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A model for (re)building consumer trust in the food system

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A model for (re)building consumer trust in the food system

Abstract

The paper presents a best practice model that can be utilised by food system actors to assist with (re)building trust in the food system, before, during and after a food incident defined as ‘any situation within the food supply chain where there is a risk or potential risk of illness or confirmed illness or injury associated with the consumption of a food or foods’ (Commonwealth of Australia, 2012). Interviews were undertaken with 105 actors working within the media, food industry and food regulatory settings across Australia, New Zealand (NZ) and the United Kingdom (UK). Interview data produced strategy statements which indicated participant views on how to (re)build consumer trust in the food system. These included: 1. be transparent, 2. have protocols and procedures in place, 3. be credible, 4. be proactive, 5. put consumers first, 6. collaborate with stakeholders, 7. be consistent, 8. educate stakeholders and consumers, 9. build your reputation and 10. keep your promises. A survey

was designed to enable participants to indicate their agreement/disagreement with the ideas, rate their importance and provide further comment. The five strategies considered key to (re)building consumer trust were used to develop a model demonstrating best practice strategies for (re)building consumer trust in the food system before, during and after a food incident. In a world where the food system is increasingly complex, strategies for (re)building and fostering consumer trust are important. This study offers a model to do so which is derived from the views and experiences of actors working across the food industry, food regulation and the media.

Key words

Food, trust, food regulator, food industry, media, food incident

INTRODUCTION

The food system has changed dramatically over the past few decades as the result of increased technical advances, globalisation in the supply and demand of food, changes in demographics, and in response to major social changes in the home and the workplace. Consequently, the disconnect between consumers and their food is greater (Meyer *et al.*, 2012) and most consumers are reliant on a range of actors within the food system to access safe food. Of central importance to our research are the times when consumer trust in the food system is broken. Indeed, there are many opportunities for things to go ‘wrong’ in the food system, given the increasing complexity of modern-day food production, procurement and distribution. A consequence of this complexity has been an increase in, or at least an increased awareness of, food incidents. The research presented herein sought to work with actors in the food system to develop strategies to (re)build consumer trust before, during and after food incidents.

Food incidents are defined as ‘any situation within the food supply chain where there is a risk or potential risk of illness or confirmed illness or injury associated with the consumption of a food or foods’ (Commonwealth of Australia, 2012). Examples include the Fonterra infant formula incident in China and New Zealand in 2014 and the Bovine Spongiform Encephalopathy (BSE) crisis in the UK in 1996. In this paper we also identify ‘food incidents’ as events which may not pose a risk of illness or injury to consumers but are situations where consumers feel that they have been deceived by the food system (for example the 2014 horsemeat scandal in the UK and Europe). These incidents, despite not necessarily posing direct risks to consumer health, may negatively impact consumer trust in the food system and therefore warrant investigation as part of this issue. Food incidents have previously been shown to affect consumer trust in the food supply (Sarpong, 2014) which can then influence consumer behaviour, for example, consumption of beef decreased after the BSE food incident in the UK and across Europe in the late 1990s (Mazzocchi *et al.*, 2008).

The management of food incidents have been explored within the literature (Berg, 2004, Jensen, 2004, Grebe, 2013, Jacob, 2011), including identification of actions which have assisted or hindered consumer trust following a food incident. Good management of food incidents is important, as it has been shown that effective communication and incident management can minimise the losses of trust and confidence that can parallel food incidents (Jacob, 2011). Strategies that have previously been reported to facilitate good management of food incidents, and/ or crisis management of similar situations, include timely public communication, acknowledgment of risks (real and consumer-perceived), control of related stigma (Jacob, 2011), an apologetic and accommodative approach (Grebe, 2013) and

informing the public, including providing information about how food risks are being identified, prevented and managed (Cope *et al.*, 2010).

Three broad groups of key actors have been shown to be important in influencing consumer trust in food and managing food incidents namely the media, food regulators, and the food industry. The media are an important source of information for consumers about food (Lupton, 2004), however the media have also been reported by consumers as decreasing their trust in the food system (Henderson *et al.*, 2012). The media may contribute to public anxiety about food risk and may be a poor source of food risk information (Henderson *et al.*, 2014a). Investigating how the media seek to influence consumer trust in the food supply, especially during times of food incidents, is therefore important to the maintenance of trust in food regulation.

Response to food incidents requires coordinated action between a number of systems, including food regulatory bodies and the food industry. Previous evidence from the UK and Europe has suggested that food authorities and government expert messages are not trusted by consumers (Poppe and Kjaernes, 2003, Coombes, 2005). While Australian consumers have been found to be generally trusting of food regulatory systems, few could identify or name the national and local bodies responsible for maintaining the safety of the food supply (Henderson *et al.*, 2010), choosing instead to trust the food regulatory system until a food incident undermines this trust (Henderson, Ward, Coveney and Meyer, 2012). As such, trust in the food system in Australia is contingent on ongoing success in monitoring food risks and is vulnerable to a major food incident. Food regulatory bodies are instrumental in the prevention and management of food incidents, suggesting that they play a crucial role in influencing consumer perceptions of risk during food incidents; which have been shown to

influence consumer intention to purchase food (Mazzocchi, Lobb, Bruce Traill and Cavicchi, 2008). The food industry is also vital to the prevention and management of food incidents. Previous food incidents have demonstrated the economic losses that the food industry can suffer as a result of food incidents (Smith *et al.*, 1988, Bakhtavoryan *et al.*, 2014), demonstrating one element of the motivation to ensure good prevention and management.

Our previous research identified that systematic investigation of the mechanisms and strategies used by the media, food regulatory and food industry organisations to (re)build consumer trust in food was required. Consumers appeared to exhibit 'blind faith' in the food system rather than active reflection about the safety of the food supply (Henderson *et al.*, 2011, Meyer *et al.*, 2008, Ward *et al.*, 2012), leaving them vulnerable to exploitation since they are not empowered to question the sources of information offered to them (Henderson, Coveney and Ward, 2010). A lack of reflection may contribute to loss of trust in regulation if a food incident occurs. Therefore identifying ways in which organisations can develop, maintain and re-build active trusting relationships with consumers, so that consumers can become more active reflectors, was deemed important. Consumer trust in food has been shown to be influenced by the media (Henderson, Coveney, Ward and Taylor, 2011, Henderson, 2010), and depend in part on the trust consumers have in authorities (including the food industry and food regulators) that provide information about food risks (Grunert, 2002). Given the role that these actors play in (re)building consumer trust, it was deemed important to investigate how trust is developed. This was supported by individuals from the food industry and food regulator settings involved in the research who, from a practical point of view, wanted a tool to use with consumers to maximise trust before a during a food incident. However, there is little reported in the literature about how these actors facilitate consumer trust in the food system. In particular, there is a lack of practical information about

strategies that can be used to (re)build consumer trust, especially in the context of food incidents. This study sought to identify how the media, food regulators and the food industry respond to food incidents and how consumer trust in food can be (re)built in the context of such incidents, recognising the importance that each group of actors plays in responding to and managing food incidents. This paper will provide an evidence based model which identifies the key elements of (re)building consumer trust in the food supply. This model can be used as a tool for use by individuals in the food system for addressing the issue of consumer distrust.

MATERIALS AND METHODS

Phase 1

Interviews

In 2013, interviews were conducted with participants from Australia, NZ, and the UK. One researcher conducted interviews in Australia and NZ and two researchers conducted interviews in the UK. Interviewers used a semi-structured interview guide and met regularly through Skype during data collection to ensure consistency in approach and questioning. All interview participants gave written, informed consent prior to their interview. They also provided their email addresses so that they could receive results and be contacted for the next phase of the study. Interviews were conducted face to face or over the telephone, depending on what was most convenient for the participant. The interviews ranged from 30-60 minutes in length depending on how much information the participant had to share. The interviews explored how participants would respond to a hypothetical scenario of a food incident and also asked some general questions about (re)building consumer trust in the food system. Further details of the methods for these interviews have been reported elsewhere <removed for blind peer review>.

Recruitment

Participants were actors from the media, food industry or food regulatory areas who had experience in reporting, managing or responding to food incidents. Participants were recruited using purposive sampling (Patton, 2002) by the research team. Members of the research team and their contacts suggested individuals who would be suitable to interview, based on their experience in reporting, responding to and managing food incidents. These individuals were invited to participate through email. If a response was not received the email was followed up with a phone call. A sampling strategy was developed to ensure that participants working in a variety of areas within media, food regulation and the food industry were included.

Data analysis

Interviews were transcribed verbatim and transcripts were de-identified and imported into NVivo 10.0 (QRS Doncaster, Victoria). For each actor and country, interview data were coded into key themes by one researcher using the phases of thematic analysis: familiarizing yourself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the report (Braun and Clarke, 2006). Initial codes were generated using two methods: (1) from areas of interest identified by the research team based on previous research (Meyer, Coveney, Henderson, Ward and Taylor, 2012, Henderson, Coveney and Ward, 2010) and relevant to the study aims for example approaches to building, breaking, maintaining and repairing trust in the food system and (2) from the transcripts as new themes recurred as analysis progressed. Other members of the research team checked the coding for consistency by reviewing up to four transcripts each and coding independently. Consistent coding and agreement was found.

Phase 2: Member checking

The member checking process involved two main steps: (1) development of strategy statements and (2) checking of these statements with participants using an electronic survey.

Development of strategy statements

The term 'strategy statements' refers to statements identified from interview data that describe an action to (re)build consumer trust in the food system. Interview transcripts were coded at three levels to arrive at strategy statements. The three levels of coding ensured that any cross-actor and cross-country similarities and differences could be noted. First, data were coded for actions including building, breaking, maintaining and repairing consumer trust. Second, data were coded by type of participant (media, industry or regulatory actor). Third, to allow for cross country comparison, actors were coded for their country of origin (Australia, UK or NZ). One other researcher checked the analysis and consistent results were obtained. From this analysis, ten strategy statements for (re)building consumer trust in the food supply in response to food incidents were developed. Strategy statements were developed from interviews with all three types of actors.

Electronic survey

Development of the electronic survey

To ensure that the strategy statements that were derived from the interview data were an accurate representation of the interview participants' views, an electronic survey was sent to all interview participants using Survey Monkey. The survey consisted of three sections: participant background, agreement with importance of the strategy statements and ranking of the importance of the strategy statements for use on both a day-to-day basis and in response

to a food incident. Participants were given the opportunity to provide further comment following all questions except those in the background section. Three versions of the survey were created to cover the different professional contexts of the participants; media, food industry and food regulatory actors. Each version of the survey had the same questions; however a different example, derived from the interview data, was provided alongside each question specific to each actor group. This helped to provide a context for the strategy statement within each actor's area of work.

Recruitment for the electronic survey

An email was sent to all participants who took part in an interview in Phase 1 of the study inviting them to participate in Phase 2. The email included a summary of the study as well as a web link to the electronic survey. The initial survey was followed up with a second invitation two weeks later.

Data analysis

Results from the electronic survey were collated in Survey Monkey and imported into Microsoft Excel. Results included the percentage of respondents who agreed, disagreed, were unsure or skipped a question. For each actor group, the group average percentage agreement with each strategy statement was calculated. The overall average agreement (not specified by actor group) using the overall percentage agreements from each actor group, was also calculated. There were two ranking questions where participants were asked to rank the importance of using the ten strategy statements to (re)build trust on, firstly a daily basis and secondly, following a food incident, from 1 to 10. This question was analysed by calculating the overall, average rank for each strategy statement. This was not calculated for each actor group separately. Importantly, anonymity was maintained and individual responses to

survey questions could not be attributed to a specific individual. Free text responses were imported into NVivo 10.0 (QSR Doncaster, Victoria) and then analysed qualitatively. For ease of organisation, this was done within each actor group.

Development of the model for (re)building trust

Information obtained from the survey about participants' agreement with the strategy statements was used to develop the model for trust (re)building in relation to food incidents. This was done by determining which strategy statements were considered the most important by participants through analysis of their agreement and disagreement with strategies, their ranking of strategies and their free text responses. The model was developed by (1) identifying which strategy statements fit and where they fit in the model and (2) conceptualising how they fit together. Elements of the initial strategy statements (derived from interviews) were modified based on participant responses to the survey (for example, change of wording or removal of a strategy statement).

This study received ethics approval from the Flinders University Social and Behavioural Research Ethics Committee.

RESULTS

Development of the Strategy Statements

The ten strategy statements for (re)building consumer trust in the food supply before, during and after food incidents, derived from interview data, are shown in Table 1. This includes: be transparent, have protocols and procedures in place, be credible, be proactive, put consumers first, collaborate with stakeholders, be consistent, educate stakeholders and consumers, build your reputation and keep your promises. Table 1 demonstrates the slightly different meaning

of the strategy statement in each of the different actors' work contexts, ascertained from interview data: media, food industry and food regulatory settings.

Electronic survey

Response rate

Fifty five percent of participants (n=58) completed the electronic survey; 15 media actors, 15 industry actors and 28 regulatory actors. In all three surveys, demographic questions were completed. However for media and industry actors, approximately one third of participants skipped all remaining questions after the demographic questions (median and range media actors: 5, 5-6; median and range industry actors 6, 6-7). For food regulatory actors, the number of participants skipping questions was much less (median 1, range 1-3). Eight of the original participants had moved jobs or changed email addresses since the Phase 1 interviews and hence they could not be reached.

Agreement with strategy statements

The average levels of participant agreement with the importance of each strategy statement, derived from the electronic survey, are presented (Table 2). Participant rankings of the importance of each strategy statement, both on a day-to-day basis and in times of a food incident, are also presented (Table 2).

Development of the model using strategy statements

Information obtained from the survey about participants' agreement with the strategy statements was used to conceptualise the important features of (re)building consumer trust in the food supply and hence develop the model. Importantly, no differences between countries were observed in relation to agreement with and ranking of strategy statements.

Identifying which strategy statements fit in the model and where

Five strategy statements were primarily used to develop the model. These include 1.transparency, 2.protocols and procedures, 3. be proactive, 4.collaborate with stakeholders and 5.put consumers first. The importance of these statements to trust (re)building is evident in the percentage of participants agreeing about their importance, for example transparency, protocols and procedures and proactivity received an overall agreement of their importance of 100%, 97% and 100% respectively (Table 2) Additionally and importantly, these five strategy statements were reiterated as very important through participant comments, which are outlined in the next section.

Two of the original strategy statements ('put consumers first' and 'collaborate with stakeholders') received lower, overall rankings of importance (71% and 78% respectively) These strategy statements were still included in the model because participant comments indicated that these were useful strategies. Other strategy statements from the member checking exercise were not explicitly included in the model because they were either (1) covered under other strategy statements (for example 'keep your promises' was found to fit under 'transparency'; 'educate consumers' was better placed under 'consider consumers'; and 'credibility' including the use of credible experts, could be incorporated within 'collaboration with stakeholders') or (2) they were considered less relevant by participants. For example 'build your reputation' was discussed as a by-product of engaging in other strategies, rather than as a strategy on its own. Additionally, the strategy 'consistency', which was identified as important through a high overall ranking (86%), has been operationalised in the model as the circular connect between the other strategy statements. Further details about the importance of each strategy statement, as derived from participant comments, are discussed below.

The model

Transparency

Participants, regardless of their role in the food system, all agreed that transparency was the most important strategy for (re)building trust in the food system after a food incident.

Transparency, including communicating openly with consumers, received the highest average percentage agreement and ranking of importance by participants. Participant comments also illustrated the importance of this strategy:

“Where there is a loss of trust, transparency is much more important than usual and is central to rebuilding trust. This is probably the most important factor listed”- Regulatory respondent

Transparency meant slightly different things for the different actors. For example in a media context, transparency was about ensuring that information sources were cited, while for regulatory and industry actors, it was more about ensuring good communication and responding to queries openly and honestly.

Transparency was also discussed in relation to other strategies. For example, regulatory participants commented that publication of protocols and procedures for managing food incidents is required.

Within a food industry context, it was suggested that transparency in relation to food safety issues was high. However it was identified that more transparency is needed in the area of food labelling as a means to build trust, for example ensuring consistency with labels that are on food packaging. However it was acknowledged that caution is needed in the food industry

with transparency to avoid information being interpreted as advertising, which may not be seen favourably by consumers and reduce trust.

The original strategy statement of ‘keep your promises’ (such as fulfilling claims and commitments) was agreed upon, however it was a good fit within the strategy of transparency in the model. This was further supported by participant comments, including:

“If you don’t know the answer- admit it. Better to say I don’t know than be found out as wrong or break a promise later.” – Regulatory respondent

“Yes maintain commitments but must be shown to be honest first and foremost” – Industry respondent.

The overall importance of transparency and its interaction with all the other strategies demonstrated that it was central concept and therefore features as the heart of the model for trust (re)building in the context of food incidents.

Protocols and procedures

Protocols and procedures, such as having crisis plans in place to manage a food incident, were considered crucial and rated equally important on a daily basis and following a food incident.

“Essential and protocols that are regularly reviewed and tested. That review should always include hindsight analysis of incidents that have occurred.” – Industry respondent

Regulatory respondents also pointed out that not all situations fit into pre-determined standards, meaning that flexibility may be required at times. However, regulatory respondents did highlight that adherence to these standards as much as possible is important.

While the different actor groups had their own industry-specific set of protocols and procedures (Table 1) the importance of adhering to these protocols and procedures was universally agreed upon.

Proactivity

Proactivity, such as active communication and steps to avoid future food incidents, was also considered important (100% overall agreement) and ranked highly both on a daily basis and following a food incident.

“back it with info on how this [food incident] will be avoided in the future.” – Industry respondent

Proactivity looked different for the different actor groups interviewed. For example, being proactive for a media actor may involve checking the source of a story before disseminating it while for a food industry actor being proactive was reported as, for example, withdrawing products if there is any chance of risk.

Consider consumers

This strategy was derived from two of the original strategy statements from Phase 1, including ‘putting consumers first’ and ‘educating consumers and stakeholders.’ ‘Putting consumers first’ received the lowest overall rating of agreement (71%), however when ranked for importance on a daily basis and following a food incident, received relatively high rankings. The comments provided rich context to explain these results. Specifically, participants differentiated consumer health and safety, and consumer values. Health and safety was considered the first priority by all actor types and therefore participants thought that consumers should be put first in this respect. However, sometimes it was acknowledged that consumers may have concerns that are less about food safety and more about values (for

example genetically modified foods) and in this case, consumer issues should be given less attention:

“Priority needs to be given to issues such as food safety and preventative health. Often consumers are pushing for issues that are values issues, as such it is important to listen to consumers, however priority should be based on risks.”- Regulatory respondent

Participants acknowledged that consumer needs should be balanced with the needs of other stakeholders within the food system including food industry and regulation, as well as the environment. Furthermore, response should be proportionate to risk, as overreaction can have consequences that may reduce trust.

Additionally, ‘putting consumers first’ was also considered problematic by respondents in that the message may create unrealistic expectations amongst consumers. For example, there are feasibility limitations to food regulators testing every single item that leaves a factory, even if consumers thought this was important.

‘Consider consumers’ also encompasses the strategy statement of ‘educating stakeholders and consumers.’ Whilst the strategy was considered important (83% overall agreement), the way in which it is described in the survey did not align with participant comments. Specifically, participants highlighted that consumers are a heterogeneous group with varying levels of knowledge about the food system. Education by the food industry could be perceived by consumers as marketing which could diminish consumer trust. Alternatively, it was suggested that consumers should be provided with information about regulatory processes and specific information regarding food incidents as they occur, including risk communication. Several participants also recommended that the term ‘educate’ may be considered insulting by

consumers and that it is more about providing information to enable consumers to make an informed decision. While media actors talked about educating consumers in the sense of providing them with information, food industry actors talked about building the knowledge base of consumers. Based on these responses, the strategy statement ‘consider consumers’ was considered to be more appropriate for the model than ‘putting consumers first’. It was also considered to encompass the original statement ‘educating stakeholders and consumers’.

Collaboration with stakeholders

Participants agreed that collaborations with other stakeholders within the food system were important (78% overall agreement), however they were keen to clarify the types of stakeholders they considered important collaborators. These included public health groups, health professionals, food regulators, consumer interest groups and consumers. Participants from the food industry and food regulation settings were sceptical about the media as stakeholders. For example:

“Collaboration with stakeholders is always desirable but using “the media” can be a double-edged sword and should be handled with caution. Working with trusted sources, such as health professionals and consumer or trade organisations could be a better option as the media are not always a trusted source.” - Industry respondent

However, actors from both the food industry and food regulatory settings talked about the importance of developing trusted contacts within the media, who could then be involved in communication with the public through the dissemination of information.

Respondent comments highlighted that collaboration with stakeholders can be complicated. Specifically, there is a need for balance between engaging stakeholders effectively and keeping a reasonable independence to avoid a conflict of interest.

Review of the respondent comments in relation to the original strategy statement of ‘be credible’ suggests that this strategy is well placed within ‘collaboration with stakeholders.’ For example, amongst food industry respondents, the use of experts such as food regulators and physicians as spokespeople after an incident was thought to provide reassurance and credibility. *“An independent expert is generally more reassuring than a company employee. Trade and consumer organisations can also play a useful role, depending on the nature of the incident.”* - Industry respondent

Another industry respondent explained that following the horsemeat incident in UK, the local council’s Environmental Health Officer was engaged to communicate the company statement to demonstrate their credibility. Regulatory respondents explained that independent experts could be used to review research outcomes, and occasionally engage with the public; however for the most part, food regulators believed they were well placed to present technical information following an incident.

Consistency

Consistency, particularly in relation to messages circulated to the public, was considered an important strategy and all actors understood this concept in a similar way. Respondents explained that inconsistencies could be damaging:

“inconsistencies, even if unintended, are likely to be picked up and raise concern or distrust about the company or the product” - Industry respondent

However, it was highlighted that these messages need to be correct in the first instance to maintain trust.

Food regulatory actors discussed the importance of having consistency between enforcement agencies, for example ensuring that food businesses were held to the same standards. This ensured that consumers could be confident that no matter where they ate, businesses would be subjected to the same regulations. Consistency therefore features on the model as the connections between the four key strategies (protocols & procedures, proactivity, collaborate with stakeholders and consideration of consumers).

Reputation

Whilst reputation was considered important by respondents (87% overall agreement), it was argued that reputation is more of a by-product of the overall system rather than a strategy for (re)building trust in isolation. In other words, when actors are being attentive to the other strategies, they will gain a positive reputation as a result.

“It’s important that the focus is on being reliable and credible, not on pursuing a good reputation. Ralph Waldo Emerson ‘The louder he talked of his honour, the faster we counted our spoons.’”- Regulatory respondent

“I don’t see focusing on reputation as helpful. Take actions that will allow a solid reputation to develop. Too much focus on ‘reputation’ is likely to come across as ‘spin.’”- Regulatory respondent

Equally, poor crisis management, particularly following a food incident, was considered to be able to quickly damage reputation. *“It should be remembered that a good reputation takes a long time to build and a very short time to lose if an incident is handled badly.”*- Industry respondent

Therefore reputation features on the model as the product or the outcome of the overall system of strategies. The ability to utilise the strategies can assist in building a good

reputation. In the event of a food incident, a good reputation can have some protective effect on consumer trust.

Time

Another critical aspect reported by participants to manage food incidents was time; specifically having a timely response. *“Timelines are everything. The ability to react swiftly is important, as opinions are formed within the first 24 hours, and are then much harder to change, especially with the social media effect.”* - Media respondent

“Any delay in informing consumers about a situation is likely to lead to consumer concern and distrust” – Industry respondent

Therefore time was overlaid across the model as the context in which strategies need to be delivered.

DISCUSSION

The purpose of this paper is to describe the development of an evidence-based model for how consumer trust in the food supply can be (re)built before, during and after food incidents, from the point of view of key actors involved in the food supply. It also highlights strategies for maintaining consumer trust in the food supply on an ongoing, daily basis.

Transparency was identified as the most important strategy as evidenced by participants’ ratings, high level of overall agreement (100%) and comments. The interaction between transparency and other strategies was evident in the data, demonstrating that transparency is at the heart of the model of (re)building trust in response to food incidents. The significance of transparency in responding to food incidents has been described elsewhere, for example Jensen (2004) argues that the lack of transparency during the BSE crisis meant that the UK

government did not manage the crisis successfully. Similarly, Abelson (2009) highlights the need for accountability structures when dealing with issues of trust. However, Burke (2003) argues that transparency can be counterproductive when used in isolation, especially in the event that information is misinterpreted. This provides further evidence for the need for a model of (re)building trust which draws on multiple strategies rather than just one strategy such as transparency, as has been done with the model presented in this paper.

The importance of being proactive was acknowledged by participants. This included proactive communication and reflection on how reoccurrence of incidents could be avoided in the future. Existing literature supports the significance of being proactive, particularly with communicating risk to consumers, and the positive impact this can have in mitigating consumer concerns. Frewer (1996) suggests that if the government and risk regulators are seen as being proactive and interacting with the media, this can positively improve the ways in which food risk related information is reported. Subsequently, there can be a positive impact on trust in government regulation. The need for proactive measures to prevent food incidents was a significant theme from both consumers and food safety experts in another study (Van Kleef et al 2006). This is similar to Cope et al.'s (2010) survey which identified that consumers preferred risk management to be proactive rather than reactive in regards to food safety. However, experts within Cope et al.'s (2010) study indicated that potential risks are not always best communicated to the public as a lack of technical understanding amongst consumers could be counter-productive.

The electronic survey indicated that the original strategies of 'putting consumers first' and 'educating consumers' were primarily about prioritising consumer health and safety, and having information available to consumers. Therefore, these two strategies were combined to

form a component of the model, 'consider consumers.' Wallace (2005) identified that providing information to consumers about the food system, along with benevolence and integrity, can have significant impact on consumer trust. In contrast, Eden et al. (2008) argues that provision of information can increase scepticism rather than decrease it by improving understanding where previously people may have taken things for granted. Further information means consumers may consider the fact that systems are not fail-proof (Eden, Bear and Walker, 2008). However, the reception of information is varied depending on the audience (Papadopoulos *et al.*, 2012). Therefore consideration of consumers, including understanding who the target consumers are and how to best engage with them and meet their needs, is another applicable strategy for (re)building consumer trust in food and is reflected in the model presented in this paper.

Provision of safe food relies on a range of actors within the food system. When a food incident occurs, collaboration amongst these actors including the food industry, food regulators and the media can impact on how the overall incident is managed and ultimately perceived by the public. Results from the survey revealed that collaboration with a wider range of stakeholders than food industry, food regulation and the media is needed including consumers and consumer and trade organisations.

Participants were in agreement about the importance of the strategies, while how the strategy was used in each actor's setting was slightly different. It has previously been acknowledged that a food chain approach is necessary to ensure consumer trust and food safety (Beulens *et al.*, 2005). Therefore it is important that actors in the food chain are able to respond in consistent ways. This model provides a set of consistent approaches to responding that can be

used by three different actors groups when responding to food incidents on a day-to-day and emergency basis and hence assists in addressing this issue.

Tensions between food actors including the food industry and food regulators and the media were apparent in this study and in existing literature. Specifically, journalists without a scientific background may not provide sufficient context when presenting information to the public (Anderson, 2000). This can create unwarranted fear amongst consumers if the risks are inflated (Carslaw, 2008, Henderson *et al.*, 2014b). Consequently, a reluctance to engage with the media can arise. However, the significance of the media, especially in the communication of risk, has been identified (Leask *et al.*, 2010). The media often see their role as protectors of the public by equipping them with information (Henderson, Wilson, Meyer, Coveney, Calnan, McCullum, Lloyd and Ward, 2014a, Wilson *et al.*, 2014). Through timely, transparent communication and collaboration and an understanding of the media's role in construction of risk, the media can be utilised by food actors effectively (Burke, 2003, Anderson, 2000). This study identifies the media as a key stakeholder, however indicates that development of effective relationships between the media and other actors within the food system is required.

A limitation of this study is that not all original interview participants could be contacted because they had moved positions and changed email addresses. However, the response rate observed is comparable with similar studies that have used internet-based questionnaires with professional actors (Ritter *et al.*, 2004, Braithwaite *et al.*, 2003). Despite this, it is acknowledged that different opinions could have been observed in those participants who did not respond. The majority of contact with participants throughout this study (for example recruitment and making a time for an interview) was done through email, however it cannot

be assumed that all participants had equal access to the internet, which may have affected their ability to respond to the survey. In future, participants could be offered a paper survey as an alternative if they preferred. The fact that approximately one third of media and industry actors skipped survey questions other than those about demographics is also a weakness as it reduces the sample size. It is possible that these actors did not understand the questions, compared with the food regulatory actors who more consistently answered all of the questions. Another limitation is the lack of involvement of consumers to get their opinions on the model, however this was not the purpose of this study. Notwithstanding these limitations, this study has operationalised the data from actors working within the food system to derive strategies for (re)building consumer trust in the context of food incidents. The study also has a number of strengths. The use of the same participants in Phases 1 and 2 provided continuity and enabled clarification to be obtained about the researchers' interpretation of the interview data. In particular, this enabled individuals who respond to food incidents regularly to provide input into the development of the model, suggesting it is more strongly based on practice and therefore likely to be relevant to those working in the field.

Further research and recommendations are needed to ease apparent tensions and facilitate stronger relationships between actors working within the food system and the media. While consumer responses to food incidents have shown to vary by country (Mazzocchi, Lobb, Bruce Traill and Cavicchi, 2008), we found that no differences between countries were observed in relation to agreement with and ranking of strategy statements. Hence the model is likely to be generalizable across the three settings of this research: Australia, the UK and NZ. However, further empirical work, to test the usefulness and applicability to the media, food regulatory and food industry settings in each of these locations, is important work for further

research. In particular, testing the model in a real-world food incident to examine its usefulness across these settings, and engaging consumers to obtain their views on the model, would be important.

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Figure 1: Proposed model for (re)building consumer trust in the food system after a food incident

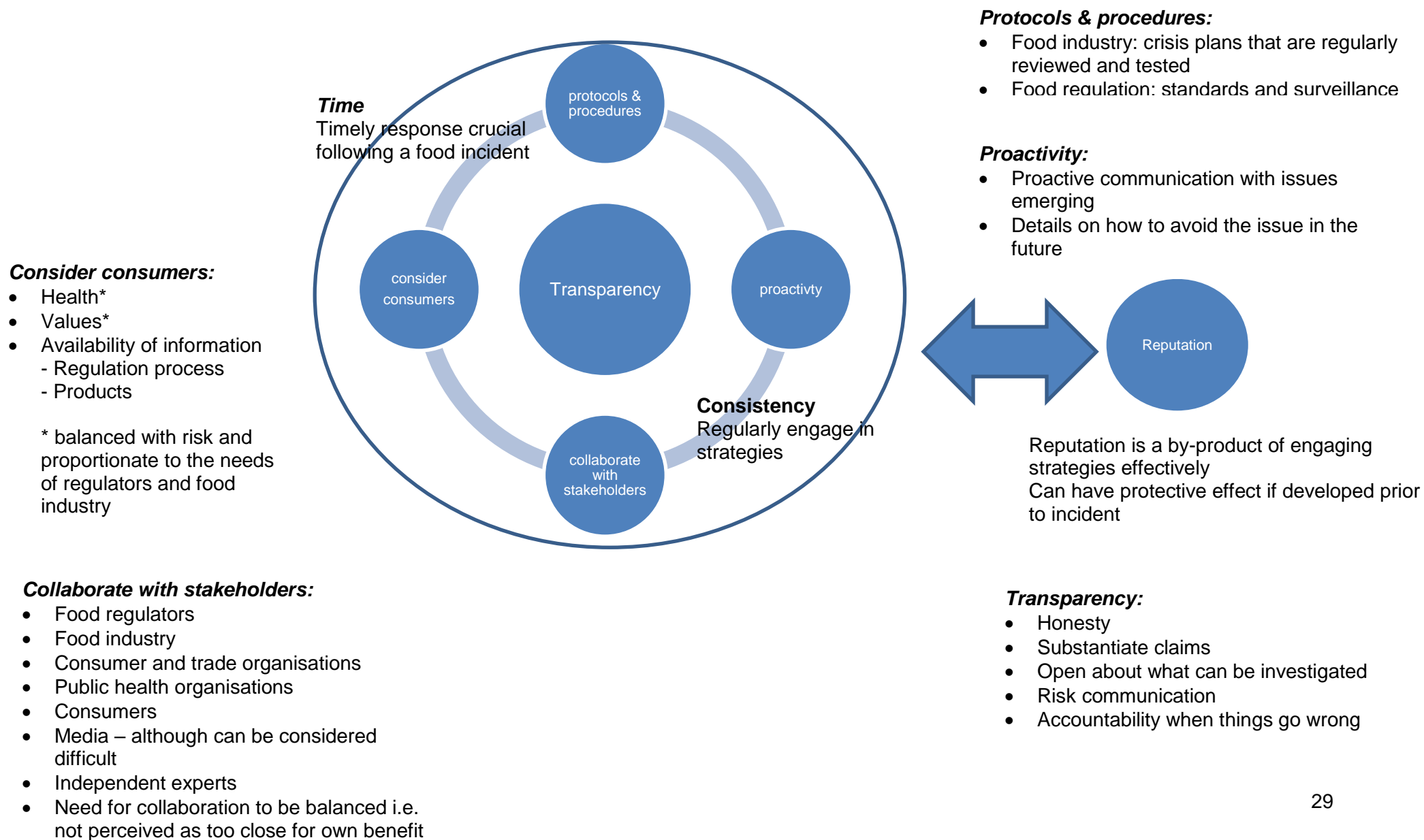


Table 1: Strategy statements for (re)building consumer trust in the food supply before, during and after food incidents.

Strategy statements	Media	Food Industry	Food regulatory
1. Be transparent	<ul style="list-style-type: none"> • Cite information sources • Present a balanced story to the public e.g. not frighten or lull people into a false sense of security 	<ul style="list-style-type: none"> • Communicate with consumers (e.g. enquiry lines, social media etc.) • Inform consumers what has occurred and what is being done to rectify the situation 	<ul style="list-style-type: none"> • Report to consumers what is being done to ensure food is safe • Respond to consumer queries
2. Have protocols & procedures in place	<ul style="list-style-type: none"> • Presence of and compliance to standards of conduct (e.g. Standards of Business Conduct and the Australian Press Council) 	<ul style="list-style-type: none"> • Incident management plans and where applicable trained crisis management personnel • Script for consumer helpline to manage consumer calls during an incident 	<ul style="list-style-type: none"> • Evidence-based audits of industry to check adherence to standards and codes • Baseline studies to verify the effectiveness of the regulations • Crisis management system in place in the event that a food incident occurs
3. Be credible	<ul style="list-style-type: none"> • Use accurate and well researched information • Cite references and information sources • Interpret scientific information correctly 	<ul style="list-style-type: none"> • Use of credible, independent expert to speak to the media during or after an incident e.g. food regulation agency spokesperson, physician etc. 	<ul style="list-style-type: none"> • Publish the evidence (e.g. results of tests, statistics) • Use of independent experts e.g. doctor, health professional etc. to provide explanation
4. Be proactive	<ul style="list-style-type: none"> • Check credibility of information sources prior to disseminating (including social media such as tweeting) 	<ul style="list-style-type: none"> • Publish findings of reports • Withdrawal of products if any chance of risk 	<ul style="list-style-type: none"> • Review and update standards and regulations to ensure they remain relevant
5. Put consumers first	<ul style="list-style-type: none"> • Keep consumers safe by informing them of food incidents e.g. details of recall, foods under investigation etc. 	<ul style="list-style-type: none"> • Consumer safety is a major priority and protocols and procedures are centred around this • Modify products in accordance with consumer demands 	<ul style="list-style-type: none"> • Demonstrate that consumers' best interest is a priority • Listen to consumers and understand their needs and expectations and respond accordingly
6. Collaborate with stakeholders	<ul style="list-style-type: none"> • Establish trusted contacts in food industry and food regulation • Reiteration of messages from food regulation body 	<ul style="list-style-type: none"> • Use the media to disseminate information following an incident • Build reliable media contacts to draw on 	<ul style="list-style-type: none"> • Keep in regular contact with industry so that they know what is being done on their behalf • Maintain on-going partnerships between industry and policy (e.g. industry test results published by policy)

				<ul style="list-style-type: none"> • Involve media in communication with the public
7. Be consistent	<ul style="list-style-type: none"> • Provide consistent messaging to reaffirm messages e.g. safety of a product post incident • Always use credible information sources 	<ul style="list-style-type: none"> • Information for consumers and professionals is consistent (although language may differ) • Consistency of products • Message consistency amongst stakeholders 		<ul style="list-style-type: none"> • Provide consistent messaging to the public and stakeholders
8. Educate stakeholders and consumers	<ul style="list-style-type: none"> • Inform consumers about details regarding food investigation process and results 	<ul style="list-style-type: none"> • Build the knowledge base of consumers (e.g. how food is produced) 		<ul style="list-style-type: none"> • Provide industry and consumer information in appropriate language (e.g. via website)
9. Build your reputation	<ul style="list-style-type: none"> • Provide timely, consistent information • Provide good public relations prior, during and after a food incident 	<ul style="list-style-type: none"> • Quality products • Good public relations prior, during and after a food incident 		<ul style="list-style-type: none"> • Show that you are reliable and provide credible information
10. Keep your promises	<ul style="list-style-type: none"> • Provide timely, quality information • Keep audience well informed 	<ul style="list-style-type: none"> • Maintain commitments and claims made 		<ul style="list-style-type: none"> • Investigate consumer concerns and respond to their enquiries

Table 2: Percentage agreement and average ranking with the importance of strategy statements by participants from the electronic survey (n=58)

Strategy	Media (n=15) (%)	Food Industry (n=15) (%)	Food Regulatory (n=28) (%)	Overall average agreement (%)	Average ranking	
					Daily basis	Following a food incident
1. Be transparent	100	100	100	100	8	8
2. Have protocols & procedures in place	100	100	92	97	6	6
3. Be credible	100	88	92	93	7	7
4. Be proactive	100	100	100	100	6	7
5. Put consumers first	90	66	57	71	7	7
6. Collaborate with stakeholders	80	62	92	78	4	5
7. Be consistent	90	88	80	86	5	4
8. Educate stakeholders and consumers	100	75	76	83	4	3
9. Build your reputation	90	88	85	87	3	2
10. Keep your promises	100	88	92	93	5	4