



WHITE PAPER

The High Cost of Corrupt Materials Data

*Transforming Corrupt Legacy Data Into a Consistently
Standardized MRO Master Catalog*

EXECUTIVE SUMMARY

How do we quantify the cost of corrupt materials data to justify a data cleansing investment when maintenance is perceived as a “necessary evil” of doing business? Building a business case and developing a successful MRO data management strategy can often be an uphill battle, even when companies are well aware of their data challenges. In an ever-changing business climate, where companies rely so heavily on data as a competitive advantage and method of achieving cost savings, it shouldn’t be so difficult to realize the benefits of data cleansing.

Oftentimes, companies do not have the resources and expertise to fully understand the benefits that can be achieved from quality data throughout all units of the business, either directly or indirectly. Consequently, many companies waste a significant amount of time and money attempting to manage their MRO master catalog internally to the best of their ability. While data cleansing may not seem like a complex task, it requires a unique combination of software, expert human review, and a proven standard operating procedure, which most companies unfortunately do not possess.

In this paper, we will review the causes and effects of corrupt materials data, as well as, the challenges organizations face when seeking project approval. In addition, this paper will explore the data cleansing process and methodology, while illustrating the extensive results and benefits that can be achieved.

INTRODUCTION

When we look at the manufacturing industry, it is truly amazing to see how much every aspect has changed over the past twenty-five years. The most simple human processes have now been replaced by complex automated machinery, the pen and paper method of transactional reporting and inventory control has been wiped out by expensive ERP/EAM/CMMS applications, and the organizational structure has branched off into full departments dedicated to analyzing and improving operational performance. The reality is that we are living in a world driven by data. Competition is rapidly increasing and companies must find every way possible to reduce costs and improve efficiency.

In the manufacturing industry, one of the most common challenges and cost-consuming inefficiencies lies within MRO master data. Through preventative maintenance and emergency repairs, this valuable data plays a critical role in the overall maintenance of facilities and operations. When every second of equipment downtime can cost a company thousands of dollars, it is absolutely crucial for inventory data to be accurate, reliable, and readily available at all times. Aside from maintenance, purchasing and procurement also rely heavily on master data for spend analysis, strategic sourcing, and inventory optimization programs.

The unfortunate reality for most companies, however, is that this critical MRO data is corrupt with inconsistent, incomplete, and inaccurate information, causing significant inefficiencies and high maintenance costs. In many cases, expensive ERP/EAM/CMMS software investments are significantly underutilized and undervalued due to the quality of data housed within. Transactions based on corrupt master data are often misleading, inaccurate, and untraceable for reporting and spend analysis. If left unaddressed, these major issues will worsen and costs will continue to increase. In order to transform corrupt legacy data into a consistent MRO Master Catalog, a data cleansing project must be implemented and tailored to the unique needs of the organization.

THE CHALLENGE

Too often companies invest millions of dollars into functionality-rich enterprise systems with the objective of improving their MRO program in order to achieve maintenance and reliability excellence. Meanwhile, they

neglect to allocate the necessary funds and resources to first address data quality issues. Without consistent nomenclature, standardized descriptions, and proper formatting, they will be no further ahead than they were prior to implementing a new enterprise system.

Although most organizations are aware of their data challenges, maintenance is typically perceived as a “necessary evil” of doing business, rather than a profit generator. For this reason, the efficiency gains and cost savings opportunities associated with data quality improvement are frequently underestimated and/or ignored. While materials data may not directly contribute to profit, production efficiency and throughput certainly do. The subsequent negative effects of corrupt materials data can significantly impact production efficiency due to incorrect parts and increased equipment downtime, therefore reducing throughput of finished goods and profit.

THE CAUSES AND EFFECTS

To no fault of their own, most companies simply do not have the internal resources and expertise to accurately create and maintain a consistently standardized MRO Master Catalog. Over time, many different employees enter data into the enterprise system, each with their own interpretation of how items should be described. Add the complexity of business acquisitions and mergers, enterprise system upgrades, and language translation, and it isn't difficult to see how data can quickly become corrupt.

THE SOLUTION

Data Cleansing is defined as the process of identifying, correcting, and standardizing corrupt or inaccurate data records within a dataset. The data cleansing process involves a strategic combination of software, expert human review, and a proven standard operating procedure to ensure maximum accuracy, consistency, and efficiency.

Depending on your business objectives, data requirements, and project budget, there are various service levels of data cleansing available. Those service levels include:

Service Level 1 - Cosmetic Cleanse

- Correct spelling mistakes
- Convert text to desired format (Upper Case, Proper Case, etc.)
- Segregate and standardize Manufacturer Name and Manufacturer Part Number
- Identify and assign a valid Noun-Modifier pairs
- Identify duplication within a site and across the corporation
- Flag items with insufficient information as “Review” items

Example:

- *Raw data - Bearing, 6205-2rs, two seals, SKF, 25 MM ID*
- *Cleansed – BEARING, BALL, SKF, 6205-2RS*

Service Level 2 - Standardization

- Correct spelling mistakes
- Convert text to desired format (Upper Case, Proper Case, etc.)
- Segregate and standardize Manufacturer Name and Manufacturer Part Number
- Identify and assign a valid Noun-Modifier pairs
- Standardize and validate the customer provided item description
- Identify duplication within a site and across the corporation
- Flag items with insufficient information as “Review” items

Example:

- *Raw data - Bearing, 6205-2rs, two seals, SKF, 25 MM ID*
- *Cleansed – BEARING, BALL, 25 MM ID, TWO SEALS, SKF, 6205-2RS*

Service Level 3 - Full Enhancement

- Correct spelling mistakes
- Convert text to desired format (Upper Case, Proper Case, etc.)
- Segregate and standardize MFG Name and MFG Part Number
- Identify and assign a valid Noun-Modifier pairs
- Standardize and validate the customer provided item description
- Provide accurate item attribute enhancement
- Identify duplication within a site and across the corporation
- Flag items with insufficient information as “Review” items

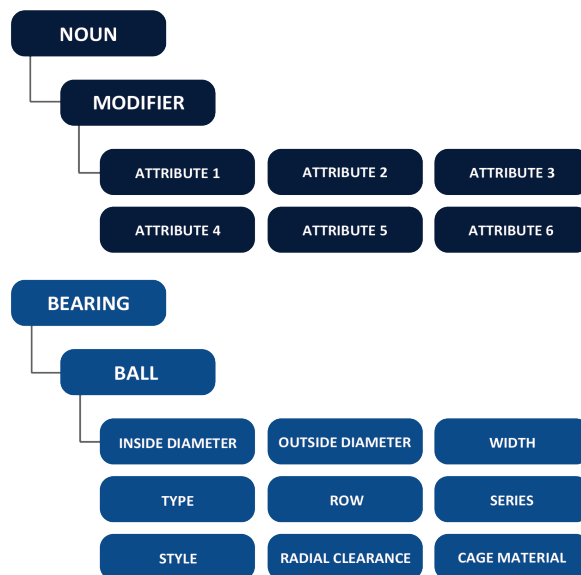
Example:

- *Raw data - Bearing, 6205-2rs, two seals, SKF, 25 MM ID*
- *Cleansed - BEARING, BALL, 25 MM ID, 52 MM OD, 15 MM WD, CONRAD, SINGLE ROW, LIGHT DUTY, 2 SEALS, C3 CLEARANCE, STEEL, SKF, 6205-2RS*

Prior to commencement of the data cleansing process, a Standard Operating Procedure must be developed to define the naming convention, standards, abbreviations, and formatting requirements that will be carried out across the corporation from initial implementation on.

The naming convention is based on a Noun, Modifier, Attribute format, and will become the foundation for structuring materials data moving forward.

Figure 2.0 – Noun-Modifier Dictionary



THE RESULTS

As a maintenance or purchasing professional, the aesthetic and efficiency benefits that can be gained from clean, consistent materials data are immediately evident. The data now clearly maintains one consistent format and nomenclature throughout the entire organization, part descriptions have been enhanced with valuable attribute information, and you can now leverage the full potential of your enterprise system.

The most lucrative benefits, however, are those that come from the ability to identify and remove excess, obsolete, and duplicate items, while improving search and reporting functionalities within the enterprise system.

Key Benefits of Data Cleansing include:

- Efficient Part Search Ability
- Maintenance Time Savings
- Accurate Reporting Capabilities
- Identification and Removal of Duplicate Items
- Excess Inventory Reduction
- Equipment Down Time Reduction
- Elimination of Maverick Purchases
- OEM to MRO Conversion Opportunities
- Maximum ERP/EAM/CMMS Functionality

From a long-term perspective, quality materials data is the backbone of a successful MRO program, facilitating efficient equipment maintenance, strategic sourcing, and procurement optimization. The process does not end once the Data Cleansing project is complete though. Maintaining ongoing data integrity requires a strict data governance and catalog management strategy to ensure accuracy and consistency as items are added, modified and suspended.

No matter how expensive, functionality-rich, or industry recommended an enterprise system may be, the reality is that the software is only as good as the data flowing through it. As companies strive to reduce costs and improve efficiency in an ever-increasingly competitive market, MRO master data quality will undoubtedly begin climbing to the top of the priority list.

“Our relationship with IMA over the past 6 years has brought an amazing level of data integrity to our global operations. It goes above and beyond standardization that eliminates duplicates and redundant parts in our Oracle Item Master. IMA’s insight and support is foundational to the business intelligence that we lend to strategic operations decisions. Specifically in procurement, we now have granular item, supplier, and price level data that is key, if not critical, to our spend projections and contractual negotiations. IMA’s Data Cleansing service creates a common language across our plants that leverage part numbered items, which results in synergies and better efficiencies at the transactional level.”

Shawn Kindle
Data and Buying Excellence Manager
Aleris International

ABOUT IMA LTD.

Founded in 1989, IMA Ltd. provides world-class material master data management solutions, specializing in MRO Data Cleansing, Catalog Management, and Inventory Optimization. Throughout twenty-five years of business, IMA has assisted manufacturing and asset-intensive organizations worldwide in their efforts to improve maintenance efficiency, reduce inventory costs, and optimize procurement performance. For more information, please visit www.imaltd.com.