# ERP SUPPLIERS Focusing Vertically

**E**RP (enterprise resource planning) software vendors can no longer attempt to be everything to everyone. To better serve their manufacturing clients and survive economically, ERP vendors are employing a variety of vertical marketing segmentation tactics to position themselves as leaders within specific target markets.

Beyond their concerns about pricing, which often eliminate SAP and other big-ticket vendors as an ERP solution, manufacturing clients are far more savvy and skeptical than they once were about the promises made by ERP vendors. Manufacturers know that ERP software is a great tool, not a business panacea. Burned at least once or twice previously, manufacturers replacing existing ERP systems have challenged ERP vendors to prove themselves. And for their part, whether it's for simple self-preservation or a result of customer-driven demand, ERP vendors are proving they possess the industry-sector and manufacturing-process expertise to win new business.

While all clients want industry-specific experience, none require more evidence of it than food manufacturers, who are driven by compliance legislation such as the Bioterrorism Act, and ETO (engineer-to-order) manufacturers, who build products designed to customer specifications.

## Food Manufacturers and the Bioterrorism Act

When the Bioterrorism Act was enacted, few realized the marketing opportunity for ERP vendors selling into this sector. Otherwise known as the

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**Examples: Food manufacturers contend with Bioterrorism Act; engineer-to-order players build unique products to custom specs**

By Thomas R. Cutler

Public Health Security and Bioterrorism Preparedness and Response Act of 2002, this legislation directed the Secretary of Health and Human Services to require the establishment and maintenance, for not longer than two years, of records by entities (excluding farms, restaurants, and certain others) that manufacture, process, pack, transport, distribute, receive, hold or import food. The records that must be kept by these regulations are used by the Secretary, if necessary, to identify the immediate previous sources and immediate subsequent recipients of food, as well as the packaging it comes in, to address credible threats of serious adverse health conse-

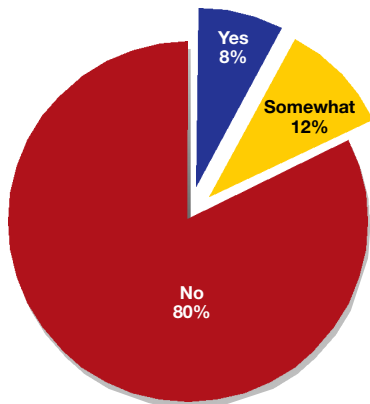## Food Makers Who Report Current ERP Systems Enables Compliance with Bioterrorism Act



**FIGURE 1**                    Source: TR Cutler, Inc.

quences or death to humans or animals.

When the FDA has a reasonable belief that an article of food has been adulterated and presents a threat of serious adverse health consequences or death to humans or animals, the relevant records or other information must be made available for inspection and photocopying or other means of reproduction within 24 hours or less after the manufacturer receives the FDA's request. The Bioterrorism Act makes the failure to establish and maintain the required records or the failure to make them available to the FDA a prohibited act that can be pros-

ecuted as a criminal action.

By the end of 2006, all food manufacturers must meet compliance with the Act, including companies with fewer than 10 employees. (See Fig. 1)

The bottom line is that documentation of lot traceability is not an option — it's now the law. According to Rebecca Gill, vice president with TGI Ltd., a leading food ERP vendor based in Toledo, OH, there are key lot traceability functions that are essential but are lacking in many of the ERP vendors claiming market segmentation competency. Gill includes the following functions as critical:

▸ Full tracking of raw material lots through manufacturing
▸ Full tracking of finished-good lots through shipment to customer
▸ Complete reporting on lot genealogy, showing all usage of lots in from vendor, through manufacturing job, and to end user
▸ Ability to query end-user sales order and see all raw material and finished good lots used for specific shipment
▸ Ability to query lot from vendor or manufacturing and see all end users to which lot is shipped
▸ Ability to track lot properties with allowable "criteria" for each lot

There are other important functionalities that support food manufacturing audits and quality assurance but are not a direct response to the Bioterrorism Act. Some of these are:

▸ Automatic quality assurance of incoming products
▸ Tracking of original country for raw materials
▸ Complete data warehouse for 24/7 ad hoc reporting

Other food ERP vendors have specific functionalities. One of these is BatchMaster Software, which provides special laboratory functions including recipe-based manufacturing. This allows manufacturers to organize production activities around a recipe to produce multiple finished products. Rory Job, vice president of BatchMaster, explains that "recipe man-

agement enables the manufacturer to conduct nutritional and laboratory analysis with recipe revisions."

Finding a balance between the needs of a given industry sector and a solid, core ERP system is tricky: the basic ERP functions are often lacking when a product is focused too heavily on "bells and whistles." TGI's Gill notes that "many vertical ERP applications in the food sector lack strong financials and must integrate with bolt-on third-party systems." ERP functionality should also include complete multicompany, multicurrency, and financial reporting capacity.

Other ERP food segment considerations and features should include:

▸ A BOM (bill of materials) that offers version levels, forward-planning activation dates, and yielding at both the component and finished-good level
▸ A full data warehouse with online user-specific dashboards
▸ A fully attributed inventory through ordering, planning, manufacturing, inventory and shipping
▸ Complete lot tracking and analysis, from raw materials through manufacturing and shipment
▸ EDI processing for all transaction sets
▸ A complete e-commerce package that is fully integrated with the ERP system
▸ Extensive pricing scenarios for customers and vendors — market pricing, volume discounts, complementary products, substitutes, and promotional items, to name just a few
▸ A full telemarketing module, with mass e-mails, lead-source tracking, promo codes and automatic call scheduling
▸ Fully integrated CRM functionality
▸ Integration with Mapquest and Microsoft Outlook

The depth of food manufacturing installations is also critical. Many ERP vendors, having secured one or two food manufacturing clients, suddenly claim expertise in the sector. This technique is a clever use of "packaging" and marketing; however, true lot-traceability solutions are just the beginning for truly committed vendors in this sector.

## ERP by Process: Repetitive versus ETO Manufacturing

The term engineer-to-order (ETO) denotes a style of manufacturing rather than a specific industry segment. Also called "project-based" or "custom" manufacturers, ETO companies typically have distinct characteristics about the way they conduct business that differentiate them from discrete or repetitive manufacturers. (See Table 1)

Chuck Stewart, general manager of Cincinnati-based Encompix Inc., an ETO ERP vendor and business unit of MADE2MANAGE explains, "ETO companies build unique products designed to customer specifications. Each product requires a unique set of item numbers, bills of material, and routings. Estimates and quotations are required to win business. Products are complex, with long lead times — typically months or even years — and ETO customers are heavily involved throughout the entire design and manufacturing process. Engineering changes are a way of life. Material is purchased not for inventory but for specific projects, with all actual costs allocated to that project and tracked against the original estimate. Once it is completed, the product is typically installed at the customer's site. In most cases, aftermarket services continue throughout the life of the product."

According to the ETO Institute, ERP software for the ETO manufacturer differs from software for repetitive manufacturing in several ways:

▸ **ESTIMATING:** Because each job is unique, an estimate is necessary to produce a customer quote. In many cases, estimates are predicated on previous jobs with similar characteristics. In some industries where there is a high volume of Requests for Quote (RFQs), companies use a summary in which they estimate using groupings or "buckets" of labor hours and material dollars and subsequently construct a more detailed estimate. Some companies have built sophisticated Microsoft Excel templates to assist in the estimating process, and Excel is the tool of choice for most of these.

▸ **BUILD TO A PROJECT OR CONTRACT:** Here, terminology differs from company to company. The terms project, job, and contract are sometimes used interchangeably. In some companies, the term contract refers to the legal document spelling out the terms and conditions of the agreement. The term project refers to the schedule of work, and the jobs are the individual segments of work that comprise the project. Whichever term is preferred, an ETO company uses the project/contract/job as a scheduling mechanism and as a mechanism for cost collection.

▸ **PURCHASING:** In some cases, material is purchased only once for a specific project. The subcontractor or supplier may be involved with the original design and specification of material. In many cases, the design engineer will specify the part to be purchased. For any material purchased, the actual cost is allocated to the project.

▸ Engineering changes: In an ETO environment, engineering changes are frequent and expected. Because the customer is heavily involved throughout the whole engineering and manufacturing process, changes to the design are inevitable. However, recording

# Key lot traceability functions that are essential but are lacking in many of the ERP vendors claiming market segmentation competency.

and monitoring the changes to determine who bears the responsibility for any additional cost is critical to the profitability of the project.

▶ **PROJECT MANAGEMENT:** ETO and project-based manufacturers appoint a manager for each project. Project managers are ultimately responsible for ensuring that the project is delivered on time and within budget. For many companies, Microsoft Project is the tool of choice here, not only for managing the project but also for communicating its status to their customers.

▶ **ACTUAL COSTING:** Unlike most repetitive manufacturing companies, which use a standard costing method, ETO companies use project accounting and collect actual costs. Actual costs are allocated to a project and monitored against the original estimate. Monitoring them against the original estimate ensures that profit margins are maintained. It is essential to know the estimated cost to complete — in other words, what's still needed to deliver the project.

▶ Installation: Many projects require installation at the customer's site. Once the assembly is complete, the equipment is broken down into major assemblies and shipped to the customer's location. Here the equipment is reassembled and typically goes through a certification process before acceptance by the customer.

▶ **PROGRESS OR PROGRESSIVE BILLING:** Due to the long lead times in the ETO world, it is a common business practice to receive partial payments, typically based on a percentage of the total bill, when significant milestones are reached. Hence, this practice is also called milestone reporting.

▶ **REVENUE RECOGNITION:** For projects with long lead times, companies may need the ability to recognize revenue

| ETO and Repetitive ERP Compared | |
| --- | --- |
| **ETO ERP Features** | **Repetitive ERP Features** |
| Unique products | Standard products |
| Job order | Sales order |
| Actual cost | Standard cost |
| Purchase material to project | Purchase material to stock |
| Ship from work in process | Ship from finished goods |
| Product lead time in months/years | Product lead time in days/weeks |
| Low-volume production | High-volume production |
| Progress billing by milestones | Invoice on delivery |
| Focus on production scheduling | Focus on material planning |
| Project-driven | Forecast-driven |
| Plan with project management | Plan with master schedule |
| Installation on site | Delivery to customer |
| Job-order-based | Part-number-based |
| Many engineering changes | Few engineering changes |
| Cost variances to original estimate | Cost variances to standard |
| Deep bills of material | Flat bills of material |

**TABLE 1**

based on the percentage of actual expenses incurred, rather than against final shipment of the product.

▶ **AFTERMARKET SERVICES:** After installation and acceptance, the manufactured equipment is usually covered by a warranty. ETO companies, particularly machine tool and industrial equipment suppliers, provide aftermarket services including maintenance, repair and spare parts.

## The Good and Bad of ERP Segmentation

The consolidation of ERP vendors will continue. Segmentation by industry sector or process will allow some companies to capture lucrative market share. Other ERP vendors are limiting geographic coverage to contain travel and demonstration expenses. The pitch for local ERP vendor coverage (typically within three hundred miles of the headquarters) is "We're here when you need us." Michael Panosh, the new CEO of PRONTO North America, notes, "We're limiting our geographic spread to the states immediately around Minnesota. We're looking at Illinois, Michigan and Ohio. We've used one of our lead-generation engines to qualify which nearby states have volume.

Although states like California and Florida are huge, they're too far away for practical sales management."

At its best, vertical segmentation of ERP vendors serves the manufacturing client by providing products that are tailored to the specific needs and requirements of a business operation. At its worst, vertical segmentation of ERP vendors may disguise small, underfunded companies that will not be around in the near future to serve their customers. Caveat emptor (buyer beware)! **SW**

*Thomas R. Cutler is the president and CEO of Fort Lauderdale, Florida-based TR Cutler, Inc., the largest manufacturing marketing firm worldwide (www.trcutlerinc.com). Cutler is also the founder of the Manufacturing Media Consortium: 2,700 journalists and editors writing about trends in manufacturing. He is the lead spokesperson for the ETO Institute (www.etoinstitute.org) as well as the author of* The Manufacturer's Public Relations and Media Guide. *Cutler is a frequently published author within the manufacturing sector, with more than 200 feature articles authored annually. He can be contacted at trcutler@trcutlerinc.com.*