

9 Helpful CMMS Implementation Steps to Achieve Long-Term Success

by Ricky Smith, CMRP, CMRT | Articles, CMMS



Many companies have purchased a Computerized Maintenance Management System (CMMS) or Computerized Asset Management System (CAMS) with the intent that the system will be the silver bullet that solves all the maintenance problems. Their success depends on following the proper CMMS implementation steps to ensure effective adoption.

The Role of CMMS in Maintenance Efficiency

A functional CMMS is only a tool. Simply viewed, it is a vast repository of information that can be instantly accessed to assist in the decision-making process to improve equipment reliability continuously.

When properly implemented, a CMMS is a handy tool for resource management, material management, equipment reliability, budgeting, maintenance cost reporting and management, and planning and scheduling. Following proven CMMS implementation steps can transform a CMMS from a simple database into a powerful decision-making tool.

Why CMMS Implementations Fail: Common Pitfalls

Unfortunately, 90% to 95% of all CMMS implementations fail to deliver the desired results and are forsaken or underutilized. There are many causes for the failure of the CMMS, but the failures are rarely due to the actual capabilities of the software. Over three hundred different maintenance management software packages are available on the market.

They range in complexity from simple work order management and tracking to massive enterprise systems that facilitate the management of the entire maintenance function. What is the difference between those plants that have a successful operating CMMS and those that do not?

Building a Strong Team for CMMS Implementation

Implementation has to be performed with a Team Concept. As with any process for improvement, upper management must champion the cause and commit resources to ensure its successful implementation. Middle-level managers, supervisors, and

craftsmen must buy into the concept and incorporate its functionality into the work process.

Without full support from all participants within the company, failure is imminent from the start. Each person involved must buy into the program of implementing the CMMS and want to realize the benefits that it can provide. For example, one plant hired a new accountant as plant comptroller. The accountant came from a plant where there was a successful operating CMMS.

To reduce the cost of producing their product, he knew maintenance was the most significant controllable cost in the operation. It has been proven repeatedly that with maintenance planning, improved efficiency, and proactive maintenance, the production management team can no longer blame missed production goals on the maintenance department.

The maintenance manager, also newly hired, desired to get control of his maintenance costs, eliminate the reactive maintenance posture, and accurately plan the work and manage his maintenance personnel. The plant in question did not have a CMMS.

The plant philosophy was that maintenance was a necessary evil, and when the equipment broke, it was fixed as soon as possible using whatever means were available. The maintenance manager and the comptroller decided that CMMS implementation would be the avenue to solve the problem. Between maintenance management and plant management, a decision was made on a software package.

**Teamwork isn't optional for CMMS success—it's the foundation.
Without buy-in from all levels, failure is imminent.**

The product was purchased and placed on the facility's computer network. Maintenance personnel and supervisors felt they were stuck with a system selected by upper management that was burdensome to use and didn't meet their needs. This situation takes place frequently.

It may vary from plant to plant as to which person in the plant's management structure made the decision, but the product wasn't sold to all participants and users. Everyone did not have a sense of ownership for the implementation, nor did they feel like they were a part of the team. Teamwork is essential for success.

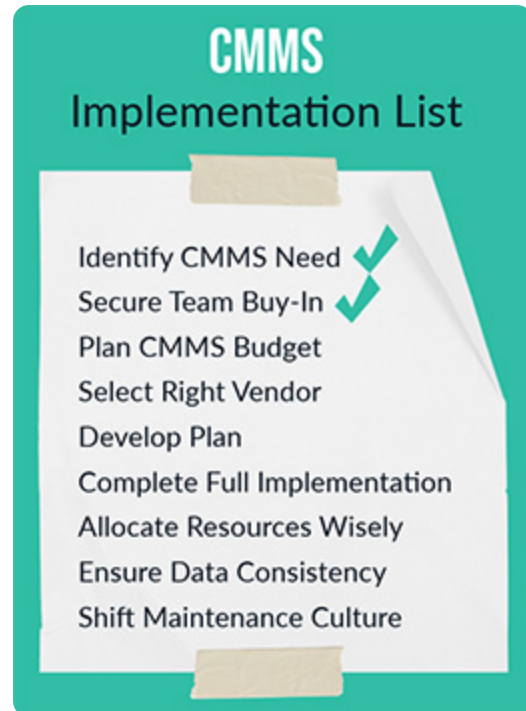
The scenario described is a formula for disaster. The comptroller's previous company had a sound system in place. He knew the benefits of a properly working CMMS and desired to move the plant into a proactive maintenance environment instead of a reactive one.

Step 1: Identify the Need for CMMS

The first and arguably most critical of the CMMS implementation steps is identifying the need for the system and aligning it with a sound maintenance strategy. After the need has been decided, the idea must be sold. A significant reason implementations fail is that most maintenance organizations have little or no input into the selection or implementation processes.

All parties using or benefiting from the system must buy into the implementation concept. It must have support from the plant manager down to the craftsman on the floor performing the maintenance. After the support has been established, an implementation team must be formed. This team should have participation from all areas of the plant.

These areas, at a minimum, should be production, maintenance supervision, a craftsman from each maintenance craft, engineering, quality assurance, human resources, accounting, storeroom, and information systems management.



Step 2: Selling the CMMS Concept Internally

Much thought and examination of the functionality to ensure compatibility with the maintenance strategy must be expended to determine the specific CMMS to be implemented. An evaluation must decide which areas of your maintenance operation need improvement and whether a CMMS will support your improvement.

It does no good to say maintenance needs to be fixed and a CMMS will do it for you. That is like saying you are going to eat an elephant. Well, how are you going to do this? The elephant must be sectioned up into smaller portions.

The same is valid for improving a maintenance organization. Analyze the weak points as well as the strengths. Determine where your organization is for use as a benchmark to develop an improvement plan.

Step 3: Budgeting for CMMS Implementation

Next, realistic cost estimates for the implementation must be created. The cost must include not only the software but also training, labor time for implementation, computer hardware upgrades, labor required for database population, and if needed, the outside resources required. Many consultants can assist with implementation and cost estimates.

A consultant's proposal should quote a price and delineate whether the work will be performed on a fixed price basis or on a time, material, and expense basis. It should include a date when the proposal's validity expires. There should be a ceiling cost if the work is performed on a time, material, and expense basis. If you use an outside firm for implementation and their proposal does not include the specifics, be prepared for the possibility of massive cost overruns.

The baseline starting point and cost of implementations are essential because very few plant managers will approve such an undertaking without knowing how much it will cost, how the improvement will be measured, the implementation time frame, and the return on investment. Key performance indicators must be identified that will aid in determining the return on investment.

These items must be determined upfront. The expected levels of improvement, the return on investment, and realistic reports on performance and costs are pivotal points to use in your selling process. The justification for the CMMS must be sold to those who will influence the purchase and the implementation.

Proper selling of the concept will ensure you get the CMMS and the assets needed for appropriate implementation. Very often, self-doubt enters the picture, and many think, 'I'm not a salesman.' There is disagreement about that thought pattern.

Justifying a CMMS isn't just about cost—it's about showing measurable improvements in reliability, efficiency, and ROI.

The concept of selling is centered on the image of a salesman. Many people prefer not to talk to salesmen. They would rather speak to the people who do the work and deliver results. Management and employee relationships require selling every day. The ability to sell a CMMS implementation project should be no different.

First, develop a list of five to ten items that are important to each group that need to accept the concept of CMMS implementation. Demonstrate how a CMMS will benefit their ability to do their job better. It may be as simple as showing how reducing maintenance costs and increasing production capacity will allow the product to be produced at a lower price and result in greater earnings for the individual through the company's profit-sharing plan.

Or it may be a more convincing argument to get the plant manager or corporate level managers to believe the amount of savings that will be realized for return on investment. This can all be overcome with research and logically presenting the facts.

When addressing the various groups within your organization, put yourself in their position and ask, as they will, 'Why should I listen to you, and what is wrong with the way things are now?' Properly presented, you should be able to sell the concept to each target audience.

Step 4: Choosing the Right CMMS Vendor

Would you walk into a store that you have never entered in the past and purchase a suit off the rack without trying it on first? Of course not. The same should be valid for a CMMS, which may cost you hundreds of thousands of dollars, including implementation costs. Unfortunately, this is not always the case.

One company that was trying to use a CMMS to manage facility maintenance for a major hotel resort bought the CMMS sight unseen. In a telephone conversation, a CMMS salesman convinced them that his system would meet their needs. Salesmen are not maintenance specialists, and their idea of success does not always align with your defined goals. The CMMS used a Microsoft Access® database. The hotel was processing more than twenty thousand work orders a month.

The result was that the CMMS took up to six hours daily to close work orders, and the system couldn't be used for other functions. They said they trusted the salesman when asked why they didn't select an SQL or ORACLE database version. They did not perform any vendor selection criteria.

Selecting the correct system starts with the preparation of a requirements document. The requirements document contains the requirements for the functionality and computer hardware capacity your organization desires in a CMMS. This document is sent to CMMS vendors that may be able to deliver the system you need.

The names of CMMS vendors can be found in trade magazines, through contacts in professional societies, and on the Internet. You should specify in your requirements document that contacts with your company should only be made to clarify the requirements and not for sales calls. The vendors' information should be used to develop a select list of vendors.

Next, have each vendor from the select list visit your facility and demonstrate the capabilities of their system. At each demonstration, you should have representation from all key areas of the plant. At a minimum, you must have your implementation team present. Questions about the product and its capability should be prepared beforehand.

These questions and concerns should be sent to the vendor before the visit to allow enough lead time for the vendor representative to address all concerns. After all, the vendor is there to serve you, so be clear about what you want the system to deliver. These inquiries should be in addition to the items specified in your requirements document.

After the demonstrations by your select list of vendors, determine which package is right for you. In addition to your requirements document, some items to consider are the level and cost of technical support, training provided and the cost of the training, software upgrades, and cost per user of the software.

If you need assistance at 3 AM on a Saturday and call the toll-free number, will there be a person there to answer your call and give you the information you need? If you desire training, does the company provide training as part of the software cost, or are there additional expenses above the software price? When a CMMS software upgrade is released, is it offered to you as part of a service contract, as part of the original cost of the package, or do you have to purchase the upgrade separately? Nothing is wrong with these options, but they must be known upfront for budget projections.

The internal selling of the concept of CMMS will eliminate the problems arising from plant politics. Most plants have internal political confrontations that inhibit good

cooperation and coordination during the overall operation of the plant.

The participation of the information systems group, purchasing, accounting, and operations must be sold on the concept because they are also system users. Contrary to belief, the CMMS is not a maintenance system. All of these plant entities are system users, and to ensure a successful implementation, they must be on board with the concept and be integral team players.

Step 5: Developing a Robust Implementation Plan

After selecting the system, the real work begins. Developing a clear roadmap is one of the most important CMMS implementation steps and directly impacts success rates. A well-developed, closely followed implementation plan will determine whether you are one of the 5% to 10% of successful companies. The plan must be concise and detailed. It must include clearly defined, achievable goals and objectives.

With few exceptions, implementations are performed in phases because few companies have the financial resources to complete the implementation simultaneously. The specific tasks should be planned in a logical sequence with defined responsibilities, personnel, progress reviews, and start and completion dates.

The plan should include infrastructure, labor and training requirements, implementation system installation, and database development schedules. Poor implementation plan development is one of the leading causes of implementation failure.

A CMMS implementation plan isn't a suggestion—it's a roadmap. Without it, failure is almost certain.

Many companies try to speed up the implementation by not using a plan. A frequent mistake is to assign someone like the maintenance department administrative assistant to implement the program. This is a classic formula for failure. First, this person has little or no authority.

Second, leaving the data collection and data entry to a person unfamiliar with the equipment and with very little understanding of maintenance is the wrong method. The implementation requires knowledgeable personnel to establish an equipment hierarchy. A method of equipment identification that accounts for the equipment

installation in a specific location and tracks equipment when it is removed must be established and thought out.

The nomenclature for spare parts and bills of material must be uniform, and the methodology for descriptions must be compatible with the CMMS search and filter functions. Preventive maintenance procedures must be developed and entered, and the equipment links must be made.

Very rarely does an administrative assistant understand the equipment to the degree required. When this scenario is used, the CMMS is usually used only as a work order tracking system. If that is all a company desires, an EXCEL® spreadsheet can accomplish that function.

Step 6: Avoiding Partial Implementations

Many companies fail in their implementation because the process is only partially completed. Many companies do not have the experienced personnel to implement a CMMS fully because they do not understand the software program and the system's capabilities.

The complete scope of the tasks involved is not fully defined during the initial implementation plan, or there is little understanding of the software program intricacies and relational database even to determine the scope of the task. When this occurs, companies try to perform actions that will make the program work.

At this point, smart companies stop and seek assistance. Many consultants can spend a few days with the company and get the project back on track. On average, companies that don't stop and seek assistance use only 10% to 15% of the total CMMS capability and the rest is wasted capacity.

When seeking the assistance of CMMS consultants to provide the experience and expertise needed to either perform a turn-key implementation or to deliver assistance to get the implementation back on track, use caution when hiring a consultant. The capabilities and experience of the consultant or consulting firm must be verified.

How many implementations has the consultant been involved with? What are some of the firm's clients? Get a list of the clients and research them yourself to determine if

they were satisfied with the services delivered. Verification is the key to using a consultant. Many consultants sound good, but can they provide the services?

Step 7: Allocating Sufficient Resources and Oversight

Among the most overlooked CMMS implementation steps is allocating sufficient resources and assigning capable project leaders. The cause of this varies from high maintenance requirements, poor commitment from upper management, and not spending the necessary capital to allocate the needed manpower to inadequate planning to develop the implementation plan.

Overall, the resources required to perform the job properly are unavailable, and the persons performing the implementation task partially complete the job. Further exacerbating this situation is the lack of project management oversight. An implementation project is a long-term effort, and dedicated management time must be put forth to provide oversight, guidance, and direction.

An appropriate project leader who implements CMMS must know the maintenance process. The manager assigned must also have the authority and upper management backing to complete the implementation. Often, a junior engineer with little or no maintenance background is assigned to this position, or the project falls on the shoulders of the maintenance manager.

He not only manages the maintenance department but also manages the CMMS implementation. These situations of project management are scenarios for failure.

Most implementations use in-house resources. When totaled, the time required to do the job properly equates to many man-years of effort. Most companies do not have this capability. When companies do not have adequate resources allocated, the implementation becomes a job to perform when there is nothing else going on in maintenance.

We all know that there is always work to be done, especially in a reactive maintenance environment. More often than not, the result is that salary and hourly employees are asked to put in longer hours to complete the implementation.

This results in poor quality, corner-cutting, and low employee morale. This scenario results in the implementation being a secondary objective, and the primary aim of

improving the maintenance operations and providing greater production capacity is never realized.

Step 8: Standardizing Data Entry to Prevent GIGO (Garbage In, Garbage Out)

GIGO, Garbage In Garbage Out GIGO is the phenomenon that occurs when information is entered into the relational database without uniformity. When you put poor data into the system, you get poor information out of the system. The system will not provide the desired results when numerous persons do not uniformly enter the data. An example is the nomenclature for spares within the bills of material.

Garbage In, Garbage Out: Inconsistent data entry kills the effectiveness of even the most powerful CMMS.

One company allowed various persons to enter data. Do you know how many different ways to identify a bearing as an equipment type? It was entered as 'BRG,' 'BRNG,' 'BERNG,' and other iterations. This individuality of parts identification made it nearly impossible to research the desired parts and link parts to the correct equipment.

The result was frustration on the part of the maintenance personnel trying to order parts for upcoming jobs or immediate repairs. The system did not deliver the expected level of service. This can be prevented with proper training and planning as part of the implementation plan.

Step 9: Shifting the Maintenance Culture

The final and often underestimated of the CMMS implementation steps is shifting the maintenance culture to align with new workflows and processes. When you have reached the point where the CMMS is implemented and the database is correctly populated so that the system can deliver the desired results, it is time to complete the final item.

The last cause of implementation failure is the plant personnel's culture. Without modifying the workflow process, training the plant personnel on the new process, and holding personnel accountable after training, the desired results of the CMMS will not be delivered. To accurately track the cost of maintenance, parts and labor expenses must be applied to the equipment.

Accurate costs can't be properly determined if maintenance technicians have personal supplies of spares in their locker or tool cart. This is a behavior shift for the maintenance technician. In reactive maintenance environments, craftsmen develop their personal set of frequently used parts, knowing the storeroom can't deliver the parts.

This allows the equipment to be quickly repaired but results in no costs for spares being rolled up to the equipment. For the CMMS to deliver the desired expectations and results, the workflow process must be evaluated. The workflow process defines the day-to-day operation of performing maintenance scheduling, planning, and maintenance execution.

Evaluation and definition of the existing process must be performed during the implementation and be included as an integral step in the implementation plan.

Shifting maintenance culture isn't about software—it's about mindset. Accountability and training make the difference.

Along with the evaluation and definition of the workflow process, maintenance procedures have to be implemented to allow the craftsman to perform the maintenance properly. There has to be a shift in the mentality to allow the planning and scheduling process to work.

It has been shown that when maintenance is planned and scheduled, a twenty-five-person maintenance team operating with planning and scheduling can deliver the equivalent amount of work of a maintenance crew of forty persons without planning. Planning and scheduling are most effective when one planner/scheduler is assigned for every twenty to twenty-five persons in the maintenance force.

The Long-Term Benefits of a Well-Implemented CMMS

Computerized Maintenance Management Systems are powerful tools that allow companies to reduce their costs significantly. These systems are an excellent vehicle to move organizations from a reactive to a proactive maintenance environment, and they enable companies to accurately track the cost of their maintenance and determine their manpower utilization.

Implementing a CMMS is not a 'quick fix' to correct maintenance problems. It is a time-consuming effort that should not be undertaken lightly. Only a tiny portion of the overall cost savings will be from a reduction in actual maintenance costs.

The CMMS will allow accurate tracking of inventory spares, reduce excess levels of inventories, accurately track and develop realistic equipment and financial reports, better management of work order backlog, and proper planning and scheduling of maintenance and maintenance personnel.

The payback will be that when the system is fully implemented, and the plant operates in a proactive posture, the return on investment will be seen through a significant rise in production capacity due to reduced equipment failures.

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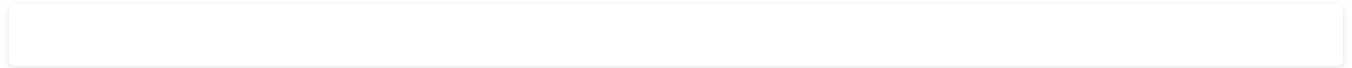
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