# Manufacturing Data Governance Best Practices to Drive Innovation and Productivity



To keep pace in a competitive environment, manufacturers must harness the power of data to improve processes and decision making. However, rapid digital transformation, evolving market demands, and heightened customer expectations introduce unique challenges to manufacturing data governance. Utilizing data governance best practices can help.

## Unique Manufacturing Data Governance Challenges

Like nearly all industries, the manufacturing industry runs on data. Unprecedented quantities of information offer tantalizing opportunities to upgrade processes, spark innovation and improve the customer experience. But with those opportunities come some challenges.

- Important information hidden in mountains of data – Manufacturing generates huge amounts of data from a wide range of sources. These include smart machines, suppliers, customers, manufacturing partners and multiple departments within the organization. Managing many types of data living in many locations presents complex challenges.

- Data quality and consistency – Both human strategists and AI-enabled decision support technology require high-quality data to detect trends and drive decision making. Incomplete, outdated, or incorrect information not only leads to poor decisions but can result in costly downtime and dangerous safety issues.

- Customer expectations – Commercial customers, like consumers, expect high-quality service. They depend on immediate access to accurate and comprehensive information about products, orders, and inventory.

- Achieving [regulatory compliance](link) – Industry regulations, contractual requirements and increasingly complex data privacy legislation mean that manufacturers need to pay close attention to how they manage data.

- Supply chain management – [Supply chain disruptions](link) continue to impact operations. Manufacturers must find ways to utilize data resources to optimize their supply chain and minimize risk. They must also closely monitor vendor relationships to satisfy compliance.



## Utilize a Data Catalog

To use data effectively, the organization must be able to locate and understand that data. [Data catalogs play an essential role](link) in addressing this challenge. Data cataloging tools find and index data across the organization, creating a searchable data inventory. Metadata attached to each data item provide critical information about the data lifecycle.

The data catalog thus makes it easier for users to find and retrieve the data they need. And with proper metadata management, they know who created the data, where it has been and what happened to it along the way. This helps to improve confidence in the data and in the strategies it informs.

## Strengthen Data Security

Data [security plays an essential role](link) in manufacturing data governance. Effective cyber security controls protect data from unauthorized access, misuse, or loss. This proves critical for manufacturers dealing with sensitive data such as trade secrets and customer information. Keeping that data safe both protects the company and aids in achieving compliance.

A comprehensive cyber security strategy should include policy-enforced encryption of sensitive data, as well as email security and network segmentation. Additionally, companies must pay particular attention to identity and access management. For instance, the system can be set to authenticate and authorize users and devices according to both their identity and context.



## Harness the Power of Automation

Data governance has the potential to unlock the power of manufacturing data. However, manual data governance can be time-consuming, labor-intensive, and prone to errors. Tools that use AI and machine learning to automate many of these tasks allow organizations to implement data governance at scale.

For instance, automated tools for data classification use pattern matching and machine learning to classify data much more rapidly and accurately than manual processes. Automation also helps with policy enforcement, compliance monitoring and other essential tasks.

## Educate Employees

Any effective data governance program must address the human component. Building data literacy throughout the manufacturing workforce plays a critical part in promoting a data governance culture. Employees should also understand data security best practices as well as their role in implementing data governance policies.

## Benefits of Manufacturing Data Governance

Implementing solid data governance delivers significant benefits in the manufacturing environment. It improves efficiency and productivity by helping companies use their resources effectively. It also supports decision making by making sure employees can find the data they need and use it appropriately.

When companies govern their data effectively, they can leverage that data to build customer loyalty, optimize their supply chain and drive future growth. The data governance consultants at Messaging Architects will help your organization design and implement a [manufacturing data governance framework](http://www.messagingarchitects.com) adapted to your business needs.