

Serving up EAM Integration

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The Need for EAM Integration

Integration is a word that strikes fear in many *information technology* (IT) organizations. There is no question that integrating systems has created major havoc within enterprises, and gluing together disparate mission-critical business systems from multiple vendors that were never designed to work together is definitely a cause for IT concern.

For many organizations, the solution has been to avoid integrations altogether by selecting a single vendor's complete suite of enterprise applications. Although the intent is not to disparage enterprise applications, the reality is that while they offer application breadth, they may not offer sufficient application depth (depending on your specific needs). The result is a compromise in application functionality in order to satisfy the needs of the broadest number of users.

However, in asset-intensive organizations, this compromise may have dire consequences. All too often, the maintenance department is forgotten and left to use whatever functionality comes along with the rest of the enterprise suite and usually has little input into the selection process. This often results in resistance by the maintenance staff and ineffective use of the enterprise suite. In some situations, the maintenance department may even revert to using inefficient paper-based systems. Thus, these asset-intensive organizations should not ignore the needs of the maintenance department—especially when they're the ones responsible for maintaining the assets that produce the revenue stream.

Fortunately, technology has finally caught up with the needs of the enterprise, and integration is now becoming a business enabler instead of an obstruction. For asset-intensive organizations, this means that a functionally robust best-of-breed *enterprise asset management* (EAM) system can play a viable and strategic role within the maintenance department by helping to streamline critical business processes. It also means that IT departments do not have to spend 50 percent of their budget supporting complex application integrations, finance gets the information they need, and management has complete visibility across the enterprise.

So what has changed to make this all happen?

Introducing Web Services

Many of you have probably heard about *enterprise application integration* (EAI). EAI has been the approach traditionally used to enable the interoperability between two or more enterprise software systems. It involves developing point-to-point links connecting specific enterprise systems. However, it can be

expensive and result in long implementation timeframes. In some cases, the cost of the EAI implementation can exceed the cost of the software being integrated. The lean and agile nature of today's organizations is placing increased demands for a less expensive approach to integration, and Web services promises to be that approach.

Although the Web services approach does not necessarily make earlier EAI technologies obsolete, it does make some types of integration possible that would have otherwise been very complex. In its simplest form, a Web service is a collection of business logic packages that are called upon as needed to support specific business processes. These business logic packages are completely independent of one another, but because they share common technology standards, know exactly how to communicate with one another when invoked within an enterprise or across many enterprises. It is the interaction of these business logic packages or services that make up what is called *service-oriented architecture* (SOA).

SOA acts just like an old-fashioned telephone switchboard operator. If two people need to call one another, there is no need to build a custom physical link that ties the two phones together, since the switchboard operator takes care of making the connection. Once the call is over, the callers can use the same phones to call other people and the switchboard takes care of all the connectivity. However, in order to make this work, all parties must agree on some specific standards, for example, using compatible phones, knowing how to find and dial a number, picking the phone up when it rings, and speaking the same language.

SOA works much in the same way, because it defines standards that must be followed to facilitate integration. For example, in order for these Web services to work together, everyone must speak *extensible markup language* (XML). XML is an open standard of industry-standard protocols for describing and exchanging information and handling transactions. It makes system integration easier and less expensive by enabling coexistence between software applications written in different programming languages, developed by different vendors, or running on different operating systems without time-consuming custom coding. Other standards include *simple object access protocol* (SOAP), which outlines how an application talks and listens to a Web service; *universal description, discovery, and integration* (UDDI), which acts as a yellow pages book that identifies available services; and *Web services description language* (WSDL), which represents a description of the Web service offerings.

This may be interesting from an IT point of view, but what does it all mean from a business perspective? It means you can easily streamline business processes by making it easier for people to work with applications and for applications to work with other applications. For example, end users do not have to interact directly with an application because they can use the technology that makes sense for them. In other words, they can easily use their mobile devices to access work

orders on the EAM application, or use their e-mail to route and approve purchase requisitions from their *enterprise resource planning* (ERP) system. Similarly, applications can easily access information or invoke functions on other applications—within the same enterprise or with an external partner.

Web Services and EAM Integration

The potential opportunities for Web services in asset management are very evident. The plant floor contains a myriad of applications and technologies from numerous vendors that often function stand-alone to address specific business issues. Unfortunately, these application silos on the plant floor are hindering many key business processes that are designed to ensure optimum asset reliability and availability.

The work management business process usually involves a number of disparate applications and requires the movement of data through each step of the process. A typical work management process might involve a condition monitoring system that identifies a problem and generates an alarm. This alarm would be entered into the EAM system so that a work order could be created. The planning process would then identify labor and material requirements. If material was unavailable, the material requirements would be entered into an ERP system so that the materials could be ordered. The EAM system would have to know whether the items were ordered and expected delivery information. The EAM system would also have to be alerted once the items were actually received so that the work could be scheduled. Once the work was completed, time card information would be entered back into the ERP system for payroll. The number of nodes and manual steps in this process makes it inefficient and time-consuming and also increases the likelihood of a breakdown in communication.



SOA, on the other hand, simplifies the process by eliminating many of these nodes. Web services handle the movement of data from one system to the next in a secure and timely fashion. As business processes change or new applications are introduced, Web services ensures that they can be easily plugged in to support the business process.



Conclusion

SOA and Web services are poised to fundamentally change asset management. Pressured by today's reality of a retiring maintenance workforce and demand for increased productivity improvements, organizations must begin to fully utilize their EAM applications. SOA promises to advance an organization's business processes by making the EAM an integral part of a comprehensive asset management strategy. Integration is the key to this success and SOA is the enabler.

About the Author

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