



Food in the Platform Economy: Understanding and Governing Emerging Digital Marketplaces

Final report

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1. Executive summary

The Food Standards Agency (FSA) works regularly with food businesses and academic partners to identify opportunities presented by technological, economic and cultural changes within the food system to improve standards of food safety or authenticity, and to address developments which may pose risks to consumer protection. One significant change in the landscape of food retail, distribution and consumption in recent years has been the rapid emergence and proliferation of digital marketplace platforms accessed through websites or smartphone applications, which enable consumers to browse and purchase food products sold by a variety of different vendors.

Such digital marketplaces have expanded rapidly within the takeaway ordering and delivery sector, and digital marketplace platforms orientated towards other categories of food products and food-related services – including pre-packaged foodstuffs, catering services and surplus food redistribution – are also developing rapidly. There is evidence that local authorities (LAs) are currently struggling to identify and engage with vendors which sell food exclusively via these platforms (Brice 2018). Moreover, unconventional groups of food sellers – including cooks operating supper clubs in private homes and sellers of homemade takeaway food – appear to be selling food via a number of these marketplaces (as detailed in Prost 2018). These developments suggest that digital marketplace platforms, and some of the vendors which use them, may pose novel challenges for both the FSA and its regulatory partners. At present, however, the nature of these challenges remains poorly understood.

The FSA has therefore partnered with LSE's Centre for Analysis of Risk and Regulation to produce a qualitative social science research project exploring what measures are in place to ensure that food sold via digital marketplace platforms is safe and what it says it is and how state regulators might improve compliance with food law in this sector. To this end, fifteen semi-structured key informant interviews were conducted with representatives of firms which operate digital marketplace platforms. A total of 19 participants, who represented the operators of 11 digital marketplaces for food operating in the UK, were interviewed. This group of 'platform operators' ranged from online takeaway order aggregators to operators of digital marketplaces for pre-packaged food products, catering services, surplus food redistribution platforms and home cooking platforms.

This report presents the project's findings regarding the measures taken by operators of digital marketplaces to ensure that the food sold via their platforms is safe and what it says it is, as well as their relationship with state food regulators. It then identifies a series of opportunities for food regulators to engage more effectively with platform operators.

1.1 Summary of findings

As discussed in section 3.1, this project found that the digital marketplaces for food currently operating in the UK display considerable diversity in their business models, in the composition of their vendor base and in the types of food safety and quality controls which they employ. Through analysis of interview material the researcher identified three dimensions of digital marketplace platforms' business models which appear to influence the measures taken by platform operators to ensure that food sold within their marketplaces is safe, and to affect the types of regulatory issues most likely to arise within their user base of vendors. Each of these dimensions appears (as discussed in sections 4.1-4.3) to be linked closely to a digital marketplace platform's relationship with a particular set of food safety governance and regulatory issues:

1. The degree of marketplace curation performed by a platform operator appears to influence its propensity to require that new vendors meet standards or requirements in excess of legal minima and to carry out documentary checks or physical inspections to verify vendors' compliance status;
2. The type of vendor trading within a digital marketplace determines what proportion of a platform's vendor base is likely to fall within the scope of the FHRs scheme, and therefore appears to influence the likelihood that FHRs ratings will be used to establish and monitor vendors' compliance status;
3. The type of food products or services traded within a marketplace appears to influence the type of arrangements likely to be made by the platform operator for the provision of ingredient and allergen information to consumers.

Table 1, presented overleaf, outlines the range of different categories of platform operators identified with respect to each of these three dimensions of digital marketplace business models. It also summarises which types of food safety controls are likely to be implemented and which regulatory issues might be raised by the operations of each category of platforms. It is possible to make inferences about the type of regulatory challenges and opportunities which a digital marketplace platform might present by assigning it to a category within each of the three characteristics presented in Table 1. A low-curation marketplace used by food producers and retailers to sell pre-packaged food products might, for instance, be expected to contain a high proportion of vendors which either had a low FHRs rating or fell outside the scope of the FHRs scheme, but also to provide a considerable quantity of information about the ingredients and allergen content of their products. It should, however, be noted that this typology is derived from analysis of a small and non-exhaustive sample of digital marketplaces for food. It should therefore be employed only as a provisional heuristic tool for identifying the food safety issues which a platform is likely to face and the regulatory challenges which it may pose. The implications drawn from this indicative typology of the regulatory issues raised by different categories of digital marketplaces for food also inform the specific recommendations made in the following section.

1.2 Implications and recommendations

1.2.1 Defining the legal status and responsibilities of digital marketplace platform operators

Internal communications suggest that a consensus is emerging with the FSA that platform operators should be classified as food businesses, and therefore that they have a responsibility to register with and to undergo inspection by their LAs. However, this research has produced evidence that at least some firms which operate digital marketplaces for food remain uncertain about the terms in which their enterprises should be classified, and about their position and responsibilities within the UK's current regime of food regulation. Moreover, no sector-specific official guidance has yet been made available in the public domain to define the regulatory responsibilities of firms which operate digital marketplaces for food.

One cost-effective way to remedy this confusion would be for the FSA to publish a formal guidance document clarifying that operators of digital marketplace platforms are categorised as food businesses for regulatory purposes and outlining what food safety and authenticity controls they would need to implement in order to comply with food law. Such a document

Table 1: Characteristics influencing the regulatory implications of digital marketplace platforms

Characteristic	Categories of digital marketplace platform			
<p>1. Degree of marketplace curation</p>	<p>Low curation</p> <p>Do not require vendors to meet any standards in excess of the legal minimum and aim to be open to any vendor not prohibited from trading in order to maximise competition and consumer choice.</p> <p>Low curation platforms are therefore likely (if their vendors fall within scope of the FHRs scheme) to have vendors with low FHRs ratings.</p> <p>Many also appear to rely heavily on review of FHRs ratings to establish whether or not prospective vendors are compliant.</p>		<p>High curation</p> <p>Attempt to attract customers through cultivating a reputation for offering only high quality goods or vendors. They are therefore likely to require prospective vendors to meet standards of food safety, quality or service in excess of legal minimum in order to trade via their marketplace.</p> <p>High curation platforms often carry out documentary checks or site inspections to establish vendors whether vendors are compliant with these standards. However, the steps taken by different platforms to substantiate and monitor compliance vary widely.</p>	
<p>2. Type of vendor</p>	<p>Conventional foodservice businesses</p> <p>Any vendor eligible to trade in these marketplaces should already be registered with its LA and FHRs rated. This group of platforms is most likely to require all vendors to possess an FHRs rating, and to review FHRs scores to monitor compliance.</p>	<p>Home cooks</p> <p>It is unlikely that all vendors trading via these platforms will meet the threshold of regularity and organization required for legal classification as a food business. Some vendors are therefore likely to be operating unregistered and without an FHRs score.</p>	<p>Food producers and retailers</p> <p>Smaller food producers which do not maintain offline retail operations may not be receiving FHRs ratings. These platforms are therefore likely to have some unrated vendors and unlikely to require vendors to possess an FHRs rating.</p>	
<p>3. Type of goods or services</p>	<p>Takeaway meals</p> <p>Vendors are highly unlikely to provide the platform with a full ingredient list for each dish.</p> <p>Arrangements for provision of allergen information vary, with some platforms directing consumers to contact vendors to obtain allergen information.</p>	<p>Meals eaten as part of an event</p> <p>Platforms are likely to provide only indicative lists of allergens which a vendor’s dishes may contain. However, meals are consumed on the site where they are prepared, enabling consumers to access other sources of allergen information (e.g. menus, verbal queries).</p>	<p>Surplus food</p> <p>Platforms often struggle to provide ingredient or allergen information online because the type of food available each day varies depending on what the vendor is able to sell via other channels. Often rely heavily on physical labelling of packaging in which consumers collect food.</p>	<p>Pre-packaged food products</p> <p>Platform operators appear likely to require that vendors submit a complete list of ingredients and allergens for each product listed on their marketplace</p>

might serve both to raise awareness among operators of digital marketplace platforms of their legal obligations and to encourage greater consistency in the types of food safety and authenticity controls employed across the digital marketplace platform sector. It could also assist platform operators in establishing their legal responsibilities by directing readers towards a designated point of contact within the FSA from which they might obtain further advice on the application of food law to digital marketplace platforms.

1.2.2. Delivering regulation to digital marketplace vendors

A number of interviewees reported that their platform's vendor base was composed primarily of small and micro businesses, and four platforms actively recruited newly established food businesses as vendors. In addition, the majority of the platform operators which contributed to this project reported advising their vendors on how to manage a range of regulatory and commercial challenges, with four interviewees stating explicitly that their platforms provided food safety advice or training to their vendors. These findings suggest that operators of digital marketplace platforms are often heavily involved in providing advice and information to their vendors on a range of commercial and regulatory issues. As such, platform operators appear to be well placed to communicate official information and guidance designed to assist new FBOs in fulfilling their responsibilities under food law, as proposed under the FSA's Regulating Our Future (ROF) programme.

This report therefore encourages the FSA to develop formal liaison arrangements incorporating the operators of a range of digital marketplace platforms. Such arrangements might potentially include a working group or expert committee focused on developing strategies for cooperation with platform operators to improve food safety among their vendors. Given at least some digital marketplace platforms' ability to cultivate relationships with large groups of small businesses early in their development, closer engagement with platform operators appears likely to yield valuable opportunities to disseminate compliance information and advice to groups of food businesses with which food regulators have hitherto struggled to engage. This report also notes that in any such initiative it will be important for the FSA to ensure that it engages with multiple platform operators within each sector. Such diversified engagement will be necessary both to maximise the number of vendors to which this information is made available and to ensure that guidance is not inadvertently distributed on a preferential basis to vendors associated with a particular platform.

1.2.3 Preventing non-compliant vendors from selling food online

All of the platform operators which contributed to this project indicated that they would suspend from their platform any vendor found by food regulators to pose a health risk to consumers or to be noncompliant with food law. However, it appears that platform operators are not routinely informed by LA officers of prohibition notices served against their vendors, meaning that it is currently difficult for platform operators to suspend or remove legally non-compliant vendors from their marketplaces in a timely fashion. These barriers to communication between LA officers and platform operators therefore appear to raise the prospect that businesses subject to closure on legal and public health grounds might be able to continue trading online with little risk of detection by their platform operator.

This report therefore encourages the FSA to explore arrangements through which platform operators might be notified more consistently of enforcement action taken by LA officers

against their vendors in order that businesses subject to temporary closure can be prohibited effectively from selling food online. One possible means by which this might be achieved would be through requiring FBOs to record the names of any digital marketplace platforms via which they trade using the digital registration service for food businesses proposed by FSA under its ROF programme. Alternatively, the FSA might create a national alerts service to which platform operators would be able to subscribe via which LAs would be able to publicise food business closures. This report does not seek to assess the desirability or feasibility of either of these specific options. It instead encourages the FSA to assess whether either of these options (which are discussed in greater detail in section 5.3), or an alternative solution, would be appropriate and practical and to open a dialogue with platform operators to discuss how such a system might be implemented.

1.2.4. Use of FHRS ratings and implications for mandatory online rating display

This project has found evidence either that a significant proportion of the vendors currently selling pre-packaged food via digital marketplace platforms have not been awarded an FHRS rating or that the operators of marketplaces for pre-packaged food believe incorrectly that a significant proportion of their vendors fall beyond the scope of the FHRS scheme. If a significant group of unrated businesses exists which are selling food to consumers via digital marketplaces, then it is possible that this might complicate efforts to implement legislation making it mandatory for food businesses to display FHRS ratings at the point of sale – a policy initiative to which the FSA is currently committed.

This report therefore suggests that the FSA's policy on mandatory FHRS display be informed by further research into both the proportion of food producers and manufacturers which sell food online and the proportion of these businesses which have been awarded an FHRS rating by their LAs. It also encourages the FSA to undertake a programme of engagement with operators of digital marketplaces for pre-packaged food in order to raise awareness among this group of platform operators that food producers and manufacturers selling food online are required to obtain an FHRS rating from their LA. Such a programme of engagement might also productively aim to explore whether it would be possible for such platform operators to integrate the review of FHRS ratings into their vendor recruitment and compliance monitoring processes in order to identify unregistered and non-compliant vendors and to limit their ability to trade online.

1.2.5. Regulating informal and domestic food sellers

This project found evidence that a small but significant cluster of digital marketplace platforms exists whose vendor base is composed principally of individuals and businesses whose activities may not, or may only intermittently, conform to the regulatory definition of a food business (a phenomenon explored further in Prost 2018). These vendors, and notably individuals who sell food cooked either in their homes or in rented spaces via the internet, often appear to be uncertain about whether or not they should register with their LAs as food businesses and there is currently a lack of sector-specific guidance which might assist them in making this judgement. As noted by Prost, some such individuals prepare food in establishments other than their home and therefore view the existing LA food hygiene inspection process as being both burdensome and inappropriate to the nature of their enterprises.

This report therefore encourages the FSA to prepare official guidance targeted specifically at these 'home cooks' in order to help them to assess whether or not they should register with their LAs as food businesses. Such guidance could take the form of an FAQ document, or be implemented in the form of a self-assessment process or decision tree designed to assist users of the FSA's proposed single national food business registration system in determining whether their undertaking qualifies as a food business.

The FSA may also wish to engage with operators of home cooking platforms in order to explore whether it would be feasible to establish shared voluntary industry standards for food safety which could be employed to assure the food hygiene competencies of their vendors. One possible model might be the introduction of requirements for individuals to possess certain training or qualifications in order to trade online as home cooks. A system of voluntary industry standards could in principle serve as a proof of concept for future recognition of possession of such qualifications within LA inspection programmes (as discussed in section 5.5). However, it is important to note that the introduction of such a system of recognition for private sector assurance arrangements would require amendments to primary legislation and would therefore not be entirely within the FSA's power to deliver.

1.2.6. Provision of food allergen information to consumers via digital marketplace platforms

This project has generated evidence that the quantity and type of information made available to consumers about the composition of food sold via digital marketplace platforms varies widely. For instance, marketplaces for pre-packaged food products appear to provide far more precise ingredient and allergen information to consumers than do those whose vendors sell takeaway meals or tickets to dining events. The relatively limited arrangements made by certain online takeaway order (OTO) aggregation platforms for the provision of ingredient and allergen information to consumers appear to pose particular challenges because consumers of takeaway meals typically have access to few alternative sources of allergen information. As such, the provision of limited ingredient and allergen information on such platforms may potentially constrain the ability of consumers with food allergies and intolerances both to utilise and to exercise free consumer choice within online marketplaces for takeaway food.

This report therefore suggests that the FSA engages with the operators of OTO aggregation platforms to explore whether it might be possible develop common standards for ingredient and allergen information which might be applied across the online takeaway ordering sector. The development of such standards could potentially be led by the FSA in order to make product and allergen data provision as non-competitive as possible or, alternatively, the FSA could choose to support initiatives by third party standard setting organisations to develop industry-wide data standards for the digital marketplace platform sector. In order to inform and support such initiatives, the FSA may also wish to commission further research exploring the prevalence and frequency of the use of online takeaway ordering platforms among consumers with food allergies and intolerances.

2. Introduction

2.1 Background

The Food Standards Agency (FSA) is a non-ministerial government department which serves as the UK's Competent Authority (CA) for the implementation of regulations dealing with matters of food safety in England, Wales and Northern Ireland. A crucial part of its role is to develop frameworks for the delivery and enforcement of food regulation in order to ensure that Food Business Operators (FBOs) comply with their responsibilities under UK and European law to provide consumers with food which is safe and what it says it is. In pursuit of this goal, and in support of its ongoing efforts to develop an updated delivery model for official controls for food safety and food hygiene (as outlined in FSA 2017c), the FSA works with food businesses and academic partners to better understand innovations in food production and provisioning. In so doing, it seeks to identify opportunities presented by technological, economic and cultural changes within the food system to improve standards of food safety or authenticity, and to address developments which may pose risks to consumer protection (FSA 2015b).

One such recent change in the landscape of food retail, distribution and consumption has been the rapid emergence and proliferation of digital marketplaces accessed through websites or smartphone applications, which enable consumers to browse and purchase food products sold by a variety of different vendors. While these intermediaries facilitate the selection and purchasing of food products by consumers, and often process payments on behalf of their users, they differ from conventional e-commerce businesses and offline retailers in that they do not manage or take legal ownership of the food products offered for sale on their websites. Instead, sellers using such platforms typically manage their own product range and inventory, retain ownership of the goods offered for sale, and bear some measure of responsibility for ensuring the safety and legality of these products up to the point of delivery to the consumer.

Such digital marketplaces emerged earliest and have expanded most rapidly within the takeaway ordering and delivery sector, to the extent that roughly half of the £5.8 billion worth of takeaway meals consumed in the UK are now ordered via an online takeaway order aggregation platform (or 'OTO aggregator') such as Just Eat, Deliveroo or Uber Eats (CMA 2017). However, over the past five years digital marketplace platforms orientated towards other categories of food products and food-related services – including pre-packaged foodstuffs, catering services and surplus food – have begun to develop, and several major technology firms have invested heavily in the digital food marketplace sector. This has led to the emergence of a wide variety of platform business models within the digital food marketplace sector, with this project identifying five distinct categories of platforms which exhibit contrasting commercial strategies and pose differing regulatory challenges (as outlined in section 3.1). There is evidence that the local authorities (LAs) which are responsible for monitoring most businesses' compliance with food regulation, and for taking enforcement action when non-compliance is detected, are currently struggling to detect and to engage with a significant proportion of the food businesses which trade exclusively via these platforms (as discussed in Brice, 2018). Moreover, a number of these marketplaces appear to be being used by unconventional groups of food sellers – including cooks operating supper clubs in private homes and sellers of homemade takeaway food – to interact and transact with customers, and it is possible that such platforms may even have played a role in enabling these unconventional vendors to emerge (Davies *et al.*, 2017).

These developments suggest that growing use of digital marketplace platforms to buy, sell and share food may be facilitating the emergence of new forms of food businesses and of novel food consumption practices which might pose novel challenges both for the FSA and for its regulatory partners. However, although a flourishing body of research has begun to examine the impacts of digital marketplace platforms on other sectors – including transport, short term accommodation and labour markets (see for instance Bergvall-Kåreborn and Howcroft, 2014; Schor and Attwood-Charles, 2017; Stabrowski, 2017; Tzur, 2017) – their role in facilitating and shaping exchanges between buyers and sellers of food remains poorly understood. The author of this report is aware of only one previous publication examining digital marketplaces for food products (Carolan, 2017), which focuses on the experiences of food producers who trade via a single digital marketplace for fresh farm produce. As such, a number of questions relevant to the FSA’s regulatory responsibilities with respect to this emerging sector of the food industry remain unanswered. It is unclear who is permitted to sell food via digital marketplace platforms and who is empowered to decide which vendors should be admitted to or excluded from these sales channels. Nor is much information available regarding what measures are in place to ensure that food sold by such vendors is safe and what it says it is, or what role the operators of digital marketplace platforms might play in ensuring that the vendors which trade via their marketplace are compliant with their obligations under food safety legislation.

The FSA has therefore partnered with the Centre for Analysis of Risk and Regulation at the London School of Economics and Political Science to produce a qualitative social science research project exploring the governance of food safety within the emerging digital marketplace sector. Specifically, this project investigated what measures might be in place to ensure that food sold via digital marketplace platforms is safe and what it says it is, and sought to establish how state regulators might secure improvements in compliance with food law in this sector. In so doing, this project aimed both to address existing gaps in the FSA’s understanding of the growing digital food marketplace sector, and to identify ways in which state regulators might engage more effectively with the operators of these platforms to encourage and improve compliance with food law. The following section provides a more detailed introduction to the underlying business models of digital marketplace platforms and outlines a theoretical framework for investigation of their role in governing the conduct of their vendors. This framework is then employed to articulate a series of key research questions which structure the project’s empirical research, before briefly outlining the structure of this report.

2.2 Introducing digital marketplace platforms

As Tarleton Gillespie (2010) notes, the term ‘platform’ denotes a particular class of economic and cultural intermediaries which are distinguished more by their distinctive approach to creating and coordinating relationships between creators or sellers of content, products or services and their consumers than by their use of specific technological applications or interfaces. Digital platforms provide a communications infrastructure which enables a varied group of geographically or socially dispersed users to connect to and to interact with one another according to a shared body of rules, protocols or conventions (Andersson Schwarz, 2017; Srnicek, 2017a). One particularly prolific, and potentially lucrative, group of such platforms is designed to bring sellers of products or services into contact with potential buyers interested in purchasing their wares so that they may evaluate one another’s offers and engage in economic exchanges. These platforms thus seek to create a spatial and institutional framework for commercial transactions akin to that traditionally provided by

physical marketplaces, which facilitate the comparison and exchange of goods through gathering vendors and buyers together in a particular place and at a particular time (Langley and Leyshon, 2017).

Such digital marketplace platforms – whose more prominent representatives range from taxi platform Uber and accommodation marketplace Airbnb to e-commerce intermediaries such as eBay, Rakuten and Amazon Marketplace – differ from conventional online retailers in one important respect. Rather than buying goods from producers before selling them on to customers, as would a conventional food distributor or retailer, they specialise in enabling two or more groups – typically vendors eager to advertise and sell goods, and buyers seeking to purchase them – to locate and assess a variety of potential transaction partners (Langley and Leyshon, 2017). For instance, online takeaway ordering platforms such as Just Eat or Deliveroo enable restaurants to advertise their meals to many consumers and, simultaneously, allow those consumers to compare and choose between a wide range of restaurants. Unlike suppliers to traditional retailers, these restaurants use the interface provided by the platform operator to sell their own wares to consumers – typically managing their own product range, maintaining ownership over their inventory and setting their prices independently. As such, the operators of digital marketplace platforms do not themselves sell products to their users but instead mediate and coordinate the exchange of goods among those users, meaning that the operators of digital marketplaces for food may never take possession of or physically handle the products traded via their platforms. In exchange for providing this intermediary service, the platform operator typically extracts a rent from each transaction between users. This may take the form of a ‘direct’ monetary payment such as a sales commission or administration fee, or be secured through the ‘indirect’ method of harvesting data about the characteristics and behaviour of users which may then be used to generate revenues through selling targeted advertising (Langley and Leyshon, 2017). Nick Srnicek (2017b: 254-255) has termed this form of commercial activity ‘platform capitalism’, a phrase which denotes:

“a newly predominant type of business model premised upon bringing different groups together. (...) by providing the infrastructure and intermediation between different groups, platforms place themselves in a position in which they can monitor and extract all the interactions between these groups. This positioning is the source of their economic and political power.”

Political economists such as Langley & Leyshon (2017) argue that ownership over and entitlement to design and modify the infrastructures of digital commerce offers the operators of these platforms considerable discretion to shape and define the terms on which much contemporary economic activity takes place. This, they contend, has enabled these firms to create an innovative apparatus of commercial surveillance and control which displays powerful tendencies towards monopoly derived from the status of these platforms as what economists call ‘two-sided marketplaces’, meaning that they provide services to two distinct groups of customers (see for instance Rochet and Tirole, 2003; CMA 2017). Put simply, digital marketplace platforms provide sellers with an advertising service, which enables them to reach many potential customers. Meanwhile, they provide consumers with a search and comparison service which can be used to evaluate the goods and services offered by many different sellers. This means that in order to provide an effective (and profitable) service, marketplace platforms must attract – and facilitate wisely chosen exchanges between – at least two distinct user populations: namely vendors and buyers. Just as a marketplace shunned by shoppers would generate few sales for vendors, so one with no vendors would be unattractive to consumers seeking a wide selection of goods or services. Therefore, as Srnicek (2017a: 45) observes:

“the more numerous the users who use a platform, the more valuable the platform becomes for everyone else. Facebook, for example, has become the default social networking platform simply by virtue of the sheer number of people on it. If you want to join a platform for socialising, you join the platform where most of your friends and family already are. (...) more users beget more users, which leads to platforms having a natural tendency towards monopolisation.”

Evidence from sectors ranging from social media to taxi services suggests that these so-called ‘network effects’ can fuel a cycle of exponential growth in the user base and market share of leading platforms, as growth in a platform’s user population renders its services more compelling – which in turn attracts further users (Boudreau and Hagiu, 2009). As Srnicek (2017a) notes, this self-reinforcing cycle can rapidly create distinct power asymmetries between the operators of leading platforms and the vendors and consumers who use them – particularly in sectors such as the takeaway restaurant trade which are composed of large numbers of small, independent businesses. If the vast majority of consumers select and buy takeaway meals, for instance, via a single dominant marketplace platform then takeaway restaurants which are unwilling or unable to trade on that platform are likely to struggle to attract customers. Meanwhile, it becomes increasingly difficult for both takeaway restaurants and consumers which increasingly rely on that dominant platform’s services in doing business with one another to take their custom elsewhere if, for instance, the platform operator elects to increase its sales commission or impose more burdensome terms and conditions.

Economists Kevin Boudreau and Andrei Hagiu (2009) therefore argue that the same characteristics which endow digital marketplace platforms with monopolistic propensities also provide their operators with uniquely effective means of governing the behaviour of their users and shaping the rules of online commerce, should they choose to do so:

“ownership conveys ‘bouncer’s rights’ (Strahilovetz, 2006) in the sense that control over the platform also conveys the power to exclude from the ecosystem as a whole. The power to exclude also naturally implies the power to set the terms of access (...) and thus to play a role somewhat analogous to the public regulator.”

As Carolan (2017) notes, there is ample evidence that other food industry actors which have achieved comparable positions of monopolistic or monopsonistic control over access to particular distribution channels or market segments have often used the ‘power of exclusion’ which it affords to acquire quasi-regulatory powers. Major food retailers, for instance, are noted for utilising the considerable coercive capacities conferred by their significant share of mainstream grocery markets – and resultant ability to either grant or deny access to considerable populations of consumers – to define and impose private standards for food safety and food quality with which their suppliers are required to conform (Busch and Bain, 2004; Hatanaka and Busch, 2008). Information about suppliers’ compliance with such standards over time is typically gathered through assessments conducted by third party auditors, and non-compliant suppliers are likely to be subject to sanctions potentially including fines for breach of their agreements with their customers and cancellation of their contracts (Marsden *et al.*, 2010; Davey and Richards, 2013). Such activity might properly be termed regulatory in nature, for it displays all three of the core components of prevailing characterisations of regulatory activity (as discussed in Black, 2002; Hood, 2005) – namely:

“standard-setting (the statement of the desired state of the world), information-gathering (the tools used to detect how the actual state of the world differs from the desired one), and behaviour-modification (the tools used to align actual with desired states of the world)” (Koop and Lodge, 2017: 100)

There are, then, strong theoretical grounds on which to suspect that the operators of digital marketplaces for food might be well equipped to act as influential private regulators of the vendors who make use of their platforms. They display strong tendencies to achieve a level of monopoly control over access to particular market segments which might be expected to confer a power both to set standards with which vendors must comply in order to gain access to customers and to modify behaviour through denying non-compliant vendors access to key markets. Moreover, Boudreau & Hagiu (2009: 184) suggest that platform operators are likely to enjoy unique opportunities to monitor and modify the behaviour of their users by virtue of their control over the infrastructure across which they communicate and interact with one another, arguing that:

“the platform owner would itself emerge as a private regulator, invoking an unusually rich set of strategic instruments to influence the behaviour of complementors and users (...) while benefiting from privileged information and a privileged position within the ecosystem.”

If this is so then platform operators might have the potential to serve as powerful allies to state regulators, or at least to trigger a substantial realignment of the landscape of food governance, if they could be enlisted in the task of securing compliance with legal requirements among their vendors. At present, however, there appears to be little research examining the emerging role of the operators of digital marketplace platforms in governing the behaviour of the vendors which trade via their marketplaces, and their role in the landscape of food safety governance remains poorly understood. As a result, extant theoretical accounts of the dynamics and regulatory implications of the proliferation of digital marketplaces often rely heavily on drawing broad inferences from a few characteristics of platform capitalism which are shared across a variety of economic sectors. As a result, they often offer relatively little insight into the reasons for differences between the commercial dynamics of digital marketplace platforms operating within different sectors and pursuing different business models, or into the range of regulatory challenges which such diversity might pose. In order to equip regulatory agencies to understand the varying governance issues and opportunities associated with different types of digital marketplaces for food, in section 3.1 this report will expand on the research on digital marketplace platforms reviewed above by elaborating five different platform business models which exist within the food sector. This section will provide a detailed description of the differences between online takeaway order aggregators, marketplaces for catering services, home cooking platforms, marketplaces for pre-packaged food products, and marketplaces for surplus food, which organises its discussion of these platforms' role within the food governance landscape in section 4. As a prelude to the development of this typology, the following section builds upon this discussion of existing theoretical frameworks for investigation of the role of platform operators in the governance of food safety to articulate a series of research questions through which this project aims to address these shortcomings in both scholarly and regulatory knowledge.

2.3 Project aims

This project aims to provide the FSA with an improved understanding of the impact of the emergence of digital marketplace platforms on the landscape of food governance, and of what measures are in place to ensure the safety and authenticity of the food sold within digital marketplaces. In particular, it aims to establish what standards or requirements vendors must satisfy in order to sell food via digital marketplace platforms, how their compliance with these requirements is assessed and maintained, and how platform

operators' attempts to ensure the safety and quality of food traded within their marketplaces interact with state regulatory systems. In so doing, it seeks to provide initial insights into the types of food safety controls to which food sold via digital marketplace platforms is subject. It also aims to identify ways in which state regulators might engage more effectively both with platform operators and with the vendors who sell food via their marketplaces. To this end it will address the following questions:

- 1) What categories of digital marketplaces for food exist, and what types of food vendors use the services of each of category of platform?
- 2) What (if any) standards and requirements must food sellers meet in order to be allowed to sell their goods via each category of digital marketplace platform?
- 3) Do operators of digital marketplaces for food take any steps to verify, monitor and enforce compliance with these standards on the part of food sellers? If so, how do they do this?
- 4) What (if any) initiatives have operators of digital marketplaces for food implemented to improve standards of food safety, quality and authenticity among their vendors?
- 5) In what ways do digital marketplaces for food currently interact with state regulatory systems, and how might state regulators engage more effectively with them to improve standards of food safety and food quality among their vendors?

2.4 Structure of the report

This report presents the project's findings regarding the measures taken by operators of digital marketplaces to ensure that food sold via their platforms is safe and what it says it is, as well as the nature of their relationship with state food regulators. It then identifies a series of opportunities for food regulators to engage more effectively with platform operators. In so doing, it seeks to enhance the FSA's ability both to respond effectively to ongoing changes in the structure of the food industry and to deliver regulation to groups of online food businesses with which state regulators have hitherto struggled to engage (as detailed in Brice, 2018).

The following section outlines the methodology of the project, while section 4 presents the project's findings regarding:

1. The standards and requirements which vendors must meet in order to trade within digital marketplaces for food;
2. The measures used by platform operators to monitor and enforce compliance with these requirements among their vendors;
3. The measures taken by platform operators to improve standards of food safety and quality among their vendors;
4. Platform operators' relationships with state food regulators.

Section 5 then synthesises the report's findings to identify their key implications for the FSA's regulatory mission and to propose possible measures through which state regulators might engage more effectively with platform operators and deliver regulation to the vendors which sell food via their marketplaces.

3. Methodology

This project aimed to produce a broad overview both of the composition of the UK's digital food marketplace platform sector and of the measures employed by the firms which operate within it to ensure that the food sold by their vendors is safe and what it says it is. However, this task posed a number of challenges. With the exception of one long established OTO aggregator, digital marketplace platforms are a relatively new feature of the UK's food system and the vast majority of such platforms have been established within the past five years. Reflecting the relatively new and rapidly evolving nature of this sector – and perhaps also due to intense competition among some of its participants and their protective attitude towards commercially sensitive information – little market research examining its size or composition is publicly available. Nor do the operators of most digital marketplace platforms routinely publish information about the food safety and authenticity controls to which their vendors are subject (although a minority of platform operators do publish considerable quantities of food safety documentation, such operators were too few in number to constitute a viable sample).

Moreover, while the Competition & Markets Authority (2017) has recently published a comprehensive investigation into the commercial positioning of the key participants in and structure of the OTO aggregation sector, no comparable source of information exists about the number and scale of digital marketplace platforms serving other categories of food vendors. Nor do operators of digital marketplaces platforms possess a trade association, professional body or other central institution which might be able to provide an insight into the number of digital marketplaces for food currently operating in the UK, or into the nature or scale of their activities. As a result, insight into the food safety and authenticity controls employed by operators of digital marketplaces for food in the UK could be obtained only through primary research. Given the difficulties both of gaining access to and of securing engagement in the research from members of this rather small and often secretive industry, it was decided that a programme of key informant interviews with representatives of digital marketplaces for food would be conducted.

3.1 Interviewee recruitment and sample design

The first stage of this project comprised a programme of structured internet searches conducted using Google. The researcher also monitored new food-related listings on several crowdfunding platforms for the duration of the project in order to identify newly emerging marketplace startups. This project adopted a deliberately inclusive approach in defining which categories of commercial intermediaries should be classified as a digital marketplaces for food, wishing to accommodate the rapidly evolving nature of digital marketplace business models by allowing potential interviewees to self-define whether their enterprise should be included in this category. As such, it did not restrict itself to investigating marketplaces which were used by particular categories of vendor, which relied upon a specific revenue model, or which were used to transact particular categories of foodstuffs. Instead, it drew upon the discussions and definitions of digital marketplace platforms explored in section 2.2 to develop three minimal criteria which platforms were required satisfy in order to be classified as digital marketplaces for food and to be invited to participate in this project:

1. The platform in question must be used to facilitate the purchase either of food products or of an entitlement for a buyer to consume food prepared by the vendor (e.g. a ticket to a meal organised by the vendor or a booking for an event caterer);

2. The platform in question must have the capacity to process payments for goods and services exchanged between a vendor and a buyer. This criterion was introduced in order to distinguish digital marketplaces both from rating and comparison platforms such as Tripadvisor and from platforms for classified advertisements such as Gumtree, Craigslist and Facebook Marketplace (which, from an analytical perspective, might be considered to be somewhat misleadingly named);
3. The platform must enable buyers to compare and purchase goods and services offered for sale by a range of different vendors, who are able to exercise control over their own product range and pricing strategy. This criterion was used to distinguish digital marketplace platforms from a much larger population of conventional food retailers such as Ocado which operate online.

Using these criteria, the researcher identified a total of 36 digital marketplace platforms for food which were operating in the UK. These platforms were extremely heterogeneous not only in their business models and vendor populations but also in the type of food that they sold and the means by which it was transferred from vendors to consumers. They ranged from ordering and delivery services for takeaway meals to marketplaces for pre-packaged foodstuffs sold by artisanal producers and platforms facilitating the advertising and booking of private chef services. They included platforms targeted at individuals wishing to sell tickets to meals hosted in their own homes and services designed to facilitate the redistribution of surplus food. Moreover, this population of platforms proved to be extremely dynamic with a number of new platforms launching, and several more being acquired by competitors or ceasing to trade, within the duration of the project. Given this rapid 'churn' of platform closures and new entrants, this project's findings regarding the number and type of digital marketplace platforms operating within the UK's food sector should be taken as being only indicative, and should be revised regularly.

The researcher attempted to contact representatives of each of the 36 platforms identified either via email or by telephone. The researcher also attended a series of trade shows and networking events targeted at sharing economy entrepreneurs and members of the 'food tech' industry (of which digital marketplaces for food are commonly considered to form a part), at which he secured face to face introductions to the founders or managers of several further platforms. Ten of the platforms approached by the researcher agreed to contribute to the project by making representatives available to take part in an interview. The researcher interviewed representatives of all ten of these platforms; as such the group of platforms discussed in this report constitute a convenience sample of the wider population of digital marketplaces for food. They should therefore not be assumed either to constitute an exhaustive inventory of the types of digital marketplace platform currently active within the UK's food sector or to be statistically representative of the wider population of digital marketplaces for food (Bernard, 2006).

The researcher did attempt to broaden the project's sample using chain referral approaches (i.e. by asking interview participants to introduce him to potential interviewees associated with other platforms), but this technique yielded only one additional interviewee (producing a total sample size of eleven platforms). The majority of participants explained when asked to suggest further interviewees that the digital marketplace platform sector was not only small but highly competitive and often secretive. As a result, they were typically unable to suggest further points of contact because they had very little contact with either the founders or the employees of rival platforms. It should, however, be noted that while this project's sample is neither exhaustive nor representative, it nevertheless represents over 25% of the total population of digital marketplaces for food identified during the initial phase of the research

as operating in the UK. As such a sample of eleven platforms represents not only a significant proportion of the total population but, given the aforementioned challenges of gaining access to interviewees associated with this group of enterprises, an encouraging response rate.

The eleven platforms which participated in this project were diverse not only in their business models and the types of vendor which traded via their platform, but also in terms of the scale of their operations and the number of staff which they employed. The majority of the platforms which contributed to this project employ fewer than 50 people and would be categorised according to standard Department for Business, Energy and Industrial Strategy (BEIS) classifications as small or micro businesses (Ward and Rhodes, 2014). However, this project's sample also included two far larger digital marketplace platforms which operate in over a dozen countries and have annual revenues in the hundreds of millions of pounds. Similarly, the number of vendors selling food via the marketplaces which contributed to this project ranged from a few dozen to tens of thousands (more precise totals are not provided in this report in order to avoid revealing the identities of the platforms which participated in this project, as discussed in section 3.4).

The platforms which contributed to this project can be disaggregated into five broad groups, which are distinguished by differences both in their business model and in the types of vendor which trade via their platforms:

3.1.1 Online Takeaway Order (OTO) aggregation platforms

The largest cluster of participants within this project's sample was made up of OTO aggregation platforms, a category of businesses which provides online marketplaces within which consumers may compare and order takeaway meals for home consumption from a variety of restaurants within their local area. As such, the vendor base of OTO aggregation platforms is composed of foodservice businesses which operate from premises which are registered with their LAs as food business establishments, and which are issued publicly available food hygiene scores under the FSA's Food Hygiene Rating Scheme (FHRS). Perhaps reflecting the fact that digital marketplace platforms have been an established feature of the UK's takeaway industry since the early 2000s, and that this has hitherto been the most lucrative sector of the food industry for such marketplaces with online takeaway orders estimated to be worth approximately £3 billion as of 2016 (CMA 2017), four OTO aggregation platforms contributed to this project.

It should be noted that OTO aggregators are not themselves a homogeneous category of businesses, and that a variety of business models exist within this sector. The Competition & Markets Authority (2017) distinguishes between 'pure' OTO aggregation platforms, which process customer orders and payments for 'traditional' takeaway restaurants which maintain their own independent delivery capability and a group of 'ordering and logistics' platforms that have emerged since 2013. The latter group of platforms both process orders on behalf of restaurants and provide courier services to deliver the food to consumers. This enables such platforms to serve a broader range of restaurants, including those which have not hitherto provided takeaway meals and do not maintain their own delivery capability. The CMA notes some differences between these two groups of online takeaway order aggregation platforms – notably that the fixed costs of operating a takeaway ordering and logistics service were higher, meaning that such platforms tended to charge a higher sales commission to their vendors. However, it ultimately argued that the two groups' services are sufficiently similar that in effect they compete within the same market. In addition to these

established categories of OTO aggregation platforms and ordering and logistics platforms (both of which focus on takeaway *delivery* services), one of the platforms which contributed to this project provided a takeaway ordering service only – meaning that customers were required to pick up the meals from the takeaway after placing their order.

Only one major ‘pure’ OTO aggregation platform, which is estimated to count at least 85-90% of traditional takeaway restaurants among its vendors, is currently operating in the UK. However, the Competition & Markets Authority (2017) identifies three major competing marketplaces for takeaway order aggregation and logistics services, as well as a number of smaller marketplaces offering both pure OTO aggregation and takeaway ordering and logistics services.

3.1.2 Marketplaces for catering services

A fifth platform provided a rather different form of online meal ordering service to its users. This platform allowed individuals seeking to organise private social events or corporate functions to browse the profiles of a wide range of professional event caterers, who provided indicative menus and prices per person via the platform. Consumers were able to send booking requests to their chosen caterers via the platform after which, if the caterer accepted the request, the consumer would pay the booking fee via platform. The platform operator would then hold this payment until after the event – thus both reassuring the vendor that payment had been made and reassuring the consumer that they would be able to have their payment refunded in the event of a dispute. The caterer in question would then prepare meals for the event organiser’s guests at the site of the event.

This platform’s vendors tended to be either mobile caterers (e.g. food trucks or market stalls) or small, independent foodservice businesses such as cafes or restaurants whose proprietors supplemented their income by providing catering services for private functions. All of these vendors fell within the scope of the FHRS scheme, and would thus be expected both to be registered with their LAs as food businesses and to possess a publicly available food hygiene rating. Although only a single platform of this type contributed to this project the interviewees representing it were aware of at least one similar marketplace, which they viewed as a key competitor to their business.

3.1.3 Home cooking platforms

This category of platforms is distinguished from OTO aggregators and marketplaces for catering services primarily by the types of vendors which trade via its platform. ‘Home cooking platforms’ are designed to enable private individuals to advertise and sell food prepared in their homes, on either an occasional or a regular basis. While the service being provided is thus in many respects similar to that supplied by the catering businesses and takeaway restaurants discussed above, the individuals supplying it may not necessarily trade sufficiently regularly or on a sufficiently organised basis to satisfy the legal definition of a food business articulated by Regulations (EC) No 178/2002 and (EC) No 852/2004. As a result, they may not necessarily be subject to a legal obligation to register with their LA as a Food Business Operator (FBO), or to permit LA officers to conduct food hygiene inspections at their premises or issue them with an FHRS rating (as discussed in Prost, 2018).

Two such home cooking platforms contributed to this project, each of which had a strikingly different business model and vendor base. One was targeted at private individuals wishing

to sell tickets to 'supper clubs' – meals open to paying guests which they hosted either in their own homes or in rented spaces such as cafes or community halls (see Prost, 2018, for further details). In this case the service provided was similar to that offered by the marketplace for catering services discussed above; the platform would process the bookings and payments provided by 'guests' seeking to attend meals and would hold the payment until after the event, releasing it only after receiving satisfactory reviews from the guests. The second was designed to enable private individuals to sell food prepared in their home kitchen as takeaway meals. In this case the platform provided a service roughly analogous to that offered by an online takeaway order aggregator – processing orders and payments on behalf of its vendors and providing a courier service to deliver the food to consumers' homes.

Home cooking platforms have established a small but distinctive presence within the UK's food sector. Following an initial attempt in 2013 by a now defunct company named Cookisto to establish a digital marketplace for supper club hosts, a number of marketplaces for home cooked food have established in the UK before rapidly either merging or exiting the sector. The author of this report is aware of four digital marketplace platforms which are currently operating in the UK whose vendor bases are made up of supper club hosts, but has identified a single active marketplace for home cooked takeaway food.

3.1.4 Marketplaces for pre-packaged food products

This project's sample also included two digital marketplace products which allowed consumers to browse, compare and order pre-packaged food products from a variety of vendors. These products would then be delivered to their home via a courier service organised by the vendor. The service provided by these platforms is much more similar to that provided by generalist e-commerce marketplaces, as is their vendor base which was composed largely of food producers and of small bricks and mortar food retailers seeking to secure long distance sales through developing an online storefront. As a result, the vendors using the two marketplaces for pre-packaged food products would be subject to legal requirements to register with their LAs as Food Business Operators. However, it is not entirely clear whether all of their vendors would be expected to have an FHRs rating. Only food retailers and foodservice businesses are currently subject to the FHRs inspection process, meaning that if an LA was unaware that a food producer was selling food online then an FHRs rating might not be offered to them.

Pre-packaged food products are currently sold via a relatively large number of digital marketplace platforms which are available in the UK – the author of this report is aware of eleven such marketplaces. These include several generalist e-commerce marketplaces within which vendors are permitted to trade a wide variety of both food and non-food products as well as more specialist platforms (including the two marketplaces for pre-packaged food which contributed to this project) which are dedicated primarily or entirely to the sale of food products.

3.1.5 Marketplaces for surplus food

The final category of digital marketplace platforms which contributed to this project is differentiated from those discussed above principally by the type of food in which its users trade. These are marketplace platforms designed to assist individuals and organisations

which find themselves with surplus food – that is, food which is still fit for human consumption but which cannot be sold before it becomes legally unsaleable – in redistributing it to consumers before it reaches its expiry date. Crucially, *surplus* food is distinguished very clearly from *waste* food, which is classified as no longer being fit for human consumption (Midgley, 2014), and which these platforms do not seek to redistribute to their users.

While two such platforms contributed to this project, they demonstrated the diverse nature of marketplaces for surplus food by displaying radically different vendor bases and revenue models, and sought to redistribute surplus food through quite different processes of exchange. One of these platforms marketed itself explicitly to food businesses, principally but not exclusively within the food to go sector (i.e. foodservice businesses such as cafes, sandwich bars and bakeries which allow customers to pick up food to eat elsewhere but do not operate a takeaway delivery service), as a real-time discounting tool. Essentially these vendors were enabled to advertise food which they felt that they were unable to sell on the platform at a reduced price, with consumers able to browse these listings, place orders, and pay for the food via a smartphone app. These consumers would then pick up the food from the business and the platform operator would take a sales commission on each such transaction. As a result, all of this platform's vendors were registered with their LA as food business establishments, and all had been issued with an FHRS rating.

The second such platform, by contrast, had originally been designed as a peer-to-peer marketplace via which private individuals could donate or sell their surplus food products to one another. It had subsequently changed its business model in two consequential ways. First, it had banned individuals from charging money for food products in order to discourage users from producing food specifically in order to sell it via the marketplace (a practice at odds with its identity as a surplus food redistribution platform). It now requires users either to donate their food for free or to provide it in exchange for a charitable donation from the other party, from which the marketplace would take a sales commission. Interestingly, an interviewee representing this platform argued that it was still in effect operating as a two-sided marketplace because it continued to perform the function of coordinating suppliers of food with demand for it, and of mediating the exchange of goods and (in some cases) payments. Second, it had begun redistributing surplus food donated on a not for profit basis by food businesses. This food would be picked up from the business's premises and listed on the platform by volunteers, and other users would then collect it from the volunteers' homes. As such, while some of the food transacted via this marketplace was ultimately supplied by registered food businesses, none of the 'vendors' who advertised it on the platform or exchanged it with consumers were classified legally as food businesses or subject to the FHRS rating process.

The number of surplus food redistribution platforms appears to be growing rapidly as the issue of surplus food waste attracts increasing public and political attention. The author of this report is aware of five such platforms which are currently active in the UK and several more which are under development, which provide a range of commercial and non-commercial channels for surplus food redistribution.

3.2 Limitations of the sample

Although this sample displays considerable internal diversity, it does omit some key actors within the UK's digital food marketplace sector. Notably, Eatwith – which is believed, following its recent acquisitions of VizEat and Grub Club, to have become the single largest

home cooking platform currently active in the UK – declined to contribute to this project. The project's sample also does not include any representatives of the several generalist e-commerce marketplace platforms (for instance Amazon Marketplace, eBay or OnBuy) which permit their vendors to sell ambient pre-packaged food products to consumers. This is an unfortunate omission given that LA regulatory officers have in the past routinely identified vendors trading exclusively via such platforms as being both disproportionately likely to be non-compliant with food law and disproportionately difficult both to detect and to locate physically so that enforcement action may be taken against them (Brice, 2018). It is also possible that this project's association with the FSA, which raised anxieties among some participants about the uses to which information supplied to the researcher might be put by state food regulators (as discussed in section 3.4), may have deterred platforms which impose fewer food safety and quality requirements on their vendors from contributing to the research. If so, then it is possible that platforms which take more proactive approaches to assuring food safety, quality and authenticity might be overrepresented among the interviewees.

3.3 Data gathering approach

Based on this recruitment process the interviewer conducted a series of fifteen semi-structured interviews, which ranged in duration from approximately 40 minutes to roughly two hours. During this project a total of 19 participants, who represented 11 different digital marketplace platforms, were interviewed. All of these representatives were either employed directly by or partners in the platforms which they represented. Ten of these interviewees were either co-founders, CEOs or UK country managers of the platforms which they represented (perhaps reflecting the fact that many of the firms currently active within the digital food marketplace sector are relatively new startups with only a small number of employees). A further four interviewees were employed in marketing, public affairs or public relations roles. Each of these interviews was recorded and transcribed, with the transcripts subsequently coded and analysed using NVivo 11.

This project was conceived as an exploratory piece of research designed to examine the practices of an emerging industry about which relatively little is currently known. The format of these interviews was therefore designed to permit both the researcher and the interviewee sufficient flexibility both to describe the business models, activities and concerns of a broad range of platforms and to raise and follow up topics whose significance was not anticipated in advance of the interview. The precise list of questions posed during each interview was tailored to reflect the business model and vendor base of the platform in question, questions were posed in an open ended format in order to allow interviewees to answer in their own terms, and interviewees were given several opportunities to highlight any additional topics which they felt should be discussed (Robson, 2009). However, each interview was also organised according to an interview guide designed to ensure that all of the following topics were addressed in the researcher's discussions with representatives of each digital marketplace platform:

- The platform's history and business model;
- The size and composition of the platform's user base of vendors;
- The process through which their platform recruits new vendors, and the requirements which prospective vendors must satisfy in order to trade within their marketplace;

- The processes through which their platform monitors whether vendors are complying with these requirements, and with their legal obligations;
- Any initiatives or incentives through which the platform operator seeks to encourage improvements in standards of food safety or food quality among their vendors;
- The platform's procedures for changing the behaviour of, or taking enforcement action against, non-compliant vendors;
- The platform's current relationship with state food regulators, including the FSA and its regulatory partners;
- The interviewee's own suggestions about how the FSA and its regulatory partners might engage more effectively with digital marketplaces for food or with their vendors.

This semi-structured approach to interviewing – in which interviews were organised around a pre-determined list of topics, but questions were asked in an open-ended format and a flexible order and interviewees were encouraged to volunteer their own discussion points – offered several benefits. In ensuring that a consistent range of topics was addressed across all eleven platforms, it enabled the responses of interviewees representing different platforms to be compared and common characteristics and practices shared by a number of different platforms to be identified. However, it also provided greater opportunities than a questionnaire or structured interview format for interviewees to describe their platform and vendors in their own terms, and to bring to the researcher's attention topics not anticipated in the interview guide (Robson, 2009). Using a semi-structured interview methodology thus helped to create opportunities for unexpected observations and insights to emerge from the researcher's discussions with interviewees (Bernard, 2006).

3.4 Ethical considerations

Although the FSA is responsible for enforcing compliance with food regulation directly only at a minority of food business establishments – principally slaughterhouses, cutting plants and dairy farms (as detailed in Food Standards Agency *et al.*, 2014) – it is nevertheless perceived widely to be an important actor within the UK's food law enforcement apparatus. As a result, representatives of some platforms were eager to highlight the food safety controls which they had implemented and to collaborate more closely with the FSA in the future. However, others expressed an understandable reluctance to share details of their current practices or opinions, perhaps fearing that this information might be used by state regulators to single out particular platforms for more stringent oversight and enforcement action in the future. In order to alleviate participants' concerns that any platform whose current food safety or authenticity controls deviated from legal requirements might be subject to enforcement action or prosecution as a result of its participation in this project, it was promised that the anonymity of all interviewees and their employers would be maintained in the outputs of this project. This measure was intended to encourage interviewees to be as accurate as possible in describing the practices both of their platform and of their vendors, and to be forthright in describing their platform's current relationship with state regulators, rather than volunteering perceived norms of best practice (Bernard, 2006; Robson, 2009).

In order to maintain the anonymity of research participants, the names of the individuals and platforms which contributed to this research have been withheld and no direct quotes from the interviews are reproduced in this report. All materials containing the names of the individuals and platforms which contributed and the details of their responses to interview

questions have been stored exclusively on secure servers maintained by LSE in order to ensure that they are accessible only to the researcher. The details of individual platforms operators' responses to interview questions have also, whenever possible, been aggregated into broader categories (e.g. OTO aggregators, curated marketplaces) in order to reduce the danger that a distinctive pattern of responses might be used to identify a specific platform.

4. Findings

4.1 Standards and requirements for marketplace vendors

4.1.1 FHRS rating requirements

The platform operators which participated in this study required prospective vendors to satisfy a variety of standards and conditions before they could be permitted to begin selling food within their marketplaces. This variation in the requirements for entry to different marketplaces appears partly to reflect differences in the nature of the vendors trading on different platforms, particularly in the cases of the two conditions which new vendors were most commonly asked to satisfy. Namely, that they be registered with their Local Authority (LA) as a food business and that they possess a Food Hygiene Rating Scheme (FHRS) score.

Eight of the eleven platform operators interviewed required any new vendors to possess an FHRS rating in order to begin trading via their marketplace, and most routinely checked the FHRS ratings of prospective vendors as part of their signup process. These eight included five of the six marketplace platforms whose vendor base was made up entirely of foodservice businesses, and both of the platforms enabling individuals to sell home cooked food. The sole platform allowing the exchange of surplus food between volunteers and private individuals also required all businesses which donated surplus food to its volunteers have an FHRS rating of at least 3, and that all such donor businesses should be registered with their LAs. Four of the platforms for foodservice businesses and both home cooking platforms also required all of their vendors to be registered with their LAs. By contrast, neither of the marketplaces for pre-packaged food products which contributed to this project required new vendors either to be registered with their LAs or to possess an FHRS rating.

These differences appear to reflect the scope and conditions of the FHRS scheme itself, which assesses and scores the food hygiene practices of registered food business establishments which supply food directly to members of the public. As a result, FHRS ratings are routinely provided to food retailers, foodservice establishments (ranging from restaurants, takeaways and hotels to non-commercial kitchens serving users of institutions such as schools, hospitals, prisons and care homes) and a range of mobile and event caterers including food vans and market stalls (FSA 2017d). All of the vendors eligible to trade via marketplaces for foodservice businesses – from takeaway restaurants to food to go (FTG) establishments and mobile event caterers – would therefore fall within the scope of the FHRS scheme. As such, they would face a legal obligation both to register with their LA as a food business and to undergo a food hygiene inspection which would lead to the production of an FHRS rating which would be available to the public – and could easily be checked – via the FSA's FHRS portal. As such, not only could the operators of digital marketplace platforms whose vendor base is made up of foodservice businesses reasonably expect all prospective vendors to possess an FHRS rating, but they would – under most circumstances – have reason to suspect that any unrated business which attempted to join their marketplace might be failing to comply with food law. However, it should be noted that the one such platform which allowed unrated foodservice businesses to trade within its marketplace had elected to do so only because its staff had found that a small group of LAs within whose jurisdiction it operated were failing to register and to inspect a substantial proportion of new takeaway businesses. As such, it had relaxed its requirements for new vendors within these jurisdictions in order to compete more effectively against rival online takeaway order aggregators.

The vendor bases of the two marketplaces for pre-packaged food products which contributed to this project tended, by contrast, to be made up largely of small- and medium-scale food producers, complemented by a relatively small proportion of small, independent food retailers. Representatives of these platforms suggested that the majority of their vendors were therefore unlikely to own a shop or other food business establishment which would be eligible to receive an FHRs rating, although they might sell their products to such establishments, either via their own website or via rival digital marketplaces. As a result, the operators of these two platforms felt that it would be impractical for them to require prospective vendors to possess an FHRs rating, with one of these interviewees remarking that food safety certifications targeted at producers such as the Safe and Local Supplier Approval (SALSA) scheme were more likely to be relevant to their marketplace's vendors.

The two home cooking platforms, meanwhile, displayed a slightly different relationship to the FHRs scheme. Due to their focus on individual cooks operating from domestic premises, these platforms operated on the assumption that the majority of new applicants to their marketplaces would represent new or incipient food businesses – and indeed that some might be entirely new to the food industry. As such, they did not expect these individuals to have registered their homes with their LAs as food business establishments, or to have undergone a food hygiene inspection and received an FHRs rating, before attempting to join their marketplace. Instead, one of these platforms provided applicants with assistance in registering their home as a food business establishment as part of their onboarding process for new vendors, and permitted cooks to begin trading via their marketplace only after they had received an FHRs rating. The second permitted prospective cooks to join the platform and to begin hosting without undergoing a food hygiene inspection or receiving an FHRs rating, but did so only in order to enable individuals or groups to use their platform to host occasional one-off events such as charity fundraising dinners. The operators of this platform then made any new vendors which posted multiple events, or expressed an intention to use their marketplace regularly to sell tickets to events, aware that in order to continue trading via the marketplace they would have to register with their LA and obtain an FHRs rating. This practice reflects the FSA's guidance on the application of food law to community and charity food provision (FSA 2016), under which individuals and groups providing cooked meals to relatively small groups of consumers less than once per month are exempted from the legal obligation to register as a food business and to undergo food hygiene inspections. Reflecting the importance of the individual FBO's food hygiene competency to food safety within home cooking enterprises, both of these platforms also required all of their vendors to obtain a CIEH-approved level 2 food safety qualification before beginning to trade regularly via their marketplace. It should be noted, however, that Eatwith – currently believed to be the UK's largest marketplace for home cooked food (which did not contribute to this project) – operates a different approach, and does not require that its vendors obtain either an FHRs rating or any food safety qualifications (see Prost, 2018).

Interestingly, the vast majority of these marketplace platforms, regardless of the types of food vendor for which they were designed, utilised FHRs ratings primarily as a means of verifying that prospective vendors were complying with their legal obligation to register their establishment with their LA. Only one of the 11 marketplaces which contributed to this project – an online takeaway order (OTO) aggregation platform whose vendor base was made up exclusively of foodservice businesses – displayed the FHRs ratings of its vendors to its consumers. This platform also incorporated the capability to organise search results in order of the FHRs ratings of the restaurants found in an area, as opposed to other search criteria such as the restaurant's proximity to the user or (by default) its average consumer review score. The operators of this platform had implemented this feature in the hope both that it would attract food hygiene-conscious consumers to their marketplace and that it would

provide an economic incentive for improved food hygiene standards within the takeaway sector by directing sales traffic towards more compliant establishments. However, at the time of interview they had not yet conducted any analysis of the extent to which this feature was used by consumers or of its impacts on users' takeaway ordering patterns, making it difficult to assess its effectiveness in achieving these goals. Two more OTO aggregation platforms were interested in displaying their vendors' FHRs ratings to consumers via their websites and mobile apps in future, but had not yet implemented this capability. One of these interviewees reported that their platform had experienced significant consumer demand for an FHRs rating display capability, but that its efforts to develop this feature had been hindered by difficulties in matching the names and addresses of businesses as presented within the FHRs open dataset with their internal data.

Meanwhile, two platforms did not permit vendors whose FHRs rating was below a minimum threshold to join their marketplace. Specifically, one platform for event caterers required all of its vendors to achieve an FHRs rating of at least 4, while the platform which allowed users to exchange surplus food donations required all donor businesses to achieve an FHRs rating of at least 3. Interviewees representing a further two platforms whose vendor base was composed of foodservice businesses stated that they preferred prospective vendors to have a 'high' FHRs rating. However, these platforms did not formally require their vendors to achieve a minimum FHRs score and noted that FHRs ratings were only one of a number of variables which informed their vendor selection decisions, meaning that potential vendors who were attractive to them on other criteria might face more relaxed FHRs requirements.

Intriguingly, three of the four platforms which actively sought to exclude vendors with a 'low' FHRs score from their marketplace were also among the four platforms whose marketplaces were open only to vendors whose products or menus were judged by the platform operator to be 'of good quality'. Some interviewees associated with this quite distinctive group of platforms – which included three platforms for foodservice businesses and one for food producers and retailers – described themselves as operating a 'curated' marketplace. By this, they meant that their marketplace's range of vendors had been selected deliberately by the platform operator to ensure that all of the goods and services met a certain standard of quality. All of these interviewees presented this 'quality promise' to consumers as an integral element of their marketplace's commercial positioning and identity. More specifically, they argued that the exclusion of poor quality goods and vendors was necessary either to convince consumers to trust and to try innovative and unconventional categories of food (e.g. surplus food, home cooked meals) or to differentiate their marketplace against 'uncurated' competitor platforms offering goods of more variable quality. Curated marketplaces were thus distinguished by their operators' deliberate attempts to transform their platform into a 'quality stamp' (Jansson and Hracs, 2018) through permitting only high quality vendors and products to enter their marketplace in the hope that consumers would choose to purchase food via their platform in order to avoid substandard products.

These platforms' commercial strategy and approach to marketplace governance contrasted sharply with that of a second group of interviewees, which included representatives of three platforms for foodservice businesses and one home cooking platform). These interviewees stated explicitly that their platforms did not require vendors to meet any food safety or quality standards other than compliance with their legal obligations. Interviewees representing this group of platform operators argued that a platform operator's primary responsibility was to its customers, including the vendors obliged to pay its sales commissions or membership fees. As such, they argued, platform operators had both a commercial and an ethical responsibility to provide all vendors who complied with the platform's terms and conditions and with their legal obligations with access to a neutral marketplace, in which no vendor held an unfair

advantage over any other. Setting standards in excess of the legal minimum, they noted, might oblige them to remove businesses from their marketplace which, despite being noncompliant with a particular platform's food safety standards, were nevertheless judged by regulatory authorities to be safe enough to continue trading. Under such circumstances, they argued, their platform would effectively be preventing businesses which state regulators had permitted to trade from selling food online – an act which they felt would violate their platform's duty of impartiality towards its vendors. Some interviewees within this latter group explained this stance was motivated by a desire to provide a neutral marketplace which presented new food vendors with as few barriers to entry as possible. Others cited resistance among their vendors to the imposition of minimum standards for FHRs scores. Meanwhile, an interviewee representing one OTO aggregator suggested that variable food hygiene standards within the takeaway sector meant that imposing a minimum FHRs rating would exclude so large a proportion of restaurants from their platform that such a measure would be commercially unviable within a competitive sector.

Attitudes within the digital food marketplace platform sector towards the adoption of mandatory minimum FHRs ratings within thus appear to be determined to a large extent by differing strategies and philosophies of marketplace design defined by differing orientations towards the process of 'curation'. The concept of curation, and its role in economic life, has in recent years become the subject of growing interest and debate not only among e-commerce and retail businesses but also within economic sociology and geography. Joosse & Hracs (2015) define curation as the process of assessing, evaluating and classifying objects, persons and services in order to establish which of an assortment of entities display certain valued characteristics, and to organise those which do into coherent collections, displays or ranges. Curation thus necessarily involves filtering out and excluding items which do not conform to a certain standard or lack a particular attribute in order to produce a grouping or cluster which is thematically consistent or of reliable quality – much as, for instance, an art curator selects pieces for an exhibition or a retailer assembles its catalogue (Jansson and Hracs, 2018).

Commentators such as Michael Bhaskar (2017) argue that the work of curation has become increasingly central to economic processes as the expansion of e-commerce has enabled consumers to browse and purchase products supplied by sellers across the world, and thus to procure an increasingly broad range of products and services. Such accounts suggest the expansion of choice enabled by the displacement of commercial activities into digital media has produced a rapidly growing demand for services which assist consumers in navigating the cornucopia of goods available to them and in identifying and selecting the products and services which correspond most closely to their desires. Such commercial intermediaries, whose role is essentially to screen out substandard or irrelevant goods to ensure that consumers are presented with a manageable and compelling assortment of options from which to choose, might be termed 'curators'. Joosse & Hracs (2015: 205) argue that in evaluating goods, and in deciding which should (and which should not) be presented to consumers in sites of choice and purchase from physical shop displays to marketplace apps and websites, "curators interpret, translate and shape the marketplace by sorting, organising, evaluating and ascribing value(s) to specific products." As such, intermediaries which control important sites of product advertising and purchase, from fashion stores to music streaming services, can acquire considerable influence over the exposure received by particular vendors and products – and thus over their commercial success – should they choose to take on a curatorial role (Jansson and Hracs, 2018). The extent to which the owners of promotional and transactional spaces such as digital marketplace platforms choose to adopt a curatorial role, and the manner in which they perform it, can thus influence

the governance of commercial spaces and the exercise of power within economic life substantially.

While it might be tempting in the interests of simplicity to cast the two approaches to marketplace design and positioning outlined above as rival 'curated' and 'uncurated' marketplace models, it should be noted that all processes of marketplace design necessarily incorporate some degree of selection, filtering and exclusion. Some such sorting, sifting and classification of vendors and products is required in order to ensure that consumers are able to use the marketplace to browse a relevant selection of vendors, products and services, and that they are equipped to make meaningful comparisons among them (Callon, Meadel and Rabeharisoa, 2002; Callon and Muniesa, 2005). For instance, even the apparently 'uncurated' marketplaces operated by most of the OTO aggregators interviewed excluded food produced by vendors other than takeaway restaurants which were registered officially as food businesses. The following sections of this report will therefore refer to 'high curation' marketplace platforms, which include only products and services which conform to private quality requirements, and 'low curation' marketplace platforms which seek to be accessible to any legally compliant vendor which conforms to a certain category of food businesses and provides a certain type of food product or service.

Based on analysis of interview material, six platforms – including one OTO aggregator, both marketplaces for prepackaged food products, one marketplace for event caterers, one home cooking platform and one surplus food redistribution platform – were categorised as 'high curation marketplaces'. Meanwhile, three OTO aggregation platforms whose vendor base was made up entirely of foodservice businesses were classified as 'low curation marketplaces'. Two platforms occupied an ambiguous position within this classification. One home cooking platform targeted primarily at supper club hosts did not require prospective vendors to meet any food safety standards before hosting events via the platform, in order to ensure that it was open to all potential cooks regardless of their professional experience within the food industry. Representatives of this platform noted that they had also avoided taking a curated approach in order to avoid raising unrealistic expectations among consumers about the quality of the food produced by novice hosts. However, this platform did require those who hosted events regularly to undertake a significant programme of professional development including food safety training subsidised by the platform, acquisition of an FHRS rating, and potentially (for more experienced cooks) the acquisition of optional professional qualifications in alcohol service and hospitality. In view of its founders' avowed desire to ensure that the platform was open to all providers and to avoid operating a curated marketplace model, this platform was ultimately classified as a low curation marketplace.

Meanwhile, the platform which permitted volunteers and members of the public to exchange surplus food took a somewhat contradictory approach to curation, which appears to have been driven at least in part by its founders' attempts to comply with UK food law. Food donations posted by individual members of the public were left entirely uncurated; any individual was able to sign up to the app, for free, without having to meet any requirements and to post food donations which were not routinely monitored or moderated by the platform operator. Because these donations tended to be sporadic and spontaneous, they were held not to meet the threshold of regularity and organisation required for the donor to be classified as a food business and thus were permitted to go uncurated. By contrast, food collected from donor businesses and redistributed by volunteers via the app was subject to significantly more stringent controls. Donor businesses were required to have an FHRS rating of 3 or above, and volunteers were required to obtain a CIEH-approved level 1 food safety qualification and to complete a food hygiene self-assessment process for their kitchen

before being permitted to collect and redistribute food. In short, this marketplace appeared to be pursuing a low-curation strategy for food donated by private individuals and a high curation strategy for food donated by food businesses. In the following sections it is therefore classified as a low curation marketplace when food donated by private individuals is being discussed and a high curation marketplace when the discussion turns to food donated by food businesses and redistributed by volunteers. Thus, a total of four platforms were categorised as low curation marketplaces, six were categorised as high curation marketplaces and one operated a hybrid model of curation.

4.1.2 Additional standards for vendors

These contrasting 'high curation' and 'low curation' models of marketplace design and positioning appeared to be associated with very different attitudes and approaches not only to setting minimum food safety and quality standards for marketplace vendors but also to the process of establishing whether prospective vendors were compliant with those standards. Not only were all four of the platforms which required their vendors to meet a minimum FHRs rating pursuing a high curation strategy, but individual platforms within the high curation group required their vendors to satisfy a variety of other requirements in order to trade within their marketplaces. Thus, two of the high curation platforms required prospective vendors to demonstrate that they possessed public liability insurance and one required them to demonstrate that they had produced a Safer Food, Better Business (SFBB)-compliant Food Safety Management System (FSMS). Meanwhile, one of the two high curation marketplaces for producers and retailers of pre-packaged food products which contributed to this project was open only to vendors classified by the platform operator as 'independent' businesses, while the other accepted only vendors whose products were 'ethically sourced.' In contrast, none of the low curation platforms which contributed to this project required their vendors to meet any such additional requirements.

High curation marketplaces were also more likely than their low curation counterparts to draw on evidence other than a prospective vendor's FHRs score in assessing whether or not they were compliant with their platform's standards. Notably, four of the high curation platforms – three of which were used exclusively by foodservice vendors and one of which was a home cooking platform – routinely sent staff to visit and evaluate prospective vendors' products and premises as part of the process of assessing whether an applicant should be permitted to sell food via their marketplace. In three cases these site visits focused primarily on tasting the applicant's food in order to assess its quality, and on evaluating the vendor's customer service quality and the overall attractiveness of their establishment. However, one of the home cooking platforms had gone so far as to work with Environmental Health Officers within their home LA to develop a proprietary food hygiene inspection format which its representatives claimed was based upon, but was in some respects more rigorous than, LA food hygiene inspections. These interviewees claimed, for instance, that their inspections had more demanding temperature requirements for the storage of chilled and frozen food than those used by EHOs to assess compliance during LA food hygiene inspections and that they were repeated at least once every six months. This would mean that most of their vendors would be inspected more frequently by representatives of the platform operator than by LA officers. This platform also required prospective vendors to submit a copy of their CIEH level 2 food safety training certificate in order to demonstrate that they had obtained the standard of food safety knowledge required by the platform operator. None of the low curation platforms made any comparable attempt to use first hand inspections or site visits to assess the quality or compliance of prospective vendors.

Meanwhile, two high curation platforms whose user base was made up largely of foodservice vendors made use of consumer reviews posted to platforms such as Google Reviews and Tripadvisor in deciding whether or not to admit prospective vendors to their marketplace. These platform operators considered 'positive' consumer reviews to be an important source of evidence that an applicant's food was of 'high quality.' A further two such high curation platforms used references from applicants' employers and food industry contacts and analysed their social media presence in evaluating the quality of prospective vendors' food and deciding whether or not to admit them to their marketplace. Two high curation platforms also required prospective vendors to submit copies of their FSMS documentation during the signup process in order to demonstrate their compliance with food law, while one required applicants to provide copies of their FHRS sticker, public liability insurance certificate, fire risk assessment and gas and electrical safety certificates.

It should, however, be noted that not only the type of evidence used by high curation platforms to verify prospective vendors' compliance with their food safety and quality requirements but also the quantity of such information sought varied widely. Notably, interviewees representing both of the marketplaces for pre-packaged food products which participated in this project – both of which were pursuing a high curation strategy – stated explicitly that they asked only that vendors provide them a written undertaking specifying that they would comply both with their legal obligations and with the platform's food safety and quality requirements. No further corroboration of vendors' claims was sought by either of these two marketplaces, and these interviewees noted that the primary purpose of these undertakings was to indemnify the platform against liability for the actions of any vendors later found to be non-compliant. As such, while a high curation strategy does appear to be associated with a greater propensity to seek evidence actively that new vendors are compliant both with food law and with platforms' own private standards, not all high curation platforms can be presumed to make such efforts. Marketplaces for pre-packaged food products in particular appear to be less likely to take active measures to verify that their vendors are compliant, regardless of whether or not they pursue a curated strategy.

Meanwhile, only two low curation platforms (both of them OTO aggregators) reported drawing on any sources of evidence other than a prospective vendor's FHRS rating to assess their degree of compliance with food safety and quality standards. One of these platforms required prospective vendors to provide copies of their establishment's food business registration form, a picture of the premises and a solicitor's letter confirming the FBO's identity in order to confirm both that the applicant represented a registered food business, and that they were indeed that business's owner. The other asked only that applicants claiming to serve halal food supplied a copy of their Halal Monitoring Committee certificate to demonstrate their compliance with halal certification requirements.

4.1.3 Product and allergen information standards

In addition to imposing certain standards of conduct or registration and certification requirements on the individuals or enterprises who aspired to join their marketplace as vendors, most of the platforms which contributed to this project required vendors to provide a particular package of information about each product which they intended to sell within their marketplaces. However, these product information requirements varied widely from platform to platform, and appeared to be determined by different influences from those which informed the standards which vendors themselves were required to meet. More specifically, platforms' product information requirements appeared to be influenced by the types of food

sold within each marketplace and by the circumstances under which consumers were expected to obtain and eat it.

The operators of the two marketplaces for pre-packaged food products which contributed to this project both reported requiring vendors to submit particularly a precise and comprehensive portfolio of information about the composition and ingredients of each product which they intended to list on the platform. Both platforms required vendors to supply a complete and accurate list of ingredients and allergens as part of the process of proposing a new product listing, as well as any claims which they intended to make about the product in question being 'free from' particular ingredients or allergens (e.g. that it was nut free, gluten free or dairy free). Representatives of both platforms were eager to explain that ingredient and allergen lists were mandatory for all products, and that they would not allow any product listing lacking this information to be published to their platforms. Both platforms also allowed vendors to add optional information about a range of other product characteristics to their listings, including listing any ethical or sustainability standards against which their products had been certified (e.g. fair trade or organic certification) and any non-allergy related dietary requirements to which they conformed (e.g. suitable for vegans or free from artificial sweeteners). Both platforms had also implemented search features permitting consumers to find and view only products which were free from particular allergens or conformed to particular ethical and dietary requirements. One of these platforms also provided an optional facility allowing vendors to upload information about the nutritional composition of their products, including their energy content (measured in both calories and kilojoules) and their macronutrient content.

Interviewees representing both of these platforms stressed that all new products proposed for sale within their marketplace were reviewed manually by employees of the platform. During this process the information supplied by the vendor would be checked for consistency, with scrutiny of ingredient and allergen lists forming an important part of this process. These interviewees explained that should any inconsistency be detected between the ingredient list and the allergen and free from claims made by the vendor (for instance if a vendor had described a product containing flour as 'gluten free') then the platform's staff would make further enquiries of the vendor. Under such circumstances, the product would not be approved for sale until the inconsistency had been resolved. However, representatives of both of these platforms also noted that all of the product information described above is provided by their vendors, and that it is the vendor's responsibility to ensure that the information about their products which appears on the platform is accurate. As a result, neither platform asked vendors to supply any independent evidence (for instance certificates of conformity with the Soil Association Organic standard) to corroborate their descriptions of their product. In defence of this position, interviewees representing both platforms argued that because their platforms were small startup enterprises employing relatively few staff it would not be 'scalable' for them to routinely seek independent validation of the claims made by vendors about their products. However, they admitted that this approach did leave them highly reliant on vendors to submit accurate product information and that while they were able to identify inconsistencies between the various pieces of product information provided by their vendors, they would not be able to establish in the absence of such inconsistencies whether or not the information supplied to them was accurate.

The operators of the five digital marketplaces for takeaway meals which took part in this project also relied heavily on their vendors to submit information about the products listed on their platforms. All five platforms required new vendors to provide information about the range and prices of the dishes on their menu either by entering this information directly onto

the platform operator's website or by submitting a paper menu to the platform operator, whose staff would then transcribe the relevant information onto its website. As such, representatives of all of these platforms were at pains to make clear that the product information supplied to consumers via their platform could be only as accurate as the information supplied to them by their vendors. However, in all five cases the information about product composition gathered through these processes was considerably less detailed than the information about the composition of pre-packaged food products gathered by the operators of two marketplaces discussed above. None of the five marketplaces for takeaway meals which contributed to this project required their vendors to provide a comprehensive list of the ingredients used to prepare these meals. The platform operators argued that this practice was a reflection of product labelling norms within the takeaway restaurant industry, arguing that takeaway menus do not typically provide this level of information about the composition of dishes and that many of their vendors were reluctant to provide them with more detailed ingredient information.

It is likely that the different standards of product information provided by these two categories of platforms is in part reflective of the fact that food legislation currently applies less stringent food composition labelling requirements to non-prepackaged foods such as restaurant meals than to pre-packaged food products (Barnett *et al.*, 2017). However, one interviewee representing a marketplace for takeaway meals suggested that their vendors' reluctance to supply more precise information about the composition of their products also reflected the differing attitudes of leading firms within the two sectors towards the provision of product composition and allergen information. This interviewee, who had worked for both a marketplace for pre-packaged food product and an OTO aggregation platform, suggested that one leading marketplace for pre-packaged food products had played an important role in developing product data standards for this sector. Due to its dominant position in the market, they argued, Amazon Marketplace has been able to set detailed standards for compositional, and in some cases nutritional, information about food products sold via its platform. Because the majority of Amazon Marketplace vendors depend upon this platform for a large proportion of their sales it is difficult for them to transfer their custom to rival marketplaces, and thus they have faced a strong commercial incentive to comply with Amazon's product information requirements. This interviewee noted that the widespread adoption of Amazon's product information standards had made it relatively straightforward for Amazon vendors to provide the same information to the operators of other, smaller and more specialist, marketplaces for pre-packaged food products. Amazon's private standard setting initiatives, they felt, had thus improved the quantity and quality of product information available across this sector.

By contrast, this interviewee felt that the leading digital marketplaces for takeaway meals had hitherto shown relatively little interest in convincing their vendors to accept more demanding product information standards, being content instead to capture the relatively vague compositional information already provided on restaurant menus. This interviewee suggested that this difference may reflect the fact that the online takeaway ordering market has until recently been more competitive with several major platforms vying for market share, leaving the operators even of leading marketplaces concerned that vendors might 'defect' to their competitors if they attempted to introduce more stringent requirements. This interviewee noted that this possibility is still an important concern for smaller challenger marketplaces in this sector, and may be deterring them from attempting to gather more precise compositional and allergen information from their vendors.

In the absence of detailed information about the composition of the meals supplied by their vendors, two of the takeaway ordering platforms which contributed to this project did not

routinely supply any information about the allergen content of specific dishes. They instead displayed a generic statement at the bottom of each vendor's menu page stating that any of the dishes listed above might contain any of the 14 regulated food allergens specified within Regulation (EU) 1169/2011 on the provision of food information to consumers, and encouraging consumers with food allergies to contact the vendor directly for further information. The operators of these platforms explained that they did not feel sufficiently confident in the accuracy and completeness of the ingredient and allergen information supplied by their vendors to make more specific claims on their platform about whether or not particular dishes might be suitable for consumers with food allergies. They had therefore adopted a strategy of asking consumers to seek allergen information directly from the vendor from which they were ordering food in order to ensure that legal responsibility for any incidents which might result from the provision of inaccurate allergen information would rest with the restaurant which supplied the meal in question.

Two further takeaway ordering platforms, however, did provide allergen warnings for specific dishes which were identified on menus supplied by their vendors as containing allergens. A representative of one of these platforms noted that their employer also periodically checked this information against that available on their vendors' in-store displays and paper menus by sending sales representatives and mystery shoppers to visit their restaurants. The primary purpose of these visits was to ensure that the prices listed on the platform by vendors were the same as those advertised in-store (and therefore that consumers could not buy food from their vendors more cheaply offline). However, they were also used by this platform operator to identify and correct discrepancies between the restaurant's in-store menu and that displayed online, including discrepancies in allergen warnings. One takeaway ordering platform did not routinely display any allergen information to consumers via its website or app. However, representatives of this platform noted that this was primarily because their marketplace, unlike the other takeaway ordering platforms examined during this project, was not aimed at vendors providing a takeaway delivery service. Instead, customers who ordered food via their marketplace would have to collect it from the restaurant which had prepared it – allowing them to make use of the various means of obtaining allergen information (from menus and counter displays to seeking verbal confirmation from staff) already available on the premises.

In this respect, this final marketplace for takeaway meals employed an approach to product information provision very similar to that of the two marketplace platforms which contributed to this project within which consumers could purchase meals which would be served and consumed as part of a social event (hereafter termed 'dining platforms'). This category of platforms included one home cooking platform used primarily by supper club hosts to sell tickets to meals prepared and served at their home or in rented commercial premises and one platform enabling consumers to book mobile caterers to provide food for their events. Representatives of both platforms reported that they asked vendors to provide indicative lists of the allergens which their dishes were likely to contain (or, as an optional alternative, of food allergies and other dietary requirements for which they were able to cater). However, both observed that it was often difficult for their vendors to provide a precise allergen list in advance of the event organisation process because the booking process often involved extended discussion with event organisers or guests about how they might cater for the specific preferences and dietary requirements of attendees. As a result, the ingredient list and allergen content of dishes supplied by these vendors varied far more widely from event to event than might be expected of, for instance, dishes supplied by a takeaway restaurant with a set menu of dishes each of which is prepared according to a set recipe. However, these interviewees pointed out that this process of customisation often takes place in dialogue with the customers who will be consuming the food – meaning that consumers with

food allergies have far more opportunities to seek information about the composition of their meal than would typically be available during an online takeaway ordering process. Interviewees representing both platforms also pointed out that because the consumers would be present in the location where the meal was prepared, they would also have access to a broader range of visual and verbal allergen warnings than are typically available to consumers placing delivery orders online. Thus, while they admitted that there might sometimes be certain limitations to the written allergen information provided via their marketplace, they also argued that this information was a less important choice cue for consumers than it would be on other categories of digital marketplace platform.

Both of the two marketplaces for surplus food which participated in this project had, however, faced significant challenges in providing allergen information to consumers via their platform. One such platform, which was used primarily by food to go businesses to sell surplus food at reduced prices, was entirely unable to provide allergen information to consumers via its platform. This was because the precise nature of the food provided to the consumer would depend on which dishes remained unsold immediately before closing time. As a result, the nature of the food provided to these consumers varied substantially from day to day and its precise allergen content was likely to be unknown to the vendor at the time when the consumer placed their order. However, an interviewee representing this platform noted, much like the representatives of the two dining platforms above, that consumers who bought surplus food via their marketplace would have to collect their meal from the vendor's establishment in person. As such, they would both have access to in-store menus and displays listing the ingredients of the dishes available to them and have opportunities to query staff directly about the allergen contents of the various foodstuffs. This, they argued, mitigated the risk of food allergen-related incidents substantially.

The second marketplace for surplus food which contributed to this project relied on volunteers to pick up food donations from the food businesses which provided them, and then to redistribute it to other users who would pick up the food from their homes. FBOs would provide information about the ingredients and allergen content of the food that they donated while these volunteers were picking up the donation from their premises – whether through verbal communication or by directing volunteers to read ingredient lists provided on product packaging, menus or notice boards. The volunteers then reproduced this information as part of each advertisement for donated food which they posted to the platform, checking it where necessary against an official ingredient list for each product provided to the platform by the donor business when it first began donating surplus food. This platform has nevertheless struggled to comply with food allergen labelling legislation when redistributing non-prepackaged food (e.g. café sandwiches provided in paper bags or deli meals packed in cardboard takeaway boxes) because this food was packed at the donor business rather than at the point of distribution to the consumer (which, in this case, is the volunteer's home). As such, it is not subject to legal exemptions which allow non-prepackaged food which is prepared and packed on the premises where it is purchased by the consumer to be provided without an ingredient list (as outlined in FSA 2015a). An interviewee representing this platform therefore feared that volunteers distributing donated food to other users of the platform which had not been provided in packaging on which was printed a list of ingredients and allergens could therefore be considered to be in breach of food labelling regulations. At the time of interview the platform operator was taking advice from their PA and insurer on possible means of addressing this issue, but had not yet identified a satisfactory solution.

4.2 Monitoring and enforcing compliance with marketplace standards

4.2.1 Monitoring vendors' compliance with standards

The preceding section highlighted a rich and varied range of attempts by the platform operators which contributed to this project to set standards and requirements for their vendors. This suggests that digital marketplace platforms and the firms which own and operate them are indeed taking on an informal regulatory role in the governance of food commerce and even of food safety. This general impression is reinforced by this project's findings regarding the role of platform operators in monitoring and enforcing compliance with these standards among their vendors, as discussed below.

The vast majority of the digital marketplace platforms which contributed to this project, regardless of the nature of their vendor base and of whether they pursued a high curation or a low curation commercial strategy, made active attempts to ascertain whether their vendors were continuing to comply with their requirements over time. By far the most widely used means of detecting non-compliance across all categories of platform operator was the analysis of consumer complaints, with seven out of the eleven platforms which contributed to this project analysing complaints in order to establish which of their vendors might be failing to comply with their food safety, authenticity and quality standards. Two platforms whose vendor base was made up primarily of foodservice businesses and one home cooking platform also monitored online consumer reviews in order to identify potentially noncompliant vendors, on the basis that vendors with an unusually poor consumer satisfaction rating were more likely to be failing to comply with their platform's quality standards. Some of these platforms did this by analysing consumer reviews posted to their own platform, while others relied on reviews posted to third party rating platforms such as Tripadvisor. One marketplace used by food producers and retailers to sell pre-packaged food products monitored the number of refunds requested by consumers from each of its vendors on the same basis. Interestingly, interviewees representing one online takeaway order aggregation platform indicated during an interview that they would be willing to share consumer complaint data relating to possible food safety non-compliances among their vendors with regulatory authorities including the FSA and LAs.

Meanwhile, interviewees representing two platforms whose vendor bases were made up of foodservice businesses reported that their colleagues regularly checked each vendor's FHRS rating in order to establish whether the businesses trading via their marketplace were still compliant with food law. However, neither of these interviewees was able to specify how frequently vendors' FHRS ratings were analysed. Representatives of a third such platform admitted when asked that they had not yet considered introducing a process for periodic review of their vendors' FHRS ratings, explaining that because their platform was only a year old there had so far been little opportunity for their vendors' scores to change. However, after this topic was raised in the interview they announced their intention to develop a process for regular review of their vendors' FHRS scores as soon as possible.

Perhaps the most aggressive approach to verifying vendors' compliance with a platform's food hygiene standards was taken by the home cooking platform which had developed a bespoke food hygiene inspection process for its' vendors kitchens (as discussed in the preceding section). The founders of this platform did not feel that LAs conducted sufficiently frequent food hygiene inspections at highly compliant food establishments, and were concerned that standards of compliance among their vendors might decline during the interval of up to two years between programmed inspections. This platform had therefore committed to inspecting every vendor's kitchen once every six months.

As discussed in the preceding section, only one of the digital marketplace platforms which contributed to this project sought actively to verify the accuracy of the information supplied to them by vendors about the composition, nutritional value or ethical and sustainability credentials of their products. As such, the online takeaway order aggregator which periodically employed sales representatives and mystery shoppers to check the accuracy of the online menus supplied by its vendors against those provided in store was the only platform within this project's sample which made any active attempt to monitor its vendors' compliance over time with its product information requirements.

4.2.2 Enforcing compliance with standards

All of the platform operators interviewed as part of this project also took an active role in ensuring that their vendors complied with the standards that they had set, and in taking action either to change the behaviour of non-compliant vendors or to remove them from the marketplace. Interviewees representing ten of the eleven platform operators which contributed to this project reported that they and their colleagues routinely investigated complaints made to them by consumers against their vendors, most commonly through contacting the vendor directly to ascertain the underlying cause of the complaint. Indeed, the two dining platforms which contributed to this project noted that their platform held customers' payments on behalf of the vendor until after the meal for which they had paid had been consumed, meaning that they were always made well aware of (and often obliged to investigate and mediate) customer complaints. The sole exception was the platform allowing volunteers and private individuals to exchange surplus food on a non-commercial basis, whose representative reported that they were more likely to receive complaints about volunteers' behaviour from other volunteers (who monitor one another's conduct closely) than from recipients of donated food. This interviewee was keen to stress that these complaints typically involved irregular attendance at surplus food collections, rather than mishandling of donated food. However, they also reported that because they had more prospective volunteers than volunteering opportunities they were able to respond proactively to complaints, and that they routinely excluded any volunteer who was the subject of two or more complaints from their programme of organised food redistribution activities.

It was often less clear in interviews with representatives of other platforms exactly what the process of investigating consumer complaints involved, and whether investigators representing the platform sought simply to mediate between the vendor and the consumer involved or whether they sought to change the vendor's underlying behaviour. However, interviewees representing two high curation platforms – one of them a platform whose vendor base was composed primarily of foodservice businesses, the other a home cooking platform – indicated that if they received repeated complaints alleging serious food safety failings on the part of one of their vendors then staff would visit the vendor in question to inspect their premises.

Representatives of all of the platforms which contributed to this project indicated that they would immediately suspend from their platform any vendor which was found to pose a health risk to consumers or to be non-compliant with food law, and a number of interviewees indicated that such vendors would be barred permanently from their marketplace. Nevertheless, a number of interviewees noted that suspending a vendor from their marketplace was considered a last resort, and that their platform would take such action against non-compliant vendors only if they had failed to respond to less punitive forms of enforcement action. Expanding on this point, an interviewee representing one curated

marketplace used by foodservice businesses suggested that in the absence of an immediate threat to consumer health their platform would prefer to offer potentially problematic vendors – for instance those which received a low FHRS rating – food safety advice and training delivered by a consultancy with whom they had a partnership. Meanwhile, interviewees representing one home cooking platform suggested that a vendor who received a disappointing FHRS rating would initially be offered an opportunity to be ‘mentored’ by a more experienced vendor who would provide them with food safety advice and coaching.

Meanwhile one interviewee, who represented an online takeaway order aggregator, stated that their platform endeavoured to suspend the accounts of any vendors whose restaurants had been issued by their LA with an Emergency Hygiene Prohibition Notice (which states that a business poses an imminent risk to public health and requires the proprietor to close it immediately). However, this interviewee noted that because EHOs have no obligation to inform platform operators of prohibition notices served against their vendors, and may be unaware that businesses subject to enforcement action are trading via a digital marketplace, their platform is often not made aware that its vendors have been found to be non-compliant or prohibited from trading. In such cases the platform operator is in effect forced to rely upon vendors whose restaurant has been closed to report themselves, meaning that it is often difficult for them to suspend or remove legally non-compliant vendors from their platform in a timely fashion. It might be surmised that other platform operators are (regardless of their intentions) likely to encounter similar difficulties in receiving notification of, and in responding effectively to, enforcement action taken by LAs against their vendors.

Interviewees representing five of the six high curation marketplaces which contributed to this project indicated that their platform would also be willing to exclude from its marketplace any vendor which failed to comply with the private standards of conduct set by the platform, even if the vendor in question was compliant with food law. Indeed, these platforms’ agreements with their vendors typically gave platform operators broad discretion to exclude vendors from their marketplace in response to any violation of their terms and conditions. Thus, interviewees representing one of these platforms reported that they had removed from their platform the profiles of several vendors who had attracted large volumes of customer complaints or behaved rudely towards customers, effectively barring these vendors from trading via their marketplace. Another reported operating a formal ‘three strikes and you’re out’ policy, under which any vendor subject to repeated consumer complaints about the quality of its food would be suspended from trading via its marketplace. Meanwhile, representatives of both marketplaces for pre-packaged food products reported that it was their platform’s policy to permanently exclude from their marketplace any vendor who was found to have made false claims about the quality or certification status of their products.

4.3 Initiatives to improve standards of food safety, quality and authenticity

Interviewees representing seven of the eleven platform operators which contributed to this project reported that their platform had introduced some active measures designed to improve either the safety or the quality of the food provided by their vendors. These initiatives broke down broadly into initiatives designed to produce economic incentives for vendors to adhere to a high standard of food hygiene and the provision of advice and training to assist vendors in ensuring that their food was both safe and of high quality.

To this end one of the OTO aggregation platforms had begun displaying the FHRS scores of all of its vendors and had introduced search functions enabling consumers to rank restaurants in their area in order of their food hygiene ratings (rather than, as on other

platforms, in order of their average consumer review score or their proximity). This platform's default search setting was still to rank vendors in terms of their average consumer review score, and the interviewee representing it was uncertain about how widely the option to rank vendors in order of their FHRS rating was used. However, the feature had been introduced partly with the intention of directing sales traffic towards restaurants with a higher standard of food hygiene compliance. In so doing, the operators of this platform had hoped to create both a direct commercial incentive and a competitive pressure among their vendors to achieve higher FHRS ratings and, in so doing, to encourage them to produce safer food. Two other OTO aggregation platforms were considering introducing the capacity to search and rank restaurants in order of their FHRS rating for the same reasons. In a similar vein, one of the platforms which contributed to this project allowed its vendors to pay to secure the highest ranking in its search results for their local area, ensuring that their restaurant would always appear at the top of any search made via its platform. While this system provided little incentive to improve food safety in itself, this paid-for advertising opportunity was open only to vendors whose restaurants boasted both positive consumer reviews and a FHRS rating of 3 or above – and vendors whose FHRS rating declined after a subsequent food hygiene inspection were not permitted to retain their high search ranking. An interviewee noted that securing the highest placement in consumers' search results can be highly lucrative for a vendor, resulting in a significant increase in orders. As a result, vendors who have secured this privileged position are typically highly reluctant to relinquish it and, potentially, to be replaced in the top search ranking by a rival restaurant. This, they claimed, had created a strong incentive for such businesses both to maintain a high FHRS rating and, should it decline following an LA inspection, to improve their standard of food hygiene compliance rapidly and ensure that their restaurant was reinspected in a timely fashion.

It is interesting to note that all three of the platforms which either ranked search results on their platform in order of FHRS ratings or expressed an interest in doing so were OTO aggregators which maintained low curation marketplaces open to all foodservice businesses regardless of their consumer review scores or FHRS rating. This suggests that both marketplaces pursuing high curation strategies and those taking low curation approaches may have the potential to create improved standards of food hygiene compliance among vendors whose businesses fall within the scope of the FHRS scheme, but that each may do so through rather different mechanisms. As discussed above, some of the high curation marketplaces which participated in this project created such an incentive through excluding any vendor which failed to meet a minimum FHRS score from their marketplace, meaning that certain sales channels were effectively closed to foodservice businesses exhibiting a poor standard of compliance with food hygiene legislation. As a result, all vendors eligible to participate in these marketplaces already displayed a high standard of compliance with food hygiene legislation and, in consequence, these platform operators had relatively few opportunities to improve the food safety compliance of their vendors. Indeed, several interviewees who represented low curation marketplaces noted this point explicitly in order to justify their platforms' decisions to remain open to vendors with lower FHRS scores, noting that it was only through doing so that they could assist those businesses which were struggling to comply with food safety legislation. Several of these platforms had demonstrated an interest in using the aggregation, search and ranking capacities of their platforms to improve standards of food safety among their vendors through directing both consumer attention and (potentially) orders towards more highly compliant vendors. In so doing, they hoped to create a commercial incentive for improved standards of food hygiene not by excluding less compliant vendors from their marketplaces, but by directing sales and revenue away from them and towards their more compliant competitors.

Four of the platforms which contributed to this project provided their vendors with some form of advice or training designed to improve standards of food safety within their businesses. Interviewees representing two of these platforms stated that they would seek to deliver targeted advice, support and training to vendors who were struggling to achieve their platform's required standards of food quality and food hygiene. This support might be delivered either through asking a more compliant vendor to 'mentor' them (in the case of one home cooking platform, which also provided vendors with free CIEH level 2 food safety training) or through targeted advice and training delivered by a food safety consultancy with which the platform operator had a relationship (in the case of one OTO aggregator). Meanwhile, a second OTO aggregator offered all of its vendors the opportunity to access CIEH-approved food safety training and food safety advice, provided at a reduced price and on a non-profit basis by a food safety consultancy firm, as part of a wider package of collective purchasing benefits available to its vendors. Meanwhile, one marketplace for pre-packaged food products had organised a workshop on allergen labelling for its vendors, in order to ensure that they understood how to comply with new food labelling requirements following the introduction of Regulation (EU) 1169/2011 on the provision of food information to consumers.

It is also important to note that while only a minority of platform operators had involved themselves directly in providing their vendors with advice and training on food safety, several more reported playing an active role in advising their vendors on other aspects of business management, marketing and regulatory compliance. In particular, both home cooking platforms and both marketplaces for pre-packaged food – along with a digital marketplace for event caterers – reported advising their vendors frequently on matters ranging from how to pay tax to the selection and management of couriers, menu design, and effective techniques for social media marketing. Representatives of four of these marketplaces noted that their platforms were designed specifically to assist aspiring entrepreneurs in establishing and expanding new food businesses, and that they therefore deliberately recruited new and emerging food businesses as vendors for their platform when possible. As such, this project provides evidence that the operators of digital marketplace platforms – and particularly those targeted at relatively new, informal or emerging food businesses – are likely to form an important source of information and advice for some of their vendors on a range of aspects of business management including (but not limited to) food safety.

4.4 Relationship with state regulators

Perhaps reflecting their active engagement in supporting and improving compliance with food regulation among their vendors, the majority of the platform operators which contributed to this project demonstrated a substantial degree of awareness of their own regulatory obligations. Interviewees representing six of the eleven digital marketplace platforms which participated in this project mentioned unprompted that their platform was registered with its LA as a food business. Moreover, two of these platform operators had established Primary Authority (PA) relationships in order to obtain assured advice on their responsibilities under both food standards and food hygiene law which would be valid across multiple LA jurisdictions. An interviewee representing one of these platforms reported having worked closely with their PA, and with a food safety consultancy, to develop a legally compliant FSMS tailored to their platform's activities – an endeavour which had involved substantial cost and effort due to their adoption of an innovative business model focused on the redistribution of surplus food by volunteers. Meanwhile, a representative of one of the home cooking platforms which contributed to this project reported having collaborated closely with

their platform's home LA to develop a proprietary food hygiene inspection process for their vendors, even shadowing an EHO during one of their programmed food hygiene inspections in order to learn what lapses of hygiene to look for.

In spite of these examples of close collaboration between state regulators and operators of digital marketplace platforms, representatives of four platforms expressed some degree of uncertainty or ambivalence when asked whether they considered the platform with which they were affiliated to be a food business. These interviewees preferred to describe their platform as 'food tech businesses', 'technology firms involved in the food industry' or 'an agent for its vendors only'. This is not purely an issue of classification; only enterprises defined as food businesses have a legal responsibility to register with their LA, undergo food hygiene and food standards inspections and maintain an FSMS (FSA 2016). As such, the extent to which digital the operators of marketplaces for food consider themselves bound by an obligation to comply with food regulations is likely to depend to a substantial degree not only on whether they are categorised legally as food businesses but also on whether their operators self-identify as FBOs.

The accounts given by the majority of interviewees of their relationship with food regulators also tended to be mixed in tone. Interviewees representing the two home cooking platforms which contributed to this project reported that LAs had typically been highly engaged with and supportive both of their own efforts to ensure that their digital marketplaces for home cooked food were legally compliant and of their vendors' efforts to establish food businesses in their own homes. However, interviewees representing a further three platform operators reported that they had sought to engage with regulatory bodies in order either to seek advice on the legal responsibilities of marketplace platform operators or to obtain assistance in advising or training their vendors but had struggled to establish engagement with them. In particular, these interviewees reported that they had found it difficult to locate contacts within regulatory agencies (including the FSA) who possessed either an understanding of the business model and legal responsibilities of digital marketplace platforms and that state regulators had been reluctant to engage with their efforts to improve food safety compliance among their vendors. For instance, an interviewee representing one OTO aggregator reported that EHOs in a number of jurisdictions had responded negatively when their platform had begun to fill out food business registration forms on behalf of unregistered takeaway restaurants which applied to join their platform and had begun to submit these forms to LAs. Several interviewees also noted that very little specific information about the legal responsibilities of operators of digital marketplace platforms was currently available in the public domain, meaning that each aspiring platform operators was obliged to develop a bespoke approach to regulatory compliance from scratch. It might be inferred that this absence of the types of sector-specific information and advice on regulatory compliance available to FBOs in other sectors may be contributing to both duplication of effort and to the varying approaches to regulatory compliance observable across the digital food marketplace sector. Indeed, several interviewees expressed an appetite for more formal regulatory guidance on what constitutes an acceptable approach to compliance with food law for platform operators to be developed and made available. The remaining six interviewees had not actively sought contact with food regulators, and appeared to have a relatively neutral relationship with them.

Despite these reservations, interviewees representing several digital marketplace platforms expressed an interest in working more closely with the FSA in future to improve standards of food hygiene among their vendors. The operators of two OTO aggregation platforms were eager to partner more closely with state regulators both to deliver official food safety advice to their vendors and to raise awareness among vendors of food safety training opportunities.

Meanwhile, interviewees representing a third OTO aggregator expressed an interest in sharing customer complaint data received by their platform which indicated possible food safety non-compliances with regulatory authorities in order to improve LAs' capacity to detect and respond to both food hygiene and food standards offences. Interviewees representing this platform also proposed establishing an arrangement for notifying state regulators of the existence of any unregistered food business establishments which sought to join their platform as a vendor. It should, however, be noted that only one of the platforms which participated in this project expressed an interest any such information sharing arrangement and that an interviewee representing a second OTO aggregator explicitly ruled out any possibility that their platform might establish an information sharing relationship with state regulators. This interviewee argued that in order to maintain a positive relationship with the takeaway restaurants which traded via their marketplace, which might be exploited to convince these vendors to improve their food safety practices, it was important to earn and maintain the trust of a group of FBOs whose relationship with food regulators is often difficult. The interviewee felt that this trust was likely to be damaged considerably by any suggestion that their platform might be involved in reporting lapses in compliance among their vendors to the regulatory authorities. As such, they felt that their platform could play a more effective role in improving compliance among its vendors through distributing official food safety advice to takeaway restaurants and by providing food safety training opportunities to its vendors on a voluntary basis.

When asked how food regulators might better engage with platform operators and their vendors in order to support and reinforce food safety compliance within the digital food marketplace sector, relatively few interviewees were willing to suggest any specific initiatives. However, representatives of three OTO aggregators did offer opinions on the ways in which the FHRs scheme should respond to the emergence of digital marketplaces for food. One of these interviewees offered strong support for the introduction of mandatory online display of FHRs ratings (both on food businesses' own websites and on digital marketplace platforms). They also suggested that a new system should be developed by the FSA in consultation with LAs to ensure that platform operators are informed when one of their vendors is prohibited by an LA from trading. An interviewee representing a second OTO aggregator, meanwhile, suggested that the scope of the FHRs scheme should be expanded to ensure that emerging categories of food vendors, such as so-called 'dark kitchens' and 'dark stores (takeaway restaurants and retail distribution centres which serve online customer orders only and do not have traditional storefronts), are subject to inspection and rating. This interviewee noted that in the absence of such an expansion of the FHRs scheme it would be difficult for the operators of the digital marketplaces within which such businesses trade to meet any requirement to display their vendors' FHRs ratings which might be placed upon them. They also expressed a fear that if the emergence of such unconventional online food vendors was not addressed then the reputation and use of the FHRs scheme among both consumers and food businesses might be undermined. An interviewee representing a third OTO aggregator, meanwhile, asked the FSA redouble its efforts to ensure that LAs conducted initial food hygiene inspections at new foodservice businesses in a timely fashion, and that it ensure that all new businesses continued to be inspected and to receive FHRs ratings as the FHRs system was reformed in the future. This interviewee explained that their platform's signup team examined prospective vendors' FHRs ratings as part of the process of deciding whether or not to permit them to trade via their platform's marketplace, and that the growing number of uninspected (and therefore unrated) new businesses within some LA jurisdictions was already impeding their ability to identify and exclude non-compliant businesses. As such, they did not wish to see the FSA

take any action which might increase the proportion of new food businesses which do not possess an FHRs rating.

These suggestions both reinforce the observations made above about the importance of the FHRs scheme in its current configuration in enabling digital marketplace platforms whose vendor base is composed of foodservice businesses to establish whether prospective vendors are legally compliant and to decide which applicants should be permitted to trade within their marketplace. They also suggest that the FHRs scheme has become an important element of the regulatory and commercial infrastructure which permits such marketplaces to function smoothly, and that it will be important for the FSA to take this role into consideration when assessing the possible impacts of future changes to the FHRs system.

5. Discussion of findings and recommendations

This section will synthesise key findings from across the various aspects of digital marketplace platforms' food safety and regulatory compliance measures discussed in the previous section in order to address in greater depth six regulatory challenges posed by the trading of food within digital marketplaces. These challenges are:

1. Defining the legal status and responsibilities of digital marketplace platform operators;
2. Delivering regulation to digital marketplace vendors;
3. Preventing non-compliant vendors from selling food online;
4. Digital marketplace platforms' use of FHRs ratings and its implications for mandatory online FHRs rating display;
5. Regulating informal and domestic food sellers;
6. Provision of food allergen information to consumers via digital marketplace platforms.

Each of these challenges will be discussed in turn, after which a set of concise recommendations will be offered outlining ways in which the FSA might engage with platform operators and with other stakeholders to address the issues identified, and to strengthen food safety standards within the digital food marketplace sector.

5.1 Legal status and responsibilities of digital marketplace platform operators

As discussed in section 2, digital marketplace platforms remain a relatively novel (if increasingly significant) element of the UK's food sector, and they differ in several respects from the categories of food businesses which are familiar to regulators. Perhaps most significantly from a legal standpoint, these platforms never take legal ownership of (and most never physically handle) the food which is transacted via their marketplaces. Their role therefore raises a number of legal and regulatory questions. Should digital marketplace platforms be classified as food businesses subject to the UK's delivery and enforcement regimes for food regulation? Should they be required to undergo LA food hygiene inspections, or to receive FHRs ratings? To what extent do they bear a legal responsibility to ensure that the vendors who trade via their marketplaces are compliant with food law, or that the food sold by such vendors is safe?

Internal communications suggest that a consensus is emerging within the FSA that platform operators should be classified as food businesses because they participate in both an organised and a continuous fashion in the distribution of food to consumers, and therefore that they have a responsibility to register with and to undergo inspection by their LAs. However, this research has produced evidence that at least some firms which operate digital marketplaces for food remain uncertain about the terms in which their enterprises should be classified, and about their position and responsibilities within the UK's current regime of food regulation. While six of the platform operators which contributed to this project have registered with their LAs as food businesses, and two had established PA relationships, other interviewees appeared to be uncertain about whether or not the platforms which they represented should be considered food businesses. As discussed in section 4.4, several interviewees preferred to describe the platforms with which they were affiliated as 'food tech businesses', 'technology firms involved in the food industry' or 'an agent for vendors only'.

Given that only undertakings classified officially as food businesses are subject to legally enforceable obligations to comply with food safety and food standards legislation, differing understandings of the legal and regulatory status of the operators of digital marketplace platforms may be related to differing approaches to food safety and food standards controls within this sector. More specifically, it is possible that operators of digital marketplace platforms which do not classify themselves as food businesses may not consider it necessary to register with their LA or to maintain systems of food safety and food standards controls to ensure that food transacted via their platforms is safe and what it says it is. However, any such tendency may also be tempered by factors such as the platform's commercial strategy – in particular whether or not it aims to offer a curated marketplace which guarantees that the goods and vendors made available to its consumers will meet a certain standard of quality (as discussed in section 4.1).

It is possible that this diversity of opinions about the legal status of firms which operate digital marketplaces for food persists at least in part because no official information has yet been made available in the public domain about the specific regulatory responsibilities of firms which operate digital marketplaces for food. Neither the FSA nor its regulatory partners have yet published any sector-specific official guidance or resources for either platform operators or the LA officers responsible for enforcing food regulation regarding the application of food law to the digital marketplace sector. The absence of such guidance is reflected in a number of interviewees' observations that they had been obliged to develop a bespoke approach to regulatory compliance from scratch as part of the process of establishing their platform. This suggests that the absence of official guidance may be contributing to variations in the food safety, quality and authenticity controls implemented by different platforms. It should be noted that several interviewees expressed a desire for official information to be made available specifying what measures platform operators would need to take in order to ensure that their marketplaces are compliant with food law. Moreover, some interviewees also reported having struggled to obtain regulatory advice appropriate to their enterprises both from the FSA and from LAs, and requested that a dedicated point of contact be made available from which platform operators may obtain advice on their regulatory responsibilities.

5.1.1 Recommendation 1

This report therefore notes that there is an appetite among industry actors for sector-specific official guidance to be made available clarifying whether the operators of digital marketplace platforms should be classified as food businesses and what food safety and food standards controls they need to implement in order to comply with food law. This report therefore encourages that the FSA to publish a formal guidance document clarifying whether operators of digital marketplace platforms should be categorised as food businesses, and outlining what food safety and authenticity controls they would need to implement in order to comply with food law. This document might be aimed primarily at a readership of entrepreneurs and newly established businesses seeking to develop online marketplace platforms via which food can be traded. However, it might also find an audience among LA officers seeking guidance on whether and how they should deliver and enforce food regulation in relation to any digital marketplaces headquartered within their jurisdiction. Such a document might help both to raise awareness among operators of digital marketplace platforms of their legal obligations and to create greater consistency in the types of food safety and authenticity controls in operation across the digital marketplace platform sector. Such a document might also assist platform operators in establishing their legal

responsibilities by directing readers towards a designated point of contact from which they may obtain further advice on the application of food law to digital marketplace platforms and on their regulatory responsibilities, and might be modelled on the FSA's existing series of sector-specific Food Industry Guides.

5.2 Delivering regulation to digital marketplace vendors

While this project did not set out to assess either the number of food vendors trading via digital marketplace platforms or the scale of these vendors' operations, a number of interviewees reported that their platform's vendor base was composed primarily of small and micro businesses. Moreover, four interviewees reported that their platforms actively recruited newly established food businesses as vendors, and that nurturing new and emerging food businesses was an important part of their platform's mission and purpose. In addition, interviewees representing seven platform operators which contributed to this project – the majority of the sample – reported providing their vendors with advice on how to deal with a range of regulatory and commercial challenges, with four interviewees stating explicitly that their platforms provided food safety advice or training to their vendors. This was true of platforms targeting a variety of vendor types, ranging from food producers selling pre-packaged food to takeaway restaurants and supper club hosts.

These findings suggest that the operators of digital marketplace platforms not only count a potentially large number of small and micro-scale food businesses among their vendors, but also that at least some such platforms are likely to cultivate relationships with such businesses soon after – or perhaps even before – they commence trading. Moreover, this project produced evidence that such platforms are often heavily involved in providing advice and information to their vendors – and particularly to vendors new to the food industry – on a range of commercial and regulatory issues ranging from food safety compliance to marketing and taxation arrangements. As such, platform operators would appear to provide an important source of advice for categories of food businesses, such as sellers of pre-packaged food products trading exclusively online (see Brice, 2018), with which food regulators have hitherto struggled to engage and to which they often find it difficult to deliver food regulation. Moreover, this report's findings suggest that at least some marketplace platforms are likely to establish relationships with such businesses early in their development. As such, platform operators would appear to be well placed to communicate official information and guidance designed both to make new FBOs aware of their responsibilities under food law and to help them to understand how best to fulfil these responsibilities as proposed under the FSA's Regulating Our Future (ROF) programme (FSA 2017c).

While platform operators show promise as a channel for communicating regulatory guidance to newly established food businesses, it is important to remember that not all new or small food businesses trade via digital marketplace platforms. As such, information disseminated via digital marketplaces will not necessarily reach all such food businesses. Moreover, it would be important to remember in exploring such arrangements that each digital marketplace platform would be able to reach only a certain type and proportion of FBOs. Even within the OTO aggregation sector, in which it is estimated over 90% of online takeaway meal orders are now processed via a single marketplace platform, different platforms have somewhat different vendor bases. Notably, while the market leading platform in this sector focuses on existing takeaway restaurants, two takeaway ordering and delivery platforms have cultivated relationships with a growing number of restaurants which do not

have their own takeaway delivery capabilities (CMA 2017). As such, it seems improbable that the FSA will be able to communicate information or advice to all small businesses operating in a given sector via any single platform. An effective communications strategy is therefore likely to require both engagement with a range of marketplace platforms and use of a range of other communications channels. Engagement with multiple platforms within each sector would also mitigate the risk that access to official regulatory advice might be captured as a private benefit accruing to vendors associated with a particular platform – a situation which might hypothetically bring the FSA’s commercial neutrality into question.

5.2.1 Recommendation 2

This report therefore encourages the FSA to develop formal liaison arrangements incorporating the operators of a range of digital marketplace platforms. Such arrangements might potentially include a working group or expert committee focused on developing strategies for cooperation with platform operators to improve food safety among their vendors. Given at least some digital marketplace platforms’ ability to cultivate relationships with large groups of small businesses early in their development, closer engagement with platform operators appears likely to yield valuable opportunities to disseminate compliance information and advice to groups of food businesses with which food regulators have hitherto struggled to engage. It might thus open up opportunities to ensure that new food businesses have access to official guidance on their regulatory responsibilities early in their development, as envisioned by the FSA’s ROF programme (FSA 2017c). This report also notes that in any such initiative it will be important for the FSA to ensure that it engages with multiple platform operators within each sector. Such diversified engagement will be necessary both to maximise the number of vendors to which this information is made available and to ensure that guidance is not inadvertently distributed on a preferential basis to vendors associated with a particular platform.

5.3 Preventing non-compliant vendors from selling food online

All of the platform operators which contributed to this project indicated that they would suspend from their platform any vendor found by regulatory agencies to pose a health risk to consumers or to be noncompliant with food law. Thus all platforms reported that, for instance, any vendor issued by their LA with an Emergency Hygiene Prohibition Notice (EHPN) requiring the proprietor to close a business which posed an imminent risk to public health would immediately be prohibited from selling food via their marketplace. However, it was often unclear by what means a platform operator would learn that an LA had prohibited one of its vendors from trading, and thus that it needed to take action against the vendor in question. Only two of the eleven platform operators which contributed to this project monitored the FHRS scores of their vendors on a regular basis (although a third aims to begin doing so in the near future). Indeed, it appears likely that vendors trading actively on some of the platforms which contributed to this project may well fall beyond the current scope of the FHRS scheme. Moreover, one interviewee representing an OTO aggregator whose entire vendor base does fall within the scope of the FHRS scheme noted that their platform was not routinely informed by LA officers of prohibition notices served against their vendors, possibly because these officers were unaware that the business in question were trading via a digital marketplace.

This interviewee noted that it was, as a result, difficult for platform operators to suspend or remove legally non-compliant vendors from their marketplaces in a timely fashion. Indeed, in the absence of notification from LAs of regulatory sanctions enforced against their vendors, platform operators currently appear to be forced to rely upon vendors whose restaurant has been closed to report themselves. These barriers to communication between LA officers and platform operators therefore appear to raise the prospect that businesses subject to closures on legal and public health grounds might in some circumstances be able to continue trading online with little risk of detection by their platform operator. If this is so then there is a danger that the effectiveness and deterrent potential of regulatory sanctions – and particularly that of EHPNs, one of the most economically significant civil sanctions available to LA officers – might in some circumstances be compromised.

5.3.1 Recommendation 3

This report therefore encourages the FSA to explore arrangements through which platform operators might be notified more consistently of enforcement action taken by LA officers which might lead to the temporary closure of one of their vendors, in order that the business in question could be prohibited effectively from selling food online. This might be achieved in at least two different ways:

1. One interviewee suggested that this outcome could be achieved through requiring FBOs to record via the digital registration service for food businesses proposed by FSA under its ROF programme (FSA 2017c), which is due to be introduced in early 2019, the names of any digital marketplace platforms via which they were trading. LA officers would then be able to check which digital marketplace platforms were used by any businesses against which they took enforcement action and to notify the appropriate platform operators that the business should be prohibited temporarily from selling food via their marketplace. However, such a system would nevertheless rely on FBOs to submit accurate information about their online sales strategies to the FSA's digital registration service, and would also require all platform operators to maintain a dedicated contact point for regulatory enquiries.
2. An alternative option would be for the FSA to create a national alerts service via which LAs could publicise food business closures – modelled, for instance, on the existing Food Alerts RSS feed used by the FSA to distribute notifications of food incidents and recalls – to which platform operators would be able to subscribe.

This report does not seek to assess the desirability or feasibility of either of these specific options. It instead encourages the FSA to assess whether either of these options, or an alternative solution, would be appropriate and practical and to open a dialogue with platform operators to discuss how such a system might be implemented.

5.4 Use of FHRS ratings and implications for mandatory online rating display

This research has highlighted the important role which the FHRS scheme plays in enabling operators of digital marketplace platforms whose vendor base is made up of foodservice businesses, including major OTO aggregators, both to assess and to monitor standards of food hygiene among their vendors. As discussed in section 4.1.1, five of the six marketplace platforms which contributed to this project whose vendor base was made up entirely of foodservice businesses, and both of the platforms enabling individuals to sell home cooked

food online, required all of their vendors to produce evidence that they had received an FHRs rating. Meanwhile, four of the platform operators which contributed to this project used FHRs ratings to assess which prospective vendors should be permitted to join their marketplace, either excluding vendors whose FHRs rating was below a certain threshold or showing a preference towards vendors with a higher rating. Moreover, two platform operators regularly checked each vendor's FHRs rating in order to establish whether the businesses trading via their marketplace were still compliant with food law.

The FHRs scheme is thus used widely among platform operators whose vendors are eligible to receive FHRs ratings to establish whether prospective vendors are compliant with food law, to distinguish vendors considered suitable to trade within curated marketplaces from unsuitable applicants, and to monitor changes in vendors' standards of food hygiene. However, one group of digital marketplaces for food presented a notable exception to this pattern of FHRs rating use. Neither of the marketplaces for pre-packaged food products which contributed to this project required their vendors to have an FHRs rating, and indeed neither felt that their vendors were particularly likely to have been awarded an FHRs rating. This limited engagement with the FHRs system appeared to be linked to the fact that the majority of vendors trading within these two marketplaces were small- and medium-scale food producers and manufacturers. Food producers and manufacturers are not routinely given FHRs ratings by their LAs on the assumption that, unlike retailers and foodservice businesses, they do not supply food directly to consumers (FSA 2017d). It is therefore possible that these platform operators are acting based on an expectation that their vendors will fall outside the scope of the FHRs scheme and will not, therefore, possess a food hygiene rating for them to check.

However, the FHRs Brand Standard (FSA 2017d) does require LAs to issue FHRs ratings to all food businesses which sell food to consumers online, on the grounds that this activity constitutes the direct supply of food to consumers. It remains unclear at present whether the operators of the digital marketplaces for pre-packaged food products which contributed to the project remain unaware of this requirement for their vendors to obtain an FHRs rating, or whether the LA officers responsible are unaware that the food producers and manufacturers which fall under their jurisdiction are selling food online. However, this project has provided initial evidence either that FHRs ratings are not being awarded to all food manufacturers and producers which are eligible to receive them or that, if awarded, these ratings are not utilised widely at present by digital marketplaces for pre-packaged food products to assess the food safety standards or regulatory compliance of their vendors. Instead, the operators of such marketplace platforms typically appear to require that prospective vendors provide them with an undertaking that they are legally compliant. This requirement provides evidence that the platform operator has exercised due diligence with respect to its vendors, indemnifying them against legal liability for the actions of non-compliant sellers, but in the absence of corroborating evidence of compliance does not appear assist them in identifying and excluding non-compliant vendors. Moreover, a number of the LA officers interviewed by Brice (2018) observed that food businesses selling pre-packaged food exclusively through online channels are disproportionately likely both to be trading unregistered and to be non-compliant with food law. This suggests that the implementation of more stringent controls over access to digital marketplaces for pre-packaged food products might be required to improve food hygiene and food standards compliance among this group of businesses. The experience of interviewees representing platforms whose vendor base is composed of foodservice businesses suggests that requiring vendors to possess an FHRs rating can provide platform operators with an economical means of ensuring that their vendors are registered as food businesses, and perhaps of identifying non-compliant vendors (although its effectiveness in doing so could be increased as outlined in recommendation 3).

It is possible that the imposition of such a requirement could drive unregistered marketplace vendors to register with their LAs, or create a demand for re-inspection of some low-risk premises currently subject to an Alternative Enforcement Strategy (AES) in order to produce a food hygiene rating. In so doing, it might create at least a temporary increase in the cost of delivering regulation and the inspection burden faced by LA officers. However, these effects would need to be balanced against the risk that the existence of a significant pool of businesses which sell food to consumers online but do not possess an FHRs rating could complicate any attempt to introduce a mandatory requirement for food businesses to display their FHRs ratings online. The FSA is committed to introducing legislation making the display of food businesses' FHRs ratings mandatory at the point of sale in England, building on similar legislation which has already been introduced in Northern Ireland (FSA 2017a). In light of the increasing proportion of sales and orders which are transacted via online channels within certain sectors of the food industry, for instance the takeaway restaurant sector (CMA 2017), it seems likely that in order to be effective such legislation will need to include a requirement that ratings be displayed on applications and websites via which consumers select and purchase food (FSA 2017b). However, digital marketplace platforms whose vendors do not possess FHRs ratings will struggle to comply with such a requirement (should it be introduced). This suggests that the introduction of mandatory display requirements might leave users of such marketplaces with limited access to vendors' FHRs ratings or result in the expulsion of a large number of unrated vendors. This might be expected either to leave users of such marketplaces with more limited access to information about the food hygiene standards of the firms which supply their food than is available to consumers shopping via other channels, or to cause disruption to the operations both of platform operators and of digital marketplace vendors trading in pre-packaged food.

5.4.1 Recommendation 4

This project has found evidence either that a significant proportion of the vendors currently selling pre-packaged food via digital marketplace platforms have not been awarded an FHRs rating or that the operators of marketplaces for pre-packaged food believe incorrectly that a significant proportion of their vendors fall beyond the scope of the FHRs scheme. It is possible that the limited use of FHRs ratings among this group of digital marketplace platforms may be contributing to the high rates of non-compliance among online sellers of pre-packaged food observed by LA officers interviewed by Brice (2018). It is also possible that the existence of a significant group of unrated businesses selling food via digital marketplaces might complicate efforts to implement legislation making it mandatory for food businesses to display FHRs ratings at the point of sale, a policy initiative to which the FSA is committed (FSA 2017a).

This report therefore suggests that the FSA's policy on mandatory FHRs display be informed by further research into both the proportion of food producers and manufacturers which sell food online and the proportion of these businesses which have been awarded an FHRs rating by their LAs. It also encourages the FSA to undertake a programme of engagement with operators of digital marketplaces for pre-packaged food in order to raise awareness among this group of platform operators that food producers and manufacturers selling food online are required to obtain an FHRs rating from their LA. Such a programme of engagement might also productively aim to explore whether it would be possible for such platform operators to integrate the review of FHRs ratings into their vendor recruitment and compliance monitoring processes in order to identify unregistered and non-compliant vendors and to limit their ability to trade online.

5.5 Regulating informal and domestic food sellers

The majority of the digital marketplaces for food which contributed to this project appear to accept only vendors which conform to established regulatory definitions of what constitutes a food business as specified in Regulations (EC) 178/2002 and (EC) 852/2004, and which are therefore subject to legal requirements to register with and undergo inspections delivered by their LA. However, this project also identified a small cluster of digital marketplace platforms whose vendor base is made up predominantly of sellers who may not supply food to consumers sufficiently regularly or on a sufficiently organised basis to be classified as a food business under extant regulatory definitions (as detailed in FSA 2016; see also Prost, 2018). This group included two marketplace platforms designed to enable private individuals to sell food cooked in their domestic kitchens to consumers, either through selling tickets to 'supper club' events held in their homes or in rented spaces or through preparing takeaway meals for delivery to consumers. A third platform was identified which enabled private individuals to exchange surplus food with one another, and to engage in redistribution of surplus food supplied by food businesses on a voluntary basis.

All three of these platforms had taken steps to resolve these ambiguities about the legal status of their vendors. The platform allowing individuals and volunteers to redistribute surplus food had developed an FSMS making it clear that volunteer food redistributors were to be classified legally as employees under the platform operator's control, rather than as food businesses in their own right. Meanwhile, both of the home cooking platforms which contributed to this project had adopted a policy of requiring all vendors who sold food via their marketplaces more than once to register with their LAs as food businesses and to obtain an FHRS rating (as discussed in section 4.1.1). This requirement was applied regardless of the frequency with which these vendors traded or the number of consumers to whom they sold food. However, a recent FSA research project has found evidence that at least one other home cooking platform which is currently operating in the UK does not require its vendors to be registered as food businesses, meaning that individual vendors are left to interpret whether or not they are required to register with their LA (Prost, 2019). Prost's research found both that only a small minority of home cooks chose to register as a food business in the absence of a strong commercial incentive to do so, and that a substantial proportion of such vendors were unaware of the legal requirement for food businesses to register with their LAs. This included a small minority of supper club hosts who appeared to be selling food frequently enough and to a sufficiently large number of consumers that they would qualify as food businesses but had not yet registered with their LAs.

Prost's (2018) findings suggest that it may under some circumstances be challenging for home cooks to establish whether or not their operations satisfy the current regulatory definition of a food business. Regulation (EC) 852/2004 (recital 9) states that an undertaking needs to show both "a certain continuity of activities and a certain degree of organisation" in order to be considered a food business. Current FSA guidance (FSA 2016) states that any enterprise which provides food to consumers on average at least once per month can be considered to demonstrate the requisite continuity of activities. However, assessing the degree of organisation exhibited by an enterprise requires a more complex judgement taking into account the degree of risk posed by its food handling operations, the complexity of the food safety controls required to mitigate these risks, the number of consumers to whom it supplies food and the potential vulnerability of these consumers. Home cooks who sell food only on a part time basis, and prepare meals and organise events at irregular or varying intervals, may satisfy these criteria only intermittently. Moreover, Prost's (2018) findings suggest that those 'home cooking' enterprises which trade more frequently are likely to move

between various rented commercial spaces. This appears to create further confusion among these vendors, some of whom currently believe that if the establishment in which they cook has undergone food hygiene inspections as part of its normal operations (e.g. as a café during the day) then their supper clubs does not require registration as a separate food business.

At present home cooks and other unconventional categories of food vendors trading online do not have access to any dedicated official guidance to assist them in navigating these complicated judgements about whether or not they should be classified as food businesses. It is therefore possible that the preparation of sector-specific guidance – and its dissemination through the platforms via which such vendors trade – might increase registration rates among such vendors, as might the implementation by a wider range of home cooking platforms of requirements for cooks to register and to obtain a food hygiene rating. However, it should be noted that some of the supper club hosts interviewed by Prost (2019) were critical of current requirements for all registered food businesses to undergo programmed LA food hygiene inspections. This was particularly the case among those hosts who prepared meals in rented commercial spaces, who argued that inspecting a domestic kitchen in which they did not prepare food for sale was not a particularly effective means of assessing their supper club's standards of food hygiene. It is also possible, then, that a reluctance to submit to the LA inspection process may be deterring some home cooks from registering as food businesses.

If this is so then there may be some justification for investigating whether or not it might be more appropriate to develop alternative approaches to assessing compliance with food law within such enterprises. Notably, building on Prost's (2018) observation that supper club 'businesses' in particular are often centred more on a particular person than on a particular establishment, it could be argued that it might be more effective to assess the food safety competence of the FBO than to inspect the premises in which their enterprise is based. This might, for instance, hypothetically be achieved through requiring home cooks to obtain an approved food safety qualification which could be used by platform operators in place of an FHRS rating to validate their fitness to sell food to consumers online. Such a scheme could potentially be devolved to a trade association or private sector provider if an industry standard for vendor food safety competence could be agreed. However, it is important to note that official recognition of any such future scheme would require the passage of primary legislation exempting businesses subject to it from LA inspection programmes. As such, a mandatory assurance scheme would not be entirely within the FSA's power to deliver, although a voluntary system of private sector requirements for food safety qualifications could potentially be established as a proof of concept for such a scheme.

5.5.1 Recommendation 5

This project found evidence that a small but significant cluster of digital marketplace platforms exists whose vendor base is composed principally of individuals and businesses whose activities may not, or may only intermittently, conform to the regulatory definition of a food business (a phenomenon explored further in Prost 2018). These vendors, and notably individuals who sell food cooked either in their homes or in rented spaces via the internet, often appear to be uncertain about whether or not they should register with their LAs as food businesses and there is currently a lack of sector-specific guidance which might assist them in making this judgement. As noted by Prost, some such individuals prepare food in establishments other than their home and therefore view the existing LA food hygiene

inspection process as being both burdensome and inappropriate to the nature of their enterprises.

This project therefore encourages the FSA to prepare official guidance targeted specifically at these ‘home cooks’ in order to help them to assess whether or not they are required to register with their LAs as food businesses. Such guidance might take the form of an FAQ document, or be implemented in the form of a self-assessment process or decision tree designed to assist users of the FSA’s proposed single national food business registration system (as detailed in FSA 2017c) in determining whether or not their undertaking qualifies as a food business. The latter format could allow users of the single national food business registration to answer a series of questions, the answers to which could be used to decide automatically whether or not they should register as a food business.

The FSA may also wish to begin to engage with operators of home cooking platforms in order to explore whether it would be feasible to establish shared voluntary industry standards for food safety which could be employed to assure the food hygiene competencies of their vendors. One possible model for investigation might be the introduction of requirements for individuals to possess certain training or qualifications in order to trade online as home cooks. Such a system of voluntary industry standards – which could be administered by trade associations or private sector providers – might provide a relatively ‘light touch’ means of ensuring that home cooking enterprises meet minimum standards of food safety while supporting the FSA’s stated (2017c: 10) aspiration to encourage the uptake of private sector assurance schemes for food safety and standards.

While a shared system of voluntary private sector standards would not in itself satisfy some such vendors’ interest in establishing an alternative to LA inspections, it might in principle serve as a proof of concept for future recognition of possession of such qualifications within LA inspection programmes. Such recognition would appear to promise the additional benefit of minimising the burden to state regulators of regulating this small and seemingly relatively low risk sector of online food commerce. It would also accord with the FSA’s ambition of harnessing private sector assurance arrangements to ensure that “responsible, compliant businesses will face a lower burden from regulation, and free up local authority resources to target the businesses that present the greatest (residual) risk to public health” (FSA 2017c: 9). However, it is important to note that the introduction of such a system of recognition for private sector assurance arrangements would require amendments to primary legislation and would therefore not be entirely within the FSA’s power to deliver.

5.6 Provision of food allergen information to consumers via digital marketplace platforms

This project found that the quantity and type of information made available to consumers about the composition and allergen content of food sold via digital marketplace platforms varied widely depending on the type of food sold within each marketplace and on the circumstances under which consumers were expected to obtain and eat this food. Both of the marketplaces for pre-packaged food products which contributed to this project required vendors to supply a complete and accurate list of ingredients and allergens as part of the process of listing a new product on their platform. These platforms’ vendors were also required to record explicitly any claims which they intended to make about the product in question being ‘free from’ particular ingredients or allergens, and employees of the platform operator reviewed this information manually to ensure that it was consistent with the ingredient list. The information about product composition gathered by operators of digital

marketplaces for takeaway meals from their vendors was considerably less detailed. None of the five marketplaces for takeaway meals which contributed to this project required their vendors to provide a comprehensive list of the ingredients used to prepare their dishes, and two of these platforms did not routinely supply any information to consumers about the allergen content of specific dishes. These platforms instead displayed a generic statement at the bottom of each vendor's menu page stating that their dishes might contain any of the 14 regulated food allergens specified within Regulation (EU) 1169/2011 on the provision of food information to consumers, and encouraging consumers with food allergies and intolerances to contact the vendor directly for further information. Two further takeaway ordering platforms did, however, provide allergen warnings for specific dishes which were identified on menus supplied by their vendors as containing allergens.

While such measures appear sufficient to ensure that these online takeaway ordering platforms are compliant with the Food Information Regulations (FIR) 2014, questions might be raised about the extent to which generic instructions to contact the restaurant to obtain information about the allergen content of specific meals are appropriate to consumer needs in a takeaway ordering context. Recent FSA-supported research exploring the practices and preferences of consumers with food allergies and intolerances when eating out has found that written menus (including online menus) are both an important and a preferred source of allergen information for such consumers when eating at restaurants and when ordering takeaway meals. Moreover the same research found that blanket instructions to 'ask staff for further information' about the composition of meals may be seen as "fulfilling the letter of the law but not its spirit" (Barnett *et al.*, 2017: 4), and thus create a perception among such consumers that a restaurant is uninterested in or incapable of managing allergens effectively. In so doing, this practice may potentially deter consumers with food allergies or intolerances from eating out at or ordering takeaway food from the restaurant in question – and potentially from doing so at all. This suggests that the limited provision of allergen information on OTO aggregation platforms may constrain the ability of consumers with food allergies and intolerances both to utilise and to exercise free consumer choice within online marketplaces for takeaway food. Indeed, findings by the recent CMA investigation into the merger between Just Eat and Hungryhouse that in 2016 approximately 50% of takeaway meals in the UK were ordered via a digital marketplace platform, and that such platforms' share of takeaway orders was expected to grow further, suggest that this constraint may be growing in significance (CMA 2017).

Both of the dining platforms which participated in this project also either provided only indicative allergen information to consumers or provided no ingredient or allergen information via their platforms, as did one marketplace for surplus food. However, interviewees representing these platforms argued that this practice was relatively unproblematic due to the manner in which their vendors supplied food to consumers. In all four cases, consumers obtained food ordered via these platforms either by attending an event at which the vendor prepared a meal in their immediate vicinity, or by collecting their food from a food business establishment operated by the vendor. Interviewees representing all three platforms argued that consumers would therefore be present in the location where the meal was prepared, and would have access to a broad range of visual and verbal allergen warnings which are not typically available to consumers placing delivery orders. This argument is consonant with Barnett *et al.*'s (2017) findings that consumers with food allergies and intolerances seek out a range of opportunities to obtain information about the allergen content of foodstuffs when eating out, including written information provided in advance of a meal, signage and menus provided at the establishment, and verbal confirmation from staff.

The findings of this project provide some support for the view that it is more straightforward for some categories of platforms to provide consumers with detailed information about the composition and allergen content at the point of ordering than it is for others. It is, for instance, difficult to imagine how a platform from which consumers can place advance orders for surplus meals, whose contents will depend on which dishes remain unsold at the end of a vendor's trading day, would be able to provide specific allergen information at the point of selection and payment. Interestingly, however, one interviewee suggested that the variation described above in the provision of ingredient and allergen information to consumers may not be solely a reflection of such operational factors or of differences in the food labelling requirements applied to pre-packaged and non-prepackaged food products. This interviewee, who represented an OTO aggregation platform, suggested that the widespread provision of detailed compositional, and in some cases nutritional, information within digital marketplaces for pre-packaged food products had been possible due to the relatively demanding product data standards introduced by Amazon Marketplace. This interviewee claimed that Amazon Marketplace, having established a dominant position among marketplaces for pre-packaged food (and many other products), had been able to impose these standards on its vendors with relatively little concern that this would prompt them to move their custom to a rival marketplace. Moreover, this interviewee argued, widespread adoption of Amazon's product information standards had made it relatively straightforward for Amazon vendors to provide the same information to the operators of other, smaller and more specialist, marketplaces for pre-packaged food products.

This interviewee argued that comparable cross-platform product information standards might be lacking in the OTO aggregation sector because the online takeaway ordering market had until recently been more competitive, with several major platforms vying to increase the proportion of takeaway restaurants trading via their marketplace. This, they suggested, might have left the operators even of leading marketplaces concerned that vendors might 'defect' to their competitors if they attempted to introduce more stringent requirements. One way in which the FSA might facilitate the provision of more sophisticated allergen to consumers purchasing food via OTO aggregation marketplaces might, then, be to support the development of common, cross-platform ingredient and allergen data standards for the takeaway sector.

The development of such data standards might be expected to produce several benefits. First, in assisting OTO aggregators in providing more precise ingredient and allergen information to consumers, it might be expected to expand the effective range of takeaway meal choices available to consumers with food allergies and intolerances. It might also be expected to help such consumers to manage the risk of experiencing an adverse reaction to a takeaway meal more effectively. In enabling vendors to provide the same package of product information to each platform operator at the point of signup, the existence of such data standards might also both improve the consistency of allergen information across different platforms and make it easier for takeaway restaurants to switch platforms by eliminating cumbersome data re-entry requirements. This might in turn act as a mild stimulant to competition between operators of different OTO aggregation platforms – although this possibility might also deter incumbent platform operators from implementing such standards if they were to become concerned that this might enable some of their existing vendors to create listings on alternative platforms more easily.

5.6.1 Recommendation 6

This project has generated evidence that the quantity and type of information made available to consumers about the composition of food sold via digital marketplace platforms varies widely. For instance, marketplaces for pre-packaged food products appear to provide far more precise ingredient and allergen information to consumers than do those whose vendors sell takeaway meals or tickets to dining events. The relatively limited arrangements made by certain online takeaway order (OTO) aggregation platforms for the provision of ingredient and allergen information to consumers appear to pose particular challenges because consumers of takeaway meals typically have access to few alternative sources of allergen information. As such, the provision of limited ingredient and allergen information on such platforms may potentially constrain the ability of consumers with food allergies and intolerances both to utilise and to exercise free consumer choice within online marketplaces for takeaway food.

This report therefore suggests that the FSA engages with the operators of OTO aggregation platforms to explore whether it might be possible develop common standards for ingredient and allergen information which might be applied across the online takeaway ordering sector. The development of such standards could potentially be led by the FSA in order to make product and allergen data provision as non-competitive as possible or, alternatively, the FSA could choose to support initiatives by third party standard setting organisations to develop industry-wide data standards for the digital marketplace platform sector. In this regard the FSA might, for instance, wish to explore the feasibility and desirability of engaging with GS1's recent efforts to develop product data standards and unique product identification codes for the digital marketplace sector. In order to inform and support such initiatives, the FSA may also wish to commission further research exploring the prevalence and frequency of the use of online takeaway ordering platforms among consumers with food allergies and intolerances. Such research might provide further insight into the processes through which such consumers seek and utilise information about the composition and allergen content of takeaway food when ordering online, and thus into nature and magnitude of any constraints upon choice or risks to consumer health posed by current arrangements for the provision of allergen information online.

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