Transforming Your ERP System into a Solution for Higher Profitability

White Paper

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Most organizations try to delay upgrading their enterprise resource planning (ERP) system for as long as possible. The typical replacement cycle is five to seven years, but some companies are now realizing that they haven't evaluated their options since Y2K. Other companies are being forced to find new solutions as their legacy systems are sunsetted. Still others have been managing most of their data outside their ERP in Excel, and they know it's time for a more efficient method.

While the economic climate may not seem conducive to a large IT investment, now may truly be the best time to enhance your organization's infrastructure. A fully integrated ERP system will help your enterprise standardize its business processes to achieve greater efficiency across your operations. And the right service provider will ensure that you meet these goals and maximize the return on your investment. Take this opportunity to invest today for success tomorrow.

Understanding Dataflow Challenges in the Manufacturing and Processing Industries

Organizations across all industries utilize ERP systems for data management. The types of data and how they transact vary by business. Manufacturing and processing companies have very different needs than businesses such as retailers, government agencies, nonprofits, financial groups and professional service providers. The same ERP system will not work for them all, and neither will the same ERP services provider. As a manufacturer, your ideal ERP services partner is one who understands the intricacies of your industry and the many data points that are needed to integrate in order to provide the greatest value for your business. The right partner will understand the details of various processes as they relate to your manufacturing industry.

Quote-to-Order

The process by which a sales opportunity becomes an order requires careful data collection and integration. The quote-to-order process is particularly challenging in the manufacturing and processing industries because it involves complex demand. For example, retail distributors procure and resell finished goods straight from a catalog of items, but manufacturers and processors must manage scarce resources, raw materials, labor and machine time in order to calculate available-to-promise. They must also measure demand, develop a forecast and estimate what the company can expect to sell over a certain period of time. It is important to accurately gauge demand for the sake of setting timeline and budgetary expectations with clients and their customers. The recent trend toward mass customization only adds to the complexity. Tailoring products to serve individual customer needs requires management of the front end of the demand, the sales aspect of the process, and then conversion of these quotes into orders. Not every ERP system or installation / integration services provider knows how to manage these variables.

Are you getting the most value from your quote-to-order process?

- Do you know the cost of the products you manufacture?
- Can you provide an accurate available-to-promise (ATP) date to your customers at the time of order?

If you answered “no” to these questions, an integrated, manufacturing-based ERP solution will help you realize improvements.

Planning and Scheduling

The core function of an ERP system is planning and scheduling. Manufacturing and processing companies have specific challenges in this area because accurate planning and scheduling allows companies to achieve the efficiencies of just-in-time inventory — with reduced levels of finished goods, work in process, raw materials, cycle times and production times. Not every ERP system or services provider can handle these complexities.

Are you getting the most value from your planning and scheduling process?

- Do you always deliver on time?
- Do you have just-in-time inventory levels?
- Are your customers always satisfied with their orders?

If you answered “no” to these questions, an integrated, manufacturing-based ERP solution will help you realize improvements.

Production and Quality

Businesses such as retail, government and nonprofit organizations do not need to worry about the process of converting raw materials to finished goods, but this is of course the essence of manufacturing. In the manufacturing / processing space, ERP systems must handle detailed data related to bill of materials (BOM), multiple units of measure, different packaging descriptions and conversion of raw materials through a particular workflow. Plus, it is critical to track actuals through the machines. Knowing which materials are used, tracking genealogy and performing inspections ensures the quality of your products.

Are you getting the most value from your production and quality processes?

- Can you track work in process?
- When product goes out of specification, can you determine why?
- Can you track the reverse genealogy of a finished good back to the raw material lot?

If you answered "no" to these questions, an integrated, manufacturing-based ERP solution will help you realize improvements.

Integration

In the manufacturing industries, businesses require an overall portfolio of numerous applications, such as laboratory information management systems (LIMS), control systems and human machine interfaces (HMIs). Additionally, they often rely on manufacturing execution systems (MES), content management systems (CMS) and systems for water management, asset management, downtime tracking and other functions. To improve efficiency and quality across these many systems, an organization must develop a standard method of sharing data among them.

Businesses should first try to consolidate data points, if possible, in order to reduce the level of support and maintenance required. Then, the remaining data points must be integrated. Integrating the many data points across your organization allows you to eliminate the human error associated with manual data transfer. You also avoid the high costs associated with supporting and maintaining skills sets required for inputting data across a range of applications. Plus, integration allows real-time access to information needed for making informed, timely decisions.

Are you getting the most value from your individual data points?

- Do your plant managers have access to real-time data through dashboards with key performance indicators (KPIs)?
- Can your plant managers predict events and correct for events before they occur?

If you answered "no" to these questions, an integrated, manufacturing-based ERP solution will help you realize improvements.

Selecting the Right ERP System

When you begin your ERP selection process, consider the following factors to help decide which solution is best for you.

Industry Needs

Even within the manufacturing and processing space, needs range widely by industry. When shopping for an ERP system, look for software that offers specific solution options for your operations. For example, Microsoft Dynamics AX offers solutions for particular manufacturing industries and for achieving compliance with good manufacturing practice (GMP) requirements and other regulations.

Functional Features

Today's ERP systems include tools to handle the various data transactions manufacturers need on a daily basis. Consider solutions that are proven to help with the following functions:

- Financials
- Planning and scheduling
- Manufacturing
- Plant maintenance
- Supply chain management
- Customer relationship management (CRM)
- Integration with internal or external human resources and payroll systems
- MES integration

System Architecture

Selecting an ERP solution with the best architecture for your business will help ensure its success. First, consider your current technology platform and those used by your vendors. Whether it's Microsoft, OpenSource, Linux, IBM or another platform, choosing a compatible ERP solution will only ease the implementation process. For example, most people are used to using Microsoft® Office applications. Microsoft's ERP solution, Dynamics® AX, incorporates the Office user interface that is familiar to so many workers, allowing them to begin using the application with minimal training.

Second, look for an ERP solution that will support the method of integration you prefer to use. Options include APIs, Web services, XML, batch import / export and EDI. Some systems work better with a particular method, and you should be sure to choose the solution that meets your integration preferences or requirements.

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Also consider the level of configuration you will require for your ERP system. It can be extremely costly and time-consuming to build a custom integration, depending on the flexibility of the system architecture. For the same reason, some specially tailored ERP solutions can also cause difficulty when it comes time for upgrades. Many ERP systems allow for easy upgrades, but others may require that you reintegrate your connected applications with each new version of the software. When considering the configuration and upgrading capabilities of your ERP solution options, ask the following questions:

- Does the application have an integrated development environment?
- Can the application be changed without disrupting the upgrade path?
- Do you need any special skills to configure the application?
- Will the application support your business processes and objectives?
- Will the application support your needs for integration across multiple locations and with different companies — potentially including multiple currencies and languages?
- Will you be able to centralize certain functions such as procurement, payables and receivables?
- Will the application support your plans for future growth?

Provider Capabilities

When shopping for an ERP system, consider the qualifications of the company that developed it. The developer's financial stability will indicate whether the company will be able to provide ongoing product support and upgrades as needed. Ask the provider about its future roadmap and direction — whether it plans to improve the product and how you will benefit from these advances. Look for a clear, realistic projection. A plan for steady progress is a good sign, but a constant stream of upgrades may be hard to manage.

Some companies forget that evaluating the service provider is just as important. Even if you select a top-line application with the best features and architecture for your business, the system may fail if it is not properly implemented. Likewise, a seemingly less functional application can deliver great success if it is well-implemented and optimized for your needs. The best way to ensure a successful ERP solution is to select the right service provider to help you gain the most value from the system.

The right service provider will also help ensure that your implementation project stays within your approved budget and timeline. The marketplace is full of horror stories of ERP projects taking twice as long to complete and costing much more than was originally estimated. Such drastic miscalculations can quickly devastate your hope for return on investment. That's why many manufacturers now spend just as much time evaluating services providers as they do the actual ERP software.

The three categories of service providers are:

- **In-house team.**
  Assembling your own internal team to perform the ERP implementation and integration may seem like the most affordable option, but it may not be the most effective one. An in-house team will not necessarily understand ERP best practices or have the time and skills needed to do the work properly. You may actually end up spending more due to lost productivity.
- **ERP vendor.**
  Most ERP system providers will also offer to install their solution for you. This may be an option, but keep in mind that your software provider will probably only have expertise in its own product. The workers may not know how to integrate their ERP application with all your other systems so that you can realize the greatest benefit from the solution.
- **Independent systems integrator.**
  A good third-party provider has extensive experience working with a broad range of systems and can ensure a successfully integrated ERP solution. These providers may have broad experience within your industry and can help you with a best-practice approach. Independent implementers also have experience integrating various ancillary systems with your new ERP application.

When considering the capabilities of your service provider, ask the following questions:

- Is the service provider financially stable so that it will be able to complete the project and also provide future support?
- How much experience does the service provider have in your industry and in integrating ERP systems with other manufacturing systems?
- What is the service provider's implementation methodology?
- How well does the service provider understand the ERP system you chose and how to realize its complete benefits?

Establishing and Achieving Business Objectives

The right ERP solution will make it easy to realize extensive business benefits. ERP solutions can help you develop consistent business processes, make real-time decisions, improve efficiency, reduce inventory, and boost customer satisfaction and margins.

Consistent Business Processes

Most of your personnel have used your software applications at previous jobs and tend to continue working in the way that is familiar to them. Because there is no one-size-fits-all solution, workers in each functional area of an organization may end up using a different set of business processes. Whenever the functional areas interact, the inconsistencies manifest, negatively impacting your company's efficiency and quality.

With an effective ERP solution in place, your organization will benefit from a holistic approach to how your organization handles all its transactions. Your departments will have the opportunity to decide and establish an automated, consistent way of doing business so that the processes are repeatable. As a result, your company will be able to improve quality and minimize redundancy across the organization.

An ERP system incorporates your business logic and provides access to accurate data for making informed decisions. Workers otherwise have little way of knowing how their actions impact other functional areas of the organization. For example, if a production supervisor receives a high-priority work order, he may decide to stop a production line and begin the new order — though he may not realize that the line he stopped is just as important. But with an ERP system in place, he would be able to review the criticality of all work in process and prioritize accordingly.

Real-Time Decision Making

Organizations today have plenty of data, but they don't always have access to it in a comprehensible, useful format. ERP systems help manufacturers achieve the common objective of making decisions in real time. The systems provide the right information at the right time and to the right people who have the power to make the right decisions.

For example, organizations that lack integrated systems may not see their production data until several days have passed — and by then, it's too late to fix any problems with the metrics. But with an ERP system, plant-floor supervisors are able to view real-time data and identify any trends that may require adjustments on the production line to keep product on-spec. It is important to note that the people who are empowered to actually make the necessary decisions are often plant-level and not C-level managers.

Improved Efficiency

ERP systems also provide the information managers need to reduce overtime and product scrap. For example, if a CFO mandates reducing scrap by 10 percent, the plant manager first needs access to a range of information in order to meet this goal. The manager needs to understand and track the materials that are actually used, as well as the difference between the estimated and actual consumption. Only then can the plant identify the problem areas and make improvements for controlling waste.

Reduced Inventory

As more organizations embrace lean manufacturing initiatives, they must build just-in-time inventories to reduce the cost of holding raw materials and finished goods longer than necessary. ERP systems provide the planning and scheduling capabilities needed to gain a clear view of demand and plan deliveries accordingly. Then, if the company approaches production from a make-to-order instead of a make-to-stock perspective, product can be delivered to the customer as soon as it comes off the production line. By not storing these inventories, manufacturers keep their facilities more active and therefore more efficient and profitable.

Higher Customer Satisfaction and Margins

Without integrated systems, organizations can only approximate their delivery times for orders. But with an ERP system in place, customer service representatives can instantaneously evaluate the current production schedule and availability of raw materials in order to perform accurate ATP

calculations. Providing accurate delivery dates and following through on time helps organizations build better customer relationships. Organizations can even improve their gross margins, as customers are often willing to pay a premium for quick turnaround. Demonstrating that you can deliver on short lead times will allow you to increase your win percentage on quotes.

ERP systems also help improve customer satisfaction by ensuring consistent quality. Every time a customer orders a certain item, ERP systems help manage the details of the required specifications to ensure that the quality is the same for every order. And because ERP makes managing these details so easy, manufacturers are better able to meet customers' demands for mass customization. Manufacturers simply use their ERP systems to see which raw materials and equipment are available for custom products. Delivering higher-quality, custom-tailored product on time, every time, ensures high customer satisfaction ratings and builds loyalty. Over time, manufacturers will develop a better understanding of each customer's needs. Through adaptive manufacturing capabilities and consistent on-time delivery, manufacturers can increase their shares of wallet for their customers, yielding higher revenue and returns.

Forming Execution Strategies

Once your organization decides to implement a new ERP system, you have to decide on an execution strategy to help form ERP selection criteria and proceed with the procurement, implementation and integration process. Each company must choose the direction that works best for its needs.

Internal Steering Committee

The more traditional approach involves forming an internal steering committee to evaluate the ERP systems and form a request for proposal (RFP). This steering committee may comprise internal personnel, outside consultants or both. Many companies do rely on some external resources because they have the time and expertise to do the work. Many third-party companies in the marketplace specialize in this type of consulting and will assist with this entire process:

- Perform market research and discovery work.
- Gather and assess the requirements of your company's stakeholders and functional areas.
- Develop and submit the RFP to multiple software vendors.
- Create a compliance matrix of vendor responses.
- Invite and attend vendor presentations.
- Contact customer references and visit vendor sites.
- Select the best system.

Prototype and Pilot

If speed is a concern and you think you know which ERP system you want, you may prefer to try a prototype or pilot system to see how the solution works. Many private equity groups and startups prefer this method because it allows for quick speed to market, even if many of the business requirements are still unknown.

Out-of-the-Box Versus Configured Solution

Regardless of which execution strategy you choose, you must decide how much configuration your organization will require as part of the ERP implementation process. Most ERP systems will automatically address about 80 percent of your business requirements. You can then decide how you want to handle the other 20 percent. You can either alter your business processes to fit the application, or you can configure the application to match your business processes.

Remember that you can always make adjustments later, so if speed to market is a top priority, your organization may choose to utilize the out-of-the-box application and add functionality later. But if your business processes are extremely unique and you have always rolled out systems with mass configuration, you may want to perfect the ERP system for your needs upfront. A good service provider will lead you through this decision-making process to help you choose the right level of configuration for your needs, your budget and your timeline. Configuration certainly can be more costly, but reengineering your business processes to match an application may also be expensive. For example, you may decide to change the way you price your products, but if your pricing method allows for flexibility and helps you build your customer relationships, you may not want to make this sacrifice.

Ultimately, if you use the criteria presented here as a guide, you will be able to select the right ERP system for your business — and the right service provider to help you realize the greatest return on your investment. A properly implemented ERP system will help you manage the many types of data that are unique to manufacturing industries, driving efficiency across your business for greater profitability.

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