Sparta Systems

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Introduction

Consumer Package Goods (CPG) companies today struggle to find ways to reduce risk and increase operational efficiencies across facilities within their enterprise, while at the same time trying to find cost effective ways to meet increasing regulatory and trading partner compliance objectives. In order to achieve these goals, CPG companies are looking at ways to incorporate new technologies in their current processes or across the organization. Whether it is robotics in the plant, business analytics or a new enterprise IT system to standardize information across all facilities, world-class companies are thinking outside-the-box in order to be more efficient.

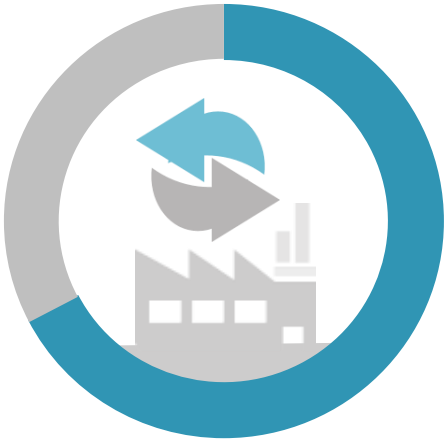
Moreover, organizations are globalizing their value chain network to support innovation, reach new markets, and reduce costs. However, companies have less visibility into a product's lifecycle than ever before, leaving brand owners exposed to higher risk of product issues, consumer health and safety incidents, and shareholder value.

As a result, organizations are looking for ways to create greater transparency into their suppliers' and contract vendors' operations and quality processes to ensure that products meet safety and quality requirements.

This paper highlights current operational and regulatory trends, their impact on the market, and how supplier collaboration and management is a key component to reducing supply chain incidents and waste, while supporting operational excellence, new product introduction, and sustained revenue enhancements.



Operational Trends



68%

F&B manufacturers outsource to Contract Vendors[1]

CPG manufacturers today operate in a very different landscape than a decade ago. There are four trends driving manufacturers to change the way they operate.

Global Expansion. Organizations that are globally expanding their market presence and product portfolio to increase market share, resulting in new suppliers and contract manufacturers being added to the partner network to accommodate new market demands. In fact, an estimated 68% of food and beverage manufacturers are outsourcing some level of production to contract vendors.[1] Most manufacturer's source ingredients and packaging from global suppliers and outsource manufacturing and packaging to global contract vendors, making it considerably more difficult to manage product quality and safety throughout the product lifecycle, especially considering that most companies still manage supplier quality management manually.

Mergers & Acquisitions. M&A activity has been on the rise recently which increases the number of facilities within the enterprise and the supplier and contract vendor network. The challenge is managing a larger number of resources with the same disconnected enterprise systems and manual process that are not working today. It is estimated that 44% of companies still struggle to synchronize and integrate data across various management systems and internal groups,[1] making it considerably more difficult to manage product quality and safety throughout the product lifecycle.

Regulation. Industry regulations, such as FSMA and GFSI, have a considerable impact on manufacturers' processes and procedures. No longer is it enough to provide Standard Operating Procedures (SOPs) and paper-based records of supplier documentation. Current regulations require a record of every supplier or contract manufacturer site that provides ingredients or finished goods and a corresponding

1 Globalization: Linking Supply Chain Transformation to the Profit and Loss Statement. Aberdeen Group. Bob Heaney. June 2013.
2 Global Manufacturing Outlook. Competitive advantage: Enhancing supply chain networks for efficiency and innovation. KPMG & Economist Intelligence Unit. May 2013.

Operational Trends (continued)

risk-based audit history by manufacturers and importers. The challenge is that most F&B manufactures do not have visibility into where the ingredients and goods they source actually come from, and existing IT systems were never designed to store the type of data required by these regulations. Now add the complexity of trading partner requirements, like Target and Walmart, regarding social responsibility, quality manufacturing, product testing and additional business data to ensure compliance.

Social Media and Corporate Social Responsibility (CSR). The latest generation of consumers expect companies to produce sustainable, socially responsible products, and they are quick to turn to social media if they think a manufacturer is not compliant. Misinformation about a company's practices can spread quickly via social media and tarnish a brand's reputation leading to lower sales. This is especially frustrating when the guilty party is the manufacturer's supplier and not the company itself.

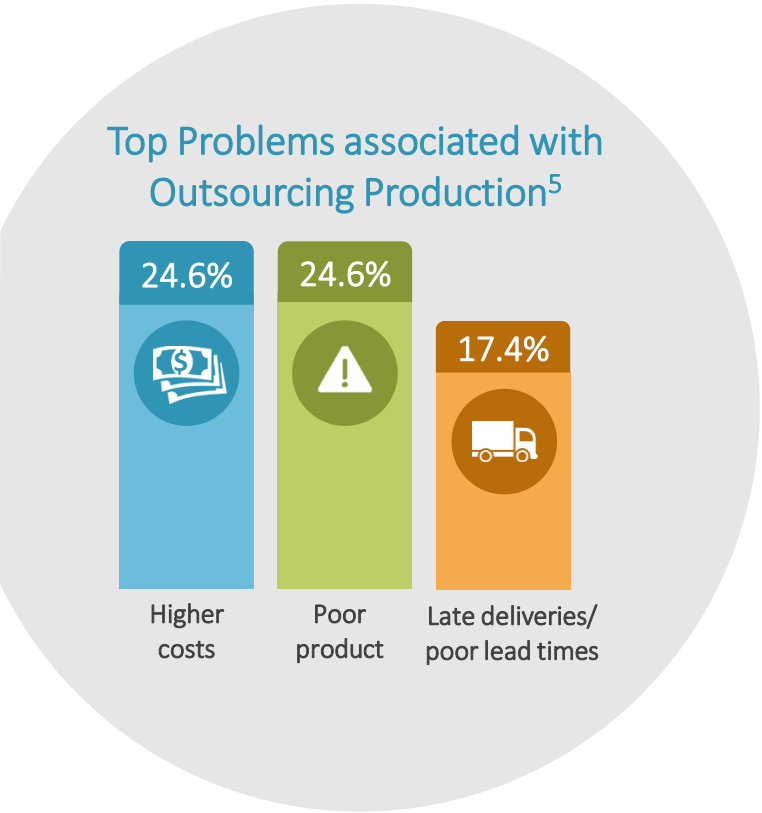
One high profile example is Foxconn Technology Company in China where employees endured long work days in sweatshop conditions to assemble Apple iPhones. Apple endured harsh criticism for not having better visibility into their contract manufacturers practices as well as a surprising impact on the stock. Reviewing Apple's stock chart during that time, the stock dropped on November 26 from $695 to $660, resulting in a 5% drop that took almost $30 billion out the stock's market cap.[2]



75% of consumers who read about a company's CSR said they were more likely to purchase products from the company in the future.[1]

1 Corporate Social Responsibility Branding Survey. Penn Schoen Berland Associates. 2010.
2 Did Foxconn bring down Apple Stock? Seeking Alpha. October 16, 2012.

Impact and Consequences



These operational trends have led to a decrease in visibility throughout the product lifecycle and increased the number of product issues. While many companies have implemented ERP systems to automated financial and transactional data, these systems lack the functionality to track and manage quality data to support product incident management and compliance requirements.

Although the use of contract manufacturers provides companies access to new technologies or equipment, increases production capacity and lowers operational costs, the lack of control and visibility into processes increases the risk to the product's quality and safety leaving the brand susceptible to greater issues when it enters the supply chain. It is estimated that the cost of poor quality (COPQ) can range from 15-40% of business costs[1], which includes rework, returns, recalls and lost revenue. Additional COPQ statistic include:

- When a company quarantines product for rework, it can cost 10x the original cost to resolve the issue.[2]
- The average manufacturer spends 9-15% of total revenue on returns of revenues to manage all aspects of consumer returns.[3]
- Recalls across multiple industries have been increasing for years. The US food and beverage industry alone has seen a 135% increase in recalls since 1999. Over 50% of recalls can be traced back to supplier and contract manufacturer issues.[4]

Manufacturers are looking for better ways to collaborate with their partner network to reduce waste and COPQ.

1 Quality Essentials: A Reference Guide from A to Z. Jack B. ReVelle. 2004.
2 Dr. W. Edwards Deming 1-10-100 model
3 Reverse Logistics: Driving improved Returns Directly to the Bottom Line. Aberdeen Group. February 2010.
4 Recall Execution Effectiveness Report. Deloitte, GMA, FMI, GS1. May 2010.
5 Fast Facts on Food Processing. Outsourcing: Friend or Foe? Grant Thornton Food & Beverage Practice. Part 2 of 6. May 2009.

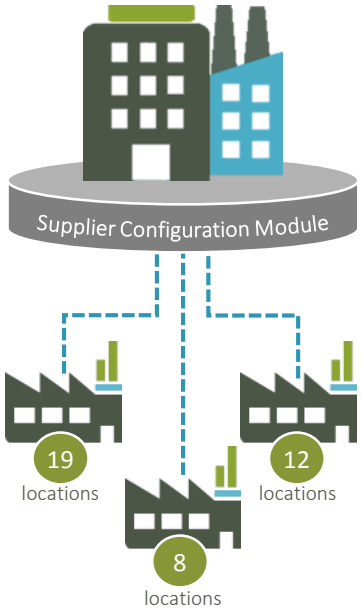
Five Best Practices to Enhance Supplier Management

The problem also expands outside the four-walls of a facility. Most manufacturers source ingredients and packaging from global suppliers and outsource manufacturing and packaging to global contract vendors. This makes it considerably more difficult to manage product quality and safety throughout the product lifecycle. For manufacturers, brand ownership carries the promise of trust in quality, safety and reliability so they need to ensure that their vendor network maintains the same quality standards as the brand owner.

Now we are going to define the five best practices to ensure product quality when working with suppliers and outsource vendors and how technology can leverage existing IT systems while creating transparency across the value and supply chains.



Step 1: Supplier Foundation



Companies can have hundreds to thousands of suppliers and contract vendors in their partner network, depending on the size of an organization. The challenge is tracking and managing all these partners and keeping information up-to-date. It is important to start with a complete list of current suppliers and their sites that actually provide ingredients or finished goods.

Another important step is creating a supplier profile that includes a risk-level rating based on the ingredients or products they provide or the facility's control and processes. The risk rating will assist in the development of an effective audit plan to ensure FSMA compliance and company requirements. High risk ingredients, such as nut-based products, can increase the supplier's risk rating due to the risk of contamination, so it is important to rate the supplier risk level on a regular basis.

In the event of a nonconformance or issue, the audit needs to provide a list of the findings that must be addressed. The supplier then has a specified period of time to respond to the audit findings and complete Corrective and Preventive Actions (CAPAs) to address the situation.

How Technology Simplifies a Supplier Foundation and Site Audit Management

A Supplier Configuration module allows users to create a single repository of the current suppliers, global locations and ingredients or materials provided to the company. Information can be entered manually by users or connectors can be used to access master data from other IT systems for data accuracy and consistency.

Audits can be scheduled based on risk level and recorded in the module to ensure that information is updated and certifications and other documents can be attached to the supplier site record. The audit lifecycle steps are automated to include scheduling, preparation, auditing, report approval, report issuance, response and corrective action tracking.

Audit results are stored by supplier site and the workflow ensures follow-up and Corrective Actions are being executed in a timely manner. In the event of a delay, all responsible parties receive electronic alerts to resolve the issue, eliminating the need for manual tracking supplier audits. A complete record of dates and authorizations are also stored to provide a complete record in the event of a discrepancy.

Step 2: Supplier On-Boarding

Now that current suppliers and contract manufacturers are recorded and managed properly, it is critical to maintain the process for new suppliers and vendors on-boarding to streamline the process. By doing so, the organization can easily identify suppliers that are underperforming, add new suppliers from M&A activities, and manage ingredients for upcoming product launches.

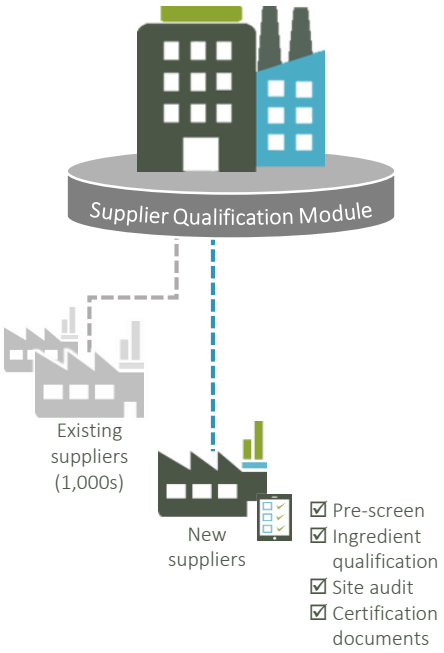
How Technology Simplifies Supplier Site Qualifications

A Supplier Qualification module allows users to quickly on-board new suppliers as needed. Instead of a standard multiple page questionnaire, users can send prescreening forms are easily distributed electronically to ensure timely delivery and supplier response.

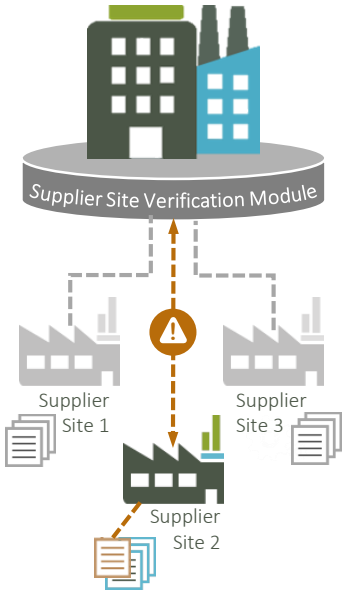
Suppliers selected after the prescreening process would receive an in-depth ingredient/material qualification questionnaire and would need to submit all certification documents required for consideration. The module tracks and manages documents and provides dashboard reports on the status of suppliers' responses.

The company will also schedule on-site audits with each supplier location to ensure compliance with company and regulatory requirements. The Supplier Qualification module will monitor findings and required CAPAs at each supplier facility and update supplier scorecards with approved status. Since the module can be integrated with other existing IT systems, the supplier records and product specifications can be automatically updated for consistent supplier information across all facilities.

The ability to quickly add new suppliers to have a real impact on the company ability to contain cost, ensure new product introduction success and grow revenue.



Step 3: Ingredient Management



Once the suppliers sites and their ingredients and materials have been catalogued in one central repository, companies can begin to track and manage ingredient and materials by supplier site to the manufacturing sites approved to receive them. Once this information is categorized, documents such as annual certifications (i.e. Kosher, GMP, HACCP, etc.) and transactional documents (i.e. COA, test results, etc.) are easier to save and access when needed. This centralizing of data enables users to communicate bill of material (BOM) and specification changes provided by the manufacturer or the supplier.

How Technology Simplifies Supplier Site Verifications

After organizing the supplier site content, the Supplier Site Verification module can collect and manage additional supplier master data. Configured workflow processes ensure all supplier site documentation is available and organized in the event of an audit (i.e. FSMA, SQF, etc.) and notifications will be sent to a supplier regarding any missing documents in order to maintain compliance.

This module also enables users to collaborate in real time with suppliers and vendors through the use of a supplier portal. This allows users and suppliers to properly plan for changes in BOM or recipes due to specification issues. so that changes with BOM and specifications are communicated in sufficient time.

The Supplier Site Verification module centralizes and monitors information on the supplier, the ingredients, specifications, COA, Country of Origin (COO), and other important tests and documents to manage against internal requirements and regulatory and industry requirements (i.e. GMP, ISO, GFSI, FSMA, etc.), allowing quality to significantly reduce the cost of goods sold (COGS) and the cost of poor quality (COPQ).

Step 4: Integrated Incident Management

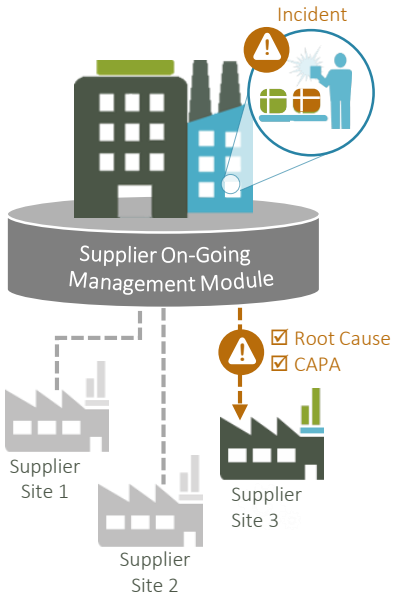
The next step in the process is to monitor quality events within the manufacturing process and determine if an incident is a result of an internal manufacturing practice or a supplier quality issue. Quality issues can be discovered through supplier disclosure, consumer complaints, or via internal identification. By creating standard operating procedures (SOP) to address problems and complaints with suppliers, issues can be expedited to determine the root cause and CAPAs can be implemented to solve the issue in less time. A supplier's response to issues would impact updates to the supplier risk evaluation and scorecard updates.

How Technology Simplifies Supplier On-going Management

A Supplier On-going Management module improves safety and reduces costs by centralizing all quality events in one repository so that complaints, incidents, nonconformances, and out of specification test results can easily be tracked, managed and queried. Since the module is integrated with other IT systems, such as ERP, MES and CRM, incidents and nonconformance records can be created automatically, reducing the time and errors associated with manual, paper-based processes.

The investigation process is streamlined to track all related tasks within the cross-functional team and key personnel are notified when a task is closed so CAPAs can be implemented. Users can review the status of open issues, CAPAs and change management to improve cycle time through a closed-loop workflow process.

In the event that a quality incident is related to a supplier, the supplier portal allows real-time communication between the company and the supplier to resolve the issue and quarantine any suspect material or finished goods before it makes its way to consumers. The entire automated process leads to a reduction in raw material costs and variability, improved yield, and greater supply chain reliability.



Step 5: Supplier Performance Management



The challenge of managing a global portfolio of suppliers and contract vendors can be overwhelming. Companies need to protect their brands, comply with trading partner (i.e. retailers such as Walmart) and government (i.e. FSMA) requirements, and manage the overall quality and cost of goods sold.

To ensure that quality processes are being properly managed internally and with external suppliers, it is important for companies to be able to report on trends and issues to proactively manage issues and supplier risk.

How Technology Simplifies Real-time Performance

Many companies realize that spreadsheets not longer provide the real time data visibility and drilldown functionality needed to proactively manage quality issues. The Supplier Performance Management module integrates all modules and external data into one easy-to-use analytics dashboard tool, providing visibility into scorecards and benchmarks across all suppliers.

Now users can track and trend quality data, identify patterns, and make decisions directly within one centralized repository with an interactive drag-and-drop reporting interface. This module puts the power of analytics in a user's hands to conduct real-time analysis and report without relying on outside technical resources.

The predictive analytics functionality finds patterns and trends in historical data to determine probability of issues in the future and how to reduce risk and identify opportunities for greater value generate and cost reductions. Now quality data can help drive continuous supplier quality improvement, drive operational productivity, reduce audit and oversight cost, and support new product introductions.

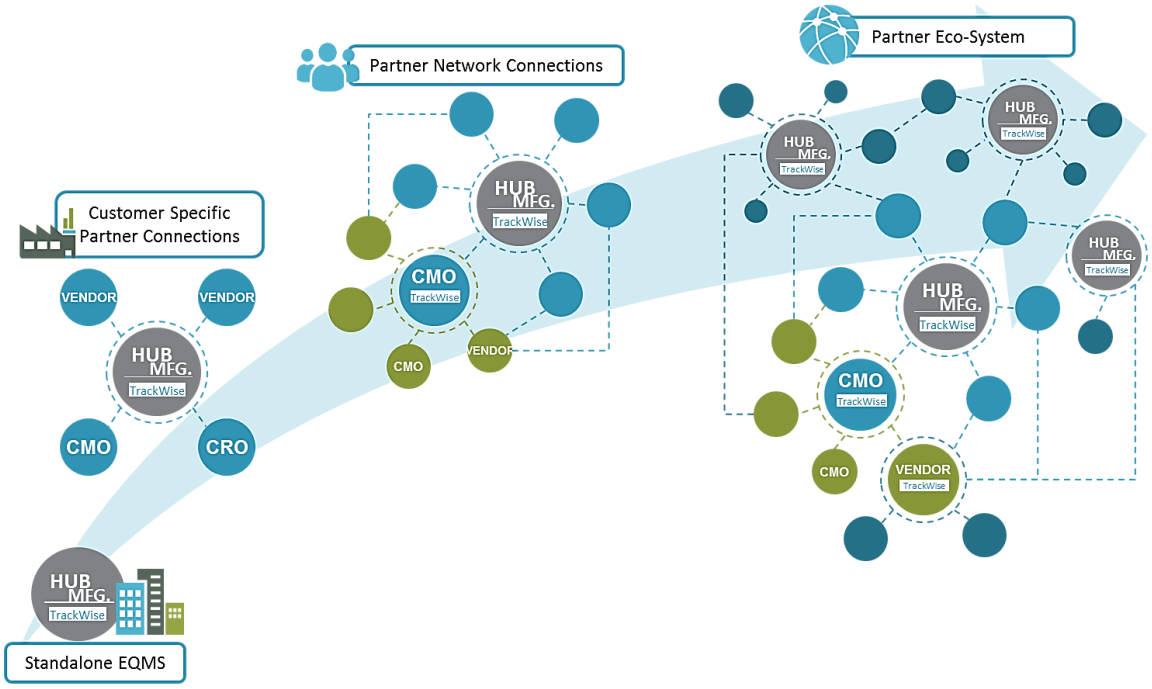
Conclusion: Partner Ecosystem of the Future

With the increased reliance on global suppliers and contract vendors, companies are looking for ways to increase collaboration and transparency across the value chain.

The adoption of enterprise technologies to standardize quality processes within a facilities is the first step in the process. Once this is achieved, companies can reach out beyond their four-walls to ensure that suppliers and contract manufacturers are implementing the same best practices for product quality, safety and compliance.

The goal is to standardize product quality not only with Tier 1 partners but through all value chain partners and their extended supplier network. This vision of a complete partner ecosystem will establish real-time communication and data sharing to identify issues early and proactively prevent quality issues from entering the supply chain.

Product safety for manufacturers, suppliers, contract vendors, shareholders and - most importantly - consumers.



Resources



To learn more about how quality management process designs can enhance your supplier visibility, operational efficiency and business insights visit www.Sparta Sytems.com or check out the following resources:

Webinar: Supplier Quality Management Strategies for Enterprise Quality Management Systems

Whitepaper: Predictive Analytics: Unlocking the Hidden Meaning of Your Quality Data

eBook: Best Practices to Ensure Quality and Supply Chain Efficiency

Sparta Systems, an industry pioneer and global leading provider of enterprise quality management software (EQMS) solutions, enables businesses to safely and efficiently deliver their products to market. Its TrackWise® EQMS, a trusted standard among highly regulated industries, is used by quality, manufacturing and regulatory affairs professionals to manage compliance, reduce risk and improve safety across the global enterprise. Headquartered in New Jersey and with locations across Europe and Asia, Sparta Systems maintains an extensive install base in the pharmaceutical and biotechnology, medical device, electronics manufacturing and consumer products markets.

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