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Maximizing Your CMMS Potential for Data Harvesting

by Dave Bertolini

Perhaps it will surprise you to learn that 90% of Computerized Maintenance Management Systems (CMMS) contain little data worth trying to utilize for sound maintenance management decision making. There are a multitude of common errors/problems that enable this frightening finding.

Now the good news… it's not too late to identify and correct the issues to yield valuable data harvesting opportunities. There is a standardized flow to establish a system that must be understood to ensure this critical tool is capable of providing valuable data and unleashing its full potential. We need to start at the very beginning to fully understand the root cause of 95% of typical data issues. Once you understand what the issues are, a Plan of Improvement (POI) can be developed to address opportunities for improvement and ensure data harvesting is possible.

Let's start with an overview of how to correctly establish a system for success:

- **Installation** — The physical installation of the software. At this point the system is void of any site data. Installation is typically accomplished with the CMMS vendor and the Implementation Core Team.

- **Implementation Core Team** — The selection of a cross-functional team (Maintenance, Operations, Materials Management, Information Technologies, Maintenance and Operational Planners, Accounting/Purchasing, and Management). This is the bulk of your implementation workforce. Although it will not be necessary to utilize 100% of each team member's time, it is critical to ensure ample time is dedicated to accomplish the implementation in a timely manner. These individuals will become your site's system experts and future trainers for your entire organization.

- **Core Team Trining** — System overview training of the CMMS and its capabilities to the Implementation Core Team to ensure system capabilities are understood. This training is typically conducted by the CMMS vendor at your site. This will lay the framework for "training the trainers", while ensuring all system capabilities have been seen, understood, and can be implemented to their fullest extent.

- **Work Flow and Process Development** — Defining how the system will be utilized and the flow of data to ensure standardization. This often overlooked critical phase causes more CMMS implementation failures. The purpose of work flow and process development is to ensure repeatable standards are established, understood by all users, adhered to, and periodically audited. These flows and processes must be trained to the entire organization to ensure valid data is collected for future harvesting. It is extremely important that the utilization of the system is seamlessly blended into everyday use, if processes or required procedures are difficult or cumbersome to follow; they **will not** be followed.

- Implementation — The defining phase to develop all pertinent data standards to ensure consistent data collection. This is where serious consideration should be given to soliciting outside help to guide the Implementation Core Team. Most CMMSs are neither intuitive nor simple to understand. Here's where an experienced CMMS implementer, working with the core team, can be worth their weight in gold, ensuring you understand the decisions you're making. Simply put, "you don't know what you don't know".

Each module/area and each field within that module/area of the system must be defined. Typical modules/areas found in most CMMSs are Employees or Labor, Equipment, Materials Management, Purchasing, Preventive and Predictive Maintenance or Tasks, Work Orders, and Reporting. Let's take a closer look at some of the modules/areas:

The Employee or Labor module/area should contain all the labor resources that are assigned to the Maintenance Department. This data is required to support the Planning and Scheduling function of the CMMS. Also, labor rates should be defined for each individual to ensure accurate labor costs are captured.

The Equipment module/area should contain all data for all maintainable equipment within the facility. Typical items that must be defined are: a unique equipment number, a well-structured description, equipment type or classification (or sometimes both), location, cost center, department, warranty information, links to bill of material information, etc. Carefully review the equipment type/class list. This table typically grows as the facility ages; however, it is important to keep the options to a small useable level. This is the quickest way to report information on similar pieces of equipment across one or more facilities.

The Materials Management module/area is very similar to the Equipment module/area and has the same requirements for inventory numbers, types, descriptions, etc. All too often this module never becomes fully populated. The items in inventory should each have a "where used" identified, a location of where

the item is in the storeroom, and most important, established min/max levels so needed items are always available. One of the fastest ways to improve maintenance productivity is to not allow maintenance resources to wander up and down storeroom aisles looking for needed parts.

The Work Order module/area is where the various work types or classes reside. Look at the different work types and see if all the typical work your maintenance resources accomplish is quickly identifiable. If you don't see it here you won't see it in reports. Work order priorities are typically defined here to help Planners understand how quickly the work requested on the work order must be planned and scheduled.

Preventive and Predictive Maintenance or Tasks module/area is where the detailed descriptions and step by step guides for maintenance activities reside. These PMs or tasks should specify any tools, materials, job steps, associated safety notes or precautions, and estimated times to complete the job. Look at the detail of the instructions; the intent is not to insult intelligence but merely establish standards. The goal is to ensure that regardless which resource that is assigned this task completes it consistently with the same results. Another often overlooked aspect is the constant improvement that PMs and tasks should receive. As each task is closed out, feedback information should be provided to improve them. This could be as simple as the addition of special tools or as complex as a complete rewrite of the steps and order of them. This will quickly yield productivity improvements as "lessons learned" are captured and used the next time the job is performed.

Although there are other modules/areas of the CMMS that are not mentioned above, the ones we have discussed are generally found in all systems. These items discussed should be easy to verify and can be used to check the performance of your system.

- **Standard Operating Procedures (SOP)** — The documenting phase captures all definitions developed during the implementation phase. Each module/area and each field definition must be documented within the SOP for future reference. Templates for data collection for equipment, materials, tools, and employees should be developed and included in this document. This document becomes the foundation for system training for current employees and future employees.

- **Configuration** — The establishment within the system of all standards defined during the Implementation phase and documented in the Standard Operating Procedures. The Implementation Core Team establishes each definition in the proper field and or table in the system. My experience during system configuration has shown that dividing the Implementation Core Team into assignments for each module/area works best. Once the assignments are made they should be completed by those assigned to ensure consistency.

- **Data Population** — The population of site data such as, employees, equipment, materials, etc. This data is typically in numerous formats and locations throughout the site. Serious consideration should be given to migrating data from one system to another. Most times migrating data is costly, time consuming, and normally yields little value. Templates that were defined and documented in the SOP should be utilized for collecting data that must be populated. It is critical that templates are utilized to ensure all necessary data is collected. Data collection and population is one of the most time consuming and expensive efforts, therefore it is imperative that only necessary data is collected.

- **Validation** — A final system review of all data to ensure future data harvesting opportunities exists. This validation effort is focused on several main areas. Ensuring the

accuracy and completeness of the core data (equipment, materials, labor and accounting information). Testing the procedures and processes developed to support the maintenance function. Capturing the existing transactional and accounting data necessary to complete the month end and year end accounting. The last item is often overlooked and the amount of effort underestimated. Many maintenance transactions take place over the course of months. Developing, testing and validating a plan to transition these transactions in progress from the existing system into the new system is critical to ensure minimum impact to the business.

- **End User Training** — The training for all site users based on their respective roles within the organization. This training utilizes all documents developed during the implementation and is conducted by your on site system experts — the Implementation Core Team. Ensure training starts with the established work flows and processes. If these are not understood by the site, nothing will work. System training must be conducted by user roles (Maintenance Resources, Planners, Materials Management, etc.). It makes little sense to train on areas or system functions that will never be used. Remember each user must receive training and casual users typically need follow-up coaching or training.

- **Go-Live Support/Coaching** — On the floor support provided by the Implementation Core Team to ensure the work flows, processes, and system utilization are performed properly. This accelerates the learning on the floor as well as gets users acquainted with the proper use while reinforcing the training received.

- **Process Auditing** — A defined audit to ensure consistent data standards are followed and work flows and process improvement opportunities are identified. Periodic audits must be performed on the work flows, processes and system utilization. Audits should be performed immediately after systems go live to ensure bad habits are not allowed.

If you followed the above process you should be routinely harvesting good maintenance management data and utilizing it to make critical decisions. If you're like the other 90% of people with a CMMS implementation gone bad, you now understand where things went wrong. Don't overreact… it's still fixable by re-implementing the system following the above process. Remember there are no bad CMMSs, only bad implementations.

About the Author

Dave Bertolini is a Managing Principal for People and Processes, Inc. He has completed over 250 CMMS implementations or re-implementations in 38 different CMMS packages and routinely provides CMMS assessments/evaluations and Plan of Improvements (POI) to address system deficiencies. For additional information about the basics of what should be addressed in work flows, you can email Mr. Bertolini at dbertolini@peopleandprocesses.com.