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Approach any plant manager who has recently been through the experience of implementing a new computerized maintenance management system (CMMS) and ask this question: “How did the project go?” Chances are you will get an answer that goes something like this: “Well, the system is finally in now, but it cost a lot more money and took a lot more time than we were led to believe. It still won’t talk to our other systems and we can’t see the payback yet. I’m beginning to wonder if it was worth it.”

In fact, it is not uncommon to come back years after implementation to find that the planned-for payback never materialized. Further, often only a fraction of the capabilities that the software vendor built into the system are being effectively utilized. Why?

The reasons for CMMS failures are as different as the companies implementing them. Often the blame is put on the software package selected or vendor support provided. But that is usually an excuse and not the real reason these failures occur. Failures can usually be traced to one or more of these five primary causes:

1. Using a CMMS to solve the wrong problem. Sometimes companies choose to implement a CMMS to solve a problem that is not system related at all. They may, for example, adhere to maintenance practices that are inappropriate or obsolete; or they may have neglected training in the past; or the organizational structure is wrong for doing business in today’s environment. Until these problems are addressed, no system will help and, in fact, may exacerbate the problem. Before embarking on any CMMS project, make sure the problem has been defined correctly.

2. Treating the project as a technology project. In more cases than most of us like to admit, CMMS projects are treated as technology projects. That is, great care is taken to insure that system technology meets certain criteria, such as effective use of object oriented technology, NT (or Windows 95, etc.) compliance, or designed using industry standards. Specialists evaluate packages on their technology, on the various features and functions that one system offers over another. It is not unusual for organizations to spend as much as a year— *and sometimes longer*— looking at and evaluating various CMMS packages. The technology is important and clearly should not be overlooked, but it is often not the most critical aspect of the project. Usually it is the easy part. Change is the hard part. CMMS projects are more about change management than about technology.

3. Selecting the wrong software package for the job. Too often, CMMS packages are selected that are not appropriate for the solution that is needed. For example, features and functions of one software package may be appropriate for maintaining rolling stock but may be inappropriate for a process plant with a large amount of fixed equipment. A mismatch between system capabilities and solution requirements usually occurs because a rigorous process for evaluating and selecting a package to meet the solution requirements was not followed.

The evaluation process must start with a good definition of requirements: business functions and capabilities that must be supported, technical considerations (computer platform, network, Internet enabled, etc.), integration with other systems, financial health of the software vendor. The process must insure that the software packages can be evaluated objectively and consistently.

4. Poor project management during implementation. Having a written project plan is certainly a start to good project management, but by itself is not sufficient. Project plans must be comprehensive and realistic. They must be followed and used as a gauge to track progress. It is necessary for people to take responsibility for tasks delegated to them and then to be held accountable for the results. It also means communicating and setting realistic expectations.

5. Inadequate change management. Of the five primary causes of project failure, change management is the one that is most often overlooked. Yet, effectively managing change in the organization is critical to long-term CMMS project success. Change cannot be left to chance. It must be planned and carefully executed.

Develop a vision for maintenance

Change management starts with the development of a vision of how maintenance is to function once the software has been installed and is in its steady state. A properly constructed and communicated vision sets the stage for all that follows. It describes, in terms that can be easily understood by every worker in the plant, at least the following:

Role of maintenance in the plant's success and its expected contribution. It is important for people affected by the CMMS project to understand just how maintenance contributes to

plant and equipment performance. This understanding creates the environment for maintenance performance metrics that are meaningful in an overall business sense to the operation.

Approach to maintenance taken by the plant. For example, if the plant has adopted reliability centered maintenance (RCM) as its approach to plant maintenance, then RCM should be incorporated into the maintenance vision.

How computerized tools, such as a CMMS, will support the business processes. The vision statement should include at least a high-level description of the way people and equipment will interact with the system. It also should show how the CMMS will support the maintenance organization and the various functions performed by it.

Interactions that maintenance will have with other functions and other systems. Understanding the level of interaction that maintenance has with other functions of the organization and with outside entities is key to defining the CMMS requirements, identifying system integration requirements, and developing comprehensive operating policies and procedures. If there are other systems that tie closely to the CMMS system, the nature of that tie must be clearly understood and incorporated into requirements.

Manage change for positive results

Communication is another change management component that is often treated as an afterthought. An effective, successful communication plan requires careful thought and planning. It is through communication that expectations are set and project status is shared. It is a way to get the big picture, i.e., the vision, across to the rank and file in the organization so they understand what is happening, why it is happening, and how it will affect them personally as well as the organization. Communication will not solve every project problem, but it certainly will keep a lot of unnecessary ones from cropping up.

It has been said, “If you think education is expensive, try ignorance.” Change management requires education for people on the basic concepts of maintenance management. Education’s goal is to elevate to another level the affected plant population’s knowledge and awareness of maintenance. Education begins early in the project and continues until the system is fully implemented. It is an important aspect of communication and does much to explain the vision. It is essential to the training that will follow because it provides context to what is being asked of those interacting with the system.

Training, another key change management component, teaches people "how to" do the job. It must be comprehensive enough to allow the individual to do the job that is required and should be specific to the job at hand. It should be timed so that material is still fresh in the mind of the system user when the system is made available for use. In other words, if a person is a planner/scheduler, it is necessary to train that individual only on the specifics of planning and scheduling. If an effective education program has been put in place, then the context of planning and scheduling has already been covered. Often, training requires training beyond the specific CMMS software, such as when an organization is migrating from a manual environment to a computerized one. It may be necessary in that case to conduct computer fundamentals training before specific CMMS training can begin.

I once had a colleague who went across the country telling our plant people that the system that was to be installed was so good it would "walk, talk, sit up, and beg." The clear implication was that the system would do everything they had ever wanted. Of course, the system could not live up to its billing. It failed. A critical element of any CMMS project's success is the proper setting of expectations. Left to chance, people will set their own expectations based on their vested interests, concerns, or fears. Key areas where expectations must be properly set include system impact on their jobs, when certain system features and functions will be available, system response, cost of the project, performance to schedule. The key words here are: No Surprises.

Many times in a project, for political or other reasons, people say "Yes" and nod when they really mean "No." They don't "buy-in" to the system. "Buy-in" is obtained through a combination of ways: workshops where people actively participate in the solution, communicating the vision and setting realistic expectations, meeting project commitments. Every person affected by the system will want to know how it affects him. Buy-in will not happen until that question is answered. Effective change management addresses this issue.

Management support is essential

Effective change management also requires senior plant management and staff support for the project. Support means more than just signing the project's Authorization for Expenditure. It means visibly supporting the goals and objectives of the project by clearly indicating to the plant staff the importance of the system to overall plant success. It means providing time to attend critical project reviews and recognizing successes when they occur. It most of all means taking a leadership role that communicates to the rest of the plant staff that "this is important to me and it should be important to you, too." If plant management is not behind the project, rank and file plant staffers quickly perceive that and act accordingly. **MT**

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