

The ERP Umbrella

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In any modern plant, communication is key. But just what level does your facility really need and, perhaps more importantly, what can you manage?

ERP (enterprise resource planning) was once considered a software solution for large manufacturers. Designed to serve as a tool to integrate all business facets into a real-time communication platform—from operations and materials considerations, all the way to accounting and human resources elements—ERP is widely used as a customized solution, requiring manufacturers to build a system from the ground up, rather than cannibalizing current software platforms.

Over time, cost parameters and application changes have made it more reasonable for an SME (small and medium-sized enterprise) to consider. At this same time, manufacturers need for real-time enterprise-wide communication has increased, making the business case for this type of endeavor more appealing. That said, it's quite an undertaking, and many manufacturers find even the initial steps daunting.

“ERP often requires new levels of discipline from staff,” says Gary Marzec, Program Manager, Northrop Grumman Information Systems. “Training and dedication to learn a new system can be a big hurdle to jump.”

Finding A Vendor

Perhaps the discipline should start with a measured analysis of ERP solutions providers before committing outright to a vendor.

According to Plex Systems, provider of Plex Online Software as a Service (SaaS) ERP, there are several essential elements manufacturers need to consider when selecting the right ERP vendor. Besides carefully calculating a total cost of ownership, prospective integrators should ask the following questions:

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Published on Industrial Maintenance & Plant Operation (<http://www.impomag.com>)

1. Does the proposed ERP solution support the company's style of manufacturing?

There are dozens of styles of manufacturing, from job-shop to cell-type organizations to highly complex automated environments. An ERP system must support the specific manufacturing style and business model.

It is strongly recommended that plant floor staff attend demonstrations and/or reference visits. If the system is difficult to use, it will become “shelf-ware” and ROI will be completely compromised.

2. Does the system support the extended enterprise?

A manufacturing operation doesn't exist in a standalone environment. Suppliers and customers require direct access to data.

Check if the solution is both reliable and highly secure, says Plex. For ultimate flexibility, the system should expose transactions to a customer or supplier—without programming and without installing software at a trading partner. The system interface should be intuitive enough that suppliers and customers will not need training to use it effectively.

3. How is the software licensed?

Sadly, the enterprise software industry often plays games with software licensing, offering variable feature-sets on a “per user” basis.

Plex Systems recommends a flexible, open licensing model that allows deployment throughout the enterprise. Everyone at a company adds value to the products and services; the most effective system will capture important facts about everything going on as it happens.

4. How many customers are on the latest release of the software and when was the latest release?

Most analysts estimate that fewer than 50 percent of enterprises are within two releases of the current version of their enterprise software packages.

Check if the vendor offers a traditional, licensed “on premise” method of delivering software and whether there is evidence the solution is fraught with waste and delays, including complex version control.

Many companies can provide advanced software development and delivery over the Internet, in which the manufacturers benefit from continuously improved application enhancements—even on a daily basis.

5. Are lean principles supported in the system?

ERP systems are generally considered to be counter to lean principles. That's because the standard approach is to allow individual departments or functions to

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select the application that best meets their individual needs.

Ask if the system will help take muda (waste) out of the entire system both internally and up and down the supply chain.

Check if the vendor touts standalone solutions to perform certain lean planning functions. Find out if the ERP solution supports lean execution. Are transactions poka yoke'd (mistake-proofed) at the point of origination? Is heijunka (demand leveling) available? And are these functions supported across the supply chain—with customers and suppliers?

Tackling Customization

According to Mike Salem, CEO of software solution provider Vorex, the factors that can play a role in the way a manufacturer's customize their ERP system depends heavily on their size, scope of operation, and their specialization: "For example, a small manufacturer may require very little, if any, customization," says Salem. "But a large operation might require multiple reports for the different departments and a complex workflow, or even larger fields to handle their high volumes.

"Another factor would be the scope of operations—a multi location operation in multiple regions will require customization so each region stays current with their local laws, currencies, accounting, or even language. And the final factor is the specialization of the manufacturer. An operation that produces 'typical or known' products, such as chairs, pipes, stationary, and the like might require very little customization, as their operation is already known for most ERP vendors. But, for example, if the operation is producing custom diving equipment for off-shore oil drilling, then these manufacturers might require very customized system to address their very unique manufacturing requirements."

In addition, adds Northrop Grumman's Marzec, "There are numerous joint ventures, special supply agreements, and consignment programs that involve deviations from the old fashioned 'buy raw material, process in-house, and ship direct to customer model.' These niches and arrangements affect material ownership, purchase points, sale points, price calculations, demand signals, and more."

Leaping Knowledge Gaps

Certainly some of the biggest hurdles are for SMEs—especially when it comes to preconceptions relative to the capital investment and time commitment for such a project undertaking. Sometimes, the most problematic issues from an SME vantage point is in not realizing the amount of manpower it will take to get their ERP system up and running, says Marzec. "This is no small undertaking, so making sure there is enough staff to support the project without being stretched too thin is important."

Also, says Marzec, not knowing what the focus or needs are of the company when selecting a vendor can make for longer implementation when issues are addressed during implementation instead of at the beginning. The solution? According to Marzec, it's about having top management involved in the process from the very

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beginning, regardless of company size. “The team needs to know management’s commitment and expectations,” he explains. “Companies need to identify those special activities they are currently engaged in and work with the ERP vendor to understand how they can be handled in the new system. Small companies are prone to being niche-oriented, but often don’t realize it. They need to communicate their business requirements to the ERP vendor very carefully and not assume that vendor has an understanding of their particular requirements. Being niche-oriented, there are oftentimes misconceptions that an off-the-shelf product will solve the problems without any customization.”

Another big misconception for SMEs, says Vorex’s Salem, is the cost and complexity of the application. “There are still many reputable ERP vendors that specialize in the SME sphere, offering much less expensive applications that are much easier to use than your typical ERP system,” he says. “Another common misconception is that installing an ERP system can be a lengthy process (over a year). Although there are many instances to support this misconception, choosing the right ERP vendor that caters to SMEs might pleasantly surprise these manufacturers with a smooth and relatively short installation time frame (less than 4 months).”

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