How Data Quality Impacts Manufacturing 4.0

HOW GOOD IS YOUR DATA?

At a time when major advances in machine learning (ML), artificial intelligence (AI) and internet of things (IoT) are being promoted in the industry, many manufacturers continue to struggle to incorporate advanced analytics into their business processes. Critical to the success of any data analytics initiative is having clean data. The data must be accurately labeled, free of duplicate records, and blended to generate the correct results. This is key to becoming a truly data driven enterprise.

Adding to the challenge are the rapidly increasing volumes and variety of the types of data coming from business applications, sensors, third party sources and e-commerce transactions. Together these have created bad data.

To compensate, data analysts and data scientists must cleanse the data before incorporating it into their analytics dashboards and models. It is a time-consuming and expensive process. Most industry estimates show that on average it costs $10 per record to clean up the bad data, and $100 if you do nothing. Moreover, the ramifications of doing nothing will continue to grow. Business users waste time dealing with bad data, data scientists spend an excessive amount of time cleaning up the data and IT must invest in developing processes to keep various systems that are not integrated.

A CLASSIC MANUFACTURING USE CASE

Take for example a manufacturing company that wants to create a Quality Dashboard as an integral part of their Continuous Improvement Initiatives. An important first step is to consider the amount data needed to get a complete and accurate view of the critical quality metrics (data points) the company has at its disposal. Most companies create and collect large amounts of process data but typically use them for tracking purposes only. To get a complete and accurate picture of the "quality health" of the company, the analytics dashboard needs to include scrap data, warranty claim data, inbound inspection data, rework data, and other sources.

The simple answer to the question, "Where can I get the data for my Quality Dashboard?" Is that it is in the Enterprise Resource Planning (ERP) system. Unfortunately, this is not even close to being correct in most cases. Much of the detail data from the shop floor is not captured in the ERP system, or even stored in the enterprise data warehouse (EDW). The problem is that this data is processed and stored in multiple, fragmented systems. With so many data points, companies need to take a repeatable, proactive approach to data accuracy and related issues to build trust in the information that leads to increased adoption. Production, quality control, and demand planning are among the many functions that manufacturers can enhance through improved data quality. Having trusted and complete data improves visibility into manufacturing processes, resulting in reducing or eliminating engineering flaws, manufacturing over-and under-runs, product defects, and other problems related to quality.

In this scenario, the opportunity is to invest in a system and the skill sets that will allow them to quickly and easily prep, blend and cleanse their existing process data with the data in their ERP and EDW systems, which in turn can be analyzed more easily in spotting patterns and drawing actionable insights from the information.

THE NAVEEGO DATA ACCURACY PLATFORM

Having clean data is at the core of every manufacturing company's continuous improvement programs. A crucial step to maintaining data quality over time is investing in the right technology.

Naveego is a cloud-first data accuracy management service that identifies and continually monitors your data problems at the source systems BEFORE that bad data creates inaccuracies in your reports, dashboards, or other decision-making tools. In addition, our Master Data Management solution compares data in all your systems and delivers one version of the truth by making sure changes to data in one system are reflected in the other systems that also contain that same data.

The right data quality management strategy will not only help you make better and more informed business decisions, but it will also maximize the success of your current and future business initiatives.

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