



Supplier and service provider risk management

Addressing food safety risks
along the supply chain

Evolution of the food supply chain

The food industry's supply chain continues to evolve and grow in complexity. Supply chain participants are no longer limited to the first tier supplier, the manufacturer, and the distributor (see Figure 1). Today, participants include everyone involved from “farm to fork” in the growing, harvesting, processing, packaging, transporting, holding, and selling of a food product. A participant can have multiple roles within the same supply chain. And it's more than likely one

or more ingredients or raw products are sourced from non-domestic entities. Risks to food safety exist along each step of the farm-to-fork continuum.

Many companies—from food and beverage manufacturers to restaurants and food retailers—find it difficult to document their end-to-end supply chains. Yet it is essential to understand the supply chain to meet federal regulations, mitigate risks, and satisfy consumer demands for supply

chain transparency. Lack of a holistic view and understanding of potential risks can lead to food safety and quality failures, resulting in damage to a company's—or multiple companies'—brand reputation and bottom line. Companies must understand the challenges they face, and the potential solutions available, to manage food safety risks in today's complex supply chains. Internal and external driving forces affect

Figure 1. Food industry supply chain



Challenges

how companies manage their supply chains, and can directly or indirectly shape food safety programs. Through our experience, Deloitte Risk and Financial Advisory has identified several common challenges.

Internal Challenges

Company organization and governance

Food safety should be driven from the enterprise level to ensure it's aligned to business objectives. However, many companies manage food safety at the functional level. And other business functions may not perceive quality and food safety as part of their responsibilities. Or they may not understand how their daily decisions can impact food safety. For example, procurement might engage a new spice supplier without the food safety team's evaluation of the supplier's mitigation of the risk for, say, *Salmonella* contamination.

Supplier management programs are not always responsive to an evolving supply chain, either. Companies often discover they don't have adequate policies and programs in place to identify and mitigate the risks posed by the supply chain,

especially food safety risks. For example, many consumers want gluten-free (or other allergen-free products), GMO-free, or antibiotic-free products. Companies rely on accurate labeling to reflect product content or sourcing to meet these expectations; otherwise brand reputation may be affected. Organizations must ensure changing consumer expectations or regulatory developments are communicated across the supply chain, and update relevant policies or procedures.

Balance between cost reduction and risk mitigation

Many food and beverage manufacturers, retailers, and restaurants focus on reducing costs. Companies should understand the implications of cost reduction initiatives on food safety and balance the risk/reward equation. The balancing act can be quite difficult if the organization does not consider food safety to be a cornerstone of the business. For example, procurement may pursue reduced costs from a supplier without understanding that the supplier may lower its focus on food safety to offset reduced margins. If procurement reduces

the cost from a supplier, the company may need to increase its food safety controls, which may actually increase overall costs. Ignoring the risks should not be an option.

Recall management

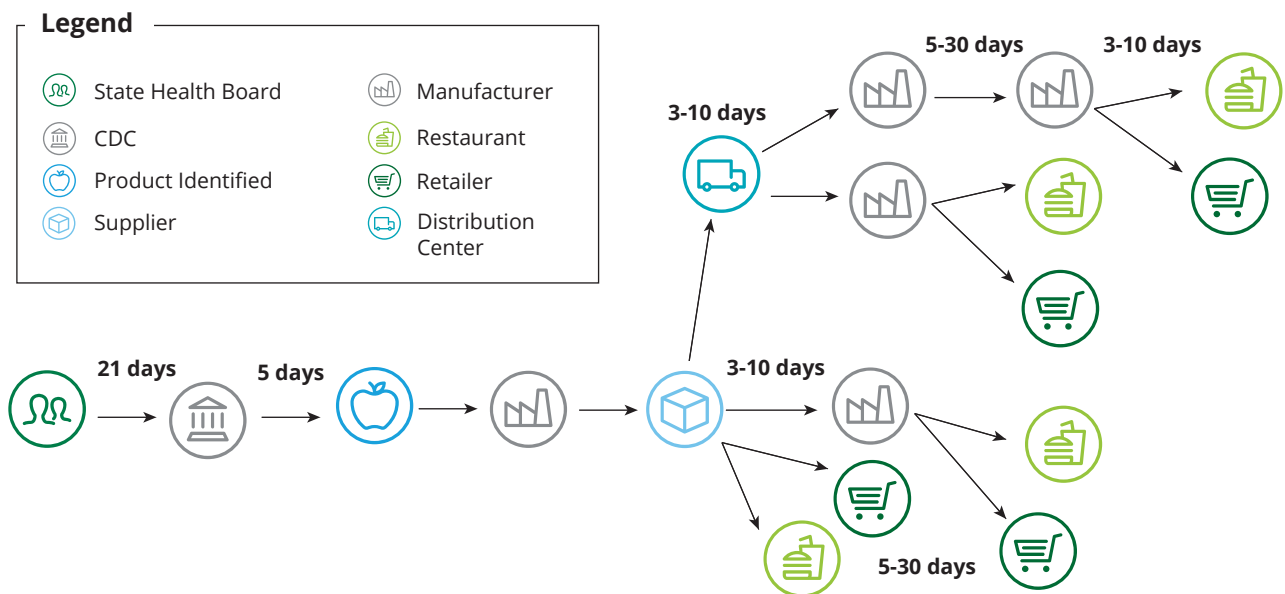
Recalls are at the forefront for manufacturers, retailers, and restaurants. Many large recalls occurred during the last year due to issues in the food supply chain. Companies continue to maintain paper documentation of food safety and quality checks, as well as supplier information, impacting the speed at which a recall can be defined and executed. Identifying the root cause and understanding the full extent of affected product may take several months. Downstream companies may not be notified for several days, weeks, or even longer, and corrective actions can be delayed. Strategic use of technology solutions can be a real benefit to decrease the time required to define and execute a recall. The longer it takes to conduct a recall, the more expensive it typically is, since the recalled product has moved further into the supply chain. (See Figure 2)



Alert: Product A is being recalled after state health departments and the Center for Disease Control (CDC) linked it to 15 foodborne illness outbreaks.

The implicated manufacturer conducted a risk assessment and attributed the suspected contamination to a supplier. That supplier is conducting an analysis to notify their affected customers. The notification process in the example below shows a process that takes from 34 to 86 days to notify end consumers. Many parties are involved in the supply chain, and the time required to obtain documentation to trace the ingredient can significantly impact the recall timeframe.

Figure 2. Anatomy of a recall



External challenges

Difficulty in defining supply chains beyond tier 1

Assessing food safety and quality risks beyond tier 1 of a company's supply chain has been difficult for several reasons.

- Many suppliers are reluctant to disclose their suppliers due to contractual obligations or competitive reasons.
- Manufacturers may find it difficult to track ingredients by lot and supplier. For example, agricultural ingredients such as milk or grain cannot be tracked to the exact farm or production lot when these commodities are handled through a cooperative since multiple lots or batches can be mixed. Products stored in tanks or silos have no clear delineation between lots unless the tank or silo is emptied and cleaned before the next load of product is delivered.

- Resource constraints may make it difficult to manage and investigate suppliers for food safety or quality risks beyond tier 1.

Marketplace evolution

As mentioned earlier, consumer demands continue to evolve and new laws and regulations continue to proliferate:

- **Consumer sentiment** – Consumers are redefining expectations for transparency and traceability in farm-to-fork supply chains in addition to demanding local sourcing, antibiotic-free, non-GMO, cage-free, etc. Food and beverage manufacturers, restaurants, and retailers should ensure their business model can anticipate and adapt to these new food safety and quality expectations.

- **Regulations** – Under the Food Safety Modernization Act (FSMA), several rules impact how the industry assesses risks and implements mitigation strategies, including in their supply chains. Many companies are in the early phases of understanding the complex FSMA rules and their implications. And they may have unidentified risks in their supply chains. Key FSMA rules include the Preventive Control Rule for Human Food, Foreign Supplier Verification Program for Importers of Food for Humans and Animals, and the Sanitary Transportation of Human and Animal Food Rule, all of which greatly impact how a company interacts with their supply chains.

Solution to managing supplier food safety risks

Companies should consider addressing the challenges outlined in this paper, incorporating the full supplier lifecycle into their business strategy, to allow them to proactively identify and respond to food safety and quality risks. Deloitte Risk and Financial Advisory has developed a broad and integrated safe food supplier and service provider (supplier) risk management framework, which aligns companies with their business objectives using an end-to-end approach. (See Figure 3.)

Foundational requirements

An effective supplier risk management program rests on foundational elements. An organization should establish a food safety and quality culture throughout the company, one that is demonstrated by leadership's actions. Company culture is essential to set the expectation that food safety is a priority across the enterprise and it supports

the governance and oversight structure. Policies and standards that are aligned to and support the culture and governance structure should define the supplier management program.

Supplier risk management lifecycle

Deloitte Risk and Financial Advisory's safe food supplier risk management framework includes five stages to manage supplier food safety and quality risks. The graphic below highlights these five stages, along with foundational and operational elements:

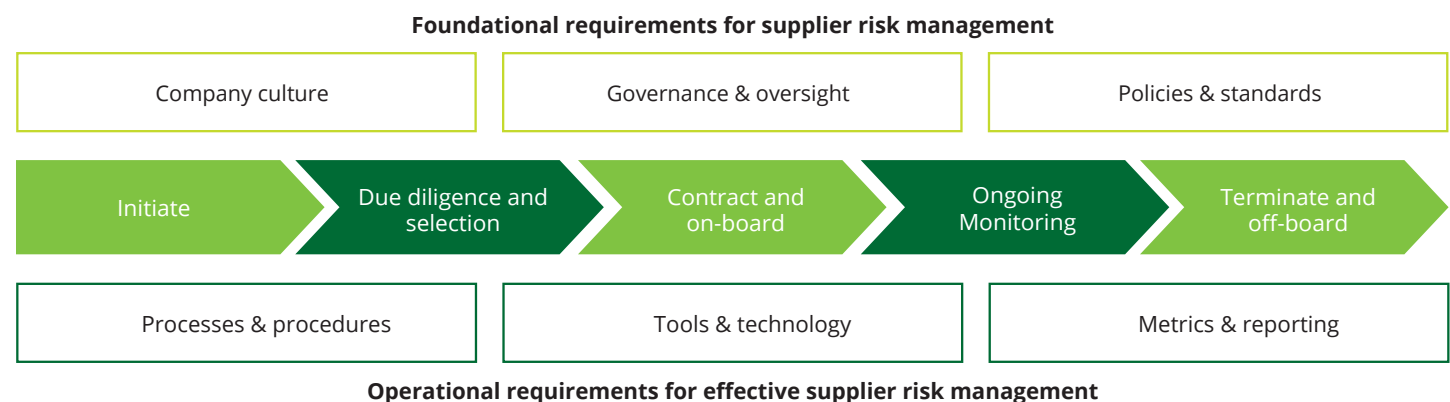
A company's supply chain organization should employ each of these stages to effectively manage end-to-end food safety risks:

Initiate. Companies should formally evaluate and document the business case for a new supplier, service provider,

or outsource manufacturer. Once the decision has been made to enter into a new arrangement, the company should assign appropriate resources to manage the potential food safety risks that may exist with the supplier, raw material, and/or ingredient they are purchasing.

Due diligence and selection. Two aspects should be considered when conducting due diligence on prospective suppliers/providers: risks inherent in the ingredient/product/service and risks with the specific supplier/provider. Some ingredients or raw products present greater risks than others, such as dairy, raw meats, and produce. Thermally processed or otherwise treated materials present less risk. Prospective suppliers should be assessed to determine their ability to provide the ingredient/product/service at the required level of

Figure 3. Supplier risk management framework



quality, safety, cost, and timeliness. Factors to consider include the supplier's financial stability, reputation, operations, and location and surrounding areas. Food safety on-site audits may be required to verify the validity and effectiveness of food safety programs and processes. Combining assessment results from both the ingredient/product/service and the supplier can provide insights to guide selection of the preferred vendor.

Contract and on-board. Contract terms and conditions should include food safety and quality specifications (test methodology, limits, temperatures) in addition to other service-level agreements (SLAs) and actions taken if requirements are not met. Suppliers need to be properly on-boarded to ensure they clearly understand the requirements, corrective-action protocols, communications, and testing/monitoring to be conducted during the life of the contract.

Ongoing monitoring. Two dimensions of the supplier/service provider arrangement should be monitored throughout the life of the contract. First, tracking performance to contract terms and conditions provide an indication of the supplier's ability to continually meet requirements, and can provide early indication of an impending problem. Second, periodically reassessing risks presented by the supplier can detect developing problems, such as financial instability. The depth and frequency of each dimension is determined by the level of risk presented.

Termination and off-boarding. Companies should use a formal and consistent process to terminate and off-board suppliers, whether it be for cause or for normal contract expiration. Terminated suppliers should have their system access rights revoked and be removed from approved supplier lists. This is important to prevent procuring ingredients and materials from unauthorized suppliers, which could lead to potential food safety and quality issues.

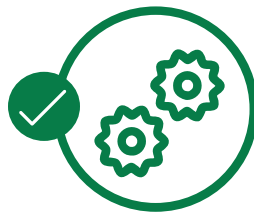
Figure 4. Analysis of a recall



Company A, a large food manufacturer, recalled 100,000 pounds of product due to contaminated spice from Supplier X. The federal government, during an inspection of Supplier X, discovered positive environmental swabs for *Salmonella* and positive tests for *Salmonella* in finished product.



Company A completed an initial due diligence assessment on Supplier X prior to sourcing from them and incorporated the required quality and food safety parameters into the contract. Over the course of their relationship, Company A did not, however, conduct ongoing monitoring to verify that Supplier X continued to meet their standards and contractual obligations.



Imagine if Company A conducted ongoing monitoring at a designated frequency. They may have been able to prevent their company's product recall and brand damage by identifying gaps that led to failures in the supplier's environmental monitoring programs and food safety plans. Due diligence and ongoing monitoring are necessary components of a supplier risk management program and can help protect a company's brand and bottom line—and potentially customer lives.

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Operational requirements

Several operational requirements are important to effectively and efficiently implement the supplier risk management framework. Documented processes and procedures should clearly define the accountable parties and the actions to be completed. An integrated information management system to house financial,

supplier, and quality and food safety data is necessary to analyze supplier performance and relationships among suppliers. Key performance indicators such as on-time delivery, product quality and safety, and customer service response time should be defined, actively monitored, and reported to line staff and management.

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How to evaluate current suppliers

Companies can use Deloitte Risk and Financial Advisory's supplier risk management framework for existing suppliers as well. Incorporating existing suppliers into the framework may seem like a monumental task. The following steps outline a risk-based approach to mitigate higher risks in the near-term and effectively integrate all suppliers over time:

- Develop a risk-ranking methodology, which may include previous audit scores, government warnings (e.g., FDA 483 citations), supplier notifications, or recent recalls.
- Apply the risk-ranking methodology to current suppliers and identify those that pose the greatest risk to your food safety program and brand reputation.
- Conduct due diligence assessments on the top 10 to 20 percent high-risk supplier arrangements and incorporate them in the ongoing monitoring stage.
- Create a roadmap to incorporate remaining current suppliers, targeting an annual objective of 25 to 50 percent of existing suppliers.



Adding business value

Deloitte Risk and Financial Advisory views the safe food risk management framework as a tool companies can use to proactively improve operations while simultaneously reducing risk. It can also better equip an organization to respond to food safety and quality risks in the supply chain. Figure 5 highlights the value this can add to your organization.

Figure 5. Potential business value

Proactively manage risks

The safe food supplier and service provider risk management framework allows companies to go one step further and identify risks that may be unknown to them using Deloitte Risk and Financial Advisory's predictive analytics technology. Identifying emerging risks adds significantly to a company's business and can often give it an advantage over its competitors who may be slower to identify and respond to risks.

Resource allocation

Deloitte Risk and Financial Advisory views leveraging a solid program to consistently, efficiently, and effectively deal with risk as a significant value to businesses. Properly designed and implemented, a supplier risk management program will efficiently and effectively manage risks with minimum resources. Overall business health is improved by mitigating potential risks and responding appropriately to those that do occur, while reducing manual and/or duplicated efforts.

Visibility into supplier management program

As companies identify key performance indicators and implement ongoing monitoring of their suppliers, leadership will have visibility into supplier performance and how the overall program is functioning. Leadership will be able to proactively manage supplier relationships and take corrective action or terminate those that may pose potential food safety issues.



Summary

The internal and external food safety challenges facing food and beverage manufacturers, restaurants, and retailers will continue to evolve and expand as the complexity of the supply chain increases, regulations continue to evolve, and consumer demands increase. Companies need to understand what innovative and disruptive solutions, such as the Internet

of Things and Blockchain, are in the market to help identify and manage food safety supply chain risks. Deloitte Risk and Financial Advisory's safe food supplier risk management framework is designed to help companies proactively manage these challenges and protect their brand reputation and bottom line.



Why Deloitte Risk and Financial Advisory?

Deloitte Risk and Financial Advisory has significant depth and breadth of experience working with global agricultural entities, food manufacturers, retailers, and restaurants covering the farm-to-fork continuum, including growing, harvesting, processing, distributing, selling, and serving of food and food-related products. Our practice is staffed with individuals who worked in the food industry for much of their careers—including food safety and quality, regulatory, engineering, and supply chain—who are capable of advising clients and helping them solve operational challenges.

Deloitte Risk and Financial Advisory brings industry-leading supply chain management knowledge and experience. Deloitte was named a leader in supply chain risk management consulting, based on capabilities, by ALM Intelligence.¹ Our team provides insights into operational risks and regulatory compliance requirements to assist our clients in improving their food safety and supply chain risk management programs around the globe.

¹Source: ALM Intelligence; Supply Chain Risk Management Consulting 2016; ALM Intelligence estimates © 2016 ALM Media Properties, LLC. Reproduced under license

Contacts

Tom McGinnis

Partner | Deloitte Risk and Financial Advisory
Deloitte & Touche LLP
+1 313 396 3309
tmcginnis@deloitte.com

John Brown

Manager | Deloitte Risk and Financial Advisory
Deloitte & Touche LLP
+1 404 220 1602
johnbrown@deloitte.com

Glenn Yauch

Principal | Deloitte Risk and Financial Advisory
Deloitte & Touche LLP
+1 312 486 4477
glennyauch@deloitte.com

Meghan Cox

Senior Consultant | Deloitte Risk and Financial Advisory
Deloitte & Touche LLP
+1 312 486 1602
mcox@deloitte.com





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