

Ready, Set, Go To Successful CMMS Implementation

Written by Ernie Autin, Reliability Management Group
Thursday, 01 April 1999 18:08

Implementing a computerized maintenance management system (CMMS) requires a large commitment from an organization in time, money, and resources. The success of such a project not only is determined by an on-time, within-budget, and within-specification delivery of the new software, but also is measured by the value the system brings to an organization's bottom line.

Unfortunately, value is rarely created. Recent reports suggest that the average cost of implementing a software application exceeds the original estimate by a factor of six. Furthermore, less than 80 percent of the proposed functionality typically is delivered for that price. This can be compounded by a typical delay in the delivery cycle of two to four times the original schedule. In all, the excessive cost of implementation, the reduction in promised functionality, and the delay in delivery result in the suboptimization of necessary work management practices.

In achieving value from a CMMS, an organization must:

- Ensure that basic work management processes are clearly defined and implemented.
- Prepare for change.
- Appropriately select and design the CMMS.
- Create and track the economic value of successful implementation.

The use of a process-oriented methodology that assists maintenance and operations professionals to successfully implement a CMMS can enable an organization to achieve value.

Successfully implementing a CMMS

Reports suggest that many CMMS implementations create frustration rather than support of positive work management practices. Many organizations abandon their present CMMS in the hope that the next generation of CMMS technology will ease their frustrations. These organizations find themselves with a different, yet similar, set of frustrations.

If the investment in a CMMS were simple and inexpensive, the effect of abandoning failed systems would be minimal. Yet the investment in selection, design, and implementation of a CMMS is significant and seems to be increasing. Consider the impact of failed systems on the work required to operate and maintain a facility, on an organization's attitudes toward

Ready, Set, Go To Successful CMMS Implementation

Written by Ernie Autin, Reliability Management Group
Thursday, 01 April 1999 18:08

technology, and on the missed opportunities for real improvement in equipment and human reliability. When coupled with software costs, maintenance fees, and implementation services, the cost of a failed CMMS quickly escalates.

Regardless of the choice of software, success hinges on the readiness of an organization including:

- The infrastructure supporting the CMMS.
- The clarity of work management practices and the alignment of these with the CMMS.
- The commitment of the organization to do what it takes to make the CMMS work.

This readiness must be reflected at all levels and functions within the organization. Successful selection, design, implementation, and optimization of a CMMS requires that operations, maintenance, and associated work management processes are in order; people, the organization, and their individual and collective experiences have been considered in preparing for change; the tool itself has been appropriately selected and designed; and the project and organizational economics are considered to create value.

Operations and maintenance work management processes

The awareness that product is a result of process is well established. Product improvement requires that processes be understood, documented, and implemented.

Even though organizations have invested hours mapping and documenting processes, many report little, if any, noticeable improvement in product quality. Because of this, some suggest that process improvements provide little value to organizations. Others suggest that these organizations have not effectively implemented work management processes. If an organization poorly defines and implements standard work processes, then the CMMS will provide little value.

A CMMS is a tool, an enabler to work being performed. Therefore, the work management process should be the driver for the selection and design of the system.

Customized software is developed specifically for nonstandard, industry-specific work

Ready, Set, Go To Successful CMMS Implementation

Written by Ernie Autin, Reliability Management Group
Thursday, 01 April 1999 18:08

processes that are highly proprietary and unavailable in any shrink-wrapped software package. If the application software is to be customized, operations and maintenance must work closely to carefully craft appropriate work management processes. The inclusion of the information services (IS) organization and other affiliated parts to the process definition is wise. The CMMS design must take into consideration the work management processes, especially the critical work to be performed and the key interfaces (for example, accounts receivable to stores).

For customized software, the specific work process requirements drive the design of the software. Clarity, consensus, and commitment to the organizational work management process then become imperative to the successful design, implementation, use, and optimization of the CMMS.

Shrink-wrapped software is designed for work processes that are common among industry groups. The main advantage of shrink-wrapped software over customized software is cost. Because a generic work management process is assumed, the organization's work processes must be modified to fit the software. The savings accrued in software development cost, post-implementation support costs, and ease of migration to subsequent releases makes shrink-wrapped software a preferred choice. Modification of the software (specifically the source code) to align with changes in the generic work process decreases the savings and advantages. Again, it is critical that maintenance and operations work together with other related parts of the organization to gain clarity, consensus, and commitment to the new generic work management process.

CMMS providers offer a significant number of shrink-wrapped software packages for almost every need in every industry. As basic operations and maintenance work management processes tend to be non-industry specific, most software provides the basic function required by organizations. Additionally, few organizations have developed the process sophistication that would require customization of a CMMS.

By its design, a CMMS requires process discipline. Clearly established work management processes must be agreed upon, implemented, and adhered to if the CMMS is to be successful. Successful organizations insist on this and ensure that representatives from maintenance, operations, IS, and other organizational areas be party to these process discussions from the outset.

The people and the organization

Ready, Set, Go To Successful CMMS Implementation

Written by Ernie Autin, Reliability Management Group
Thursday, 01 April 1999 18:08

In addition to considering the work management processes, the organization's readiness must be managed. If the organization has successfully defined and implemented basic work management processes, then organizational readiness is probably working well. Organizational readiness is required to successfully perform work or create change.

Organizational readiness can be described as having the right people, focused on the right things, at the right time, with the right tools, performing the right work, with the right attitude, creating the right results. It is a reflection of the organization's culture. Although markets may demand change, people within an organization determine when and how their organization will respond. To ensure organizational readiness while implementing a CMMS, consider the following:

- Organizing and assessing current state information. This includes information on basic reliability work management practices, the readiness of the IS infrastructure, the state of the organizational culture, and the economic constraints.
- Creating "what better looks like." Based on the business requirements of the organization and its strategic plan, the organization defines the preferred state for its work management processes and culture. Clarity, consensus, and commitment must be established, documented, and communicated in order to focus the organization on the result.
- Developing a tactical plan. A project plan must be carefully developed to ensure on-time, within-specification, and within-budget delivery of the CMMS. Then, the plan must be implemented as planned.
- Tracking implementation progress. During the CMMS implementation, plans must be carefully tracked, and changes to the plan must be carefully documented and implemented. Specific measures of project progress as related to the business value must be defined, tracked, and reported against.
- Structuring the organization. CMMS design, implementation, and optimization must be supported by an organizational structure with excellent communication, decision making, and cooperation. This sustains organizational clarity, consensus, and commitment.

Activities as simple as user preparation and education, open communication within and between organizations, and organizational structure that supports the decision making process describe organizational readiness. Ultimately, the organizational structure must support the selection, design, implementation, and optimization of the CMMS. When effectively selected and implemented, the CMMS can be used to support operations and maintenance. This creates reliability and availability, resulting in reduced cost, enhanced revenue, and opportunity for growth.

The tool

Ready, Set, Go To Successful CMMS Implementation

Written by Ernie Autin, Reliability Management Group
Thursday, 01 April 1999 18:08

If a CMMS is poorly selected, designed, and implemented, then the CMMS will fail to meet organizational requirements. The CMMS itself may have little to do with the failure. It is well established that application software may contain defects. These defects can compound the challenges associated with implementation. Even if the CMMS is perfect, the organization will encounter difficulty if the system is poorly selected, designed, or implemented. Solutions to organizational problems are seldom relieved through technology. It is the appropriate use of technology within a given business context that provides solutions.

Some might argue that buying the newest technology helps. However, complications surrounding issues in the existing IS infrastructure can derail any computer system. The IS infrastructure includes items such as:

- The work processes that support the hardware, the software, and the network.
- The business processes required to make valid technology decisions.
- The competency and skills of the IS staff.
- The contractor support process.

Successful CMMS implementation and use requires that the IS infrastructure is designed, implemented, and supported so that the application software can operate within it.

Few IS organizations possess the knowledge, skills, abilities, and experience to successfully design, implement, and optimize a CMMS. This reflects the complexity of implementing technology and is compounded by the lack of IS organizations with well-defined and well-implemented business work management and support management processes. Many organizations attempt to compensate by supplementing their IS organizations with contract support from software vendors. But software vendors and their designated implementers may lack the integrated skills to successfully design, implement, support, or optimize the system. In some cases, the software vendor may have difficulty with the application software. This may be furthered by problems within the IS infrastructure.

These basic questions can lead to additional questions, revealing the readiness of the IS infrastructure:

- Are desktop computers configured to support the application?
- Are networks appropriately configured for the application?
- Are servers, midrange, or mainframe computers configured to support the application?

Ready, Set, Go To Successful CMMS Implementation

Written by Ernie Autin, Reliability Management Group
Thursday, 01 April 1999 18:08

- Do IS processes (e.g., disaster recovery, systems configuration, and project management) exist that will support the installation and operation of the application software?
- Does the present level of performance from the IS organization consistently provide levels of reliability, availability, and serviceability as required by the organization?

When failed IS projects are examined, organizations often report that infrastructure readiness was a major contributor to the failure. This discovery reflects the complexity and the importance of managing an IS infrastructure.

For those who throw out the old and bring in the new, frustration will likely arise unless the application software is truly mature; the implementing organization has the required knowledge, skill, ability, and experience; and the IS infrastructure is well defined, well implemented, and well managed.

As the tool and the required infrastructure is designed, implemented, and optimized, the work management processes gain renewed focus. If poorly designed and implemented, work processes will contribute to the failure of the CMMS. Work management processes must be well defined, agreed upon, and implemented if the CMMS is to be successful.

Project and organizational economics

If the CMMS supports work processes and the organization implements those work processes in a standard and habitual manner, the focus turns toward the production of economic value. Many organizations measure return on investment. As an example, some organizations do so by calculating the economic value added (EVA). Whether measuring by EVA or other means, trends reflect that the contributions made by the CMMS must reflect cost reductions, increased revenue, and growth.

Experience suggests that few organizations measure, and even fewer do it well. Even if measures exist, many would suggest that linking process and performance measures to profit is an even greater challenge. Although economic justification is a well-established practice, few organizations demonstrate a consistent ability to produce the kinds of economic results that most CMMS projects propose. If improvement is to become a reality for organizations, measurement linked to profit must become real.

Ready, Set, Go To Successful CMMS Implementation

Written by Ernie Autin, Reliability Management Group
Thursday, 01 April 1999 18:08

Ultimately, maintenance and operations professionals must demonstrate the true value of reliability through economic return. If reliability is to flourish, then these professionals will ensure that the CMMS is designed, implemented, and optimized to produce value. The work management processes, the organization, the tool, and the economics must be individually optimized and collectively integrated to achieve this.

On-time, within-specification, and within-budget CMMS implementation requires a process-oriented implementation methodology. This methodology must integrate people, process, technology, and economics and must operate under a project management umbrella. Lowest cost reliability results when the CMMS is implemented to support effective and efficient work management.

This happens when the organization gets ready to change by assessing itself, sets itself to be successful by building a foundation for the change it is going to undergo, and goes into implementation with the courage and willingness to change as planned.

Organizations choosing to enhance their operations and maintenance reliability by implementing a CMMS must carefully consider:

- The operations and maintenance work management processes and those other processes that interface with the work management process.
- The organization's readiness to generate and maintain clarity, consensus, and commitment to a new way of managing work.
- The technology itself, including the application software and the IS infrastructure supporting that software.
- The management and tracking of the project to the on-time, within-specification, and within-budget delivery of overall CMMS performance.

When organizations consider these factors and are held accountable, they maintain a credible claim to successful CMMS implementation. The journey requires an organization to invest considerable time, energy, and money. The true challenge to successful CMMS implementation is reflected in implementation that leads to cost reduction and revenue enhancement. **MT**

Ready, Set, Go To Successful CMMS Implementation

Written by Ernie Autin, Reliability Management Group
Thursday, 01 April 1999 18:08

Ernie Autin is associate principle, vice president of business development, at Reliability Management Group, Minneapolis, MN 55337; telephone (612) 882-8122. He may be reached at eautin@rmg.com