



The Essential Guide to Manufacturing Data

Improving operational efficiency and achieving digital transformation starts with data management.

The increasing complexity of the 21st-century global economy has significant ramifications for how manufacturing companies learn to adopt and manage data while maintaining its integrity. Manufacturers are facing a perfect storm of post-pandemic challenges – including competition, inflation, materials shortages, geopolitical tensions and higher customer expectations – at a time when achieving operational efficiency is paramount.

Under pressure to get more value out of existing and newly acquired systems, share accurate data quickly across the company, adhere to evolving data classification standards and continuously innovate, manufacturers must reach new levels of data maturity to meet increasing needs for more data and drive operational success, such as:

- Higher overall equipment effectiveness (OEE)
- Lower factory downtime
- Higher manufacturing yield
- Lower overhead and production costs
- Higher factory throughput

In this white paper, we'll share how a 360° business view, delivered through a single data management foundation, is vital to driving operational excellence, informed decision making and true digital transformation across all aspects of a manufacturer's operations.

Building your data management foundation

Like most organizations, manufacturers struggle with data management issues, such as quality, speed and availability. Critical data is often replicated across multiple silos and systems with little or no data governance processes, leading to a general distrust of the data. To thrive in today's crowded and competitive landscape, manufacturers need greater data visibility across all aspects of the business, from product, supplier, brand and channel management to supply chain logistics and operational control.

This is where master data management (MDM) can help. MDM offers an essential data management foundation that serves your enterprise data needs using a business-first approach. It provides complete, consistent access and visibility of asset, product, customer, location and supplier data. Most importantly, MDM enables the entire organization to make data-driven decisions that provide operational efficiency, business agility and revenue generation.

Despite the increasing level of importance MDM has in achieving data maturity, you may still be puzzled by what MDM is. Perhaps you understand the concept, but don't see how it helps companies like yours. In either instance, the next sections will explain everything you need to know about MDM in easy-to-understand terms.

Understanding master data

Data is your company's most valuable corporate asset, and MDM is the data management foundation that lets you realize its full potential. But what exactly is master data? Master data is the single source of information that's important to your business. In other words, it is data about your customers, products, suppliers, assets and locations that supports key business processes and transactions. The master data, when optimized, enables a centralized platform for analytics, reporting and visibility across the entire enterprise for quicker decision making.



Leveraging volumes of incoming master data provides intelligence used to improve the business – an array of assets for increasing operational efficiency, meeting customer needs, accelerating revenue generation and more.

Today, many manufacturing organizations don't take advantage of this critical corporate asset – master data – because it's maintained in various unconnected platforms like supplier, ERP, MES, PLM and CRM systems that are not governed, which results in inaccurate, incomplete and duplicate records that often take considerable time to merge. MDM solves this problem by providing a central repository for building and sharing a single version of truth. MDM allows you to make faster, smarter decisions across all aspects of your manufacturing business.

How MDM helps you

MDM does more than manage your data. It helps you acquire, govern and provide access to data that supports digital transformation and new business opportunities. Built-in

data governance capabilities, such as match-and-merge, help remove duplicate records and create golden records of trusted information. Via integration, MDM can break down data silos and connect your business systems, so that you can leverage a single version of the truth and achieve data transparency across departments.

Ultimately, MDM enables you to create a foundation of complete and accurate data that can support your business initiatives. Through this centralized approach to data management, you can:

- **Improve data quality and lower costs.** You can effectively consolidate, cleanse, enhance and govern data using MDM. If records need editing, updating or deleting, MDM changes the relevant golden record for the amendment to be synced everywhere. The administrative savings alone are significant. The costs associated with data maintenance run rampant if your data isn't timely, accurate or consolidated across departments. In addition, low-quality data can lead to bad customer experiences and an inability to make data-driven decisions.
- **Support Industry 4.0 initiatives.** MDM reduces the time and cost of end-to-end business processes by leveraging centralized master data across the business. A centrally governed data foundation that provides a single source of truth will support Industry 4.0 initiatives, such as adoption of new assets, machinery and technology, and increase the efficiency of existing systems and assets. This provides optimal OEE and workforce efficiency, as well as future-proofs the business by enabling scalable growth.
- **Optimize production and reduce bottlenecks.** MDM consolidates bill of materials (BOM) from multiple systems and suppliers, along with critical data from production assets, to help analyze operational efficiency. It also aligns the required information to show compliance to industry standards. Unifying raw material, supplier and product master data, while providing greater visibility on production assets, can lead to a better managed supply chain, reduced downtimes (including predictive maintenance), higher yield, and more agility to switch set-ups. MDM can also provide automated transparency into the product or process to share downstream.
- **Evidence sustainability efforts.** MDM enables businesses to provide consistent, accurate and complete sustainability and ESG documentation, as well as information about hazard identification and worker safety. This can lead to higher worker morale, reduced fines for non-compliance, better recruitment for new talent, and safer work environments.
- **Capitalize on new market opportunities faster.** MDM improves efficiency throughout the entire supply chain. You can effectively onboard, cleanse and enrich every aspect of product information while sharing,

publishing and syndicating it across all critical enterprise channels and distribution networks. This enables you to efficiently address new market demands and customer requirements to improve the overall customer experience.

- **Achieve regulatory compliance.** MDM enables businesses to implement governance and automated controls over the product classification and regulatory compliance process, freeing IT and data teams to focus on other high-priority strategic initiatives. By making the process easier for business partners, MDM enables companies to build stronger and more loyal business relationships, based on an increased level of transparency and trust.
- **Reduce waste and costs.** MDM enables operations and production to automate machine run times while still maintaining the highest OEE, ensuring energy is used only when needed. Business rules can also be applied to waste material to quickly recycle, reuse or even resell, providing an additional revenue source that can be applied to reduce the cost of production.

How manufacturing companies are achieving success with MDM

MDM is a proven concept. Some of the world's leading brands are successfully using MDM to deliver value to their organizations. **SGMW**, a joint venture between SAIC Motor, General Motors (GM) and Liuzhou Wuling Motors, is a powerful example of how companies can use **Multidomain MDM** to gain visibility and streamline business processes.

As one of the largest manufacturers of microvans in China, SGMW needed to streamline its business operations while reducing dependency on its existing ERP system. The company selected Stibo Systems Multidomain MDM to serve

“Stibo Systems MDM helps SGMW manage material, supplier, logistic, manufacturing, procurement and vehicle master data. It also enhances data compliance, availability and provides a trusted data source for our downstream systems.”

— Mr. Liu Dewei, MDM Project Manager, SGMW

as an aggregator for its internal and external data sources. The solution allows the company to easily upload all necessary information and acts as a central hub for all parts, factory, BOM, logistic, assembly and supplier data.

With Multidomain MDM, SGMW experiences:

- Improved visibility and tracking of parts suppliers (which suppliers delivered parts to which factory)
- Streamlined inventory control
- Centralized repository for parts, BOM, contract, factory and supplier data
- Minimized idle time in the production process through the delivery of accurate information to assembly lines
- Reduced dependency on the ERP system
- Optimized supplier response time

The MDM solution composes BOM for each vehicle to be assembled and allocates parts to different locations within the assembly lines. SGMW can also accurately, and visibly, monitor the data flow of automotive parts – from supplier to individual assembly line workstations. These changes produced dramatic improvements in data quality, performance, process transparency and product lifecycle processes.

Building your MDM business case

Achieving operational excellence, leading digital transformation, delivering superior products and meeting increased customer demands has never been more important. It requires a flexible and comprehensive approach that starts with data but ends with business outcomes. That's the role of MDM. It allows you to replace costly manual data methods, remove data silos and improve processes.

MDM helps bring connection and visibility across the entire manufacturing organization, enabling a complete, comprehensive 360° view of your data. Moreover, MDM scales to include multiple domains across products, customers, employees, suppliers, digital assets and more.

Your company can use MDM to develop new processes where interaction between systems is a prerequisite. You can also deliver accurate and actionable information, normalized across all data formats, to every point across the manufacturing organization. Ultimately, you make better, faster decisions that lower costs and increase ROI with MDM.

Do you want to know how an MDM solution delivers return on investment? Try the **ROI Calculator** and get a customized report that quantifies your data management project.

About Stibo Systems

Stibo Systems is the leading enabler of data transparency through master data management and data syndication. Built on an open platform with scalable, cloud-native SaaS technology, our solutions empower many of the largest and most innovative global companies with better data quality and visibility. This creates a trusted data foundation for enhancing operational efficiency, making informed decisions, delivering superior customer experiences and supporting sustainability initiatives. Headquartered in Aarhus, Denmark, Stibo Systems is a privately held subsidiary of Stibo Software Group, which guarantees the long-term perspective of the business through foundational ownership. More at stibosystems.com.