



Data Governance Is Mission Critical for Dun & Bradstreet

BUILDING STRATEGIES FOR THE MODERN ENTERPRISE

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An aerial photograph of a busy pedestrian crossing with white zebra stripes. A large, diverse crowd of people is walking across the street. The image is used as a background for the left half of the slide.

Introduction: The Elusive Promise of Data

Data is everywhere. It takes on many languages and forms. It multiplies exponentially in the blink of an eye. For many businesses, the promise of data insights reaping limitless business benefits appears unattainable. It's the rainbow's end on the edge of a vast technological landscape, and no matter how far and fast we chase it, the benefits remain out of reach – unless we have the right tools and the right approach to data governance.

Gone are the days when data could be simply fed into a computer to predict an outcome.

We are struggling to gain control of our data and fully understand how it is sourced – and whether we have the right to use it for specific business purposes. The elusive promise of data presents the modern business with three major challenges:

- 1 How to manage the staggering volume, variety, and velocity of data
- 2 How to control and understand the source of data for legal, ethical, and security concerns
- 3 How to shape and control the quality of data so it can fuel powerful analytical tools

The immense power that data wields can only be tamed by a robust program with well-defined processes, defined data structures, and battle-tested methodologies. This program is called Enterprise Data Governance (EDG), and it should be a constantly adapting business function that manages the volume, variety, velocity, sourcing, security, and quality of data. EDG's role is to ensure that data has been obtained and sold in accordance with pertinent laws and regulations and that the right data is used in the right manner, at the right time, and in the right places.

To meet our commitment to provide our customers with the highest quality data in the most efficient manner, Dun & Bradstreet's new data governance program was launched in 2012 and has continually matured and adapted to the most current conditions and regulations. This e-book takes a high-level look at the EDG issues that we deal with every day, our strategies for addressing these issues, and best practices for ensuring our data governance efforts are efficient, scalable, and deliver value to our customers. Organizations can use this best practice approach when reviewing the current state of their EDG program or when implementing a new one. Our experience and proven track record of delivering value to our customers will prove useful in other organizations' efforts to extract the most from their business data and analytics.

CLASSIC CHALLENGES AND NEW REQUIREMENTS DRIVE ENTERPRISE DATA GOVERNANCE (EDG)



VOLUME, VARIETY, AND VELOCITY

Technologies such as machine learning (when used to extract data from websites and public documents) and the Internet of Things (IoT) are creating new sources of data that significantly expand or complement what is already available. In some cases, interactions with smart devices and sensors are creating data in and of themselves.



CONTROLLING AND UNDERSTANDING THE SOURCE

Alongside this explosive data growth, there are new and ever-evolving laws governing the collection, security, and business use cases of data appearing all over the world. We hear more and more news of data misuse, whether intended or accidental. Financial and regulatory risks are growing. And the complex, dynamic environment in which most companies operate only compounds the problem. Data compliance and laws and regulations related to the permissible use of data are changing all the time. New regulations such as the European Union's General Data Protection Regulation (GDPR) have hammered home the importance of data governance to many organizations.



SHAPING AND CONTROLLING QUALITY

Countless software applications and devices have touched the technological landscape and consequently create data that sometimes cannot be readily verified. When attempts are made to share data between systems, a lack of needed structure and accuracy will affect the quality of even the most fundamental information assets such as location, business name, or account balances. Additionally, poor quality data can spell disaster for financial balance sheets and any analytical or machine learning system that ingests it for processing.

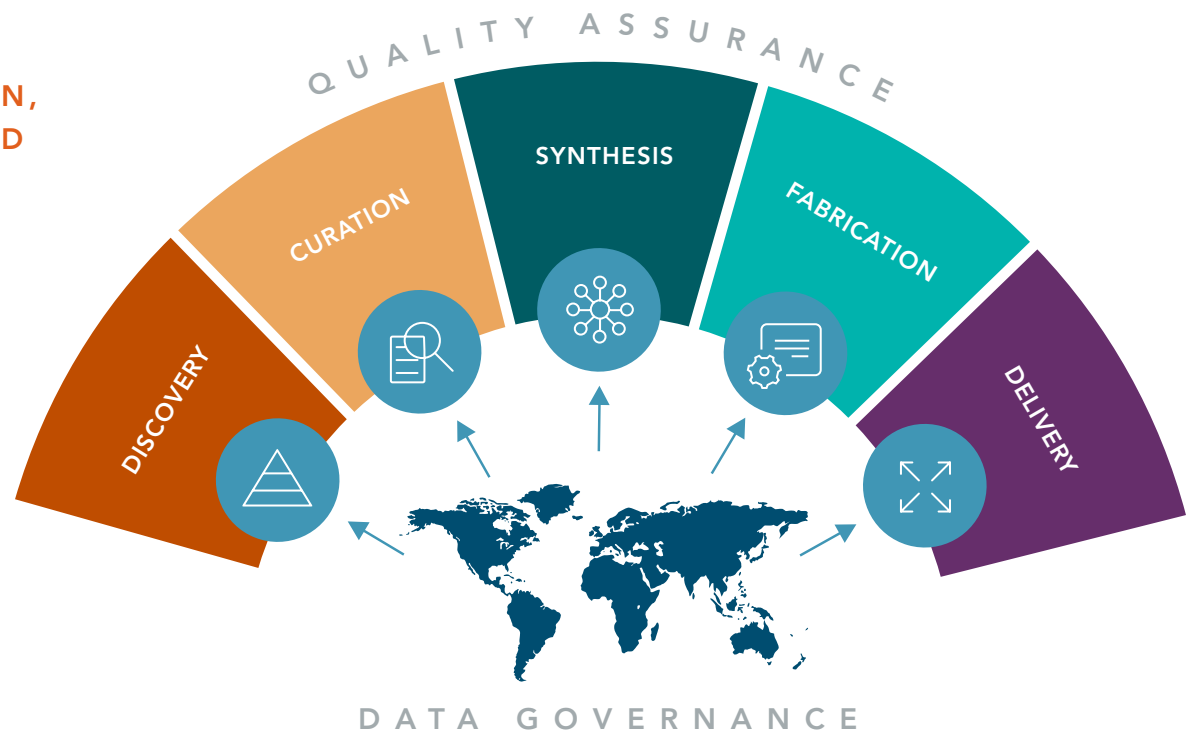


Successful Approaches to Establishing EDG

Today, there is a need for a modern approach to data governance. Data governance encompasses the **people**, **processes**, and **technology** required to create consistent and proper handling of an organization's data across the business enterprise. It helps ensure that high-quality data exists throughout the entire data lifecycle.

Robust data governance processes establish singular definitions, business ontologies, and data classifications; provide a firm foundation for Master Data (the common data such as identifiers, hierarchies, segmentation categories, and other basic content that enterprises share between their systems and processes); monitor, measure, and report data quality and governance metrics and key performance indicators (KPIs); define change management; and create an efficient and reliable issue resolution process.

TECHNOLOGY INCLUDES WORKFLOW TOOLS FOR THE DISCOVERY, COLLECTION, CREATION, INTEGRATION, STORAGE, AND DELIVERY OF DATA.



From a strategic perspective, data governance is less about achieving 100% data quality (an arguably unattainable goal, especially when some data must be modeled or synthesized) or fixing every data issue and more about having transparent processes – and ownership that can sustain adequate quality thresholds to support the business.

Data governance efforts must also never lose sight of the need to provide business value. At Dun & Bradstreet, our EDG mission is to fuel a competitive advantage by championing strategies, capabilities, processes, and policies that:

- ⬡ Help us better understand our customers' perspectives, with the goal of increasing our customers' trust and confidence in our data assets
- ⬡ Drive enhanced responsiveness to our customers' needs
- ⬡ Shape and control the quality of data so it can fuel powerful analytical tools
- ⬡ Promote clarity and ease of use for our internal and external customers
- ⬡ Unlock the value of our data assets
- ⬡ Safeguard our global reputation



Governing Globally: Spanning Local, National, and Regional Locales

While many organizations today have data governance requirements, the mandate of superior EDG programs such as Dun & Bradstreet's is uniquely tied to the business value proposition.

In addition to managing enterprise data (about customers, vendors, and other business counterparties, for example), we produce Master Data (data that can be used as a reference for identity and other key business functions) solutions for our customers' business use cases.

Some parts of our business operate globally, while others operate only in one country. The challenge is to deliver data that meets its defined requirements. Our extensive international network enables millions of professionals around the world to make confident business decisions with trusted and accessible information. Specifically, the Dun & Bradstreet Worldwide Network (WWN) is an unrivaled alliance of Dun & Bradstreet and leading business information providers across the globe. This unique local country presence is the only way to effectively control quality when collecting commercial information. Dun & Bradstreet customers have access to worldwide business information, benefiting from local experts and knowledge.

Addressing Compliance Locally and Globally

Beyond providing local and global views to business information, EDG plays a significant role in helping meet compliance regulations at scale. Companies today need to focus on existing and upcoming regulations at each level (local, national, and regional).

DUN & BRADSTREET TAKES A PROACTIVE APPROACH TOWARD:

Monitoring government bodies worldwide for proposed changes to regulations

Providing expert opinions on the implications of proposed legislation and industry best practice

Performing an impact analysis of proposed regulations, evaluating the threats and benefits



ONCE A REGULATION IS FINALIZED, WE MOVE INTO ACTION BY:

Performing privacy impact assessments

Putting into place compliance programs for any data affected by the new regulations

Assigning functional owners who are trained on – and accountable for implementing – their respective policies

Implementing a business-as-usual compliance maintenance program

SOME OF THE ISSUES WE CONSIDER WHEN BALANCING GLOBAL VERSUS LOCAL VIEWS OF OUR DATA INCLUDE:

- The ability to maintain apples-to-apples comparisons of data, whether intra- or inter-country
- The ability to support multi-lingual requirements
- The need to scale globally while maintaining compliance with local, national, and regional regulations, which can include rules regarding permissible views of data.



The Invaluable Data Steward

Having policies defined at local, national, and regional levels and identifying accountable functional owners is just the starting point for a successful data governance effort. What's then needed are people to carry out the policies. This is where the data steward comes in. The data steward plays an invaluable role in an organization, being not only a data domain subject matter expert but also a thought leader in data management.



Data stewardship is a functional role in data management and governance, with responsibility for ensuring that data policies and standards turn into practice within the steward's domain. Data stewards assist the enterprise in leveraging domain data assets to full capacity.

A data steward has six areas of responsibility:

1

DEFINING THE DATA:

Data stewards identify assets within their own data domains, gathering definitions and other key metadata related to the data assets.

2

POLICIES AND PROCEDURES:

Data stewards help create domain-specific processes and procedures along with controls to monitor adherence.

3

REMEDIATION:

No data is perfect; all data has defects and quality issues. Data stewards review customer input, concerns, and questions; internally report issues; and drive required improvements. If a given dataset has some shortcomings, the data steward develops a strategy and drives improvements to the data. For example, the company might need to find a new source to complement or expand the coverage of a dataset.

4

CHANGE MANAGEMENT:

Data stewards ensure the implementation of robust change management processes for the data they oversee. This entails setting up efficient workflows and communications.

5

USAGE:

Data stewards must know how and where data is being used. They can then represent their own data domain in projects and share or clarify permissible use cases. This function requires a knowledge of data use trends and best practices, and the ability to provide insight into how and where the data might be used in new use cases.

6

SUPPORT AND ESCALATION:

Data stewards help provide information on potential risks and offer regulatory guidance. When a data steward identifies a risk, he or she can escalate matters to rectify problems.




Data Stewardship Implementation Strategies

These functions can be carried out on local or global levels. Each data domain may take a different approach to ensure consistency across the company. Practically, organizations choose one of two data stewardship models: centralized or federated. Each model has its pros and cons.

DATA STEWARDSHIP MODELS: FUNCTION COMPARISONS

	FEDERATED DATA STEWARDSHIP	CENTRALIZED DATA STEWARDSHIP
	The data steward is part of the operational team. Here, the data steward has expertise in the data and intimate knowledge of the operational group's issues. But because the data steward has other responsibilities, data governance may not be a top priority and it may take longer to carry out any action plans.	The data steward focuses full-time on data stewardship and reports into the data governance office. For this person, data stewardship activities remain the top priority. However, the data steward may lack detailed knowledge of the business he or she supports, because he or she sits outside the business area.
PRIORITIZATION/FOCUS	◐	●
BUSINESS DOMAIN KNOWLEDGE	●	◐
SUCCESSION PLANNING	◐	●
CROSS-DOMAIN COLLABORATION	●	◐

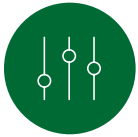
At Dun & Bradstreet, we implement a federated approach. We mitigate prioritization issues through proactive engagement with stewards' management and collaboration via a full-time Global Head of Data Stewardship, who reports into EDG. This full-time resource coordinates the activities and cross-domain collaboration of the federated data stewardship network.

An aerial photograph of terraced rice fields in a mountainous region. The terraces are carved into the hillsides, creating a series of concentric, wavy lines that follow the contours of the land. The fields are filled with lush green rice plants, and the overall scene is a vibrant display of agricultural engineering and natural beauty. The image is used as a background for the slide, with a dark green overlay on the right side where the text is located.

Data Quality Metrics and Dashboards

After defining policies and putting data stewards in place to action them, businesses need a way to measure the efficacy of their data governance efforts. This is where metrics come into play. But which metrics are the right ones? Dun & Bradstreet's preferred methodology is **Goal-Question-Metric** or GQM.

Before even thinking about metrics, we need to clearly define the data governance *goals*. Once the goals are clear, we then decide which questions need to be answered to predict successful outcomes of these goals. From there, we define the *metrics* that will define success. For example, a metric for system uptime might show 99.99 percent availability but that only proves relevant if it's clearly understood what 0.01 percent downtime means in practice and in impact. This level of uptime may be acceptable to most organizations, but what if the system is down when a company critically needs it? Measurement for measurement's sake is pointless unless success is defined.



Some useful key metrics to help identify data governance success measure:

IMPROVEMENT IN DATA QUALITY SCORES

ADHERENCE TO DATA MANAGEMENT STANDARDS AND PROCESSES

REDUCTION IN RISK EVENTS

To measure data quality, Dun & Bradstreet's EDG team created a Data Quality Insights (DQI) organization that reports into EDG. The DQI team drives a modern data quality process with an outside-in customer lens. The outcome produces better alignment of data quality priorities toward customer concerns and perceptions while providing more meaningful communications.

The process captures internal and customer feedback and requirements in order to understand what is most important to our customers. We use this information to create customer-focused metrics and key performance indicators (KPIs). Quality thresholds and impact on the business as determined by the KPIs are then used to develop and prioritize data improvement plans. This information is then communicated throughout the organization to those responsible for making the improvements. Dashboards and other collateral are then used to provide transparency on performance and areas to focus on in the future.



A critical part of this process is determining the right DQI metrics. To do this, we follow a method known as Goal–Question–Metric, or GQM.

The GQM method is as follows:

- 1 **UNDERSTAND AND AGREE UPON OUR DATA QUALITY IMPROVEMENT GOALS**
- 2 **DETERMINE THE QUESTIONS THAT NEED TO BE ANSWERED TO KNOW WHETHER WE ARE ON TRACK TO ACHIEVING THE GOALS**
- 3 **DEFINE THE METRICS TO ANSWER THOSE QUESTIONS**

The GQM process is a proven methodology for creating relevant, meaningful metrics that provide clearer insights into the achievement of goals. We quickly assess data quality efforts by using GQM-derived KPIs and make the results available via dashboards.

DQI takes the customer's point of view with respect to the quality of Dun & Bradstreet data. One issue to keep in mind is that very often customers will consider any problem to be a data quality issue. They may think there are inaccuracies, but frequently the issue lies in misinterpretation of the data.

For example, a customer may think revenue stated for a company represents an entire corporate family tree roll-up when in fact the number applies to just the revenue of the single business entity. If this is the case, the customer will assume the data is incorrect. When this type of “data quality” issue is identified, the remedy does not lie in improving data quality. The right solution is to better educate the customer about what the data represents. In this situation the data is correct, but the customer needs assistance understanding the meaning of the data. Often, this results in an improvement of our metadata quality (rather than in data quality itself).

Metadata Management

If data is gold, then metadata is the philosopher's stone. Metadata yields enormous power as an enabler of organizational processes. It is key to bringing order and extracting benefits from complex data supply chains made of thousands of interconnected systems. Robust metadata management will provide payoffs well beyond fulfilling regulatory requirements. It will preserve the value of your data, analytics, and data science for years to come.

Metadata provides the means for identifying, defining, and classifying data within subject areas, which enables users and technologists to manage the context as well as the content of the data assets.

Metadata management refers to the activities associated with the creation, capturing, monitoring, and sharing of metadata. Metadata within the data governance practice has the primary responsibility of enabling policy and providing access to data. These policies include those concerned with data definition, data usage, and data security. Specifically, metadata provides the link between the business need or policy and the information. The effective management of metadata is one of the essential activities within a governance practice.

Dun & Bradstreet uses metadata when documenting data quality expectations, such as specifications for data element completeness, observance of defined structure formats (such as email addresses, telephone numbers, or identifiers like national ID numbers), and use of values from a standard value domain (such as ISO country codes).

The Dun & Bradstreet Data Cloud stores and processes metadata and maintains over 300 million business records that span across the globe, delivering the world’s most comprehensive business data and insights to help our customers improve their business performance.



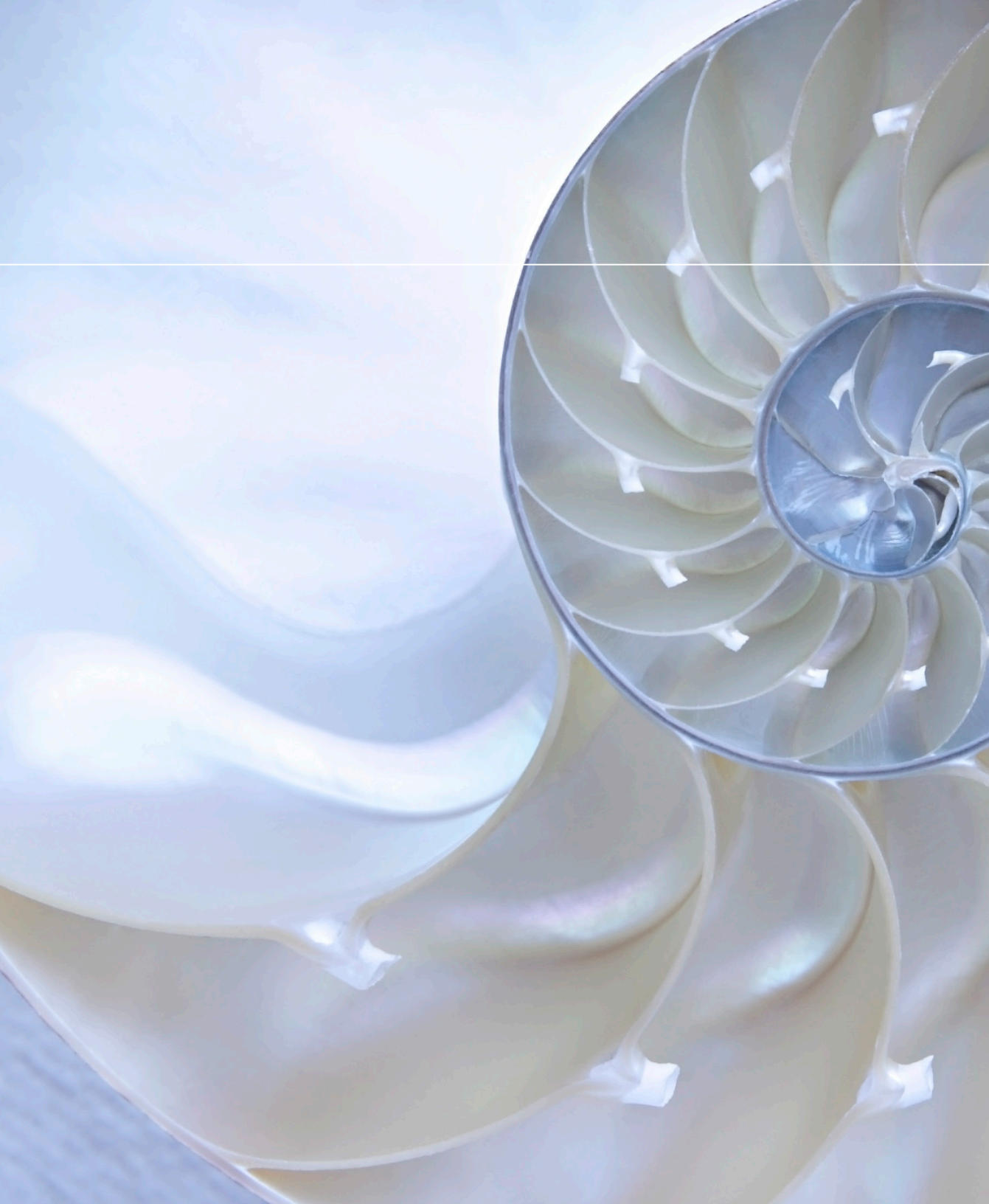
From the Data Cloud we derive Live Business Identity, the most comprehensive and continually updated view of any given entity that features resolution capabilities and corporate hierarchy insights to detect even the most complex relationships between business entities.



LIVE BUSINESS IDENTITY=
DUN & BRADSTREET
D-U-N-S® NUMBER PLUS:

- Business Identity Resolution
- Corporate Hierarchies and Linkage

- Business Performance Indicators
- Continuous Business Activity Monitoring



Data Quality Framework

A modern data quality process is driven by customer needs and each customer's unique requirements. First, consider the quality needs by use case, and measure the quality of your data by following the **Goal–Question–Metric** or GQM methodology mentioned earlier. Striving for the elusive and typically unattainable 100% data quality measure is not only costly but often ill-advised. Second, consider measuring the quality of your *metadata* when working through your *data quality* issues.

While many companies focus solely on the data, we look at two dimensions of data quality as part of our DQL.



The first is the quality of the data itself. How good is the data? Is it accurate, complete, up to date, locally consistent, and globally consistent?



The second aspect is metadata quality. This looks at systems and attributes covering the name and description of a data element, the range, format, source, classification, access method, and availability. Metadata quality also covers reference data elements, such as taxonomies and code sets.

There are no standard ways to measure the quality of metadata. There will be different standards based on the systems used and the use cases. For this reason, a data quality framework must be developed that covers processes and capabilities to improve metadata quality. Establishing a data quality framework allows companies to better leverage their data quality programs and instills a continuously improving cycle for the generation of Master Data.

A silhouette of a hand holding a globe against a city skyline at sunset. The hand is positioned in the foreground, holding the globe with both hands. The globe is transparent, showing the continents. The background is a city skyline with several tall buildings, silhouetted against a bright, hazy sky with a warm orange and yellow glow from the setting or rising sun. The overall image has a soft, ethereal quality with a color palette dominated by oranges, yellows, and dark blues.

Data Governance in Action

Once an adequate data quality framework has been established, we can put into action the principles, processes, and people required to make data governance a success. While we have an exceptional customer experience team, we wanted to add a programmatic way for those team members to ask questions, report issues, or ask for support on behalf of our customers. To address these issues, in 2016 we created the Global Content Experience team, which includes experts who provide guidance to customers who have issues or questions.

The Global Content Experience team troubleshoots issues such as when customers question the source, quality, or some other attribute of Dun & Bradstreet data. The team is uniquely positioned to facilitate internal data team members who speak directly to a customer. In many cases, the data is accurate but too complex. So, informed, direct dialogue with the customer by these subject matter experts to explain the issue becomes crucial. A Dun & Bradstreet representative who is responsible for a data product may need to explain how the data was collected or bundled into the product the customer is using.

BY ANALYZING PATTERNS IN CUSTOMER QUERIES, THE GLOBAL CONTENT EXPERIENCE TEAM WORKS TOGETHER WITH DQI TO:

Determine the most commonly asked questions

Determine the most challenging issues customers face or their greatest concerns about the data they are using

Identify areas where we may need to improve the quality of a data item

Identify areas where additional data sources are needed to complement existing data to make it more robust

Determine whether the customer needs an explanation, a tool, information on how we collect the data, or information on data quality

We periodically review the queries database to see if there is a group of customers who ask the most questions or if one data product provokes many more questions about quality than another.

The main objective of the Global Content Experience Team is to address customer perceptions of Dun & Bradstreet data. Strategically, the information helps to determine areas where Dun & Bradstreet should invest to better meet customer data needs, and as such, this information is regularly reviewed with our DQI team.

THESE ARE THE OVERALL FUNCTIONS OF THE GLOBAL CONTENT EXPERIENCE TEAM:

Facilitating responses to all global content inquiries

Analyzing insights from the inquiry database to improve our strategy, priorities, and perceptions

Partnering with customer experience and sales to meet with customers in order to influence and inform their perceptions of our global content

An aerial photograph of a large group of cyclists riding on a cobblestone street. The cyclists are wearing various colored jerseys and helmets, and their shadows are cast on the ground. The image is used as a background for the slide.

Conclusion

The proliferation of unstructured data sources, a seemingly never-ending string of major data breaches, ongoing privacy concerns, and new global regulations are raising the importance of data governance in organizations around the world.

THE DOMINANT TREND AFFECTING DATA GOVERNANCE INVOLVES THE CUSTOMER EXPERIENCE.



We focus on providing our customers with trusted, high-quality business data, analytics, and insights that improve business performance – all of which comply with local, national, and regional use cases and privacy regulations.

The Dun & Bradstreet EDG program drives data compliance, data quality, and data consistency and globally defines how data is sourced, processed, stored, and delivered. Additionally, our team's deep knowledge and steadfast commitment to compliance drive a culture where we never stop improving the quality, clarity, and content of our data. The lessons we have learned in developing EDG guidelines and best practices can be used by our customers to establish their own industry-leading data governance program.

ABOUT THE AUTHOR



Kevin Shannon is Dun & Bradstreet's Global Head of Enterprise Data Governance. His modern, award-winning approach to data governance has made him a trusted advisor and valued resource for the global community of data governance practitioners. Kevin has more than 20 years of experience conceiving and implementing enterprise data management strategies and technology solutions, defining information architecture, establishing vision from concept through completion, and overseeing the associated data, technology, and business process change.



ABOUT DUN & BRADSTREET

Dun & Bradstreet, the global leader in commercial data and analytics, enables companies around the world to improve their business performance. The Dun & Bradstreet Data Cloud fuels solutions and delivers insights that empower customers to accelerate revenue, lower cost, mitigate risk, and transform their businesses. Since 1841, companies of every size have relied on Dun & Bradstreet to help them manage risk and reveal opportunity. Twitter: @DnBUS