

The Rise and Rise of Tier 1 ERP Maintenance Systems

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Introduction

There has been a marked improvement in recent years of maintenance systems sold as part of major Enterprise Resource Planning (ERP) systems. Products such as Oracle and SAP (which command somewhere between 20-40% of the USA ERP market [1], and have a strong presence in Australia) have worked hard to improve their integrated maintenance management packages. Previously they were seen as non user friendly and overly complex. In fact it used to be the case that major ERP suppliers would align themselves with other major CMMS suppliers rather than develop their own systems. An example would have been Oracle with Maximo or EMPAC.

However times have changed, and now these Tier 1 ERP Maintenance Systems now offer extremely viable solutions. In large organisations, which need to run ERP systems, these maintenance packages now offer huge functional and technical advantages, with unsurpassed levels of scalability and integration within the company's ERP package.

This article tries to discuss and qualify some of the advantages of having a single ERP/Enterprise Asset Management (EAM) solution.

Overall Picture

Before discussing some of the features and advantages that these systems can offer, compared with either stand-alone or interfaced systems, it is worth looking at how they fit in with the existing ERP needs of the company. Figure 1 shows how the functional areas of the EAM integrate and relate to other areas of the ERP.

Technically it is easy to see how seamless integrations into existing ERP modules, such as purchasing, inventory and general ledger (GL) can offer huge advantages. In large national (or even international) organizations, having maintenance incorporated within the ERP can offer a true enterprise solution, with maintenance activities, standards and costs truly visible to all levels of the organisation. In addition maintenance management can leverage off existing company standards and workflows.

Delivery and Ease of Use

There have been huge inroads into user friendliness and functionality of these systems. There is no doubt that early versions were unwieldy to the extent that companies questioned the viability to implement these solutions into workshops. To enable process and maintenance improvements there is no doubt that large companies accepted a multitude of smaller stand alone maintenance packages (such as the hugely popular Australian MEX) so that savings can be realized. These systems will always have a place in the maintenance market, particularly for smaller organisations.

EAM systems are now web delivered for day to day functionality requirements (Work Order issue and completion for example) with more and more of the total functionality being migrated to this platform every version. Obviously benefits here are huge technically with potential lower bandwidth requirements etc. An important aspect also is that school leavers today (our future maintenance managers) are used to this method of delivery, let's call it the drop and drag/add to cart functionality!

Major Specific Advantages

Scalability – being part of the company's ERP system means true scalability across the organisation. The use of existing infrastructure ensures that issues such as back up and recovery regimes already exist.

Interface Management – wherever systems are required to integrate there is ongoing cost. Day to day management of interface tools and errors can add significantly to system management costs. If either system is due upgrading then the cost can be huge, running into \$100K's as interfaces are reconfigured and tested. Strategically any company with an interfaced CMMS should look long and hard at the viability of continuing this setup if either system (ERP or CMMS) require significant upgrade. With a single solution ERP/EAM platform these costs are minimised.

Reporting – having a single ERP/EAM solution covered by the company reporting tool offers huge advantages. With clever data mining and well specified reports, maintenance activities and costs will be available to all levels of the organisation. In addition the knowledge of report writing (for example having a small team conversant in Cognos or Discoverer) is likely to already exist in the organisation, leading to better, quicker and cheaper reports early in the EAM implementation.

Purchasing – seamless EAM integration into the existing purchasing tool offers huge advantages, not just technically but in change management and training benefits. There are already likely to be many experienced purchasers in the organisation who can provide back up and support to the new EAM users. There are also huge advantages as the EAM will leverage off existing approval workflows and vendor lists etc. In addition the required financials can be setup behind the EAM assets, taking away some pressures from the workshop level user.

Inventory – most ERP systems incorporate a very mature inventory module, which, in many cases, may well be in use long before the maintenance module. Incorporating maintenance parts and catalogued services (whether stocked, non-stock or standard external services) into an existing inventory system will ensure continuing company standards compliance. Often experienced inventory practitioners will exist within the organisation who can assist the EAM implementation with cataloguing and building BOM's etc. Unique parts identification, from centralised cataloguing standards, will also lead to better price control and visibility of maintenance spend. Needless to say the fact that a seamless relationship between parts usage (Work Order transactions) and parts received into inventory (Purchase Order receipts) exists is beneficial. How often do we see “double punching” of received parts into stand-alone maintenance systems!

Legislation/Regulatory – recent times have seen an interesting swing towards company directors and managers being held accountable not only to government bodies in terms of health and safety regulations, but also to shareholders in terms of company performance [2]. Having visibility and accountability for all maintenance management activities within the company ERP can offer a measure of control and direction that is beginning to be demanded by senior executives.

Maintenance Profile – a common theme when reading about how to make maintenance better understood, and hence supported, is that maintenance gains should be promoted. By the very nature that the system is incorporated into the ERP means that costs are visible and maintenance transactions will have a real effect on GL. Because of this inbuilt financial functionality, all implementations are suddenly required to be signed off by commercial and business managers. More than likely a substantial implementation will have a high powered steering group. Talk about raising the profile of maintenance!

Training – benefits in implementation training will be realised early as the maintenance system will present and behave like many other modules already in use. Most of the web delivered modules (such as purchasing, credit card expenses etc) will all share the same look and feel as the maintenance system. This is a huge benefit during training and implementation.

Technical Support – more than likely, if the company is running a Tier 1 ERP, there will already be in-house expertise in system support. In addition there is likely to be in place the testing regimes (test environments and routines) to ensure that any changes or upgrades to the maintenance system can be migrated successfully into the production environment without issues. The maintenance of an up to date and viable training environment will also ensure that user training is as effective and realistic as possible.

Minor Advantages

Other advantages will include:

- Seamless integration into the company email system (reports, alerts etc)
- Integration with other modules – for example Fixed Asset Register
- Seamless user management in terms of access and monitoring
- Control of named employees (resources) in the maintenance system (link to Human Resources module)

What are the disadvantages/challenges?

Obviously this article has attempted to outline the significant advantages in incorporating EAM into ERP. However there are things to be considered before deciding this methodology.

- Is my organisation large enough to warrant this sort of scalable implementation? In essence if you run a large ERP system and have significant maintenance requirements, then the answer is probably “Yes”.
- What about the cost? There is no doubt that these (and any) systems cost money to implement, and in particular to keep updated as all ERP's systems go through very aggressive enhancement programs.
- Change! There will always be the challenge to sell the concept of a large integrated system (with a lot of historical baggage) especially when some maintenance organisations are doing “very nicely thanks” with their small stand-alone

packages. In essence the challenge is to sell the concept of taking their hard won gains into the new system. Perhaps even sharing their knowledge with other areas in the business!

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References:

- (1) Maintenance Journal – May 2006 – Editorial
- (2) AMMJ – January 2007 – Major Overhauls in Maintenance Legislation? – Joel Leonard