

Right-sized solutions for the evolving metal fab shop

Growth spurts require new technology

Metal fabricators like you often face surges in sales and increasing complexity of orders. You may suddenly find your existing systems don't allow you to keep up with new demands. Not only are the outdated systems stifling the growth momentum, they're adding to the confusion and creating doubts about profitability, reliability of data, and sound decision-making. Outdated processes certainly compound issues. In this paper, we discuss how to know if you have outgrown your existing system and how to get started evaluating a new ERP system.

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Keep the momentum going

Fabricators like you are highly prone to growing pains. Small, family-owned businesses with a few loyal customers may suddenly find themselves overwhelmed with new business. Or, a successful operation may acquire and merge with another shop, trying to cobble two systems together to manage the upswing in orders.

You need to maintain flexibility to change capacity requirements, while operating effective continuous replenishment systems. You need to determine a productive way to collaborate with customers on designs and manage resources globally to fulfill design elements. In order to align your production plans with customers' demands, you must integrate seamlessly into your customers' own processes. None of this is easy. But if you have integrated systems, you can bring design, product lifecycle management, and service together in ways that predict, act and rapidly change in accordance with your customers' needs.

Besides dealing with these changing market demands, you also must contend with customers expecting greater speed and value. Jobs are also more complex, largely rush and MTO orders. Inadequate systems, sometimes paper-based, built internally, or patched together, simply can't keep up with these pressures and fluctuating demand, especially unexpected spikes. While growth is good, it can also be highly stressful and chaotic. Fortunately, modern ERP solutions can help your metal fab company manage this complexity, and step up your processes to meet the new demands.

Technology can also provide a much-needed advantage for fabricators looking for a way to stand apart from the many competitors. Tim Heston, senior editor of the *Fabricator*, said it best, "Everyone uses common tools, from laser cutting and punching to welding and powder coating. What sets a shop apart is how people connect those processes together into a single, adaptable system, ready to turn on a dime to meet ever-changing levels of customer demand."

Early warning signs you have outgrown your current system

It can be tough to know when it's the right time to buy your first ERP system or step up to a more robust one.

An ERP investment is a big step for any company, but it can be especially challenging if you're running a small- to mid-sized business (SMB) that is already stressed about volume spikes and uncertain sales projections. "We are so busy that we can't possibly find time to evaluate software" is a common statement for companies experiencing growth spurts. But, if nothing is done to alleviate the bottlenecks that come with outgrown systems, that busy-ness can turn to chaos and jeopardize future opportunities.



It can be hard to identify the early warning signs of an outgrown system. You may think that you're looking at a one-off error or isolated gap, rather than company-wide system insufficiencies. In order to compensate, your IT manager can look for patterns and repeat issues. It should be easy to spot those problems that seem to cascade and create further complications, spreading ripples of late orders, missing inventory, backed up quotes, piles of paperwork, and a workforce that is frustrated and confused.

Here are some early warning signs that indicate you have outgrown your existing system. Ask yourself if you're dealing with:

Turnover—Employee churn, frequent absences, and a general lack of enthusiasm from the workforce are often early signs that the team is stressed and not coping well with the influx of new work.

Bottlenecks—Chokes in the system are another early symptom that demands attention. There may be one point in the shop floor that tends to back up, or finance may lag behind in billing. Perhaps sales can't keep up with quotes, or change orders aren't adequately tracked and billed, leading to uncertainty if you are even covering your expenses on some of the complex MTO jobs you push through.

Increased errors—Mistakes can range from small errors in billing to missed communications about last minute design changes. Tracking errors often manifest themselves in missing inventory or stock outs of raw materials. Shipping errors also seem to escalate when systems are stressed. Delivery trucks may arrive at the customer's site with partial orders, wrong items, or damaged goods.

Quality control—Product quality usually suffers when machines, systems, and personnel are overwhelmed with the volume or complexity of orders. Small defects slide past inspectors; mistakes are unnoticed until it is too late; standards are loosened as personnel rush to complete jobs for demanding supervisors and irritated customers. Suddenly, you find you are shipping products you are no longer proud to have wear the company name.

Disgruntled customers—They may not call you out on the first error or slippage in quality. But, customers talk, complain, and voice dissatisfaction on social media. Then, the most loyal may have a heart-to-heart talk and give you a second chance. The other unhappy customers? They are already long gone, entering orders on your competitor's online portal.

Frequent unexpected downtime—When you rush a high volume of work through your shop floor, the first corners to cut are often preventive maintenance. Who has time to take a machine off-line to perform the checklist of calibration, replacement of worn parts and recommended preventive care? Equipment not running at peak performance compounds existing production issues.

Not meeting industry standards—Your customers, suppliers, and industry colleagues have certain expectations of you and how you do business. They expect you to use and offer modern capabilities, such as online portals for orders, quoting and configuration tools, visibility into job order status, real time collaboration tools, and accurate capacity projections. If you can't provide these capabilities, you risk falling behind the industry standard—and your competition.

Excess waste—Scrapped materials can run up costs quickly, plus deplete supplies of raw materials. There is no greater drain on profitability for a fabricator. Waste can be in the form of materials or time. Any time crews are left standing, waiting for machines or materials, the wasted time adds up to wasted money.

Lack of visibility to the value chain—When you were a small shop with a few orders, you could call up your suppliers—often just one or two sources—and check on orders being shipped to you. You could touch base with outsourced contractors maybe once a week and maintain a good handle on status. That's no longer the case when you are working with multiple suppliers, sometimes continents away. When you lose visibility, you lose control. Without control, you risk costly delays.

Uncertainty around margins—It's easy to lose sight of the total cost of a project, so you can bid and bill it accurately. Last minute emergency change orders are often the cause. The team becomes so focused on meeting the customer request that they neglect to record new materials, parts, or manpower allocated to the job. Soon, you can find yourself uncertain if a highly demanding customer is even profitable.

If your organization suffers from one or more of these symptoms, it's time to look for software solutions to ease the burden and improve outcomes. An ERP solution, designed for end-to-end management of tasks, is the most effective way to automate, streamline, and speed operations throughout your organization. One solution manages it all, from finance to operations on the shop floor, warehouse and shipping, even managing customer accounts, and tracking change orders.

Evaluating a new ERP system

Shopping for an ERP solution can be intimidating. Franky, this is why some fabricators put it off. The task seems huge; the stakes are high; where to start is a mystery. Fortunately, there are plenty of resources to help the IT manager or company owner, ranging from papers with advice, practical checklists for a tactical plan, and selection consultants who can walk through the process with your team, offering advice and acting as project manager for the deployment.

Turning to an expert is a good idea if you're uncertain about your organization's needs or if you lack the resources to research the issues internally. Selecting the right consultant, though, is almost as critical as selecting the right ERP system. It's important to choose a firm or consultant with a proven track record in your specific industry, who's worked with companies with your general scale and budget. You should always ask for documented results.

Remember, this process is much like entering into a relationship. There needs to be sound communication, trust, respect for each other's strengths, and a shared understanding of the goals.

Here's a checklist of **critical features an ERP system should have to meet your metal fabrication needs**.

Look for a system that provides tools for:

- **Customer management**—Metal fab companies require a complete view of customers to manage the sales process, from customer lead origination and sales opportunity tracking through converting prospects to customers and placing orders.
- **Sales and order management**—You need to provide quick, accurate quotes with product configuration and delivery options to win new customers and keep existing ones.

- **Mixed-mode manufacturing**—Manage all of your manufacturing environments from repetitive, and configure-to-order to complex engineer-to-order requirements.
- **Planning and scheduling**—Select a solution that allows you to synchronize the flow of material and available capacity, so you can provide accurate cost estimates and available or capable to promise delivery dates for your customer orders.
- **Supply chain management**—You need to react to changing requirements, move operations to new locations, and take on new business quicker. To do that effectively, you need visibility into your supply chain and a way to optimize your end-to-end supply chain.
- **Quality management**—Customers require products made to precise specifications. You must manage quality operations related to receiving, manufacturing, shipping, and returns to lower the cost of goods sold by reducing labor, scrap, burden, and other non-value added activities, while improving quality.
- **Asset management**—You need to understand the total cost of operations, energy, and maintenance, plus have the tools to keep your equipment, facilities, and other assets running in top shape to increase operational efficiency and profits.
- **Product lifecycle management**—To increase market penetration, you need to continually introduce new products. It's equally important that you better understand how product changes impact cost, inventory, production schedules, cycle time, quality across disciplines, partners, and the product lifecycle. With product lifecycle management tools, you can implement timely changes while maintaining high customer service levels in the areas of quality and delivery. Plus, you'll be better able to manage part obsolescence.
- **Financial management**—You'll need complete visibility into the financial state of operations and the accounting capabilities in order to meet the regulations of today and tomorrow, such as Sarbanes–Oxley (SOX), International Financial Reporting Standards (IFRS), and others. Get all that, and more, with advanced financial management tools.
- **Business intelligence**—You'll want to be proactive and automatically receive real-time, contextual data anytime, anywhere (on a smartphone, tablet, laptop, or desktop computer). Business intelligence tools can help you make actionable decisions more quickly, and know that you're making them based on current, accurate information—without having to track down data. Plus, you can discover, aggregate, and analyze data from multiple systems to gain a better picture of your business.
- **Performance management**—Your growing company will be able to improve overall business performance by developing effective strategies, aligning resources and actions to plans and strategies, and proactively monitoring business processes and results with performance management tools.



Can one solution really provide all of those capabilities? Yes. Modern ERP solutions are advanced, highly flexible, and contain the end-to-end functionality needed to run a metal fab operation in today's era of digitalization and global competition. Your search committee or IT manager should look for solutions that have industry features for manufacturing built-in, avoiding modifications that can become obstacles for future upgrades and complicate future growth.

You may think this long list of functionality features looks like too much, too soon. That's seldom the truth. Even SMBs and growing fab shops need to have the full gamut of operational tasks in one solution for company-wide visibility. This is the secret to having accurate bottom-line results and a comprehensive view of your company's real-time status. This allows your company to eliminate silos and different departments using separate spreadsheets and managing their own version of data. It also prevents gaps in communication and turns the complexity of a growing shop into a well-managed operation.

The benefits of a modern ERP system

Today, modern ERP solutions reinvent the concept of ERP. They go a step further in many dimensions, providing flexibility, integrated tools, functionality tailored for vertical industries, plus intuitive usability that eliminates the need to beg the IT department every time you need a specialized report. Some ERP solutions are written in open source architecture, which makes it easier than ever to integrate third-party tools and adopt new solutions and applications as they become available.

Choose an ERP system that is elastic, stretching with your organization, growing, where and when needed. This type of ERP system will be well equipped to step up to the challenges of digitalization and the fluctuations you face in the metal fab industry.




Mary E. Shacklett of Tech Target offers this advice to manufacturers considering ERP solutions:

"ERP systems come in many different forms, so it is important to find the best ERP software to help you achieve your business goals and optimize your systems and processes. Since ERP is one of the most difficult systems to implement because of its end-to-end impact on corporate systems and operations, the success of your ERP implementation becomes as important as the ERP system itself. Choosing the right system isn't just a matter of looking at the features and offerings of different vendors. It's a matter of looking at those features and seeing how they best fit your company."

Follow the basic warning signs and guidelines for selecting an ERP solution, and you'll be well-equipped to step up to the challenges ahead. Robust, highly flexible ERP solutions can help your company attain its goals, no matter how lofty they may be.

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for metal fab](#)



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