Integration - are we going in the right direction?

By Chris Staller

My previous article received a lot of positive feedback. I am glad to see that as an industry we are concerned with our future based on our knowledge of the past!

> One reader responded by saying: "In my opinion, the [production] companies that win will be the companies that can fully integrate economic, condition assessment, maintenance and planning into their corporate structure. Those companies will have to stop looking for scapegoats, and will have to start looking at how they can fully utilize their resources."
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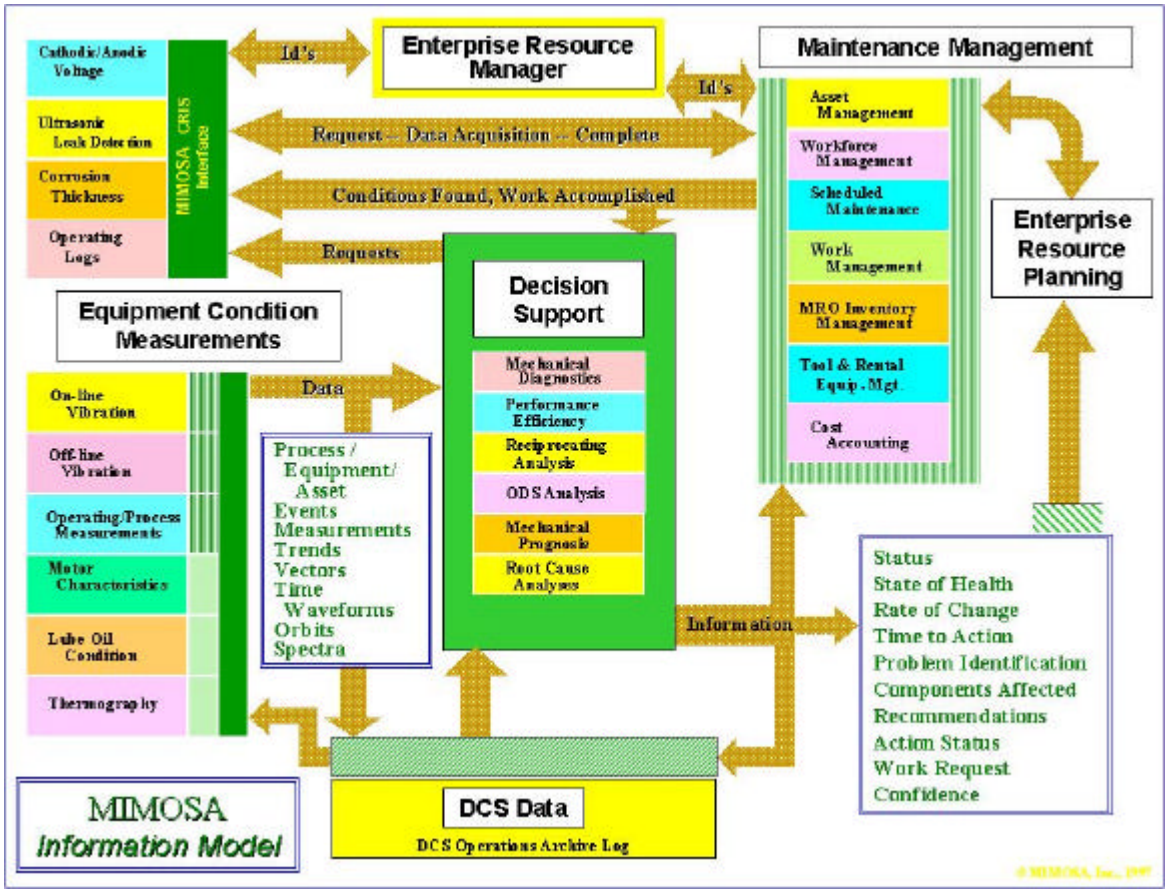
> Another reader responded with: "Where do you find operators who actually give a damn about a machine's condition or who really wish to know? Our operators do 12 hour shifts for three days then have two or three days off. With this type of shift work, there is little continuity…I think we have to completely rethink how processes are monitored, controlled, and maintained."

Both of these comments point to a common theme of how do we better utilize the information we have about a machine's condition, and integrate this information with the process [and culture].

A friend of mine, who is responsible for several CM programs at a series of large power utilities, recently reported that their systems are already integrated. I was surprised to hear this and proceeded to inquire as to the level of 'integration'. The response was rather typical: 1.) Process data is available through an ASCII link to the plant control system, whereby he can download a file for later processing (which he does manually via a spreadsheet). 2.) His CM programs are linked together by Windows™ via icons on the screen with cut-and-paste capability. 3.) The results of his PM program are [manually] entered into a maintenance management system, whereby work-orders are automatically generated. 4.) If a significant machinery problem is identified, he can e-mail operations, or phone the operator.

In all fairness, these are major milestones compared to 5 years ago. BUT compare this to how you use the Internet today in your professional and personal life versus 5 years ago. Obviously, CM is lagging behind the explosive growth found in other technologies.

What can we do to better integrate Condition information? Fortunately, organizations like *MIMOSA (http://www.mimosa.org)* are focusing on a three-tier solution to this very problem. The first establishes a model whereby Condition Monitoring technologies share data over a non-proprietary, open platform (i.e., the *MIMOSA CRIS Schema).* If users demand (a key component) and suppliers offer interfaces to their data (import and export files as well as programmatic function calls), only then can integration be accomplished. Second, *MIMOSA* recognizes the need for condition information as an important input to the 'Decision Support' block (see figure). Currently, most companies only look at process and quality variables. Yes, CM information does play a role, but it's usually a reaction through maintenance versus a variable to the operation. And finally, *MIMOSA* is working on business models that help justify integrated CM.



So what is the path to integration? Today many are not even at the level expressed by my friend in the utility industry. This is a shame, but by demanding open standards for the exchange of information, CM programs will grow by leaps and bounds. In this case, more information is better. We're starting to see this as several vendors begin to offer multiple CM technologies integrated within the same software package.

Second, only by integrating 'more [CM] information', can the 'Decision Support' block above truly become part of the operation. This is where the DCS/Enterprise provider has the greatest opportunity. I believe that by effectively integrating CM information within the traditional DCS/enterprise system, vendors of these systems will be able to differentiate themselves as true purveyors of condition assessment and equipment health monitoring functions. If you look at where the majority of money is being spent, you'll find it in either the DCS/Enterprise or Y2K programs. Hopefully, these vendors will heed the call for opportunity and not limit themselves to false promises based on mirrored inputs such as those from 4-20 mA loops and relay outputs. In fact, I know of one customer who recently changed-out their Enterprise system for a variety of reasons, one of which was the reality that the 'Condition Monitoring' modules were limited.

Third, CM must become part of the business model. In the example above of the failed Enterprise program, it is important to recognize that somewhere along the line the integrated CM solution was sold at the very top of the organization. It can also be said that it was purchased by the people responsible for running the enterprise and was pushed back through the organization. Unfortunately, the two were disconnected. The key point here is they were justified in financial terms and sold under the auspices of being integrated.

In summary, once the user demands integrated Condition Assessment technologies from CM vendors and DCS/Enterprise vendors begin to provide links for *condition indication* both from a process (Decision Support) and financial perspective, will the benefits of integrated CM be fully realized.

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