CMMS: Finding Hidden Treasure

With a little digging, managers can take advantage of valuable data collected by maintenance software

— By Scott Franklin

Investing in a computerized maintenance management system (CMMS) is similar to any other capital investment. Managers prepare a budget, perform a selection process, make a purchase, install the system, and begin operations.

One significant difference between a CMMS investment and other capital investments is that, over time, the return on investment for a CMMS actually can increase. This is because the CMMS system is doing something hardware doesn't. It collects information that can be used to improve the efficiency of the maintenance mission.

Installing a CMMS generally is viewed as a two-stage process. The first stage includes everything necessary to make the system operational, and the second stage is operating the system.

But a hidden, third stage exists. As departments use the CMMS to buy repair parts, issue and track work orders, and schedule and plan maintenance and capital projects, it collects a wealth of maintenance history.

Since no quantifiable point exists at which historical data becomes useful, it is easy to overlook the fact that over time, a CMMS collects a significant amount of data. This hidden stage is the ability to analyze collected data to improve and optimize the maintenance program.

Synchronizing systems

In reality, there is a point where historical information has "gone live" — when the system has collected one year's worth of information. Simply put, every year provides two discrete data points — an itemized cost projection and budget as well as associated year-end actual cost totals. If a CMMS system has been in operation for that entire year, it has a third piece of information — CMMS totals.

One small problem might exist, however. CMMS totals might not match anything. Why? An organization's accounting process is designed to track expenses, but a CMMS is designed to track equipment, labor and parts.

This discrepancy does not mean the two systems are mutually exclusive, just that they track common information differently. Ideally, a CMMS is configured to collect and categorize the same cost information as an organization's budgeting and accounting process. For example, how is the organization's budget categorized — capital improvements vs. general maintenance, corrective maintenance vs. preventive maintenance, etc.? And is the CMMS set up to match these categories? Assuming a year's worth of data is available; managers can try printing reports to match original estimates.

Besides annual budgets, cost information also is available from accounting systems. But if an accounting system is not integrated with the CMMS system, getting accurate correlation between accounting's accounts payable entries and CMMS parts and equipment costs is difficult.

Ideally, all parts and equipment are purchased against a work order so that coordinating with a purchasing department to record the work order number can greatly simplify resolving discrepancies between CMMS numbers and accounting numbers.

It also should be possible to develop a report from the accounting system that can itemize costs by work-order number and allow direct comparisons with the CMMS system.

Defining the benefits
The most obvious advantage to configuring a CMMS so it matches an organization's budgeting and accounting processes is that CMMS data is readily available, which can greatly simplify budget preparation and add near-real-time cost tracking.

Also, the ability to show figures from the CMMS system that directly correlate to budgeting and accounting numbers creates inherent credibility when presenting information from the CMMS.

While there are definite advantages to having budgets, accounting costs and CMMS totals correlate, this situation might not always be possible or cost-effective. Configuring a CMMS to collect and categorize costs to match budgeting and accounting procedures is a useful guideline to ensure that quantifiable costs are recorded. But the real value in this historical information is how a review of history can improve future operations. For example:

Expense analysis. A number of areas can benefit from an analysis by expenses:

- Corrective vs. preventive costs. Realizing that preventive maintenance cost are primarily labor costs and consumables — with the notable exception of scheduled overhauls and replacements — building a reviewable history of the relationship between preventive maintenance costs and corrective maintenance costs helps managers quantify the return on investment of a preventive maintenance program, especially if they can track associated or estimated costs for unscheduled downtime and equipment failures.
- Capital improvements vs. maintenance and repair costs. Capital expenditures and equipment replacements, especially unplanned replacements, often can skew the analysis of maintenance cost. Tracking these in the CMMS can simplify the analysis of actual maintenance and repair costs.

Cost tracking. Tracking maintenance expenses and costs makes it easier to stay within budgets and justify next year's budget requests. Properly recording and categorizing maintenance expenses also allows on-demand reporting of year-to-date costs and comparison to budget projections.

Equipment-cost analysis. A recent review of one company's CMMS showed that it was spending $17,000 annually to maintain a group of pumps that had a replacement cost of $350 per pump. This situation had been going on for a number of years and was not immediately obvious until the department was able to collect and analyze a year's worth of information.

Most CMMS include a Top Ten or Top Twenty listing that is based upon various criteria — maintenance costs, in this example — that can be used to identify trends. Be aware that you might have to look a little deeper to identify some problems. The problem cited above was not noticed until a report was run by grouping all identical equipment — i.e., a cumulative total for all the $350 pumps.

Equipment reliability. A comparison of preventive maintenance vs. corrective maintenance can be revealing. For example, a make and model of equipment that is 25 percent less expensive than a similar model by a different manufacturer but has double the maintenance problems might

not be the best investment.

A review of maintenance history also can identify areas of the maintenance mission that managers might want to re-evaluate. For example, equipment with a high level of corrective maintenance provides a prime opportunity to review the quantity and quality of preventive maintenance. Conversely, equipment with a high amount of preventive maintenance but little corrective maintenance might not need quite so much attention.

Labor analysis. Most maintenance and engineering managers have been faced with the requirement of having to justify staffing levels or increased manpower. The availability of quantitative data would greatly simplify this justification process. By using a CMMS system to document labor hours, over time managers can build a significant amount of information. The primary benchmark is the amount of time is being documented.

A reasonable target is to get 50-80 percent of labor hours documented in the CMMS system — i.e., labor hours documented against a work order. Being able to show a relatively high utilization, along with a comparative breakdown of preventive maintenance hours vs. corrective maintenance and capital improvements, can provide significant ammunition when faced with inevitable labor justification questions.

Also, managers should be sure they have a defensible explanation for the utilization percentage. Maintenance supervisors should be able to provide a realistic target number and a justification for that number, and managers must make sure they take the time to phrase the question constructively.

The real secret of success in maximizing the CMMS investment is to recognize that information exists in a CMMS that wasn't there the day the system arrived. Managers might be surprised by what they find if they simply take time to see what the system can do.

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