

a TNA whitepaper

tackling traceability in the food industry

increase consumer safety while safeguarding
operations and your brand's reputation





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Shayne De la Force is responsible for the planning, creation and implementation of global marketing strategies across TNA’s range of products and services. He has nearly 20 years of international business-to-business (B2B) marketing experience, and has created and implemented unique marketing strategies to boost bottom line sales and market share.

Prior to joining TNA, Shayne occupied senior marketing positions with global semiconductor manufacturers, including International Marketing Manager for Disco Corporation (Tokyo, Japan) then General Manager for Disco Hi-Tech Europe Ltd. (Munich, Germany) and Director of Global Marketing and Communications for SEZ AG (Villach, Austria).

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introduction

Countless stories of food contamination have hit the headlines in recent years – from outbreaks of Listeria in Cantaloupes in the US in 2011, to the identification of undeclared horse meat in processed beef products in the UK and Europe in 2013. The Food & Drug Administration (FDA) reports that 48 million Americans become sick each year due to food borne illnesses,¹ while around 90,000 cases of food poisoning are recorded annually in England and Wales.² As the number of product recalls continues to grow, such scandals erode consumer trust and satisfaction and can cause irreparable damage to brands. To increase consumer safety, as well as safeguard operations and reputations, the issue of traceability must be addressed.

Growing consumer demand for greater transparency from the products they purchase has led many food manufacturers to review their processes. According to a report from Allied Market Research, the global market for advanced food traceability technology is projected to reach \$14.1 billion by 2020, with an average annual growth of nearly 9 per cent. The APAC region represents the fastest growing opportunity for food safety testing due to lack of regulation, or a shortfall in its implementation.³ There has therefore never been a better opportunity for food manufacturers to consider their options and implement traceability tools to ensure that they are safe from the risk of a food safety incident.



1 <http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm103263.htm>

2 <http://www.food.gov.uk/>

3 <http://www.alliedmarketresearch.com/food-traceability-tracking-market>

1 what is traceability?

Firstly, it is important to fully understand what is meant by traceability. This risk-management tool refers to the way in which manufacturers record the movement of products throughout the processing stages, usually through barcodes or RFID tags. It gives them a practical way of responding to potential issues that can occur in food processing, and is particularly useful in cases where products need to be recalled because of contamination.

By employing efficient traceability methods, it is possible to identify the precise date or time and the exact location of any goods which must be recalled. In this way, risks can be identified and traced back to the source to isolate the problem and prevent contaminated products entering the value chain and reaching consumers. It can also save significant amounts of time should product recalls be needed, prevent costly wastage by differentiating between products that are still safe and those that are not, and ultimately help preserve the brand's reputation. Improving traceability throughout the entire production chain allows operators to regain control over product quality and food safety.

"Improving traceability throughout the entire production chain allows operators to regain control over product quality and food safety."



2 rising regulation

Governments across the globe have recognised the need for greater regulation to combat food safety scandals. For example, in the US, the FDA introduced the Food Safety Modernization Act (FSMA) in 2011, which spans from the source to the processing and packaging stage. This new act builds on existing Hazard Analysis Critical Control Point (HACCP) rules, which have been the defining standard for food safety management since the 1960s.

It puts the onus on food manufacturers to prevent food contamination, rather than just responding to cases once they have occurred. The FSMA is designed to establish a risk-based and global systems approach to food safety, to provide greater safeguards to the industry and consumers.

"Legislation now puts the onus on food manufacturers to prevent food contamination, rather than just responding to cases once they have occurred."

As well as putting in place controls to prevent food contamination, manufacturers in the US are now required by the FSMA to submit safety plans to the FDA to demonstrate how they will tackle an issue, and there are more spot checks from government officials to ensure these processes are properly implemented.

It also includes stricter operating standards and enforcement of accurate labelling. And it is not just American manufacturers who are affected – it applies to food from overseas too. Up to 15 per cent of the entire US supply chain is imported, meaning that manufacturers around the world that supply the US will also have to adhere to the regulations.

In the EU, implementing traceability systems has been compulsory since 2002 when the General Food Law came into force. These requirements detail the need to keep records to monitor product and ingredient movement, and cover the

entire food and feed industry, as well as including sector specific legislation for certain applications, such as meat products. As with US regulation, importers are similarly affected as they will be required to identify from whom and where the product was exported.

This regulation is set to be supplemented in December 2014 by the EU Food Information for Consumers Regulation 1169 / 2011, which aims to protect consumers and promote transparency throughout the food industry.⁴ The new directive requires food manufacturers to provide further details on food labels, including the origin of unprocessed meat and nutritional information, as well as stipulating a minimum size of text. Traceability tools will therefore be even more important once this comes into force.

It is clear that most local, and many global, manufacturers must implement some form of traceability system in order to comply with regulation and continue to operate safely on an international scale. Here are our top tools that can be easily integrated into your existing processing and packaging line to achieve this.



Detailed and reliable information from as many parts of the production process as possible should therefore be collected and thoroughly evaluated. Good control systems store information from the entire line in a central database, allowing plant managers to filter the data and create configurable reports to demonstrate trends and increase control over the process. Known as a Human Machine Interface (HMI), this machine provides status and production data, enabling operators to monitor any unusual activities and react quickly and efficiently should an incident occur and ensure that production is not affected.

Using an effective tracking system to batch monitor any goods-in, control existing stock and keep up to date on products' shelf lives, will help reduce raw material wastage, make inventories more accurate and maintain product quality at all times. In addition, with production tracking software, food processors can monitor and record information about their processes enabling them to rectify any issues, and have the documentation available to meet new record keeping requirements.

Not only does this speed up production, but it also creates a greater level of transparency and accountability within the manufacturing process. TNA's controls and automation capabilities allow full visibility of the entire production line to meet regulatory requirements and achieve efficient and safe processing and packaging.

3 traceability tool 1: automation

Automation is a key component when implementing traceability. Food safety can be assured by improving in-line checking throughout the entire processing and packaging line, facilitated by the adoption of a fully integrated control system. Product quality issues can apply to both raw materials and finished products, and are often caused by badly specified, outdated or poorly configured control systems. By integrating systems that can be easily validated, it is possible to obtain essential monitoring data that will satisfy traceability requirements.

“Production tracking software speeds up production, and creates a greater level of transparency and accountability within the manufacturing process.”

4 traceability tool 2: metal detection

Detecting foreign bodies within the production line is of primary importance, and metal is one of the most commonly found contaminants in food products. Metal detection technology allows processors to identify potential risks in products, monitoring for small pieces of metal to ensure consumer safety. The equipment must therefore be sensitive and reliable so that nothing is missed that could harm consumers. Equally it must reduce the risk of false detections which can often lead to wasted products and time.

It is essential to identify the correct points in the process to monitor the products, as the earlier a contaminant can be discovered and removed, the fewer products will be spoilt, making greater savings possible. Metal detection equipment must also operate at high speeds to ensure that productivity is not adversely affected. For example, the tna hyper-detect® metal detector is able to detect 1.0mm stainless steel, 1.0mm non-ferrous and 0.8mm ferrous materials, even at high speeds, providing further traceability assurances.

“Automated barcode scanning and in-line monitoring systems ensure products comply with specification and adhere to all food safety regulations.”

5 traceability tool 3: labelling

The FSMA sets strict rules around the need for accurate labelling. Automated barcode scanning and in-line monitoring systems ensure products comply with specification and adhere to all food safety regulations, with accurate labelling to correctly identify what is within the packaging. Date coding all products that move through the production line is also imperative. Assurance systems, such as the tna intelli-scan® 2, should accurately and reliably find miscoded or uncoded products. By processing the data code images through a sensitive camera system, it is possible to check that they are printed, complete and legible. This ensures that date codes are clearly marked, reducing the risk of incorrectly labelled goods entering the market.

Bar codes are a simple and cost-effective way to implement traceability at the item level. Production data, such as time to market and product quality, can be built into the code to allow for easy tracking of each product. Bar code scanning systems, such as the tna intelli-read® 3, should incorporate a full film width bar code reader to automatically scan product film and cross check it to verify that the correct product is being processed to ensure the highest product safety levels.



6 traceability tool 4: plant hygiene

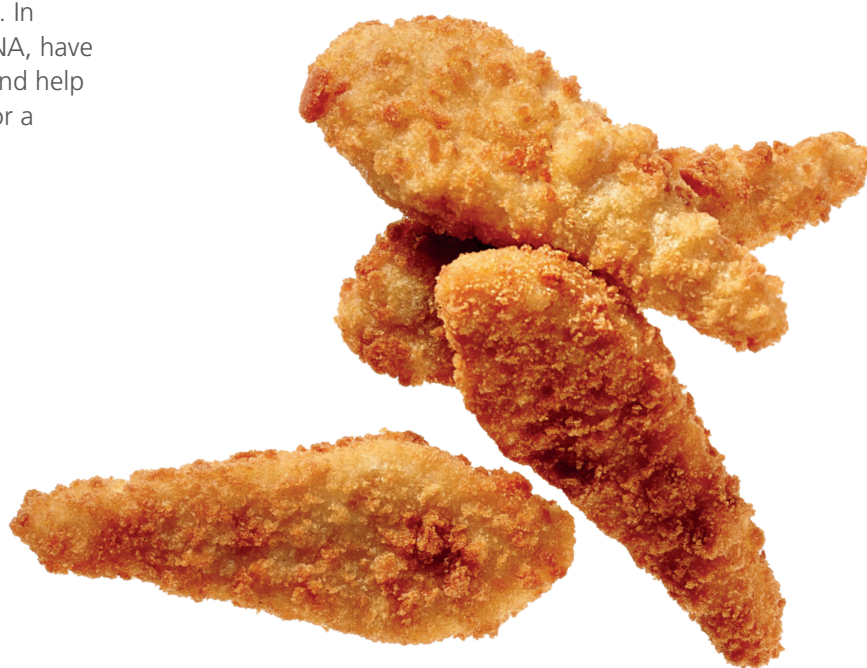
Plant hygiene is also paramount in the battle to eradicate foreign bodies and avoid environmental contamination concerns. An effective and well-documented cleaning process is necessary to meet the new FSMA requirements and assure complete food safety, with equipment cleaned on a regular basis. Easy-clean materials such as stainless steel, as well as reducing the number of moving parts where product can become trapped, facilitates this process, eliminating the need for lengthy downtime and reducing the risk of allergens or contamination.

The enhanced sanitary design of all TNA products ensures easy cleaning of the production line, minimising downtime, and helping to reduce the risk of allergens entering the value chain. All TNA products are made with food grade stainless steel, offering resilient and easy to clean design, and are built with minimal moving parts to ensure that products do not collect between elements, which could lead to HACCP or QA issues.



7 specialist partners

Manufacturers can make use of resources like the Food Safety Alliance for Packaging (FSAP), a technical group of the Institute of Packaging Professionals that offers food safety forms, models and HACCP planning resources. In addition, specialist suppliers, such as TNA, have the expertise to navigate the industry and help manufacturers meet all requirements for a rigorous traceability system.



summary

Food safety should be a primary concern for all processors, from both a consumer health and industry perspective. Manufacturers should review their processes and packaging lines to ensure they are fully validated and verified.

Improving the traceability of products is essential if they are to continue to operate safely and remain competitive in the highly regulated food industry. Partnering with a specialist such as TNA can help to facilitate this process, and maintain the high quality standards that are necessary to safeguard consumer safety and brand loyalty.

If you would like to find out how TNA can help you assess and improve your processes and implement traceability tools that suit your needs then please contact us at www.tnasolutions.com or email us at tnateam@tnasolutions.com



TNA is a leading global supplier of integrated food packaging and processing solutions with over 14,000 systems installed across more than 120 countries. The company provides a comprehensive range of products including materials handling, processing, cooling and freezing, coating, distribution, seasoning, weighing, packaging, inserting and labelling, metal detection and verification solutions.

TNA also offers a variety of production line controls integration & SCADA reporting options, project management and training TNA's unique combination of innovative technologies, extensive project management experience and 24/7 global support ensures customers achieve faster, more reliable and flexible food products at the lowest cost of ownership.



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