

# WHAT'S THE FUTURE FOR ENTERPRISE ASSET MANAGEMENT?

*All the major ERP vendors now offer their own integrated EAM solutions. So should users abandon their 'best of breed' suppliers? John Hookham reports.*

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Information technology has transformed all aspects of manufacturing industry, allowing the introduction of Just-In-Time and lean manufacturing. Technology has also changed the structure of factories and manufacturing plants. Where once there might have been perhaps six production lines each with a team of operators, these have been replaced by a single line requiring just two operators. These types of advances have not only had an impact on the production department but have also changed the way companies have viewed the maintenance department.

In many cases the maintenance department operated outside the mainstream company business processes. While production and finance deployed integrated enterprise resource planning (ERP) systems, the maintenance department continued with its T-Card systems and filing cabinets. Maintenance was the 'Cinderella' of British industry, excluded from the IT ball. However, companies are increasingly seeing plant maintenance as an investment rather than as a cost. And where previously maintenance could operate as a separate entity, today changes in the production system need to reflect back into the maintenance system.

Those maintenance departments that had software systems often relied on inhouse systems written by the data processing department. And these usually had significant shortcomings, as the maintenance department was often low on the list of priorities for scarce IT resources compared to the finance and production departments.

Commercially available software packages were few and far between and where they did exist they were expensive and often standalone, running on proprietary minicomputers. They would support the five or 15 terminals required to operate the four principal maintenance functions: updating the equipment database; work planning and recording; spare part management; and purchasing – although purchasing would often take place within the company's purchasing department to ensure the financial systems retained all the cost information.

The advent of the PC transformed the technology world, bringing data processing out of the locked DP room and onto the desks of the production managers and design engineers. The maintenance manager was not ignored either, and over the years hundreds of computerised maintenance management systems (CMMS) have been written. In many cases the systems reflected the requirements of a particular industry or type of organisation, such as specialist preventative maintenance inspection route planning for paper mills or component warranty tracking for off-road vehicles.

## **Integration or interfacing?**

A common problem for the niche CMMS suppliers, which still exists today, is the integration (or interfacing) of the maintenance system with other corporate systems. Generally, data is recorded in the maintenance management system and passed to the other systems. Information such as labour hours and material costs is collected in the work order module and transferred, often via a batch transfer, to update the financial ledger.

A one-way transfer of information is normally fairly easy to accomplish, and most packages have some form of standard data extraction utility. But things become more difficult when information needs to flow backwards and forwards between two different systems.

The most common interface is in purchasing, where the requirement is generated by the maintenance system but fulfilment is via the corporate purchasing system. However, the maintenance system also needs to be updated with delivery dates etc, to ensure the maintenance work is organised and planned correctly. But even if purchasing is completed wholly within the CMMS system, all the cost information will need to be automatically updated in the corporate finance system.

The maintenance management system also needs to operate alongside the corporate systems that handle production planning and human resources and so multiple interfaces or levels of integration are required to prevent duplication and/or re-keying of data.

In many cases when software companies talk about integration they really mean interfacing. With an integrated system, the employee's record details are held in the HR system and will be accessed by the maintenance system. But with an interfaced system the employee details will be held in both the HR and the maintenance system, with one system holding the master record. In this example the HR system would normally be the master because of the link to payroll, etc. Clearly these types of task are more easily accomplished if the same software company is supplying both parts of the solution, which is why the ERP suppliers have made inroads into the CMMS marketplace.

Companies are also reluctant to support multiple different software technologies and differing user interfaces and, despite the common misconception that it is easy, integration of software from two different suppliers is still a problem. In particular, which of the suppliers will be responsible for any software and data errors and how will upgrades be co-ordinated? With software from a single supplier this issue should not arise.

### **Enterprise asset management**

In recent times the leading suppliers of CMMS software have re-branded themselves as enterprise asset management (EAM) companies to set them apart from the massive number of small suppliers. They achieved this by offering better functionality and by being able to support companies on a global basis – providing support for multiple currencies and languages together with local implementation teams. And to help address concerns about integration, the EAM suppliers often offered standard gateways for the major ERP systems. Consequently the EAM companies could command a premium price for both their software and services.

EAM can probably best be described as a 'multi-site, multi-language, computerised maintenance management system that connects to and interoperates (is integrated) with the corporate IT systems', which for a large corporation will typically be SAP or Oracle. A CMMS system can be described as a 'single-site system with an interface to the corporate finance system'.

### **Current marketplace**

At the enterprise level, the EAM suppliers face stiff competition from the large ERP suppliers who are offering their own EAM modules that are fully integrated (not interfaced) with the rest of their ERP suite. One of the most aggressive of these companies is the world's largest application software supplier, SAP, which also claims to have the broadest solution for EAM in the market.

SAP has been supplying a plant maintenance solution for many years, but until recently did not really focus on this market sector. Consequently many of SAP's corporate customers have installed solutions from other suppliers and in particular those from the large EAM suppliers. SAP is keen to recover this lost ground and is now running annual SAP-centric EAM conferences. The other leading ERP supplier, Oracle, also now provides its own EAM solution to asset-intensive industries, where previously it had partnerships with niche EAM suppliers.

The last few years have seen EAM and CMMS sales remain fairly static for the niche players, with most software licences coming from existing customers rather than brand new customers. Another worry for the niche suppliers is the increasing ability of the mid-range ERP suppliers to win business in the heartland of the EAM sector. In the past the dedicated EAM suppliers such as MRO Software, Mincom, Datastream and Indus would expect to be fighting each other for business, not fighting Intenia, IFS, Geac and Oracle, let alone SAP.

To counter the advances being made by the ERP companies, the niche suppliers have adopted various differing strategies. Some, like Indus, have broadened their product line to include customer-centric and field service suites. MRO Software is producing industry vertical solutions and also offers a solution covering four main asset classes – production, facilities, fleet and IT assets. Other companies have responded by including modules to cover reliability-

centred maintenance, barcoding, support for mobile devices/PDAs and integration with geographic information systems (GIS).

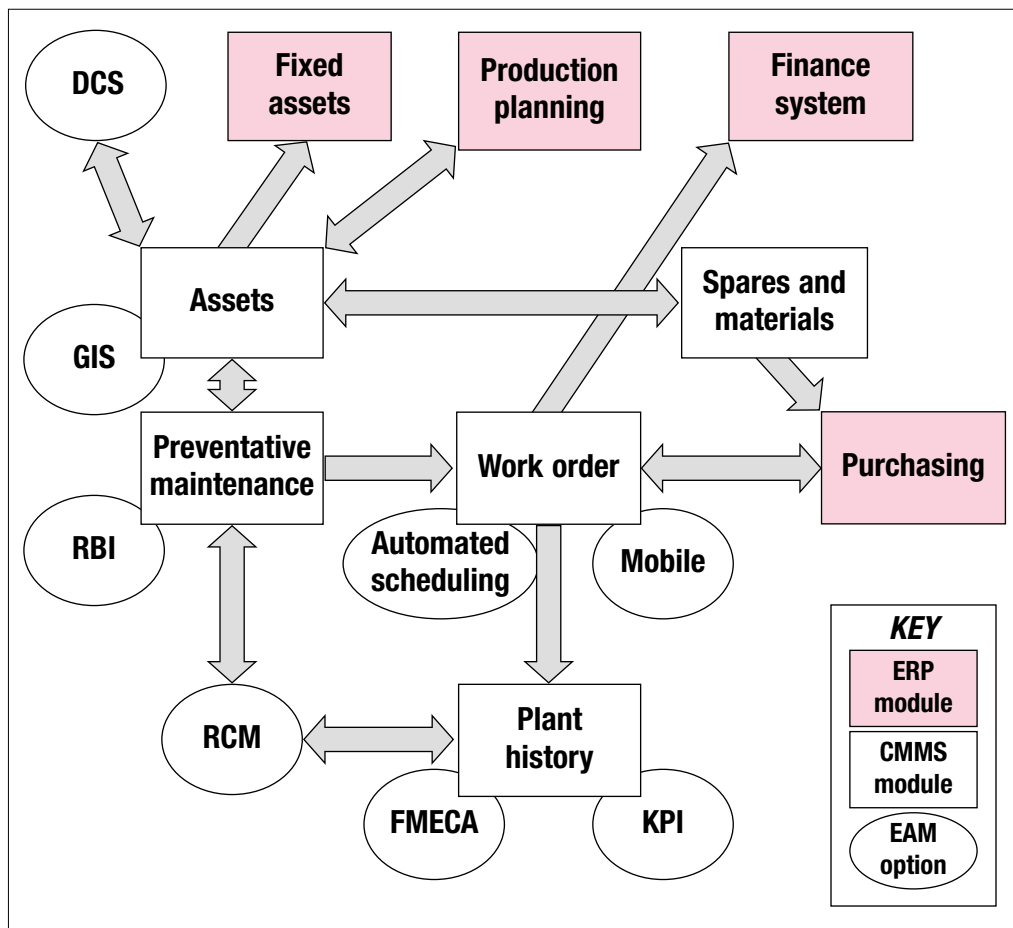
Somewhat surprisingly, maintenance management systems have always been at the forefront of technology. Web-based systems have been available for around eight years now, while most ERP suppliers were still busy producing their client/server solutions. But this passion to be the first with new technology can result in a freezing or in some cases a reduction in the product functionality, especially for many of the smaller companies that have limited resources. For example, while the core modules may be written by the software company, many of the peripheral functions such as reliability-centred maintenance (RCM) and mobile solutions may need to be provided by third parties. This limits their appeal, as not all the maintenance functions will be provided by the same supplier. SAP, on the other hand, has its own integrated RCM module tied back into the work order modules.

Swedish ERP supplier Intenia has taken a similar approach to SAP and developed what is essentially a 'best of breed' solution within its standard ERP offering. The result is that the company is winning business in asset-intensive industries that would in the past have chosen a niche EAM or CMMS supplier.

Consequently the old ground occupied by the EAM suppliers is disappearing quickly, with SAP targeting the large corporations and other ERP suppliers encroaching on the middle market. And for many companies, where maintenance is regarded as a peripheral activity, a totally integrated solution from one ERP supplier is seen as providing more benefit than a best of breed approach, especially when all of the basic maintenance management functions are readily available.

But for some asset-intensive industries the best of breed approach is still being adopted, especially for companies using failure mode effects and criticality analysis (FMECA), risk-based inspection (RBI) or who need links into digital control

Figure 1: EAM/CMMS modules and options



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systems (DCS). For example, one French-based paper company concluded, after an exhaustive evaluation of the maintenance management offering from its ERP supplier, that there were too many gaps in functionality and decided to implement software from a niche EAM supplier.

Looking to the future, as with the ERP market, there will be a level of consolidation with many of the smaller CMMS and EAM suppliers unable to compete with the larger EAM suppliers or with the offerings from the ERP suppliers. The survivors will be those companies that offer not only the core modules (see Figure 1) but also have the financial strength and the ability to deliver additional deep maintenance functionality, over and above that offered by their competitors.

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