
Project Brief

Food Service Standards Development

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I. Executive Summary

The foodservice sector, in the past, has not been associated with high level innovation, yet this is now changing with technologically driven innovation introducing operational efficiencies that are both commercially compelling whilst at the same time posing often new and as yet uncategorised risks for operators and consumers alike. Whether it be in the areas of supply management, food and concept development, operations, product development or food delivery, the introduction of innovative systems is presenting challenges for consumers, regulators and commercial interests alike, particularly in relation to the Quick-Serve sector.

II. Background and Context - Food Service Innovation

Food service innovation in the quick-serve market has been led principally by three factors: firstly, by advances in logistics capabilities with product being made available at a moment's notice, secondly, through efficiency improvements via new production processes and equipment that significantly speed up the production process and thirdly, through the availability of new information tools that reconfigure the nature of the market itself, providing the consumer for the first time with actual, relevant and current information on any food product within the supply chain. While greatly improving the availability and variety of food product, several of these process changes are however also having considerable impact on both the nature, quality and safety of the food product that the consumer receives. For instance, the rapid introduction of new production systems involving rapid reheating equipment, hot holding equipment and new types of packaging, are also introducing elements of risk regarding the quality of the final food product and the overall safety of the process.

Interestingly, although there is considerable understanding in the food service sector of the processes required for providing safe and healthy chilled food products to consumers in quick-serve environments, the same cannot be said for either hot food to go items or for the new delivery services growing rapidly in many, European urban environments. It is probable that this lack of understanding relates both to the newness of the market being served and to the level of innovation and adaptation required of standard food service operations to meet this need. It is indeed well known that while the Fast Food and Quick Serve market is projected to continue its rapid expansion and will, as a consequence, continue to introduce multiple new techniques and methods for the production and holding of hot food to go items, it is also likely to come under scrutiny from those emphasizing the impact of the quality of food/packaging on health and the environment. Similarly, the impact of food delivery companies (Deliveroo, Just Eat, Uber Eat) which are growing exponentially is under review with concerns raised regarding both the quality and safety of the product delivered.

III. Statement of Problem

Preliminary field research conducted across a wide selection of food service operators in both the quick-serve market and delivery market, has revealed a general absence of understanding of the very different processes that hot food operations require. This is particularly the case regarding the interrelation between Hot Food Holding Equipment, Hot Food Packaging, Hot Food Product and the food service processes that would normally be seen to support these. A number of potentially serious issues have been identified, including: a.) use of inappropriate packaging, b.) use of incorrect heating and holding methods, c.) failure in equipment to maintain required temperature, d.) use of bespoke and adapted equipment with compromised functionality, e.) use of commercial hot holding equipment with design and functionality issues, f.) lack of operational standards regarding hot holding techniques, g.) ignorance by operators and service providers of hot holding product health and safety standards and h.) lack of labelling information for consumers

In summary, the rapid expansion of Hot Food to Go and the accompanying introduction of novel techniques for its production, preservation, display and delivery, has allowed a commercial offering to be provided to consumers without either a validation of its safety or without sufficient oversight that would reference standards as is normally seen in the food service sector.

IV. Project Challenge

Quick-serve food operations are driven by convenience and this is increasingly reflected in the way products are designed, produced, packaged and sold. The convenience of quick-serve foods makes them one of the fastest growing segments of the food industry due to changing socioeconomic conditions; the increasing number of working couples and a resulting shortage of free time to prepare meals, growing urbanization, and a dramatic change in eating habits.

Acknowledging the increasing demand for convenience dining, whether this be in the form of fast food or quick-serve hot food to go offerings, the safety and well-being of consumers must be paramount. In order to meet both the operational requirements and product quality needs that commercial food service specialists require, a number of important changes to operations must be met, including:

- a.) **Hot Food Holding Equipment Standards** – There are currently a number of design and operational criteria that Chilled Food Display Units must meet in order to be deployed in a live food service environment. Additionally, manufacturers must thoroughly test units before they are commercially marketed, provide evidence and independent certification that they achieve acceptable operation standards. The lack of any such criteria or standard in relation to Hot Holding Food Service Equipment is having a negative impact on Food Service providers' ability to choose optimum equipment. It is also having considerable impact on the quality of the heated hot food to go product being provided to consumers.
- b.) **Hot Food Packaging Standards** – Despite the presence of numerous food contact material regulations in both the EU and UK to ensure the safety of food that is packaged, processed and consumed, the widespread introduction of new and innovative Hot Food to Go products has led to the adoption of often untested and unproven processes that could have a serious impact on the health and well-being of individuals. Preliminary research has confirmed the widespread use of primary packaging products and materials that are not designed for heated processes and often unsuitable for the environments in which hot food products are held. In addition to this, primary packaging products that have been validated for use in heated environments, are being used in ways (exposure time to heated environment) which run counter to instructions provided by packaging manufacturers through materials specifications.
- c.) **Hot Food Operational Standard (SOP) – The development of an HACCP based Hot Food Production and Hot Food Display SOP.** Due to the relative newness of commercial Hot Holding Food production, operational guidelines which oversee the production of the hot food product and the subsequent display in Hot Food Holding Cabinets are often devised in an ad-hoc fashion and without reference to standard equipment operational guidelines. The development and introduction of Standard Operating Procedures (SOPs) for Hot Food Display Cabinets will be introduced to ensure the safety and quality of Hot Food Holding product. (FSA, USDA)
- d.) **Food Service Delivery Standard** – The new food delivery service providers are having a dramatic impact across the full food service sector. While there is potentially a huge benefit for consumers and restaurants alike, the rigour of preparation and knowledge of processes to manage the risks of food service operations has not always been applied. Many of the food delivery companies entering this market do not consider themselves to be full food service operators and this judgement is what has led to many of the problems we are seeing. Any company managing the delivery of food product to consumers must be fully aware of the health & safety and legal requirements of fully managing the production and delivery of both chilled and hot food products to consumers. The development of a standard that all food service delivery companies can refer to and take guidance from is the best way of solving the many problems now emerging. While food delivery service has grown rapidly as eating habits have changed, particularly in the urban centres, there is yet no global standard set for the management of food delivery services. Against such a backdrop, we believe that a new standard can

secure the future of the sector and contribute to its further enlargement by providing clear guidance on the requirements for a safe, efficient and quality food delivery service that is good for consumers and service providers alike

V. Outcome Sought

- a.) **Hot Food Holding Equipment Standard** – Foodservice Network - BSI led development of new standards and protocols for Hot Food Holding Equipment and the establishment of a certification procedure for their use in restaurant settings. Standards to include requirements for material safety, design, construction and product performance. Standards and protocols will provide credibility and industry acceptance for this new food service technology. With multiple manufacturers launching widely disparate products, certification from BSI, will give standing to new products, provide companies with the necessary assurances and help them succeed in the market.
- b.) **Hot Food Packaging Standards** - In the UK, the FSA is responsible for protecting the public against chemicals that could transfer into food from food contact materials (Hot Food packaging). The National Regulations of 2012 provides a single point of reference for the relevant standards. Utilizing the integrated approach of whole systems design, a joint research project will be set up with the leading food packaging regulators, research agencies and developers to review the need for new regulations. It will look carefully at the changes being introduced to the use of packaging in the quick-serve food sector through the adoption of new technologies, the use of new materials and untested operational environments. It is likely that new guidelines will be developed to address the findings of our preliminary research.
- c.) **Food Delivery Systems Standard** – Foodservice Network - BSI led development of new standards for Food Delivery Systems. Standards to include requirements for product packaging, product labelling, product recall capability, product shelf-life indicators, product temperature tracking and time to delivery reporting. With multiple companies now entering the delivery market, certification from BSI, will provide minimal systems requirements, provide a universal model of the requirements of delivery enablement and provide consumers with the necessary assurances the companies operating in the commercial market have been certified to an agreed standard.

VI. Work Package 1 – Hot Holding Food Packaging Standard

Organizations Participating: BSI, Food Standards Agency (UK), INRA – French National Institute of Agricultural Research (FR), IFR – Institute of Food Research (UK)

Summary:

The need for a new Standard for Hot Food Packaging has been borne out of findings from preliminary field research conducted in 2014 which looked in some detail at the interface of product and package in the Hot Food offering across the Food Retail Sector in the UK.

It is proposed that the Test Methods for Packaging Testing be referred to the International Organization for Standardization, ISO and the European Committee for Standardization.

Tasks

- a.) Verification that current requirements of regulation of packaging are/are not met through:
 - Subjection of packaging and contents to stress tests in the field
 - Reproduction of types of damage to packaging and content seen in field studies (packages/products that are sensitive to temperature variation)
 - Review through degradation of product testing whether current packaging regulation is sufficient for Hot Holding environments (compatibility of package with food, migration of material from the packaging to the food, shelf life, barrier properties, porosity, quality assurance requirements and validation protocols, etc)
- b.) Identify whether problems identified with Hot Food packaging can be addressed
- c.) Feasibility report on the development of a new Hot Food Packaging standard
- d.) Should the outcome of tasks a – c indicate that a new standard for hot food packaging (Hot Hold Food Items), the following Standardization process should be followed:

Standardization Process

- I. Establishment of Standards Development Plan
- II. Developing the Standards
- III. Approving the Standards
- IV. Publishing the Standards
- V. Promoting the Standards to users
- VI. Maintenance of Standards (ongoing)

VII. Work Package 2 – Hot Food Holding Equipment Standards

Organizations participating: Foodservice Network, BSI, EFRA, NSF

Summary:

Foodservice Network, BSI/FSA/NSF led development of new standards and protocols for Hot Food Holding Equipment and establishment of a certification procedure for their use in restaurant settings and food delivery systems. Standards to include requirements for material safety, design, construction and product performance. Standards and protocols will provide credibility and industry acceptance for this new food service technology. With multiple manufacturers launching widely disparate products, certification from BSI, will give credibility to new products and help them succeed in the market.

Tasks

- a.) Verification that Hot Food Holding Equipment requirements are not covered by current regulatory process and that design and manufacturing shortcoming are in evidence
(completed – 2016)
- b.) Feasibility report on the development of a new Hot Food Equipment standard
(completed – 2016)
- c.) Should the outcome of tasks a – b indicate that a new standard for Hot Food Holding Equipment is required, the following Standardization process should be followed:

Standardization Process

- I. Establishment of Standards Development Plan (completed – 2016)
- II. Developing the Standards – In development
- III. Approving the Standards
- IV. Publishing the Standards
- V. Promoting the Standards to users
- VI. Maintenance of Standards (ongoing)

VIII. Work Package 3 – (Food Delivery Systems Standards)

Organizations participating: Foodservice Network, BSI,

Summary:

Foodservice Network, BSI, led development of new standards and protocols for Food Delivery Systems and the establishment of a certification procedure for their deployment. Standards to include requirements for product packaging, product labelling, product recall capability, product shelf-life indicators, product temperature tracking and time to delivery reporting capability. With multiple companies now entering the delivery market, certification from BSI, will provide minimal systems requirements, provides a universal model of the requirements of delivery enablement and provide consumers with the necessary assurances that companies operating in the commercial market have been certified to an agreed standard.

Tasks

- d.) Verification that Food Delivery Systems are not covered by current regulatory process and that concerns and failings regarding safety of delivered product are in evidence (completed – 2017)
- e.) Identify whether problems identified with Food Delivery Systems s can be addressed through systems redesign (completed – 2017)
- f.) Feasibility report on the development of a new Food Delivery Systems Standards – In development
- g.) Should the outcome of tasks a – c indicate that a new standard for Hot Food Product Delivery Systems Standards is required, the following Standardization process should be followed:

Standardization Process

- I. Establishment of Standards Development Plan
- II. Developing the Standards
- III. Approving the Standards
- IV. Publishing the Standards
- V. Promoting the Standards to users
- VI. Maintenance of Standards (ongoing)