

INTEGRATED ERP FOR FOOD MANUFACTURING

A Strategic Weapon for a Competitive Environment

W H I T E P A P E R

DEACOM[®]

INTEGRATED ERP SOFTWARE FOR FOOD MANUFACTURERS

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INTRODUCTION

Today, food manufacturers face significant challenges. Increasing costs, government regulation, safety concerns, margin pressures, and constantly changing consumer tastes are a way of life.

This white paper is written specifically for senior management.

It examines these food industry issues, and explains why an integrated business software system is essential for controlling costs, managing inventory, and meeting government regulation. It also outlines some of the key functionality a food manufacturer must look for when evaluating a new business software system.

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FOOD SAFETY

In a survey conducted by *Food Engineering* magazine, the number one issue facing food companies today is food safety. The development of very rapid distributions systems has amplified the impact of contaminated food entering the food supply chain.

Today, the threats and potential costs associated with food safety have never been higher. We are all familiar with the impact of tainted spinach, peanut butter, imported seafood, etc. It is not just the health of the consumer that is damaged by contaminated food. The resulting litigation, bad publicity, and recall costs can seriously damage a company's reputation and health.

BIOTERRORISM ACT

The events of Sept. 11, 2001 reinforced the need to enhance the security of the United States. Congress responded by passing the Public Health Security and Bioterrorism Preparedness and Response Act of 2002 (the Bioterrorism Act), which former President Bush signed into law June 12, 2002.

Today, all US companies involved with "the manufacture, processing, packing, transporting, distribution, receipt, holding, or importation of an article of food" must maintain records that identify the supplier from which they received the raw materials, and the customers that received the finished food products. Companies must maintain the records for a minimum of two years, and make them available within four hours from the receipt of a request from the FDA. These record requirements now apply to all food companies, regardless of size.

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COMPLEXITY ADDS COSTS

All of these issues have one thing in common: They add complexity, and that adds additional costs. The challenge for today's food manufacturer is how to meet the regulatory requirements, ensure a safe food supply, constantly improve business processes, and make a profit, all under downward price pressures from customers.

One answer is to invest in technology. Typically, the first software purchased by a company is an accounting package to handle the financial aspects of running a business. As the company grows, there is a need to manage inventory, process sales and purchase orders, keep track of recipes, and control production. The normal progression is that software systems are added to address the needs of individual departments. In a growing food company, it's not unusual to find separate systems for accounting, sales and purchasing, and inventory and recipe management. The result is that the same data may be held in multiple systems, leading to duplicate data entry and a different version of the truth.

INTEGRATED ERP IS THE ANSWER

A well-designed ERP system developed specifically for the food manufacturing industry can help integrate all aspects of your organization around a single set of information. An integrated ERP system offers many potential benefits to a food manufacturer, not only by improving operational performance, but also by providing the framework to meet regulatory compliance while containing costs.



A well-designed ERP system can integrate all aspects of your organization around a single set of information.

As a result, many food manufacturers are replacing multiple software applications with a single ERP system. By integrating their data in a single system, food manufacturers can control the details of their complex businesses to maximize productivity and profitability.

The use of one software system gives manufacturers a "single point of control" for data, thus eliminating the need to enter data in multiple systems, and reducing common data entry errors. It allows for the posting of transactional data in real time for instant access to up-to-the-second information.

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Training is less complicated with a single software system. Users quickly learn the “look and feel” of a single system, as opposed to having to learn the navigation and nuances of multiple user interfaces. Also, using a single system means communicating with one software vendor. This prevents the “not my problem” syndrome that occurs when one vendor passes the problem to another.

Benefits:

- Integrates all aspects of the business
- Provides a single source of data
- Improves operational performance
- Reduces costs
- Eliminates duplicate data entry

MEETING THE REQUIREMENTS OF THE BIOTERRORISM ACT

Complying with the Act places considerable responsibility on a food company. Bi-directional lot tracking - from the supplier to the customer and from the customer back to the supplier - is very difficult if your company still relies on paper records or spreadsheets. To cope effectively with these regulatory requirements and avoid sanctions, automated lot tracking has become a necessity. An ERP system automates this task by using an integrated bar coding system to assign lots and track material throughout your supply chain, from ingredients through the various stages of production, and finally to the customer. In addition to the FDA’s time sensitive request for information, food companies are under increasing pressure to demonstrate that they are able to meet the needs of a customer’s recall. An integrated ERP system with lot tracking should provide access to all material information necessary from a single screen, enabling you to easily perform a recall, and thereby enhancing your company’s reputation with customers.

Another implied requirement of the Bioterrorism Act is accurate record keeping in order to support the discovery and quick response to U.S. food supply threats. Therefore, accurate recipe, lot and batch, inventory, and shipping records are essential. Maintaining accurate records to the level required is virtually impossible with multiple systems because any time you have data in two or more locations, it’s bound to be incorrect. As a single system, integrated ERP software provides the framework and process control necessary to maintain accurate records.

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In addition, many ERP systems provide bar code data collection to help reduce transcription errors. If material movements, such as issues to production, receipts from a supplier, or transfers from one location to another, are not immediately entered into the system, there is a danger of transcription errors, especially if the data is transcribed from a packing slip or other receiving document. Bar code data collection eliminates manual data entry errors, and helps maintain lot tracking integrity.

Benefits:

- Helps meet the requirements of the Bioterrorism Act
- Eliminates the need for manual tracking
- Provides the information for a customer's recall
- Bar code data collection eliminates manual errors and maintains lot tracking integrity

FOOD SAFETY

Food safety is the primary issue facing food companies today. Maintaining quality throughout your entire supply chain is of paramount importance. It all starts with the recipe. An ERP system designed for the food industry manages recipes and all the related data—descriptive information, technical properties, quantities in user-definable units, costing information, notes, and history.

If you're a food ingredient manufacturer, and your finished product is used in your customer's product, additional quality control compliance typically is required. This could be for nutritional or ethnic considerations, such as kosher food. An ERP system with an integrated quality control function will enable you to maintain the relevant quality control data, such as specific gravity, particle size, pH, chemical composition, specifications from supplier spec sheets, and certificates of analysis.

An integrated ERP system with bar code technology will automatically track the lot numbers and identify information for each ingredient in each batch, which is essential for compliance with the Bioterrorism Act. In this way, every ingredient lot is linked to a particular batch (and particular customer shipments), and the information can be retrieved instantaneously.

Date	Disposition	Part Number	Lot Number	Postref	Quantity
09/02/2004	Order received - 01080	01080	13	PJ-20040009998	100,000.0000
09/14/2004	issued inventory - 01080	01080	13	JJ-200402124	-1,376.1200
12/14/2005	issued inventory - 01080	01080	13	JJ-200502162	-1,528.2000
01/14/2008	issued inventory - 01080	01080	13	JJ-200702328	-4,000.0000
04/07/2008	Inv Adj - 01080	01080	13	JJ-808	-30,148.3300
07/24/2008	Relieve job - 01080	01080	2138	JJ-200602204	-1,228.7600
01/14/2008	issued inventory - 01080	01080	2007-02328	JJ-200702328	-4,000.0000
08/22/2006	Finish job - FORMULA TEST	FORMULA TEST	2087	JJ-200502141	11,000.0000
08/22/2006	Finish job - PAINT01	PAINT01	2088	JJ-200502141	999.0000
08/22/2006	Finish job - PAINT05	PAINT05	2089	JJ-200502141	2,000.0000
08/22/2006	Finish job - PAINT01	PAINT01	2108	JJ-200502144	230.0000
08/22/2006	Finish job - PAINT05	PAINT05	2109	JJ-200502144	400.0000
08/22/2006	Finish job - FORMULA TEST	FORMULA TEST	2118	JJ-200502145	1,340.0000
08/22/2006	Finish job - PAINT01	PAINT01	2119	JJ-200502145	340.0000

An integrated ERP system will automatically track the lot numbers and identify information for each ingredient in each batch, essential for compliance with the Bioterrorism Act.

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A modern ERP system enables you to change recipes as production needs change, without any limitation on formula definitions. In many cases you can enter your own batch information and make changes at will, defining each field and specifying the units. When a batch ticket is printed for a recipe, intermingling of instructions with ingredients enables operators to efficiently and properly run the batch.

Labeling is another big issue. Fifty percent of the food recalls in the U.S. in 2008 were the result of packaging that failed to identify the presence of allergens, according to a study by U.K.-based industry consulting firm Reading Scientific Services Limited. Consumers are also getting into the habit of reading labels for ingredients and making choices based on nutritional value.

Labeling can be complex, especially if you are a food ingredient manufacturer, as your company may be making the same product for several different customers. Each customer has its own product name and label, and mistakes in labeling can be very expensive for the manufacturer. Labeling automation can help solve this problem and eliminate mistakes.

There are product labeling systems available to food manufacturers, but this causes problems with having to hold the recipe in two separate systems, leading to duplication of data and possible transcription errors. An ERP system designed for the food industry will contain an integrated labeling function. By integrating labeling with production, the system ensures that the product batch gets the correct customer's label.

Benefits:

- Supports food safety and regulatory compliance
- Helps maintain quality throughout the process
- Provides instantaneous access to data in the event of a recall
- Recipe management ensures changes are reflected in the production batch
- Supports complex labeling requirements

// By integrating labeling with production, [a modern ERP] system ensures that the product batch gets the correct customer's label. //

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MANAGING RAW MATERIAL COSTS

Raw materials are a major cost component for any food manufacturer. With shelf life requirements and ever increasing costs, effectively managing raw materials is essential. Ordering too much leads to waste and impacts margins, ordering too little leads to production delays, or having to pay expedited freight costs. The engine of an ERP system is the Material Requirements Planning (MRP) function. MRP is a planning tool that balances supply and demand, and helps you optimize inventory levels and avoid production delays caused by raw material shortages.

MRP shows a summary of all raw materials. It identifies raw materials that have fallen below internally set reorder points, lists open purchase orders placed for raw materials, and shows materials that have been issued to a batch but not yet used. The purchasing agent only has to review the materials that have fallen below reorder points to generate purchase orders. Greater efficiencies are achieved by combining orders and avoiding last minute ordering, which typically leads to premium pricing and expedited shipping costs.

For some ingredients, taking expiration dates into account is essential when determining picking priorities. An ERP system provides automatic lot selection based on picking rules, such as LIFO (last in first out) or FIFO (first in first out). For the food manufacturer, it is also important to take into account expiration dates, and have the option to pick the lot nearest to expiration, FEFO, (first expire first out) as well as maintain expiration dates by customer. An integrated ERP system provides an early warning if a lot is close to expiration so the appropriate action can be taken. It also prevents the selection of expired items through bar code technology.

Benefits:

- Improves purchasing efficiency
- Reduces material waste
- Reduces raw material shortages
- Improves purchasing efficiency
- Reduces the need for expediting material
- Helps eliminate production delays

INFORMATION - THE KEY TO SUCCESS

An integrated ERP system contains most of the printed documents necessary to run your business on a daily basis, such as batch tickets, inventory reports, purchase orders, sales orders, order summaries, customer packing lists, etc. It will also generate a full range of user specific financial reports, including invoices, receivables, payables, balance sheets, and income statements, and provide check writing capabilities. Having access to accurate information is the key to making better business decisions. The integrated nature of an ERP system will enable you to analyze costs, margins, inventory, production, products, customers, and vendors.

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A well-designed ERP system will also enable you to comply with the regulatory reporting requirements of the Bioterrorism Act, create Material Safety Data Sheets (MSDS) based on the actual ingredients used in each formulation, and calculate hazardous materials for Superfund Amendments and Reauthorization Act (SARA) reporting. A software system where MSDS forms are integrated with formulations ensures that the documents are always up to date and immediately reflect any changes to the recipe.


Modern ERP systems allow you to manage your business by exception. Instead of wading through mountains of irrelevant detail, summary reports provide a snapshot of the business, but also allow management to drill down to the detail when necessary. Perhaps you want to see the production batch that will satisfy a sales order, and the lot numbers and source of the material used in that batch. This is only possible with an integrated ERP system.

Benefits:


- Provides accurate information for better decision making
- Creates all the documents needed to run the business
- Creates MSDS and data for SARA reporting
- Ensures information is always up-to-date
- Provides summary analysis with drill-down

STREAMLINE OPERATIONS

With slim margins, rising raw material costs, and constraints on raising prices, food manufacturers have to do more with less to remain competitive. The successful companies are always looking for ways to streamline operations and reduce costs. The major advantage of a single ERP system is the integration of accounting with inventory, sales, purchasing, and production functions, rather than a loose connection of several separate software packages. By using two systems or more, there are always areas where manual intervention is required. There are extra steps for accounting personnel in order to keep information consistent and up to date. The short response time required by the Bioterrorism Act means all information must always be current, without intervention by accounting personnel.



The major advantage of a single ERP system is the integration of accounting with inventory, sales, purchasing, and production functions.



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An integrated ERP system eliminates duplicate data entry, most of the errors, and many of the bookkeeping tasks performed by the accounting department. Improvements to this business process will occur as accounting personnel have more time to analyze and improve budgeting, income projections, expense analysis, and procedures. An integrated ERP system for food manufacturing can dramatically change the operations of the accounting department, and change the accounting role from a data entry position to a true audit and control function.

In the food industry, customer-negotiated special pricing and packaging may require customized forms for shipments and specialized markings on products. An ERP system can automatically calculate prices based on different factors for different customers, without intervention by the salesperson or accounting department. A mass change capability allows you to easily update prices when raw material costs change, all with the click of a mouse.

The best ERP systems have an integrated Customer Relationship Management (CRM) function that readily synchronizes with tools such as Microsoft Word for word processing and Outlook® for e-mail, contacts, and calendar. CRM allows you to access call history, follow-up reminders, and templates for letters and forms. By synchronizing a BlackBerry® or other PDA to Outlook, all of your information will be right there in your pocket, even on the road. The ability to link individual contacts to a customer will allow you to jump right to a sales order summary or order history.

Another feature of a modern ERP system is the Web portal. This feature provides secure, controlled access to your ERP data for customers and your sales team. Customers can check the status of their orders from their own office, reducing the need to call your customer service department with routine enquiries. Customers can also review their billing statements online, thus facilitating faster payment. Your sales team can review the latest information just before visiting a customer, again without having to call the office. Your customer service personnel will have more time to devote to more complex tasks.

Benefits:

- Helps streamline operations and reduce costs
- Reduces errors
- Handles special pricing and packing requirements
- Easily integrates with Microsoft applications
- Frees up staff from unproductive tasks

SUMMARY

Food manufacturers are being squeezed at both ends. Increased pressure for greater food safety and regulation add more costs to the food processing supply chain. Higher energy bills and distribution costs take another chunk. At the other end, consumer behavior is forever changing, with customers demanding shorter lead times and dictating prices, leaving the food manufacturer little room to maneuver.

INTEGRATED ERP SOFTWARE FOR FOOD MANUFACTURERS

Integrated ERP systems have proven to bring many benefits to a food manufacturer, not only by improving operational performance, but also by providing the framework to meet regulatory compliance while containing costs. However, these benefits can only be realized if the food manufacturer selects an ERP system that supports the unique requirements of their industry. Only by focusing on these requirements will the food manufacturer select a truly strategic weapon for its competitive environment.

ABOUT DEACOM

Headquartered in Wayne, PA, Deacom, Inc. is the producer of DEACOM, a completely integrated accounting and Enterprise Resource Planning (ERP) software system for batch process manufacturers, with a specialization in the food and beverage manufacturing industries.

The DEACOM ERP Software System seamlessly links all departments within a manufacturing company, providing a comprehensive view of the entire operation. By making complex issues simple, Deacom helps streamline business processes to maximize productivity and profitability.

For more information or to schedule an online demonstration, call 610-971-2278 ext. 15 or visit www.deacom.net.