

Manufacturing's Competitive Needs and ERP Flexibility



Star Olympics gymnasts are strong and flexible. They are not limited to a single sport or event but typically compete in multiple areas including balance beam, parallel bars, rings, and more. They can only be successful in these different challenges by being strong and flexible overall.

Manufacturing companies require a similar flexibility.

Most products and markets offer a mixed challenge including high volume make-for-stock products alongside low volume “special” or make-to-order items, and everything in between. Often, a product will contain mechanical components, electrical elements, electronic controls, and maybe even chemical elements or supplies. In many cases, distributors start with packaging and kitting operations, and expand them to include final assembly operations. An Enterprise Resource Planning (ERP) that is tightly focused on electronic assembly or metal fabrication might have a hard time supporting the broad range of manufacturing situations that such a company needs.

Small and medium-sized business (SMB) manufacturers have an advantage – they tend to be more flexible and adaptable than their large competitors.

They generally can change business processes, manufacturing techniques, product designs, and production volume more readily than big companies with a complex management structure. Medium-sized companies have the ability to react more quickly to business challenges and opportunities. However, SMBs may be handicapped by limited resources that can make it difficult to follow through and make those needed changes.

As to information systems like ERP, SMBs need just about the same functionality that big manufacturers do. However, they cannot afford the cost and especially the complexity of the big company ERP packages. As a result, in the past many SMB's implemented simpler systems designed to meet the needs of a midrange manufacturer doing a specific type of manufacturing like batch cosmetics or precision machining. And that was perfectly fine because it gave the

company the functionality it needed in an affordable solution that didn't unnecessarily tax its technical and administrative resources. **But when a market changes like a shift to cloud and mobile technology, the industry-specific solution may become a problem.** Let's explore that idea a bit more.



Types of Manufacturing

All manufacturers have a lot in common; they all acquire parts and materials from suppliers, convert those parts and materials into products through value-adding processes, store and manage inventories, and engage in sales, distribution and financial management activities. Depending on the market and the type of product, there also may be after-sale support, repair parts and other ancillary activities to be planned, tracked and managed.

At the same time, each manufacturer will deal with different requirements tied to their products and processes. For example, bottling soft drinks for consumer sale is quite different from producing avionics to sell to aircraft manufacturers.

High and low volume

From an ERP software perspective, there is a big difference between the support required for making unique products in low volume compared to making thousands of copies of the same standard product. The Association for Supply Chain Management (www.ascm.org) endorses a continuum view called the volume-variety matrix that looks something like Figure 1.

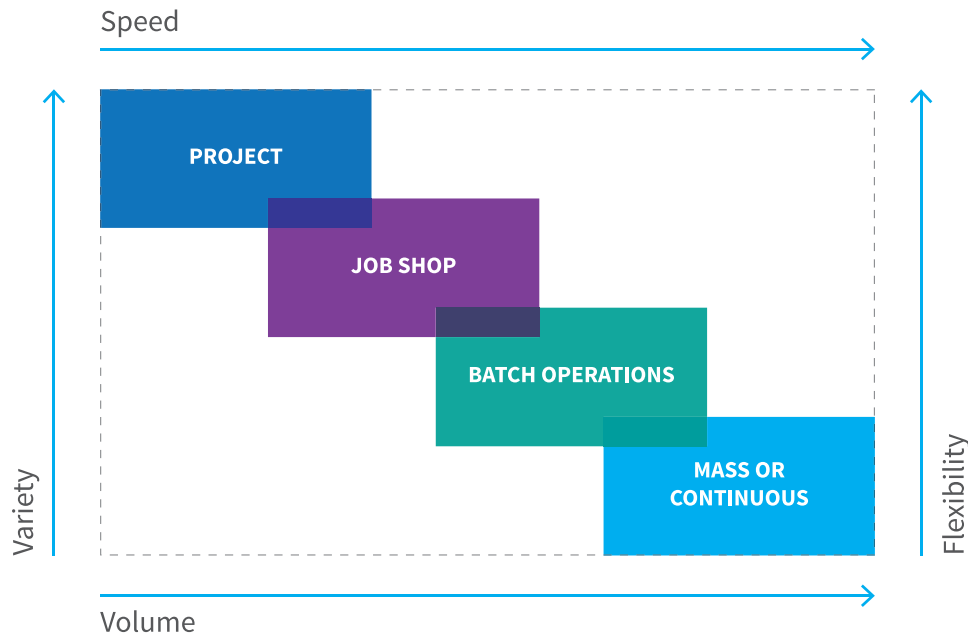


Figure 1 – Low volume / high variety, high volume / low variety

At the upper-left corner of the matrix, long-duration manufacturing projects like building a large machine require project management and accounting functionality, deep bill of material and engineering support, and broad, flexible manufacturing process capabilities. Moving down and to the right on the matrix, we move from making one instance of a single design to batch production, usually including a variety of products within a defined market like industrial equipment, electronics, medical devices, and transportation.

At the lower right, high-volume production on an automated line requires continuous (flow) scheduling and management (quite different from discontinuous batch scheduling). However, there are fewer requirements on the engineering side because bills are simpler and have fewer levels.

The truth is that many companies engage in a range of these production types. It is not unusual for a plant to produce high-volume consumer goods in one part of the plant while another area of the plant operates in batch mode making sub-assemblies or components to feed into the assembly lines. The plant may also have a job shop that makes tooling, equipment, or special orders for key customers.

Any competitive strategy requires a breadth of integrated functionality such as customer relationship management (CRM), pricing and costing, engineering change management, purchasing, distribution, supply chain management, field service, and financials.

Discrete and Process

The software industry also distinguishes between hard goods manufacturing (discrete) and those that deal with “materials or products that pour” (process) because the software functional requirements are quite different. A company that produces food products, beverages or cosmetics, for example, has different requirements than a company that makes or assembles golf carts, radios, robots, tables and chairs, or other hard goods. Process manufacturing needs scalability and decimal precision in units and formulations, typically works in a “mix and package” environment that may be a mix of batch and flow processing, and may be subject to more strict tracking and reporting mandates and traceability requirements.

Flexibility

A manufacturing company typically is established in a defined market with a limited set of products or product types. An ERP package designed for that type of manufacturing should be just fine for them. But imagine that this company designs a product variant that makes a big splash in its market and they need to start high volume production to meet demand. Will their ERP system support the new production requirements for scheduling, kanban-style inventory, and more complex distribution requirements? What if the new product requires more intense traceability?

At the other end of the spectrum, maybe the product is doing just fine in commercial markets, but a variant or related product can be marketed to the government. Is the ERP capable of project management (most government work is managed under project-type contracts), progress reporting and progress billing?

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Your company may not be in this kind of position at this time but an ERP choice should be a long-term decision. The chosen system cannot be allowed to limit your company's growth or expansion. Technology must be an enabler, not an impairment to your business.

Essential features in today's business environment include the ability to communicate, collaborate and coordinate with customers, suppliers, subcontractors, service providers, and your own shop floor. Modern systems must be mobile-friendly for off-hours and off-premise access by managers and executives, field sales reps and service personnel. Of course, all systems and communications must

be secure and private. The best systems are designed (and priced) for an unlimited number of users. This includes business partners like customers and suppliers when you choose to closely collaborate with them. Also, each user needs a personalized dashboard and workflows to simplify and enhance their interaction with the system.

Summary

Broad functionality and the flexibility to adapt to changing needs are the hallmarks of the best ERP for SMB manufacturers. The system should have a proven track record in your industry, of course, but should also be in productive use in other industries to demonstrate that flexibility.

Any system selection should also pay close attention to the solution provider. This is a long-term commitment and you want some assurance that the supplier is on sound financial ground, can demonstrate a commitment to helping its customers implement their systems successfully, provides strong support for its customers over the long term, and continuously maintains their systems with updates, enhancements, and the current technology.

Your ERP supplier is your partner in the future success of your business.

Acumatica would love to help you find the right Cloud ERP solution for your distribution or manufacturing business. You'll find helpful resources online at [acumatica.com/industries](https://www.acumatica.com/industries).

About Acumatica

The Acumatica Enterprise Resource Planning system delivers adaptable cloud and mobile technology with a unique, all-inclusive user licensing model. Acumatica provides a complete real-time view of your business anytime, anywhere, on any device. Through our worldwide network of partners, Acumatica ERP provides a full suite of integrated business management applications, including Financials, Distribution, Project Accounting, and CRM, as well as separate Field Service, Commerce, Manufacturing, and Construction Editions.

Acumatica's recommended pricing structure does not charge per user, but by the resources (hardware, memory, data throughput, etc.) required to operate the system. This lets companies add unlimited users as needed, allowing everyone in the organization access to the system at no additional cost.

Acumatica can be deployed on premises or in the cloud, depending on your business need. Plus, all Acumatica ERP and CRM modules use the same database—that means everyone in your organization has real-time access to a single version of the truth. And you can back up your data at any time.

Acumatica also sells 100% through partners. This allows us to match potential clients with the partner that is best for their location, size, and industry.

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