technique has dedicated tools to help organizations in their data quality management endeavors, and depending upon the need; you can find the tool best suited to your business needs.

Pillars of Data Quality Management

Data quality management is a systematic framework with a few key elements essential for it to work in an efficient manner. These elements are the pillars of an effective data quality management framework. Let us have a closer look at these pillars -

People

When you are managing data quality, it is vital to have buy-ins from stakeholders across the organization. This is why it is advised to have data professionals deployed across the organizations for your data quality investment to yield the desired results. Some key roles that you can have across your organization for consultation, informing, or monitoring the process include -

- Chief Data Officer (CDO)
- Data Custodian
- Data Analyst
- Data Steward

Measurement

Data quality measurement is the most critical pillar of any data quality management framework. You can measure the data quality using characteristics and key performance indicators that validate data quality. These characteristics and key performance indicators may vary for businesses of different natures. However, certain metrics that are universally accepted as the measure of data quality include -

- Data Accuracy - The values that highlight the correctness of data
- Data Lineage - The reliability of source of data
- Data Semantics - Trueness of data values
- Data Structure - Whether the available data is in desired format/pattern or not
- Completeness - Whether the data is as exhaustive as you need it to be or not
- Timeliness - How frequently is the data updated and made available for use
- Identifiability - Whether the data is duplicate or not



Data Quality Management Processes

Data quality management is a constantly evolving process comprising several sub-processes that contribute towards the ultimate goal of data quality management. Here are some of the key processes that businesses all over the world use to elevate their data quality -

- Data Profiling - The process of analyzing datasets for completeness, frequency, uniqueness, pattern, and character analysis, etc.
- Data Cleansing - The process of eliminating and eradicating invalid and incorrect information from datasets.
- Data Deduplication - The process of eliminating similar entries from the datasets.
- Data Governance - The process of enforcing defined policies, roles, standards, workflows, and metrics to ensure data security and efficient data usage.
- Data Enrichment - Enriching existing datasets with data from external sources to increase its completeness.

Data Quality Management Framework

A data quality management framework is a predefined process that deals with monitoring of data quality and implements rules and policies to ensure that the data quality doesn't plummet below the predefined thresholds.

Technology

Data quality management is a complex process, and despite knowing this, several institutes validate, update, and monitor data quality manually, which leads to several potentially disastrous errors. This is why technology has such an imperative role to play when it comes to data quality management. You can either use any of the tools available in the market for data quality management or can get yourself a vendor that offers expert data quality management services.



Data Quality Management - Key Challenges

Every organization has checks and balances in place to improve its data quality. These measures also keep them compliant with the regulatory policies and minimize the risks associated with data management. However, there are a plethora of challenges that can hinder or fail these measures and consequently hamper your data quality management initiatives. Below are some examples of data quality management key challenges you might stumble upon -

- The immense growth of variety, volume, and speed of data
- Pushing guidelines from regulations such as GDPR, CCPA, BCBS 239, or HIPAA
- Decentralization of teams and consequently decentralization of data storage
- Overburdened IT and Data teams
- Slow and complex data aggregation processes
- Increasing number of sources for data collection
- Complex data governance policies



While these challenges are just a few to name, each one has an apt and rather effective solution. As an organization, you must identify your biggest data quality management challenges and find the best-suited solutions for them.

Benefits of Effective Data Quality Management

Having accurate, updated, and clean data can give you a significant edge over your counterparts across all businesses. It will enable effective decision-making for you and provide you with decisive insights to act upon. This is why effective data quality management is such high up the pecking order among all business processes when it comes to business transformation.

Considering the significance that data holds for every business and the severe implications that data breaches can have for modern companies in terms of financial fines and the irreparable loss of reputation, data safety is atop the priority list of every corporate leader. And an effective data quality management strategy can help them avoid that. So, to sum up, effective data strategy not only can help you better your business performance but also can make your business future-ready.

Conclusion

Organizations worldwide use data for various business use cases ranging from deriving insights for making intelligent business decisions to exploring new markets for business expansion or developing new products and services. This makes the data quality of utmost importance for all, considering that most data is either grown in-house or sourced through a third-party B2B data solution provider. As technology grows and businesses evolve, the amount of data generated will also increase. Thus companies need to have the suitable data quality management systems, processes, and frameworks in place to tackle the issue without getting overwhelmed by it.

An efficient and most reliable way to safeguard your data quality management is to have timely data audits and partner with reliable B2B data providers. If you are looking for one for your business, we certainly can help you. Write into us at: marketing@datamaticsbpm.com, and we will connect you with our data experts to tailor a suitable solution for your business.

About Datamatics Business Solutions

Datamatics Business Solutions Ltd. (DBSL) is a trusted B2B data solutions & services partner to Fortune 1000 companies, growing enterprises, and start-ups. With our comprehensive B2B business data solutions and data science capabilities, we help businesses in smart prospecting and turn data-driven marketing into a strategic advantage.

Our highly accurate and verified B2B contact database includes precise firmographics, technographic insights, organograms, account profiles, latest contact information and reliable B2B data lists, which get updated in near real-time. These contacts are curated and custom-built with enriched data to fuel your next digital marketing campaign.