VITAL ANALYSIS

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A Special Report from Vital Analysis

The Food Industry Today

The food industry is one that is rife with great opportunities for producers and big challenges for consumers and governments. Food suppliers benefit through the use of technology to address production, distribution and government compliance issues while also managing costs. However, the industry is being challenged by the changing trends of consumers who are moving toward lower calorie, more natural products. The rising demand for these higher quality products often increase production costs.

> *"Rising the most was food prices, up 0.4% in July and 2.5% over the past 12 months. The price of food was 0.1% higher in June and soared 0.5% in May for the biggest gain since August 2011. 'The only major grocery store food group index not to rise in July was fruits and vegetables, which was unchanged,' the CPI report stated."*
>
> Source: http://www.usinflationcalculator.com/inflation/us-inflation-in-july-rises-0-1-annual-inflation-rate-at-2/10001455/

But the challenges continue. On the distribution side, retailers are demanding faster replenishment, fresh and natural products and packaging that stimulates consumer purchases. Manufacturers and distributors are often affected by warehousing issues, temperature control, variable landed costs and non-toxic packaging, to name but a few challenges. Additionally, the firm's profitability is often tied to the effective management of vendors, supplies and customers.

The big challenges for food manufacturers and processors are focused on three broad areas:

- Rising costs that are often difficult to pass on to consumers.
- Food safety and its attendant regulation and tracking.
- Meeting growing regulatory requirements.

Rising product costs are difficult for food processors to manage as many aspects of their cost structure are well beyond the control of any one person or firm. Product cost increases are due to a number of factors that include:

- Fluctuating petroleum prices (a key driver of motor fuel and petrochemical feed stocks for pesticides, herbicides and plastics costs).
- Growing demand for foods by people in improving economies (as their incomes increase, so do their appetites for certain foods).
- Growing global population.
- Increased global climatic change.
- Commodity speculation.
- Diversion of food crops for ethanol production.

> *"The consumer price of ground beef in May rose 10.4% from a year earlier while pork chop prices climbed 12.7%. The price of fresh fruit rose 7.3% and oranges 17.1%. But prices for cereals and bakery products were up just 0.1% and vegetable prices inched up only 0.5%."*
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> Source: http://online.wsj.com/articles/as-food-prices-rise-fed-keeps-a-wary-eye-1404672384 , July 6, 2014

Food industry players need to be exceptionally focused on operational excellence.

The United States inflation rate, at the time of this writing, has been hovering around 2% for the last year. However, in just the last year, some food prices have experienced double-digit increases.

Bottom line: Cost pressures will continue and food producers are finding it difficult to pass all of these increases on to consumers. This is putting pressure on bottom lines and making operational excellence a major strategic priority.

Safety and Regulatory Requirements

Ensuring the safety of the nation's food supply has become the focus of many regulatory bodies throughout the Western world. Monitoring of the U.S. food supply has been supplemented with additional legislation to prevent tampering and other malfeasance.

Protecting the quality of the food supply is a difficult task given the global nature of the food industry today. Grocers now provide fresh fruits and vegetables year-round and can do so by supplementing domestically grown crops with imported crops. Effective management of these vital components of the food chain requires extensive information technology and supplier certification programs.

Even with new regulations and oversight, there have been a number of well-publicized failures where food quality or safety has been compromised.

Adverse publicity is financially detrimental to food processors and manufacturers; however, deaths and/or lawsuits resulting from unsafe food have and will continue to cause business failures for those producers and manufacturers. In our discussions with food company executives, they are not only aware of this market reality but are intensely focused on maintaining the strictest quality and safety standards.

53 Days of U.S. Government Food Recalls/Alerts

- **Presence of foreign material:** in dog food,
- **Salmonella:** in Parmesan cheese, nut butters, ground oregano, carob powder, paprika powder, chocolate drink, energy bars, snack products,
- **Temperature Abuse:** in cheese
- **Undeclared ingredients**: walnuts, shrimp, eggs, milk, soy, wheat, barley, fish, tree nuts
- **Questionable seals:** in turnips & mixed greens,
- **Listeria monocytogenes:** in curds, peaches, plums, nectarines, sandwiches, made-in-store items, baked desserts
- **Clostridium botulinum**
- **E Coli:** in cheese
- **Undeclared sulfites:** in peaches, pumpkin seeds
- **Undeclared milk allergen:** in fruit drinks

Source: U.S. Food & Drug And Drug Administration, U.S. Department of Health and Human Services, 07/08/2014 – 8/31/2014, http://www.fda.gov/Safety/Recalls/default.htm

A Year of USDA Food Safety & Inspection Service Recalls

- eColi – 4 recalls
- Listeria – 9 recalls
- Salmonella – 1 recall
- No Inspection – 1 recall
- Misleading labels – 1 recall
- Undeclared Allergens – 6 recalls
- Contains Risk Material – 1 recall
- No Inspection – 1 recall
- Misleading labels – 1 recall
- Unsanitary Conditions – 2 recalls

Source: USDA, 1/24/2013-12/24/2013 http://www.fsis.usda.gov/wps/portal/fsis/topics/recalls-and-public-health-alerts/current-recalls-and-alerts

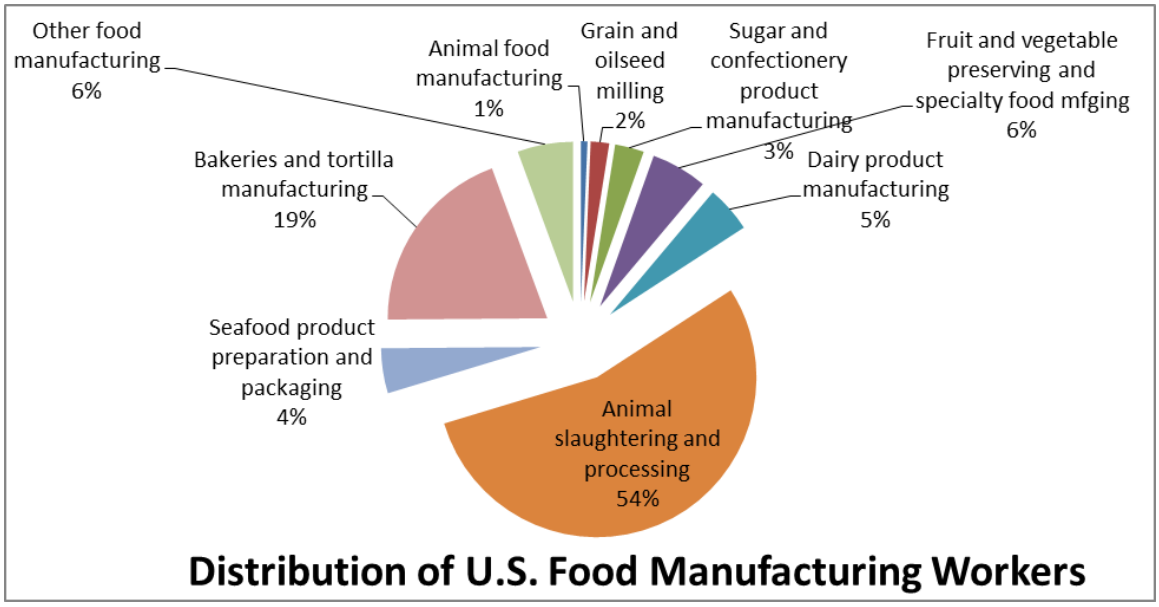
To provide high-quality, safe food products, food producers and manufacturers must have systems capable of:

- Tracking the full lifecycle of a food product from planting to consumption by end consumer.
- Serial/lot and other tracking capabilities.
- Testing and quality assurance.
- Supplier management and compliance systems.
- Returns or reverse logistics processing.
- Support for federal, state and local regulators and inspectors.

Operational excellence takes on a new light within food manufacturers and processors when safety and quality concerns are considered. Food handling must be accomplished in a precise, traceable fashion if quality and safety are to be realized at desired outcome levels. For example, the routine cleaning of plant equipment is a very precise task that must be accomplished in a specific sequence, with specific cleaning materials and by individuals well trained to perform this task. Food manufacturers must have repeatable, documented processes and workflows (with appropriate approvals & signoffs) to ensure that the food they make and sell is free from contaminants and disease.

Tech Requirements for the Food Industry

The food industry encompasses a very broad range of businesses and business types. Some firms are predominantly growers and require technology systems that are useful in the field and help with concerns such as crop rotation, irrigation, soil erosion and planting. They also utilize a number of common back-office applications to assist with accounting, finance and HR.



Source: Employment Projections program, U.S. Department of Labor, U.S. Bureau of Labor Statistics, 2012

Figure 1

Beyond this point in the value chain, food processors and distributors dominate the landscape. Figure 1 shows the distribution of these firms. These companies use a number of standard and industry-specific solutions. As expected, these firms utilize traditional back-office and mainstream ERP solutions for basic accounting and HR processes. Beyond these back-office modules, other module needs in the logistics, distribution and manufacturing disciplines may vary on a company-by-company basis. Additionally, the type of food processing involved may dictate the use of either discrete, batch or process manufacturing functionality.

For those food industry players with significant retailer interaction, a number of additional industry-specific capabilities may be required. These firms may need solutions to support direct store delivery (DSD), vendor managed inventory (VMI), trade promotions, cooperative advertising, rebates, coupon processing, returns processing and more.

But, no matter where a company exists on the food value chain, all firms must comply with local and national regulations and safety requirements. Figure 2 lists just some of the regulatory bodies and legislation that impact U.S. food producers and distributors.

Partial List of U.S. Food Regulators & Regulations

- U.S. Department of Agriculture
  - Agricultural Marketing Act
    - National Organic Program
    - Country of Origin Labeling
  - Perishable Agricultural Commodities Act
  - Federal Seed Act
  - Federal Meat Inspection Act
  - Poultry Products Inspection Act
  - Humane Slaughter Act
  - Egg Products Inspection Act
  - Food Safety and Inspection Service
  - 9 CFR 317
- U.S. Department of Health and Human Services
  - Food and Drug Administration
    - Center for Food Safety and Applied Nutrition
    - Food Safety and Inspection Service
    - Federal Food Drug and Cosmetic Act
    - Nutritional Labeling and Education act
    - Dietary Supplement Health and Education Act
    - Hazard Analysis Critical Control Point
    - Fair Packaging and Labeling Act
    - Public Health Service Act
    - Public Health Security and Bioterrorism Preparedness and Response Act
    - Interstate Travel Sanitation
  - National Institutes of Health
  - Center for Disease Control and Prevention
    - Vessel Sanitation Program
- U.S. Department of Housing and Urban Development
- U.S. Department of Homeland Security
- U.S. Department of the Interior
- U.S. Department of Justice
  - Bureau of Alcohol, Tobacco and Firearms and Explosives
- U.S. Department of Labor
  - Occupational Safety and Health Administration
- U.S. Department of State
- U.S. Department of Transportation
- U.S. Department of the Treasury
  - U.S. Customs Service
  - Alcohol Tax and Trade Bureau
- U.S. Department of Veterans Affairs
- Environmental Protection Agency
- Federal Trade Commission
- U.S. Department of Defense
- U.S. Department of Education
- U.S. Department of Energy
- U.S. Department of Commerce
  - National Institute of Standards and Technology
  - National Oceanic and Atmospheric Administration
    - National Fisheries Inspection Program

Figure 2

Changing market and competitive conditions may dictate additional technology requirements. Large food retailers appear to want greater degrees of product identification beyond uniform product code (UPC) and serial/lot tracking capabilities. Food producers are being challenged to support various RFID (radio frequency identification) initiatives. Food manufacturers and retailers are very concerned about the introduction of counterfeit, off-channel products entering the food chain. Likewise, diversions of products to different markets or retailers adversely impact a vendor's ability to recall product, if needed. Food manufacturers should prepare for the possibility of additional systems requirements in these and other areas.

Buyers of technology for the food industry should seek solutions that meet three sets of requirements: basic ERP capabilities, food industry specific functionality and regulatory/safety requirements (see Figure 3).

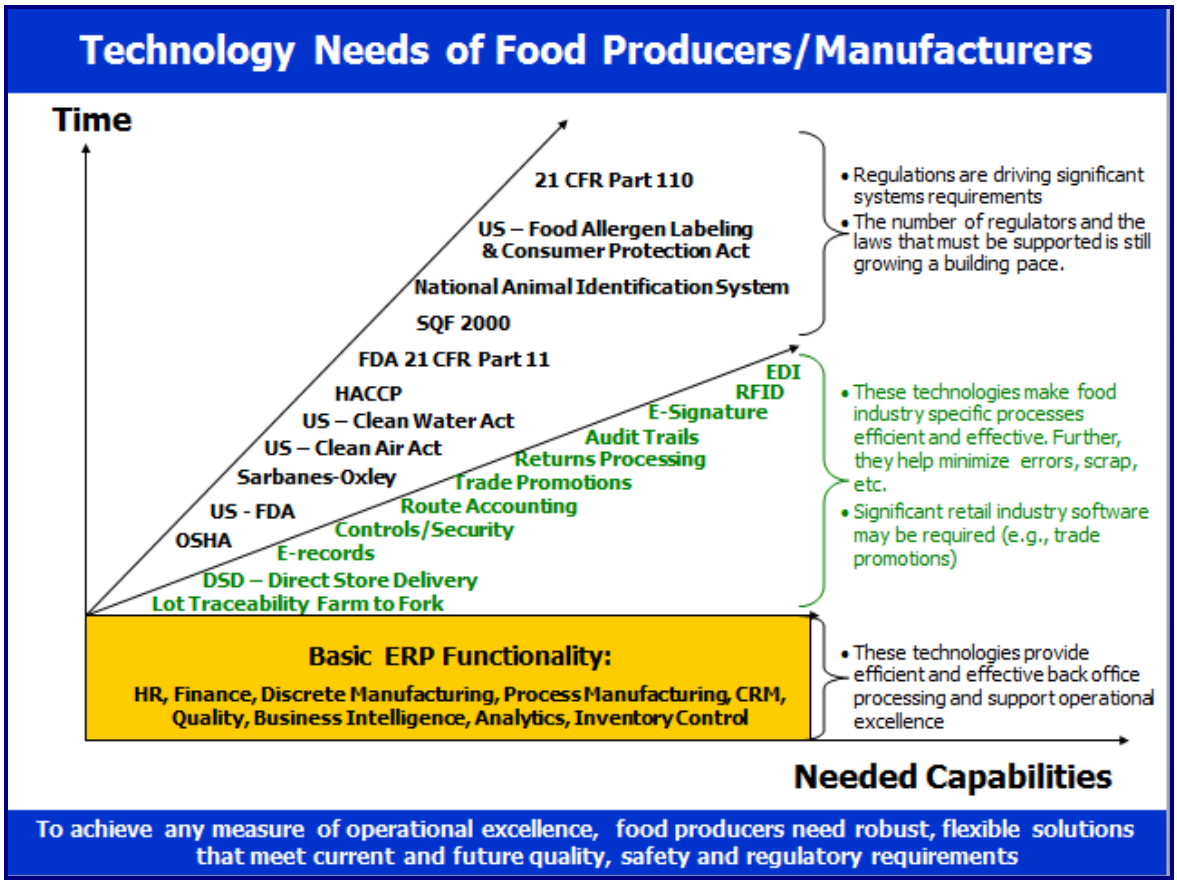


Figure 3

Entry-level software will not meet the many needs of food sector businesses beyond basic back-office and manufacturing functionality. ERP products do a solid job of tracking accounting events but do not necessarily support the intense product movement data of food stuffs or the elaborate documentation required to maintain quality and safety information. Documenting every step of the food supply chain, from grower to final consumer, is a data-intensive and difficult task. Some food processors and manufacturers are attempting to simplify their businesses by limiting the numbers of growers and suppliers from which they buy products. This process may reduce their risk exposure somewhat; however, these producers and manufacturers must still maintain copious and detailed records that track the movements of these products.

ERP solutions that are not designed for the food industry may be significantly deficient in their ability to support users in that industry. The amount of functionality required to support integration with retailers, shippers and suppliers is significant. Prospective software buyers should avoid ERP solutions that lack specific, dedicated food sector functionality. Additionally, software buyers should examine the manufacturing functionality they require very closely. If a food manufacturer requires specific process manufacturing capabilities, formula management, etc., then they should expend appropriate time verifying functionality and applicability of potential solutions.

We believe that:

- The regulatory quality and safety issues in this industry will place additional IT requirements on food processors and manufacturers.
- Changes will be demanded by other firms in the food chain and these will impact the IT environment and systems needs of food manufacturers.
- Food manufacturers must establish tighter technology relationships with critical suppliers and retailers.
- Some of this additional connectivity will support improved logistics and replenishment activities while other integration aspects will facilitate product tracking and potential recall activities. Older ERP products will be more difficult and costly to modify and less supportive of these ever-shifting and growing demands. *The business environment of food companies is highly volatile and the technology supporting it must be malleable.*

The best food companies choose their technology solutions very wisely. Specifically, these smart technology buyers look for solutions that:

- Meet all current regulatory requirements for all countries in which the buyer operates.
- Have a deep, rich history of meeting new global regulations on time.
- Contain a full-suite of ERP capabilities from back-office, front-office, shop floor and distribution.
- Have rich food industry functionality built into the suite.

SYSPRO ERP Food Industry Modules

Manufacturing
- Change Control
- Lot Traceability
- Bill of Materials/Formulation
- Requirements Planning

Financials
- General Ledger
- Accounts Payable
- Fixed Assets
- Accounts Receivable
- Cash Book
- Activity-Based Costing
- Electronic Funds Transfer

Distribution
- Inventory Control
- Sales Orders
- Purchase Orders
- Sales Analysis
- Landed Cost Tracking
- Forecasting
  - Optimization
  - Families & Groupings
- Return to Vendor
- Returned Materials Authorization
- Trade Promotions

Customer Relationship Mgmt.
Analytics
Executive Dashboards
Reporting Services
Electronic Data Interchange
Quality

Figure 4

SYSPRO in the Food Sector

SYSPRO ERP software is fairly comprehensive solution for the Food and Beverage industry. The product line has a number of technical innovations (e.g., its Espresso mobile technology) that enhance the ability for small to mid-sized businesses to succeed.

The SYSPRO ERP solution facilitates food production; regulatory support; quality control; serial/lot traceability; product recalls; and, inventory management (see Figure 4).

SYSPRO also supports a number of food industry specific and regulatory requirements. The software supports FDA 21 CFR Part 11 with a set of tools that include: electronic signatures;

record archiving and retention; audit trails; and, security controls. The electronic signature functionality is interesting as it identifies exactly who provided specific work units and for enhancing traceability. It authenticates operators for specific transactions. Functionality also exists to manage investigations (and their resolution) of customer complaints.

SYSPRO Case Study: Perrone & Sons

Safety concerns pervade the food industry. From fields and farms to the dinner table, food safety requires meticulous care, preparation and tracking. The adverse consequences of spoiled, contaminated or unsafe food can be disastrous to consumers and every firm in the food supply chain.

Perrone & Sons is a fourth generation food distributor based near New Orleans, Louisiana. The company has approximately 65 employees and serves customers over a large portion of the Gulf Coast. In 2012, the company became a user of SYSPRO's ERP software. To date, the company has implemented a number of SYSPRO applications and may expand its usage to include other applications.

Because of the perishable nature of its products, Perrone & Sons must track the freshness, shelf-life and other attributes of its raw and finished products. Like other food manufacturers and distributors, attention to spoilage, product rotation, expiration date and lot tracking are critical business needs. An example of this is the care Perrone & Sons exerts so that key suppliers do not ship them foodstuffs that are at or near the end of their shelf-life. According to John Perrone III, CIO and Owner of Perrone & Sons, the company uses a number of SYSPRO modules to achieve this. The lot traceability application is key to managing and optimizing their food quality and bottom line. He stated that this module even makes recalls "*relatively easy.*"

Other SYSPRO modules that Perrone & Sons utilize include the bill of materials application and SYSPRO's mobile software, Espresso. Mr. Perrone described Espresso as "*incredibly powerful and really nice*" and hopes to see increased usage of the mobile functions by their sales professionals soon.

The SYSPRO solution allows Food and Beverage Manufacturers to produce foods in standard weight or percentage-based recipes. It supports co-product/by-product planning and tracking to help optimize decisions. This includes analyzing the costs of co-products and burden from by-products, as well as crediting those values to the appropriate finished goods inventory accounts.

The solution also supports lot control tracking, shelf life management, product grading and hazardous materials tracking and reporting.

SYSPRO CRM facilitates the post-production process for compliance tracking and returned material processing. A value-add to the Food and Beverage industry is the ability to manage and track trade promotions when dealing with "Big Box" retailers.

Finally, SYSPRO has a number of financial reporting, dashboard and other tools. Variances, cost breakdowns, discount/deduction tracking and more are visible via these tools.

Who is SYSPRO?

According to SYSPRO, they are "an internationally-recognized, leading provider of enterprise business solutions for on-premises, mobile and cloud-based utilization. Formed in 1978, SYSPRO was one of the first software vendors to develop an Enterprise Resource Planning (ERP) solution. Today, SYSPRO is a global business solutions vendor, represented on six continents and by more than 1600 channel and support partners. Over 15,000 licensed companies across a broad spectrum of industries in more than 60 countries trust SYSPRO as the platform on which to manage their business processes.

Customer focus is a core component of SYSPRO's corporate culture and is one of the key reasons why SYSPRO maintains a strong leadership position in the enterprise application market. By focusing on people and building lasting relationships with customers and partners, SYSPRO consistently excels at guiding customers through all aspects of their implementation and ongoing utilization. SYSPRO's mission is to deliver world-class software that gives customers the control, insight and agility they need for a competitive advantage in a global economy. As such, SYSPRO provides a unique combination of robust, scalable technologies that ensure minimal risk and a high return on investment."

Summary

The food sector is confronting challenges on multiple fronts. The world's population is growing and their tastes (e.g., for more protein, for organic products, for vegan alternatives, gluten-free foods, etc.) are becoming more sophisticated and demanding. Feeding all of these current and future buyers is a challenge that will not be ending any time soon.

Regulations, tracking and a global supply chain add additional layers of challenges to this picture. Food producers and manufacturers need some of the best technology available to meet current and forthcoming challenges no matter the source.

In the food sector, businesses need functionally robust systems that are complete and integrate well with each other and with partner systems. Pragmatic executives will likely forgo more basic ERP solutions and migrate towards vendors with significant food functionality and support for an ever-growing regulatory burden. Visionary buyers already see the need for long-term product flexibility given the volatile economic and regulatory changes that are buffeting the food industry today and in the foreseeable future.

SYSPRO's ERP suite contains support for a number of food industry and related regulatory requirements. The number and completeness of applications is significant and should serve many firms well.

About Vital Analysis

Vital Analysis is a very different kind of technology research organization. We are the intersection set where exceptional technology market knowledge meets the executive suite. Where other 'analysts' replay vendor press releases, we give you the:

- impact new technologies will or won't have on your business
- reasons why you should or shouldn't care about specific emerging solutions
- business justifications why you may or may not want specific solutions

Vital Analysis was carved out of TechVentive, Inc. in 2007 as a new, but complementary business. As designed, Vital Analysis is the publishing, research and analytical arm of that company.

Our reach, like our blog readership, is truly global. We've consulted with top technology executives in Australia, Brazil, Canada, United Kingdom and the United States. We've been briefed by technology providers from virtually every corner of the planet.

About the Author

Brian Sommer is the CEO of TechVentive, Inc. - a market-strategy and content firm. Brian closely follows what C-level executives think, feel and need. Brian also publishes two blogs, one on the application software market (www.softwaresafari.typepad.com) and one on the professional services space: (www.servicessafari.blogs.com). He welcomes your thoughts and invites you to contact him at brian@vitalanalysis.com.