GUARDIAN
SOFTWARE SYSTEMS

5 *meaningful ways a foundry benefits from using foundry-specific software.*

Companies commonly use an Enterprise Resource Planning (ERP) software solution to efficiently manage business functions within a centralized, integrated system. ERP can do everything from help companies save money to keep their customers happy, and much more in between. But first, it has to be the right ERP system.

An ERP solution can't pay off until it achieves the buyer's objectives. For a foundry, the chance of that happening is close to nonexistent if the ERP solution hasn't been designed to address costs and quality demands unique to a foundry.

Before you invest significant time attempting to discern which ERP solution will work best for your foundry, consider putting the following five goals on a checklist. If you're unable to check these boxes with the software you're considering, you may never see your ERP investment pay off.

Knowledge and experience matter

For a software developer to build a foundry-specific ERP system, the developer needs a deep understanding of the foundry industry. A developer's knowledge of foundries and experience inside a foundry form the foundation for building a foundry-specific solution. An ERP program that hasn't been built from firsthand understanding of how foundries operate likely will leave foundry management feeling like they implemented a second-rate ERP solution.

Expect your provider's developers to speak your language. Ask them about their understanding of foundry operations, processes and requirements from the quality and production leaders to the CFO and owner, and why employees on the plant floor will embrace the system. Your provider should have a strong understanding of foundry differences, required and desired standards and certifications, and foundry trends.

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Expect that your ERP provider has walked in your shoes and belongs to organizations such as ICI and AFS; has actual foundry operations experience; has hands-on familiarity with different types of foundries; has worked on the foundry floor; and recognizes the data requirements for an ERP solution to pay off.

The bottom line on know-how

Breadth and depth of foundry knowledge and experience are vital to developing an ERP solution that makes sense to the foundry worker, is easy to use, captures the relevant data required, and then presents data in a manner that allows the business leaders to efficiently and accurately analyze all aspects of their foundry. Once you have that, you can begin to assess five meaningful ways a foundry benefits from using foundry-specific software

1. Track Scrap

While scrap is a part of just about any manufacturing production process, only a foundry plans for scrap. And only a foundry-specific ERP solution will allow you to track it. ERP designed for foundries enables not only scrap identification, but also recording at every level of production the reasons scrap was created. Foundry ERP provides tools for calculating the rate and percentage of scrap on any given part.

When a foundry has concise insight into how much scrap it produces, it has the hard data needed to calculate costs associated with scrap throughout production. The financial liability of scrap becomes known and can be managed to great advantage.

Four reasons to track scrap.

1. Any aspect of foundry production that gets tracked, especially something as common as scrap, is an opportunity to minimize waste and increase production efficiency.
2. Scrap percentages can be calculated and estimated, enabling the foundry to account for it in production planning, cost calculations and pricing.
3. The unknown of why and when a part gets scrapped becomes known. As a result:
    a. Costs that were once hidden can now be calculated.
    b. Procedures, processes and molds can be meaningfully reviewed and adjusted.
4. True material costs for a project can be determined with confidence.

How you can track scrap.

It begins with calculating planned scrap in an order quantity. As scrap occurs, ERP users record scrap and the reason for it. The reason provides data for determining cause.

- Reason data can result in process and/or procedural changes to reduce scrap; result in engineering changes to part design; and, result in die/pattern change or more frequent maintenance.
- Reduced scrap results in lower costs and/or higher profit margins.

The financial opportunity.

Understanding the reasons for scrap allows for corrective measures. Consider an actual client that reported an overall scrap rate of 3.6 percent, with 16 percent of it occurring in one work center. The scrap rate accounted for a 7.3 percent hit on total sales. One year later after tracking scrap and implementing corrective measures, the client reported an overall scrap rate of 1.8 percent, with that same work center reducing scrap to 10 percent. The resulting decline to a 5.5 percent hit on sales translated into a cost savings of $201,362.

2. Track Patterns, Dies

Foundries need a pattern or die to produce parts, making the pattern or die both a necessary tool as well as the part used prior to casting. In short, the pattern or die is an integral aspect of foundry uptime. Scheduling can be halted by a pattern or die that requires maintenance or replacement. With the right ERP system, a foundry can record ownership and date of manufacture for the pattern or die as well as the number of uses and maintenance. A foundry-specific ERP system offers the ability to schedule maintenance and replacement of patterns and dies based on their use. Pattern and die tracking is unique to the foundry industry, and something non-foundry ERP systems may overlook.

Four reasons to track patterns or dies.

1. The pattern/die is the required “pre-part” subject to wear, tear and failure that when monitored mitigates foundry downtime risk and order delays.
2. All engineering of the part is on the pattern or die. Engineering changes must be tracked along with procedural and process changes to ensure accuracy of parts produced.
3. Many patterns/dies are owned by the customer, who must address maintenance and replacement. By tracking patterns/dies, customers can plan maintenance and replacement, and avoid surprise breakdowns .
4. Foundry production departments, which have to plan around pattern/die maintenance and replacement, can preplan for costs associated with maintenance and replacement.

How you can track patterns/dies.

The pattern/die is associated with each part produced, and the part master indicates operation sequence for the pattern/die. The right ERP software records each pattern/die use at time of use, enabling accurate scheduling of maintenance and replacement.

- Production can schedule with knowledge of pattern/die maintenance.
- Sales can predict the production schedule with maintenance in mind.
- Your foundry can essentially eliminate delayed orders due to pattern/die failure.

The financial opportunity.

When patterns/dies are tracked and maintained or replaced in timely fashion, scrap risk diminishes, resulting in less waste and lower costs. Production departments can eliminate delays caused by unexpected pattern/die maintenance or replacement, resulting in happier customers and less foundry downtime. Foundries become more efficient at pattern/die management.

3. Gain Power and Control

A foundry ERP system must be robust enough to address all of the modern foundry's requirements. Value-added operations such as machining, assembly, plating and testing operations are essential to the vitality of today's foundry. A foundry-specific ERP system can handle every process of production from foundry through shipment.

Serialization is key in many foundries today. Foundry-specific ERP systems are capable of tracking serial numbers through every step of production from birth to ship. This allows the foundry to track every serial number shipped back through every process involved and each person who handled the part as well as the heat used to pour the original casting.

A single point of data for all operations gives you easy access to maintain complete control over what's going on inside your foundry.

Four reasons power and control matter.

1. A single point of data for all operations gives you easy access to maintain complete control over what's going on inside your foundry as well as the machine shop, assembly, plating and testing operations.
2. A robust ERP system enables you to improve part traceability from start to finish.
3. You can manage associated part numbers to final shipment as well as multiple units of measure from foundry molds or weight to shipped-part quantity.
4. You can track serial numbers through every step of production.

How to think about power and control.

In a foundry, managing parts can get complicated, with individual parts sometimes associated with a larger assembly for final shipment. With a foundry-specific ERP solution, each operational sequence can record your procedures as well as part serial numbers. The result?

- Detailed tracking of parts.
- Continuous status of parts through production.
- Single-source for data on all parts.
- Great efficiency and accountability

The financial opportunity.

When all parts are tracked from sales order through shipment and traced throughout the entire production process, you gain greater visibility into production. You can schedule production based on actual data, execute in-house without need of third-party vendors, and recognize what can and cannot be accomplished within your given parameters. That means less waste, greater efficiency and cost savings throughout production.

4. Produce Valuable Certifications

From Certificates of Conformance to detailed mechanical, chemical and Non-Destructive Testing (NDT) certifications, accreditations and endorsements have become a foundry business requirement, especially for industries like aerospace and defense. A foundry-specific ERP solution incorporates the requirements of certification throughout production.

A foundry-specific ERP solution provides documentation of the processes, specifications and processes required for certification, and it allows easy access and delivery of the certification documents.

The number of certifications required can be substantial and include conformance, mechanical, chemical, and NDT. Within NDT, certifications extend to magnetic particle, liquid penetrant, ultrasonic radiography, visual, eddy current, and welding.

There's no chance of serving certain industries, such aerospace, without certifications. Inability to serve a wider range of prospective customers can limit a foundry's growth and future viability.

Three reasons for certification.

1. Customers require it. Some customers cannot compete without strong supply chain management, of which your foundry may be an integral cog.
2. There's no chance of serving certain industries, such aerospace, without certifications. Inability to serve a wider range of prospective customers can limit a foundry's growth and future viability.
3. Certifications provide documentation of specifications required for doing business.

How to think about certifications.

With a foundry-specific ERP solution, certification requirements are automatically recorded and identified throughout production processes. At any time you can run tests to ensure specifications are being met, access test results throughout production, and produce necessary certification documents. For some customers, your foundry serves as a mission-critical part of their businesses – if you have the certifications they require.

The financial opportunity.

A foundry-specific ERP solution can efficiently track your certifications and eliminate the need for additional, off-line software and documentation. However, the greatest financial advantage is your ability to expand the number of markets in which your foundry can compete.

In an industry besieged by global competition, a shrinking labor pool, rising expenses, unpredictable energy costs and cyclical revenue, opening up more avenues to growth has become imperative.

5. Mitigate Risk of Outside Processes

A good foundry ERP system tracks not only everything going on inside your foundry, it also tracks processes and performance of third-party suppliers outside your foundry. Imagine the value in being able to account for outside processes just as well as you do your internal operations. You could begin to mitigate risk factors beyond your control.

Five reasons to track outside processes.

1. Gain greater insight into the true time and materials cost of each part produced.
2. Know when and where outside parts are produced.
3. Improve scheduling of outside suppliers and shipments.
4. Track scrap and part requirements.
5. Gain a detailed record of value-added operations from third parties to assess true costs.

How to think about outside processes.

Within a foundry ERP solution, you can set up production sequences identifying outside operations. You capture data on shipments sent from you as well as receipt of parts as they arrive. Your ERP system records part status and location, and tracks process costs. All certification requirements get documented. Serial numbers get tracked. Ultimately, you eliminate surprises, or catch them early.

The financial opportunity.

When you gain visibility into outside processes, your own process benefit. You have the ability to run a leaner manufacturing environment, with visibility into actual costs and realistic production requirements. Part status is always known. Cost analysis can be performed in real time. Causes of waste and opportunities for savings reveal themselves.

Questions to Keep in Mind

You now have the start of a roadmap to find the best possible ERP solution for your foundry. There's a lot more to learn. As you continue to think about your needs, ask yourself these overarching questions.

Production – *Are we able to manage all of our production requirements start to finish as well as reduce third-party supplier risk?*

Quality – *Are our products consistent, do they maintain industry quality standards, and do they meet customer-specific standards?*

Financials – *Do we have appropriate visibility into our cost structure to do the math accurately?*

Your Future – *Is our ERP solution robust enough to help us achieve business objectives?*

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If you would like more insights on the benefits of foundry-specific ERP software, contact us anytime. We're here to help.

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