

The background image shows a close-up of a robotic welding arm in a factory setting, with bright sparks flying from the welding point. The image is overlaid with a teal color and a diagonal split line running from the bottom left towards the center.

ERP VENDOR UPDATE

Metal Fabrication 8 Software Companies, 8 Top ERP Solutions

Insight on Today's Top ERP Providers

ULTRA
CONSULTANTS

ABOUT THIS REPORT

ERP Vendor Update: Metal Fabrication

is compiled by Ultra Consultants from interviews with software company product experts, product documentation and product briefings, independent research and Ultra internal documents.

Ultra's Insight is the opinion of our expert consultants, is based on interviews, project experience, sales experience and product knowledge, and is not intended to provide a complete review or comprehensive analysis of the products or companies described.

Note: This report covers selected ERP vendors, which were chosen based on market presence, and Ultra's most-recent product information and project experience.

Company and product information in this report has been reviewed by the software vendors featured.

The **Key Software Capabilities** tables focus on capabilities determined by our expert consultants to be essential or useful for manufacturers of fabricated metal products. The definitions used for classifications are as follows:

- **Core:** A capability that is native to the ERP solution. A module in the ERP's base offering and included with all implementations.
- **Add-On:** A capability that is an addition module (for a cost), available from the same ERP company and currently fully integrated with the base ERP system.
- **3rd-Party:** A capability from a third-party company that has been integrated with the ERP. Requires minimal or no configuration to implement.
- **None:** A capability that is not included with the base offering, an add-on module or third-party software.

WHAT IS THE RIGHT ERP NOW?

With a tough 2021 in the rearview mirror, and with a difficult 2020 now far behind, what will the coming year look like for metal fabrication companies?

Industry economists say the issues that have been a drag on the industry – labor shortages, supply chain instability, outdated technologies, operational inefficiency, rising metals prices – will continue in 2022. But those same experts predict steady growth in many fabricated metal products sectors, and note that higher demand, increased new orders and other indicators point to growth for manufacturing overall.

Unfortunately, this (probably) better “new now” continues to be defined by the ongoing (and seemingly never-ending) COVID pandemic – and the resulting risk of supply chain, production and operational disruption.

So it’s critically important for metal fabrication companies to defend against disruption by continuing to invest in modern ERP and connected technologies.

The right ERP solution can deliver the capabilities you need to improve processes, find new efficiencies, automate process management, enhance decision-making, increase manufacturing velocity, reduce waste and, most important, ensure that your company can prosper despite any challenges that lie ahead.

But what is the best solution for your organization? That’s a difficult question. Because every company is different. Because no company handles any phase of operations the same way. Because business processes are built around the unique requirements of each organization.

Start by asking a different set of questions: What new capabilities does your organization need and want? What problems are you trying to solve? What do you want your core processes to look like? How can new tools enable your organization’s digital transformation?



5 BEST PRACTICES FOR ERP VENDOR SELECTION

Whether your company is implementing an ERP system for the first time, or replacing a legacy implementation, it's critically important to make the right choice.

We asked our expert consultants to give us their thoughts on best practices in ERP selection for metal fabrication organizations, and this is what they told us:

1. Emphasize Industry Experience

Focus on metal fabrication industry experience when choosing an ERP vendor, including (and especially) your particular segment. Here's why this expertise is important: An ERP vendor may have broad manufacturing experience but may not have deep knowledge of the unique needs of your segment. Look at its overall presence in metal fabrication, too. Is its toolset widely used by companies like yours?

Ask your potential vendors to tell you how they plan to be a leading solution in your marketplace. Evaluate its features and functions to see how well they align with the industry's challenges. Read the case studies and success stories provided by the vendor – they are a good source of insight into how they build solutions for companies like yours. Ask for the product roadmap for your industry segment.

2. Assess the Total Cost of Ownership

Establish a budget in terms of implementation and total cost of ownership (TCO), then ask potential vendors if your budget and their solution are a fit.

A solution quote usually includes software (subscription or license), first-year support and implementation consulting. (Additional sites and add-on modules will be extra.) TCO, however, is broader, and takes into consideration per-user license costs, training, maintenance, customizations, upgrades, internal costs and other fees.

If the system is cloud or software as a service (SaaS), take a hard look at the Service Level Agreement (SLA) for any hidden costs, such as system enhancements and upgrades.

The scale and complexity of most ERP projects make it difficult to get, and stick to, a fixed price. Be aware that ERP vendors that offer a fixed price might exclude necessary work and training. Identify and note all inclusions and exclusions.

3. Consider Technology Strategy

Know that an ERP solution must fit the overall IT strategy of your organization. And because the IT department plays a key role in deciding whether an ERP system is feasible, it should determine and provide any technology requirements at the outset.

If on-premises ERP systems are a consideration, the IT department will need to have the resources to maintain and upgrade the software, as well as be able to provide the necessary infrastructure, servers, databases and security.

If the company is going with a cloud-based system, it's still essential to have the IT department involved in the ERP vendor selection process. There may be connectivity and integration issues with existing systems, particularly legacy on-premises systems.

4. Put the Vendor Under a Microscope

Where will the vendor be in the next five or 10 years? Many niche players have been acquired or merged with other ERP vendors – with both positive and negative results.

What's important to your company? The major ERP vendors offer big, broad solutions that will meet most of your needs, but come with greater complexity, risk and investment. Specialized vendors offer “smaller” solutions that will meet your industry-specific requirements but may not be as strong in some core functions.

5. Speak with Real Customers

Don't let your ERP vendor get away with giving you a list of hand-picked customer references in a variety of industries.

To get the best idea of how a solution will perform for you, ask for references that have been on the solution for at least a year, are in the same industry as your company, are roughly the same size, and have similar requirements. Then make the effort to speak with these customers (particularly their ERP professionals) to get their insight, opinion and feedback. Choose one for an on-site visit.

By applying these best practices, your company will better understand the strengths and weaknesses of potential ERP vendors. And it will be easier to narrow down the list and choose a software solution that will deliver greater efficiency, improved visibility and a competitive advantage.



Top 10 ERP Selection Criteria

- Functional fit
- Industry experience
- Software price, TCO and ROI
- Vendor viability
- Implementation project considerations
- Technology
- Risk
- Scalability
- References
- Post go-live support

EXPERT Q&A:

CHALLENGES, SOLUTIONS AND CRITICAL ERP CAPABILITIES

For manufacturers of fabricated metal products, the last couple of years have been bumpy – for obvious reasons.

We asked two of Ultra's most experienced manufacturing consultants, **Brad Staats** and **Tony Chalet**, for insight into today's challenges and the difficulties of operating in a complex manufacturing environment. We also asked them about modern ERP solutions and how they can create opportunities for improved efficiency, greater operational visibility, better production planning and more effective management. Here is an edited version of the conversation:

Let's start by setting the stage. The ongoing pandemic aside, what are the current challenges in metal fabrication?

Brad Staats (BS): From our position as ERP consultants, we see metal fabrication organizations struggle with systems integration. So many companies need a solution that gives them the ability

to get data from the shop floor – from their process control systems – into their ERPs, so that they can really know what's happening.

Tony Chalet (TS): Cost control is a major challenge, too – accurately knowing and effectively managing costs can be a make-or-break issue. And once companies identify their costs, they need an easy and fast means of making and applying pricing changes, so that they don't lose their margin.

BS: Efficiency is critical, and always has been. New machines require a massive investment. So, companies must work hard to get everything they can from their resources.

TC: It's all tied together. Today, companies are focused on maintaining machine utilization and increasing production, working around supply chain instability, managing rising materials costs, and minimizing waste and scrap.

How do modern software solutions make it easier to manage?

BS: Okay. Let's look at a specific example. Say I develop a quote for a part that's nested and laser-cut. I can estimate the losses – waste – that are going to occur, and price accordingly. But then I actually put production of that part into a schedule.

The assumption when I quoted that part was that I was going to cut 50 pieces from the piece of steel. But when I actually produce it, I only need to make five of those pieces – and 20 pieces of something else. So, the cost and waste are going to be different.

Modern software makes it possible to quote as the part will be produced, minimize steel usage, maximize a single piece of material, and get as many parts as possible. A client was doing production planning by hand, and was getting 70% usage out of a sheet of steel. But as soon as we went to a nesting logic software, he was getting 95% usage.

TC: Nesting capability is critical. Because each part is its own production order or work order, it's important for software to make it possible to group and schedule multiple parts. That way an operator is not reporting against five or 10 work orders produced from a single sheet. Standard ERP is not well suited to manage many orders from one piece of material.

So, this type of capability needs to be part of the ERP discussion, correct?

BS: Of course. When metal fab companies look at a new ERP, they need to look at the total solution, not just the core ERP capabilities. A complete ERP solution has specialized tools that integrate in both directions with the ERP. So it's the ERP. It's nesting. It's the PLC. It's third-party tools. It's the WMS. It's really one big solution.

TC: And connectivity – integration – is what makes it all work. When you have complete integration, it's possible for ERP solutions to leverage the data that's coming out of specialized machines. Whether it's direct integration or via APIs, easy connectivity makes it possible for metal fab companies to maximize their technology investments.

BS: Let's talk about another important capability. In metals, it's important to be able to look at things from an attribute point of view. In other words, I need steel of a certain dimension of a certain spec, etc. And I can have millions of combinations of attributes. But I can't make standard part numbers for them all. That's not feasible. But if I could look for inventory and my orders based on attributes, I can do matching and more accurate production planning.

This materials resource planning (MRP) capability is very rare in the ERP world. In fact, I only know of one solution that does this in its planning system.

TC: Planning is very difficult without attributes. You can have different-size sheets or coils that can be used as a base material for a part. So, it gets geometrically more complicated because, if I don't have a 10"x12" sheet of a specific material, I can use an 11"x10" sheet. But it will be less efficient, and produce more scrap.

Or, to make a part, I need a 12-inch piece of steel that is 12 feet long. But I can also make it out of a 24-inch coil, a 36-inch coil or a 48-inch coil. Attributes make it possible to plan better and understand what is happening on the shop floor.

Attributes aside, what are the most important ERP capabilities for manufacturers of fabricated metal products?

BS: We've talked a lot about interconnectivity of tools. That's a must-have.

TS: Good reporting from the shop floor is key – reporting that is automated and uncomplicated for operators.

And shop floor planning key too. As we've talked about, production scheduling is difficult. You have a production line where something is cut, punched and de-burred. But not all 100 of the pieces that are going to be punched are scheduled to be made first. You have to have the ability to manage single pieces as they flow across multiple operations.

BS: But that's not easy to do. The process resists good tracking, inventory control and lot control. On a shop floor it's common to use bins to move parts from one operation to another. Someone will make 100 parts, and toss them into bins, which are then moved to the next work center. But I might need to make 1,000 parts, so you end up with 10 bins that go to the second operation. And at the second operation the parts may be tossed into only seven bins. Barcoding won't help. You can't track by part. Or by bin.

TC: And it can get even more complicated when there are special operations for some parts so the number of pieces sent ahead is variable. Or when lots go to an outside anodizer or powder-coater and there are defects and waste, so the number coming back is not the same as the number going out. That kind of material handling is problematic in an ERP, and doing it requires a specialized solution.

BS: Also, it's important to be able to manage units of measure well. In metal fabrication you get a lot of combinations. You're buying using a hundredweight number, storing it in pounds or kilograms, and consuming it in pieces. Without good unit of measure tools, you're going to have constant issues.

What's ahead for 2022? What does the metal fabrication industry need to recover from a difficult 2020 and 2021?

BS: Many metal fabrication companies are dealing with archaic systems – ERPs that are 20 or 30 years old. And only some are moving toward new solutions. It's important in tough times to get up to speed and make the move from an old homegrown, highly customized enterprise management solution, or spreadsheets, to a modern ERP.

TC: Here is my pitch for companies with old ERPs: Imagine how efficient you can be with new technologies, better functionality and more sophisticated capabilities. Take stock of where your operation is today, and create a vision for where you want it to be in the future. Then plan how to get there.



Tony Chalet is a Senior Consultant for Ultra Consultants, with more than 27 years of manufacturing industry experience in a variety of industries. He has exceptional expertise in business process improvement, ERP strategy and advanced supply chain solutions.



Brad Staats is a Senior Consultant for Ultra Consultants, with a broad background in manufacturing and operations. He has more than 40 years of experience, including work in primary metals manufacturing, and is an expert in supply chain solutions and automated manufacturing environments.



Ultra's Insight: Powerful, Highly Capable Solution

Metal fabrication is an area of strength for Epicor – and the company recently acquired KBMax, which is a next-generation configure/price/quote toolset with interactive 2D/3D visualization and engineering automation.

Epicor's customer targets are companies with annual revenue from \$10 million to \$500 million.

Epicor Kinetic's differentiators include its advanced planning/scheduling capabilities, embedded MES, integrated back-end financials, mobile CRM with integration APIs to top CRM solutions, CPQ capabilities, strong product management and integration with CAD/PLM systems, and strong cost solutions.

What does Kinetic offer that addresses the unique needs of metal fabrication? Advanced units of measure with dimensional attribute capabilities. A relationship with SecturaSOFT, which sits on top of the estimating function for calculation of nested estimates in quotes. Nest Link API for CAD/CAM integration. Methods

of manufacturing capabilities that allow the definition of BOMs and routing within a single user interface.

A good reason customers select Kinetic over its competitors: Remnant tracking handled from advanced unit of measure that can track dual units of measure/dimensional attributes.

Continuing, Epicor says customers choose Kinetic because of...

- Embedded workflow that ensures new products are defined, and manages hand-offs between departments.
- Smart technology with wireless data warehouse data collection.
- Integrated Enterprise Content Management
- Advanced Tier 1 QMS system integration
- Advanced MES with integrated SPC

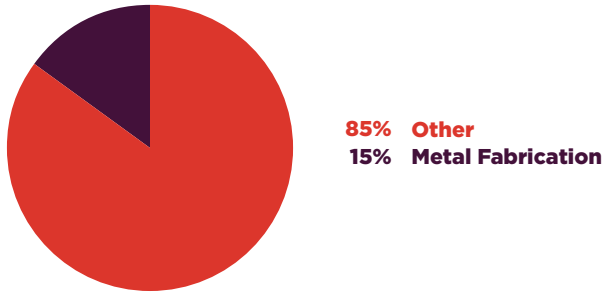
Epicor values input from its Customer Advisory Board and Product Advisory Board, and uses it to guide functionality.

Epicor Kinetic customers get significant value from its enhanced user interface and from its user-agnostic and upgradeable configurations.

KEY ERP SOFTWARE CAPABILITIES: Epicor

CATEGORY	FUNCTIONALITY	CLASSIFICATION	DEMONSTRATED INTEGRATIONS
Customer/Order Management	Order Configuration/CPQ	Add-On	Epicor CPQ
Customer/Order Management	cost based pricing, margin analysis	Core	
Customer/Order Management	Over/under quantity adjustments	Core	
Customer/Order Management	Truck/rail shipping	Core	Truck, but not rail
Customer/Order Management	Freight rate shopping	Core	
Customer/Order Management	Load creation/load building	Core	
Customer/Order Management	Packaging/shipping specs	Core	
Customer/Order Management	Total order weight/cubing calculation	Core	Weight, but not cubing
Information Technology	EDI	Add-On	Epicor EDI
Information Technology	LPN	Core	
Planning/Scheduling/Operations	Material reservation	Core	
Planning/Scheduling/Operations	Capacity planning	Core	
Planning/Scheduling/Operations	Order consolidation, reporting	Core	
Planning/Scheduling/Operations	Resources detail scheduling: finite, infinite	Core	
Planning/Scheduling/Operations	Plate nesting during detail scheduling	3-P	NestLink by Qbuild
Planning/Scheduling/Operations	Setup optimization	Core	
Planning/Scheduling/Operations	UOM conversion	Core	
Planning/Scheduling/Operations	Sub-contracting, outside processing	Core	
Planning/Scheduling/Operations	Inventory management	Core	
Planning/Scheduling/Operations	Product labeling	3-P	Bartender
Planning/Scheduling/Operations	Remnant management	Core	
Planning/Scheduling/Operations	Develop Material Plan	Core	
Planning/Scheduling/Operations	Scrap Planning/Tracking	Core	
Planning/Scheduling/Operations	Tooling management/planning	Core	
Planning/Scheduling/Operations	MRO - Maint management	Core	
Planning/Scheduling/Operations	Bins/Container tracking	Core	
Planning/Scheduling/Operations	Kitting	Core	
Planning/Scheduling/Operations	Develop Demand Plan	Core	
Planning/Scheduling/Operations	Develop Operations Plan	3-P	SMART IP&O
Planning/Scheduling/Operations	Integrate S&OP	3-P	SMART IP&O
Planning/Scheduling/Operations	PLC Integration	Add-On	Advanced MES
Planning/Scheduling/Operations	SPC	Add-On	Advanced MES
Planning/Scheduling/Operations	Deviation Tracking	3-P	Reliance ETQ
Planning/Scheduling/Operations	Collaborative planning with suppliers	Add-On	Supplier Portal
Planning/Scheduling/Operations	Kanban Management	Core	
Planning/Scheduling/Operations	OEE Reporting	Add-On	Advanced MES
Quality	Heats/chemistry	3-P	Reliance ETQ
Quality	FMEA	3-P	Reliance ETQ
Quality	PPAP	3-P	Reliance ETQ
Quality	Quality Standards Compliance	Core	
Quality	QC testing control plans	Core	
Quality	Serial Tracking, genealogy tracking	Core	
Quality	Lot Tracking, genealogy tracking	Core	
Quality	CAD Design integrated with ERP	3-P	CADLink by Qbuild
Quality	Corrective Action Management	Core	
Supply Chain	Material Scrap Factor	Core	
Supply Chain	Surcharges	Core	
Supply Chain	Alternate uses of RM, material substitution	Core	
Supply Chain	Inbound container tracking	Core	
Supply Chain	Variable lead times	Core	
Supply Chain	Pricing agreements/blanket orders and tracking	Core	
Supply Chain	Consignment inventories: customer	Core	

Customers by Industry



Targeted Verticals

- Aerospace & Defense
- Automotive
- Furniture & Fixtures
- Industrial Machinery
- Medical Device
- Metal Fabrication
- Metal Service Centers
- Rubber & Plastics

Metal Fabrication Customers

- Anchor Fabrication
- Chandler Industries
- D&S Mfg. Inc.
- Dalsin Industries
- Metalworks Inc.
- Midwest Metal Products Co.
- Rev-A-Shelf
- Team Industries Bagley

Epicor's Pitch

Capture the true value of cloud ERP with Kinetic, a solution made with manufacturers, for manufacturers. An intuitive, configurable, and guided user experience with embedded learning helps you maximize your profitability with real-time business intelligence and built-in collaboration tools.

Kinetic has the functionality you need to run a modern, future-ready business poised to capitalize on data, transform digitally, and innovate without limits. All the features you need to scale, compete and attract top talent to your organization. Trust the manufacturing expertise of Epicor to gain the momentum and know-how you need to accelerate growth and innovation. This is the future-focused force in manufacturing.

Deployment Options



Profile

Epicor Software Corporation (epicor.com) provides flexible, industry-specific on-premises and cloud software solutions designed for manufacturing, distribution, retail and service industry organizations. Headquartered in Austin, Texas, USA, the company has 27,000 customers in 150 countries, and more than 3,800 employees in offices around the world. In 2020, the Epicor generated \$950 million in revenue.

HOW TO SELECT THE WRONG ERP SOLUTION

The enterprise software selection process can be long and complicated – for several good reasons. The solution you choose will affect the way you conduct business for years to come. It will impact virtually every function. It's a significant investment. And with as much as half of ERP implementations failing to achieve their goals, it's critical to find a solution suited to your business and its unique needs.

But many organizations get off-track right at the start when they go into the selection process believing in some common myths about the process – misconceptions that can result in the wrong choice for your business.

Here are the five mistakes and misconceptions that will – inevitably – result in the selection of the wrong ERP solution:

1. Thinking that technology is the most important consideration.

Many companies replace their enterprise software because it's outdated or no longer supported by the vendor. While these are valid reasons to make the move to a new system, they shouldn't be the only ones. The software selection process is the perfect time to evaluate business goals and map them to your new solution. For example, you may want to reduce operating costs, increase productivity and streamline business processes. If you have these goals in mind, you're better able to narrow down your choices and request relevant demos from vendors.

2. Assuming that all ERP solutions are the same.

If you've ever bought a new car, you know that every model is different, even those built on the same platform. Each includes various features and benefits, including subtle differences in appearance. It's the same with ERP software. At first glance, it may seem like two solutions are exactly alike. But once you look under the hood, you may learn that one is more powerful. As you test drive it with a demo, you may find that one is more comfortable. The differences often may seem small, but looking critically at them is the key to finding software that fits your business.

3. Believing that a highly detailed RFP is required.

Many companies think they need to create lengthy RFPs, which often amount to hundreds of pages. But since most vendor offerings address core pain points, such as automating reports, these documents don't need to be nearly as long. Instead, you should look at the business problems you want to solve and processes you want to improve with the new software, not core functionalities that typically are the same across multiple vendors.

4. Thinking that an ERP project is an IT project.

While the IT department provides critical input, companies need to get various viewpoints from across the organization when they gather requirements in the software selection process. All too often, important stakeholders are left out of the conversation. Before looking at different systems, assemble a team with employees who work with and manage core processes, particularly those who use workstreams that span functions and departments. Whether it's accounting, sales, marketing, shop floor, warehouse, logistics, operations or any other department, it's important to know the challenges they have and what they need to do their jobs better.

5. Assuming that big-name solutions are always the best solutions.

Corporate executives used to say, "No one ever got fired for buying

IBM." And that mindset persists today. Many organizations start their ERP selection with a list of the biggest and best-known companies in the ERP software marketplace. And the big-name vendors offer excellent choices for small, medium and large enterprises in a variety of deployment models. But their powerful products may not be right for your organization. Extensive customization may be necessary to meet the requirements of your segment and company. Or you may have to purchase specialized industry add-ons to get it to function the way you want. Instead, consider all the options available.

There are many ERP vendors that offer broad manufacturing expertise. But there is no one-size-fits-all solution. The functionalities and capabilities required are unique to each subvertical. And finding the best fit starts with evaluating software solutions and functions based on your industry's unique needs.



Ultra Consultants is an independent ERP consulting firm serving the manufacturing and distribution industries. Since 1994, we've helped hundreds of clients streamline their business processes, select ERP software, and implement a complete ERP solution that meets the unique needs of their industry, specialty and organization.



Why Ultra?

It's critically important to choose an ERP consulting partner with deep experience in your industry, expertise in your ERP solution, and experts who have worked in businesses like yours. And you will want to work with a firm that is independent, flexible and able to help you find the right solution for your organization.

For more than 27 years, Ultra Consultants has utilized its proven methodology, ERP knowledge and industry intelligence to deliver measurable business performance improvements to manufacturers and distributors in virtually every vertical.

- Our services are built for your industry. **We understand your processes and requirements.**
- Our solutions leverage our expertise. **We help you choose software to meet your unique needs.**
- Our results reflect our ERP experience. **We maximize benefits, minimize risk and deliver success.**

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