



“Avoiding Data Disappointment”

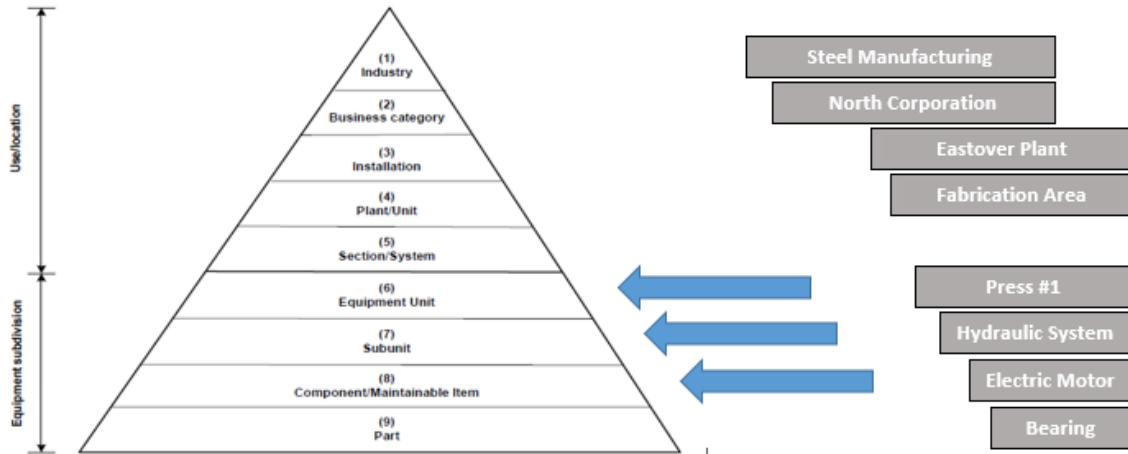
The importance of a well-structured and accurate equipment hierarchy

One of the biggest contributors to data disappointment in a CMMS/EAM is an incomplete or inaccurate equipment/asset hierarchy. The hierarchy establishes the structure for numerous aspects of system functionality. A majority of these disappointments can be corrected with a properly defined hierarchy utilizing an internationally recognized equipment taxonomy or natural grouping of equipment.

It's all about the parent child relationships established that enable; cost roll-ups, equipment/asset identification, data analysis, reporting for metrics, and failure threads (MTBF, Failure Rates, etc.). Typical hierarchies are routinely void of all site assets, lack defined parent child relationships, and many times lack logical flow. Organizations must manage their assets and using accurate equipment taxonomy is a requirement.

Once the functional location of the area and the sub functions are identified the equipment/assets can be inserted and established with its respective parent. All maintainable equipment/assets should be identified and/or those that have a defined maintenance strategy. For example a functional location of “Press In-Feed” has the following equipment associated with it. A roller conveyor, an electric motor, a gearbox, and a VFD (Variable Frequency Drive).

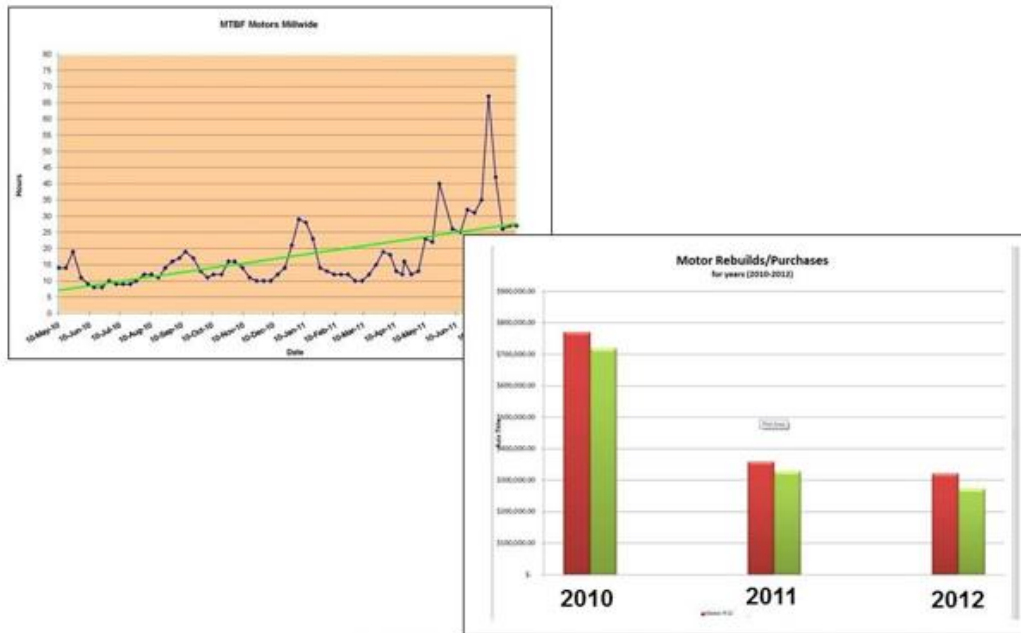
Start at highest level required for your organization and define the hierarchy (sometimes referred as the functional location) down to the component or maintainable item level. What are the functions? Let's say we define an “Equipment Unit” as “Press #1” and one of its sub units is “Hydraulic System”, next “Electric Motors” are one of the type components/maintainable items in this system. The lowest level could be utilized to attach Bill of Material (BOM) information. The hierarchy structure would be represented as shown using Equipment Taxonomy (natural grouping of equipment).



Equipment Taxonomy Example

Using the equipment taxonomy example shown above, one can identify similar failure issues on all “Electric Motors” for the assets at the “Eastover Plant” or within specific “Areas”. Mean Time Between Failure (MTBF) for all electric motors in the “Eastover Plant” or electric motor or motors on the “Hydraulic System” could now be quickly obtained. Once the hierarchy is accurate and aligned utilizing equipment taxonomy then MTBF, Failure Rate, Cost, effectiveness of the maintenance strategy, etc. can be identified with a few key strokes of the computer.

Identifying what is causing the majority of any type component or maintainable item failures begins with knowing that you have a problem. The graphs below shows the MTBF of over 500 electric motors (50-500 horsepower) at one site and how one Reliability Engineer made adjustments to the maintenance strategy (lubrication and alignment) which impacted MTBF in a positive direction along with reducing cost for new motors and the rebuilding of motors. This is just one example for why the equipment hierarchy must be established utilizing a standard to optimize asset reliability and cost.



An assessment of a CMMS/EAM must be performed to ensure your current system has standardization of equipment descriptions, equipment types and classes, and functional locational data. Once completed a walk-down validation should be performed to ensure all assets are included in the system.

Getting this correct enhances the capabilities and functionality of the system and eliminates data disappointment. Now go look at the hierarchy contained within your system. Is it complete and all assets included? Data standards applied? If not you might want to start with getting it right to get rid of data disappointment.

Dave Bertolini, CRL
Author of "CMMS Explained"
Managing Principal
People and Processes, Inc.