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FEED PEOPLE FIRST: A SERVICE ECOSYSTEM PERSPECTIVE ON INNOVATIVE FOOD WASTE REDUCTION

Abstract

Service research highlights the utility of adopting a service ecosystem approach to studying service innovation. It suggests that service innovations can arise from challenging and developing the institutions (i.e. norms, rules, practices, meanings and symbols) which underpin an ecosystem. Also, recent emphasis on consumer wellbeing posits that studies of service provision to poor consumers are needed. Reflecting these research priorities, the context of this case study on service innovation is the food waste ecosystem, whereby service innovations can contribute to the alleviation of food poverty for thousands of citizens. The central actor of the ecosystem is the leading UK charity organization fighting food waste. The paper's contribution lies in using data from ecosystem actors to clarify the distinctions between institutions, thereby enhancing understanding of the application of institutional theory within the ecosystem, and highlighting some theoretical implications for service innovation both within and between system levels. An Actor Institutions Matrix is offered as a fruitful outcome of the analysis of the institutions, and suggested recommendations for operationalizing service ecosystem studies are outlined.

INTRODUCTION

In a discussion of service innovation, Van Riel (2015, p. 199) argues that "…'service' is not to be considered, studied, managed, as a discrete phenomenon, but rather as something that is part of a system, of a network, linking departments in the firm, multiple firms and customers in an ecosystem". Service scholars are increasingly adopting a service ecosystem perspective (see Vargo and Akaka 2012; Frow et al. 2014; Lusch and Nambisan 2015; Fisk et al. 2016). A service ecosystem is defined as "…a relatively self-contained, self-adjusting system of resource-integrating actors connected by shared institutional arrangements and mutual value creation through service exchange" (Vargo and Lusch 2016, pp. 11-12). A service ecosystem perspective resonates with the view that service research, like marketing research, can and should contribute to "…long-term large problems that go beyond individual customer satisfaction and short-term financial performance to encompass the total value creation system" (Webster and Lusch 2013, p. 389). It places emphasis on institutions, i.e. the norms, rules, meanings, symbols and practices, which the connected actors share.

More recently, Siltaloppi, Koskela-Huotari and Vargo (2016) have drawn attention to the multiplicity of institutional arrangements confronting actors in a service ecosystem. Institutions are seen as the mechanisms that tie the actors together. Furthermore, as argued by Lusch, Vargo and Gustafsson (2016), institutional patterns of resource integration can offer either momentum or resistance to service innovation. Existing institutional theory, as a lens through which we can consider service innovation in service ecosystems, tends to treat norms, rules, meanings, symbols and practices together as one overall entity (Vargo and Akaka 2012; Vargo, Wieland and Akaka 2015). As will be demonstrated later, there are sound reasons to extend existing theory on societal service innovation by considering each institutional component separately. We consider these issues

specifically in a particular food-related service ecosystem, concerned with efforts to make more effective use of food waste in the retail supply chain[1].

The problem of food waste is magnified in periods of austerity. For example, in the UK, welfare reforms arising from austerity measures, introduced in the aftermath of the 2008 global economic crisis, have *inter alia* directly led to an increased number of people for whom hunger is a significant issue. Indeed, a report entitled *Feeding Britain,* prepared by an All-Party Parliamentary Inquiry into Hunger in the United Kingdom, acknowledged that there was a significant number of hungry people and "…the terrifying idea that hunger is here to stay unless all of us take our responses on to a new and totally different level" (APPIHUK 2014, p. 8). More effective redirection of edible food waste to those citizens suffering from hunger would represent one such response. It is part of a movement to *feed people first* (see, for example, Quinn and Tatum, 2016; Rodioniova 2016).

The first contribution of the paper is to highlight that deficiencies in citizen needs, resulting from austerity measures, are pressing issues that can be understood more fully through consideration of service innovation in service ecosystems viewed from an institutional theory perspective. Second, the institutional theory perspective has enabled us to consider theoretical implications for service innovation both within and between system levels. Finally, we have developed two further contributions that will help future ecosystem designers and scholars. The Actor Institutions Matrix is put forward as a fruitful outcome of the analysis of the institutions with great potential as an aid to practitioners and service researchers. We have also developed a series of recommendations for service ecosystem studies that we believe has general application.

[1] Food waste can be simply defined as edible food lost from the supply chain. Such waste occurs throughout the supply chain (Cicatiello et al. 2016), but this paper focuses on *retail* food waste; i.e. generated by supermarkets and other retailers, comprising food that has reached its 'best before', 'sell by' and 'use by' dates, or food produced by suppliers which is subsequently not required because of over-ordering by retail buying departments or is not suitable for sale, e.g. wrongly labeled, damaged in transit or not meeting strict aesthetic/cosmetic standards set by retailers.

The paper is structured as follows. A literature review places the focus on societal service innovation, and summarizes the theoretical developments in service-dominant logic, transformative service research and service design which inform an approach to societal service innovation and design, based on understanding the institutions and institutional arrangements of a service ecosystem. This is followed by an empirical study of a service ecosystem of food waste reduction, with a detailed analysis of the underpinning actors and institutions, and the derivation of an Actor Institutions Matrix with potential for the identification of innovations which span the macro, meso and micro levels of the ecosystem. Finally, recommendations are proposed for studying service ecosystems more generally.

LITERATURE REVIEW

Service Innovation

Snyder et al. (2016, p. 2401) advocate that "…service innovation acts as society's engine of renewal", emphasizing that innovations targeted at under-privileged and vulnerable citizens represent a growth area. In seeking to clarify society's obligation towards under-privileged and vulnerable citizens, Hill (2002, p. 20) suggests that they should enjoy a baseline of "consumption adequacy" which provides "…the continuous availability of a bundle of goods and services that are necessary for survival as well as the attainment of basic human dignity and self-determination". In the specific context of this paper, this resonates with the plight of citizens who regularly struggle to reach this baseline in terms of food security. Consequently, they are disadvantaged in their interactions with service providers, no longer seeking satisfaction or 'delight', but more concerned with basic survival. The impact could be significant (Anderson and Ostrom 2015).

While Bitzer and Hamann (2015, p. 8) acknowledge that "…social innovation *per se* has received relatively little dedicated scholarly attention", Witell et al. (2015, p. 437) identify the need

"…for more in-depth investigation of the effects that an innovation may have not only on the individual or the organization, *but also on society*" (Our emphasis). A focus on *societal* service innovation occurs against a backdrop of scholarship on innovation that is increasingly focused on the enabling conditions that society engenders (Murray, Caulier-Grice and Mulgan 2010; Osburg and Schmidpeter 2013; Bitzer and Hamman 2015), and on the view that innovation can result from reconfigurations of institutional structures of service ecosystems (Koskela-Huotari et al. 2016).

Theoretical Antecedents

Specifically, within service research, such debates regarding innovation owe their origins in part to - and can be theoretically contextualized in terms of - the emerging conceptualizations on service-dominant logic (SDL), transformative service research (TSR), and service design, which we consider in more detail below.

An initial exposition of a new dominant logic in marketing (Vargo and Lusch 2004), developed into what is now known as SDL, is underpinned by ten foundational premises (Vargo and Lusch 2008). Four of these (i.e. service is the fundamental basis of exchange; value is co-created by multiple actors, always including the beneficiary; all social and economic actors are resource integrators; and that value is always uniquely and phenomenologically determined by the beneficiary) were subsequently identified (with one slightly modified) as key axioms. More recently, a further axiom has been postulated, incorporating a service ecosystem approach, namely: value co-creation is coordinated through actor-generated institutions and institutional arrangements (Vargo and Lusch 2016). Institutions in this context are defined as "…rules, norms, meanings, symbols, practices and similar aides to collaboration", and institutional arrangements are "…interdependent assemblages of institutions" (Vargo and Lusch 2016, p. 6). Institutional theory has been employed traditionally in organizational analysis, where it is maintained that "…institutionalization involves the processes by which social processes, obligation or actualities come to take on rulelike status in social thought and action" (Scott 1987, p. 496). Such a theoretical perspective, when applied to service

ecosystems, provides a direction for enhancing the understanding of service ecosystem actors and their interactions.

The five axioms above move thinking beyond provider-customer service interactions to a more inclusive view of service. The service ecosystem perspective takes account of the many interactions amongst and between multiple actors - as well as resource integration and the impact of social forces - at and between three inter-related levels: macro, meso and micro (Akaka and Vargo 2015; Fisk et al. 2016; Witell et al. 2015). Thus, in the particular context of this paper, at the macro level, governments make policy decisions, such as the introduction of 'austerity' measures to reduce national deficits. Such policies affect meso level interactions, such as the rules and practices responsible for administering changed systems of citizen state aid and benefit provision, and the practices adopted to reduce food wastage/poverty. These, in turn, impact upon citizens at the micro level, in their daily interactions with private and public sector service providers such as food retailers, benefit agencies, and voluntary organizations. According to Akaka and Vargo (2015, p. 459), "…macro does not exist without micro and meso and vice versa". To understand *societal* service innovation, it is essential to acknowledge that service deficiencies can occur at any, or all, of the three levels, and where such deficiencies do occur, they can have severe detrimental consequences. A service ecosystem perspective thus provides a framework for inclusion of citizens or 'citizen-consumers' (Webster and Lusch 2013), who find themselves below the level of consumption adequacy, as beneficiaries and co-creators of value.

Such a viewpoint arguably resonates with many of the precepts of transformative service research (TSR). TSR has moved from its origins, which highlighted outcomes of customer well-being as being important and managerially relevant (Rosenbaum et al. 2011), to a more confident and positive position, focusing on "…'uplifting changes' aimed at improving the lives of individuals (both consumers and employees), families, communities, society and the ecosystem more broadly"

(Anderson and Ostrom 2015, p. 243). Citizens at the Base of the Pyramid (BoP) are permanently below the level of consumption adequacy (see, for example, Gebauer and Reynoso 2013; Martin and Hill 2012). As Reynoso, Valdés and Cabrera (2015, p. 705) maintain, "The more we know about the processes, infrastructures and context of services happening at the BoP, the more we can make positive impacts on the well-being of this huge segment of society". The BoP concept is most relevant to citizens in emerging economies. Nevertheless, when many citizens in more developed economies fall below the level of consumption adequacy, a similar approach can be adopted. Knowledge of the institutional arrangements confronting these citizens can contribute to innovative means for ensuring their improved well-being.

Latest thinking on TSR draws on the axioms of SDL, especially regarding resource integration and co-creation of value (Mirabito and Berry 2015; Skålén, Aal and Edvardsson 2015; Sweeney, Danaher and McColl-Kennedy 2015; Blocker and Barrios 2015). This arguably constitutes a movement towards studies of the socio-cultural ecosystems at various levels (i.e. macro/meso/micro) within which services and customers function - an under-researched area according to Anderson and Ostrom (2015), and one that might provide a more robust understanding of the contextual factors which may drive innovation. Linked to this, SDL is increasingly regarded as a lens through which to extend the understanding of service innovation (Ordanini and Parasuraman 2011; Lusch and Nambisan 2015).

Extending our understanding of service innovation must, we suggest, involve some consideration of service design more broadly. In Operations Management research, the service concept links customer experience and service outcome through the 'how and what' of service design (Goldstein et al. 2002). In this tradition, design characteristics include service process features such as the extent of process control (Haywood-Farmer 1988, Zomerdijk and de Vries 2007), the duration of interaction (Mills and Morris 1986, Schmenner 2004) and customer wait time (Safizadeh, Field and Ritzman 2003; Bitran, Ferrer and Oliveira 2008). Moreover, research is extended to include

the design of the facility (Bitner 1992) and, more broadly, the role of the customer (Lengnick-Hall 1996, Sampson and Spring 2012). The limitation of this view is that the extensive focus on the provider often limits the customer to a passive role in a tightly bounded system focused on the provider-customer dyad (Maull, Geraldi, and Johnston 2012).

The more recent multi-level approach positions service design at the micro and meso levels, and points to service design at the broader ecosystem level as an area for future research (Patricio et al. 2011). It works at three levels: designing the service concept (macro), designing the service system (meso) and designing the service encounter (micro). This approach has been applied primarily with firms in mind (Patricio et al. 2011; Teixeira, et al. 2012), but it seems entirely appropriate to apply this to issues of societal service innovation (Beirão, Patrício and Fisk, 2016), especially where the service ecosystem has been subjected to changes in institutions. With this in mind, there is a need to consider means for enabling a greater understanding of the levels beyond the micro level of the service encounter.

Thus, the literatures on SDL, TSR and service design arguably begin to overlap, and together provide an impetus for developing institutional ideas within a service ecosystems approach to understanding societal service innovation, which we investigate here with reference to the specific context of food supply and waste. The shared institutions and institutional arrangements, which apply the glue for the working of a service ecosystem, can only be discovered through detailed investigations of day-to-day activities of actors. Yet it is these institutions, and the constraints they place on the ecosystem, which can be challenged, developed or changed to provide opportunities for service innovation (Vargo and Lusch 2016).

EMPIRICAL SETTING AND METHOD

Research Setting and Rationale

Service ecosystems are complex, involving numerous actors, social forces and co-creation and resource integration activities (Akaka and Vargo 2015), which may reside at macro, meso or micro levels (Beirão, Patrício and Fisk, 2016). Given this complexity, we adopted a case study approach incorporating multiple qualitative data sources to identify and illuminate these various perspectives (Creswell 2003). This approach facilitated the acquisition of a more holistic understanding of multiple aspects (and their interaction) of the phenomenon under investigation (Gummesson 1991). In order to simplify this complexity, we centered our outlook upon the perspective of one particular ecosystem actor. This provided opportunities to identify subtle interactions between actors, and key institutional arrangements, which may otherwise remain latent, given their nesting within a larger food waste service ecosystem. As Aal et al. (2016), recently demonstrated, a single case study – which typically presents an in-depth analysis of a social unit (Glaser and Strauss 1967; Passer 2014) – is an appropriate methodology to examine a service ecosystem.

In this study, the UK food waste service ecosystem was analysed from the perspective of FareShare, the recognized leading UK actor in the fight against food wastage (Stuart 2009). Figure 1 depicts the main features of this relatively self-contained food distribution ecosystem with FareShare as focal organization. The private sector (e.g. supermarkets, or ambient food producers) have surplus edible food, usually because it is over-ordered or unsalable. This is then distributed to FareShare Regional Centers (17 of the 20 are independently controlled), staffed predominantly by volunteers. The centers store, and then distribute, the food to the various member charities, which pay FareShare a nominal sum for the food, and then either prepare and cook it for clients, or distribute it through intermediaries such as foodbanks. These charities are staffed by volunteers and employees and are supported through fund raising and government agencies. The whole process is managed by the FareShare central office in London, where various teams find new suppliers, manage the relationship with existing suppliers, help identify recipient charities, and ensure food distribution to the regional centers. The process takes place within a broader macro-level context

consisting of, for example, government policies (including austerity measures); media coverage of food wastage/poverty (much of which is critical of government policy); consequent public opinion relating to the issues in question; as well as other factors such as technology, and general economic conditions.

INSERT FIGURE 1 HERE

This is a significant operation: in 2016, over 5000 charities/community groups received food from FareShare. Some 25 million meals were provided from the 12000 tonnes of food which were processed (rather than going to waste) (Interview with FareShare Executive). FareShare also distributes food to foodbanks operated by the Trussell Trust (an organization that supports a UK network of over 400 foodbanks that annually feed over one million individuals).

Data Collection

Data were collected between July 2015 and July 2016 from three sources: interviews, observations, and documentary evidence. The use of multiple methods by multiple researchers provides converging triangulated evidence to support findings (Denzin 1989; Yin 2014), and serves to strengthen their validity and reliability (Lincoln and Guba 1985). Their divergence as sources was also instrumental in allowing us to shift our analysis from the macro level to the meso and micro levels.

Within the focal ecosystem actor, seven formal semi-structured interviews were conducted with FareShare personnel, as follows: (1) the Chief Executive, which sought to illuminate the organization's business history and background; (2) an Executive Director of a FareShare Regional Center in the North West region of England, which garnered specific information about local activities, and about partnerships established with local actors; and (3) with two other FareShare senior staff. These key informants were selected on the basis that they directly and regularly engaged with other actors in the ecosystem. Formal interviews with representatives from other actors within the ecosystem outlined in Figure 1 comprised one interview with a large retailer who

supplied surplus food to FareShare, and interviews with two agencies receiving food from FareShare. Notwithstanding the varying specific foci of these interviews (determined by the particular ecosystem roles performed by respondents), our fundamental approach to data collection in the interviews followed that of institutional theory which advocates examining an institutional field to understand how new practices evolve and how actors within that field adopt them (Garud, Hardy and Maguire 2007). Thus, simple questions of the actors: what they do; who with; and why, coupled with general questions about what gives them the most satisfaction, and causes the greatest frustration, were used as catalysts towards establishing, from their perspectives, not only the structural linkages within the ecosystem, but also the underpinning norms, rules, practices, meanings, and symbols.

A second source of data was gleaned from direct human observations (Grove and Fisk, 1992) conducted by two of the authors who carried out voluntary work in two different FareShare centers over the course of four separate working days. In part, the role involved picking and packing and subsequently distributing food from a FareShare depot to charities and food banks. Doing so not only provided access to more informal networks within the ecosystem, but also allowed them to conduct informal interviews with other FareShare employees, volunteers and agencies receiving food. Specifically, 4 additional FareShare employees (with roles such as volunteer dispatchers and delivery van drivers), 3 food bank staff, and 4 charity workers were probed about a variety of operational issues, such as the process of vetting charities and the difficulties of dealing with sudden, seasonal surpluses. In total, these informal interviews took place over a period of 12 hours. To aid recall of the content discussed, both researchers used note pads to systematically record their witnessed observations (Grove and Fisk, 1992). This process was an important mechanism for directly observing the routines, events, and conversations in which the various institutions – the norms, rules, practices, meanings, and symbols – were acted out on a daily basis, and for garnering a holistic picture of the entire ecosystem.

Finally, documentary evidence, e.g. Fareshare's business plan, details of its Food Efficiency Framework, financial statements, and press coverage (about 250 pages in total) was also gathered. Consistent with Yin (2014), documentary evidence played an explicit role in terms of providing specific details of an event, corroborating and augmenting information from other sources, and was therefore used to supplement the subsequent analysis of our empirical data.

Data Analysis

All 7 formal interviews were recorded and subsequently transcribed verbatim (approximately 150 pages of single-spaced text). The interviews lasted between 40 and 90 minutes. Interpretation of the data obtained was via an iterative analytical process (Spiggle 1994). Following Eisenhardt (1989, p. 536) who suggests that case study researchers should engage in "…a priori specification of constructs", it seemed obvious, especially given the above discussion on the nature of how institutions operate within an ecosystem, that analysis should be structured around the norms, rules, practices, meanings, and symbols evident therein. The thematic analysis was focused on identifying the institutions underpinning the activities and actions of the main actors. Thus, interview transcripts, which were the main evidence source, were initially coded via specific data relating to these constructs being identified by individual researchers. In order to maintain sensitivity towards issues of unitization and inter-coder reliability and agreement (Campbell et al 2013) the final coding was refined following a number of iterative group discussions. Notwithstanding specific coding categories, these institution constructs are deeply interwoven and difficult to separate. To avoid confusion, we have defined them as distinctly as possible, but a degree of overlap remains in respect of how to categorize the illustrative stories, quotes and anecdotes recounted under each heading in the following section of this paper. Their ultimate positioning is, therefore, determined by our interpretation and how they fit into the narrative flow of the case study.

As a means of recording the outcomes, and providing a synthesis of the analysis, an Actor Institutions Matrix was constructed (Table 1). The Actor Institutions Matrix was chosen to summarize findings as it provides a framework for undertaking empirical observation of practice – a feature of mid-range theorizing (Brodie 2017). It offers the means to dig deeper and unearth the "…unsolved problems or unmet needs, things that don't fit or work" (Kanter 1999, p. 123), which may reside at macro, meso or micro levels.

FINDINGS

To facilitate the analysis, the constituent components of institutions were considered individually.

Norms

Norms reflect the shared behaviors and attitudes of most members within an ecosystem (Vargo, Wieland and Akaka 2015). Generally, they exist under the radar: tacit and unspoken. Often, it is only when breached that their existence comes to light. On close inspection they might seem illogical or irrational, but nonetheless they persist. As Steinhoff (2009, p. 81) argues, people follow them simply "…because 'one' just 'knows' that these norms are right." Norms that permit the FareShare ecosystem to exist, for instance, include the ingrained attitude of many members of the supply chain that wastage is an integral component of growing, processing, storing, selling and consuming food. FareShare's mission is to reject this norm, and replace it with a new norm that complete waste eradication is possible: "no good food should be wasted – that is what drives everyone at FareShare" (FareShare Executive).

The existence of other norms within the ecosystem also hampers the realization of this mission. For instance, a contradictory norm, commonly articulated, is that firms do not have any waste. FareShare spends considerable effort attempting to convince companies that this norm has

no basis in reality. Consequently, its opening pitch to food businesses is strongly influenced by a need to challenge this norm. An executive of FareShare explains their approach when trying to win over a new partner:

> So, we have a thing called the Food Efficiency Framework, which is a systems-based approach that we ask any food business. So, we don't approach food businesses and say, "Will you please give us your waste?" We say, "Will you please put systems and processes in place that, if in the future, you have … some surplus, you can turn that into as much social good, and we can tell you the social good that's been done with it, so we can turn a problem into a solution?"

The emphasis here is firmly on quashing the perception that working with FareShare is merely an altruistic gesture. On the contrary, companies that build a working relationship with FareShare not only garner an impressive public relations story to share with stakeholders, but, by having their business examined by FareShare, they essentially gain enhanced insights into supply chain process improvement. Indeed, without exception, all companies that enter into a relationship with FareShare streamline their waste management systems to such an extent that ultimately they reduce overhead expenditure (FareShare 2016). Persuading companies to implement the 'Food Efficiency Framework' not only identifies their weaknesses in relation to the above, but also improves the health and vitality of the entire ecosystem.

Other norms in the FareShare ecosystem informed by ongoing experience of operating at the micro level service interface can conflict with FareShare's more macro level norms. The macro level norm that food offered to charities should first and foremost be fresh, healthy and edible, clashes with the micro level norm that food should necessarily be easy to prepare, both for the charities who cook the food and the people fed by them. A regional manager of FareShare explains how these opposing norms clash:

> One of the early consignments was 12 pallets of organic oats. I was a bit mortified to discover that many of the groups didn't really want them: "We don't really want oats, because it's difficult to wash the pans". We ended up with quite a lot having to be thrown away. To me it was a bit of a shocking moment to realize that people didn't want what I would consider to be something slightly healthier, for practical reasons. It makes you realize that there is this journey

about educating people.

Underscoring this conflict, a Food Bank manager interviewed explains, in matter of fact fashion, the normative situation – sometimes dubbed 'eat or heat' – which her clients are immersed in:

> The Food bank scratches the surface, the first question you are asking them [recipients of food aid] is do you actually have the means to cook any food? A lot of them don't. A lot of them don't have gas or electricity running anymore, and so sometimes you are having to give them food that they can effectively only use by running a kettle or literally just opening a tin.

Principally, for this reason, the goods that food banks distribute are entirely non-perishable. As another food bank manager explains:

> We don't actually give any fresh food away. We don't have refrigeration storage at all. And a lot of that is cost restrictions. And also hygiene. It's getting down that route that if something went out that wasn't quite fresh, it could cause all kinds of problems.

Accommodating these conflicting norms, however trivial, is a constant challenge. Some norms will be difficult or impossible to shift, while others may be more amenable to recalibration. The key is to identify and deal with each sensitively. For instance, one food producer was adamant that it produced no wastage. The view that FareShare tried to get them to accept was that there "will occasionally be some surplus, even in the most efficient of systems" (FareShare 2016), and when these occasions arise, procedures should be in place to deal with it. A frozen food company argued, (as a FareShare executive eloquently explains), that:

> "Because it's frozen, we don't have any surplus, we don't have any waste, etc. This is the frozen world. We're uber-efficient. You're talking to the wrong lot." We said, "Yes, of course you are efficient." But what happens if somebody has a bad day, and they press the wrong button? Or one of your customers changes their mind about how much product they want? If that day comes along, how about this as a process to the solution?"

Accomplishing this normative shift can only occur if the food producer recognized the legitimacy of FareShare as an important actor within the ecosystem. Successful mediation, though, is not always possible. Certain retailers and food producers refuse to countenance the possibility that

they produce any waste at all, and as such they rather frustratingly remain outside the purview of the FareShare ecosystem. A successful redrawing of normative boundaries, therefore, requires the will of more than one actor to reconsider the existing institutional arrangements.

Rules

Whilst similar to norms, we perceive rules as either tacit or explicit laws that are embedded in operational protocols. The key difference is that, in the event of violation, rules are backed by sanctions (Edvardsson et al. 2014). As a FareShare regional manager observes:

> When the food arrives, we then take responsibility for managing it, in accordance with FareShare's policies and procedures, which in turn have been agreed with the food industry. Fundamentally that's part of the deal. So we persuade the food industry to donate it, on the basis that we will manage it. It will be re-distributed in accordance with these rules and regulations which protect their brand and protect food safety.

Moreover, rules are often dictated by the most powerful players within an ecosystem. Hence, in the context of the FareShare ecosystem, supermarkets – often criticized for wielding too much power (Blythman 2005; Simms 2007) – tend to dominate rule-setting. For instance, the stringent financial penalties which supermarkets impose on suppliers for failing to fully meet an order can lead to surplus production. This systemic wastage is something that most suppliers simply accept if they are to remain in business. Via an adroitly conjured vignette, one of our interviewees explains the perverse ramifications of this:

> Right, you're the pie manufacturer, I'm *Retailer X*. I'm saying "I want 100,000 pies a day from you", and they're *Retailer X* branded pies. And the thing that you're measured on is supply and demand. I can say "You've got three non-compliance marks on the calendar. One more and you're in trouble." So, your biggest business risk is not to be able to meet demand.

As a consequence, suppliers will over-produce in order to accommodate the risk of non-compliance. These fixed rules of production, however asinine, are difficult to shift, especially if imposed by a more powerful actor, but sometimes their consequences can be circumvented. A large supermarket chain, for instance, requires that its main chicken supplier produces chicken breasts

that conform to a standardized weight. To achieve these exacting standards, the chicken breasts are mechanically trimmed, producing, in the process, a degree of excess meat. Prior to FareShare's intervention, the chicken processing company reconstituted this into other products such as pies. FareShare challenged them to prove that this was a cost effective solution. The results were surprising to the company:

> Because it's such a big, fast-moving business, they've never worked out that they were spending more on re-processing the off-cuts than they were making and selling them. We said to them, "Right, rather than you actually, at very best, breaking even, but by your calculations slightly losing money on that, why don't you donate it all to us, and we will give you the most fantastic narrative and story to tell your staff"?

In this manner, FareShare is subverting a central tenet of 'eco-innovation', which idealistically is about creating closed loop systems where waste become inputs for new processes (see Carrillo-Hermosilla, Río González and Könnölä 2009). This idea is laudable, but it makes more sense to carefully calculate first whether the new process is economically viable. In this particular case, it evidently was not. Hence the organization is better off donating the waste to FareShare, who in turn distributes it to their regional centers, and on to pre-vetted charities.

Practices

Fundamental to an understanding of service ecosystems is the idea that they are "…configurations of market actors that engage in practices" (Lusch and Vargo 2015, p. 167). Practices are the activities and routines commonly found in organizations that allow work to be efficiently completed. The negotiated order of these activities is not fixed, but over time tends to change and mutate. Given the sheer diversity of organizations within the ecosystem, these practices are naturally underscored by multiple organizational logics. Even actors of a certain organizational type can have widely diverging institutional logics. Charities, for instance, as Mohan and Breeze (2016, p. 3) explain, "…have distinctive intraorganizational processes and operate with different

belief systems that affect all aspects of those institutions and the people who work within them, including their common practices and definitions of success." For Vargo, Wieland and Akaka (2015), the evolution of these practices, what we might call service innovations, is largely dependent on the value co-creation efforts of multiple actors in an ecosystem.

The observation that innovative practice is best derived from interaction of actors in the whole ecosystem is not lost on FareShare. The organization is patently aware of the different institutional logics at work, understanding as they say that "the gateways and the routes to talk to them are different in each one" (Regional Manager), and consequently that the best way to reach many of the actors in the ecosystem is through an introduction from another actor with influence and power. FareShare garnered just such an introduction from *Retailer X*:

> We're helping them solve their problem at store level, which since February has produced half a million meals, so it's actually helping me with my mission as well. What we said to them "Right, we'll solve your problem for you. You solve our problem." So, the other day Retailer X had a meeting with 23 of their largest protein suppliers… "We, feel that these guys, FareShare, are really, really important. We want you to work with them."

Such reciprocal arrangements are key to asserting a commanding presence within the hierarchy of the ecosystem. They allow FareShare to become a focal point for innovation and a key instigator of transformative practice across the ecosystem. By working closely with almost all the major supermarkets, FareShare has managed to interpose itself into their operational blueprints. No longer is surplus food donated to FareShare as an occasional afterthought, a periodic anomaly that they may, or may not, invoke. As a FareShare executive states:

> They treat our regional centers as if they were shops. And so, just up the road from us is a [supermarket], and then there's a Fareshare. And so, they'll load the lorry up, which will go from supermarket to supermarket and then to Fareshare, and back. We are integrated as if we were one of their stores.

This same deep-rooted integration is being developed by partnering with other ecosystem actors. The Manchester regional branch of FareShare is fortuitously located in close proximity to

many fruit and vegetable traders. This locational advantage presented an opportunity to strike up mutually advantageous relationships. As a FareShare Regional Manager explains:

> We get volunteers to help us take off the outer leaves where beneath that probably 80% of the cabbage is fine. You lose the outer leaves and it's fit for human consumption. In terms of innovation, we managed to secure a grant from The Tudor Trust, and they paid for us to do a particular project working with the traders on-site and rescuing all of the fruit and veg. We went from zero, or very little fruit and veg, to in the first year I think we managed to rescue about, 120 tonnes. We're trying to build it from there. So in the last year we've rescued about 160 tonnes.

In the above example, and others like it, it is important to note that some of the most innovative practices in the ecosystem occur as a consequence of serendipity rather than the implementation of a grand masterplan. So while the diversity of the practices within the ecosystem can be problematic to manage, this same diversity can be a wellspring of innovation and, moreover, helps foster a community of creation.

Meanings

Meanings, in the context of this case study, refer to how actors make sense of the activities that occur as a consequence of integrating resources with other actors in the ecosystem (Luca, Hibbert and McDonald 2016). It could be argued that such resource integration might be difficult, given the competing institutional logics at work, with supermarkets governed mainly by a profit-driven market logic, while charities are more fundamentally concerned with doing good for society. To an extent this is true, but as Frow et al. (2014) observe, an organization such as *Retailer X* has different value propositions operating at micro, meso and macro levels. This makes it perfectly possible to be both macro-focused, what UK retailer Tesco calls 'doing right by doing good', and customer-focused, as manifest in the company's advertising strapline 'every little helps'. This explains why ecosystems are sometimes called 'value networks' (Lusch, Vargo and Tanniru 2010), and why actors across the ecosystem express similar sentiments when they talk about the meaning that underscores their activities. The sheer satisfaction of helping people, for instance, acts as a

collective spur that drive the ecosystem organizations on to greater accomplishments, as described by the respondent from Retailer X:

> Yes, just… the satisfaction that… I mean we feed… I mean I think we're coming up to the end of June, I'm predicting that we will cross the quarter of a million people a week being fed. We were 211,000 at December, and I'm rather hoping that we'll cross the 250,000 by this December.

Akaka, Vargo and Lusch (2013) note that it is the social context of this shared meaning that helps connect actors relationally in an ecosystem. Meaning is what sustains the dynamic formation and reformation of ecosystems. The FareShare Regional Manager spoke about how shared meaning drew the charitable organization for which she worked into FareShare's ecosystem, and how this also helped pull other actors into the ecosystem. A major cereal producer, for instance, was reluctant at first to commit to donating the surplus food they produced:

> But somebody in FareShare UK did a good job of eventually persuading them, because the finance people at [the cereal producer] were kind of going, "Look, we're getting paid by the pig farmers, albeit not a lot of money, but we're being paid to send this food to them, whereas you want us to pay a transport cost to deliver it in to FareShare. Well, why would we do that?" X (senior member of staff at cereal producer) always thought that it's because of this food hierarchy: "Ethically we ought to be doing this, feeding people first." Eventually, they were persuaded. So that's quite a pivotal point. We just need to try and replicate that with other companies.

Thus, setting up new operational norms acceptable to all actors in the ecosystem could only be achieved because of the shared constellations of meaning percolating around the importance of feeding people first and making a difference in their lives. It is these meanings that enable human action and create value. Our interviews with FareShare, led the participants to articulate many meaningful stories that detail the positive outcomes of their actions. In London, for instance, FareShare provide meals for the Deptford Drug Project. The idea is that they:

> … get the users in, so they can sit down over a meal and persuade them to go on a rehab program, which means they stop nicking and abusing their partners, spending all of the money that kids should have for food, robbing from a local shop, etc. All the pernicious things that drugs do. And when we started giving them steak, the first week we were able to give them *Retailer X*'s [best quality] Rib Eye Steak, because we had a pallet of it, instead of the cheap mince that they were

> buying from a wholesaler to make spaghetti bolognese. The next week, because the word had gone out in the user community about the steak down at the Deptford Drug Project, they saw a 40% increase in users who came in. If one of those users went onto rehab, that little steak has had a ripple impact on that family, on that street.

Workers in the various ecosystem organizations are also energized by the opportunity to cut waste. As the retailer respondent articulates:

> One of the most amazing aspects of the project…it's now almost out of head office's hands. We set up the process, but there has been a sort of a chain reaction as stores take it on. It's very gratifying to see what happens when it gets going. We just recruited two thousand charities into the program. And it makes the hairs on my arm stand up, because this is from nothing. We are really proud of that. Next week we'll reach our twelfth million meals donated. They are nice numbers. But the really cool stuff is hidden by the numbers. Our store colleagues hate throwing food way. They genuinely do. It's no fun, marking stuff down and putting it in a bin.

Ultimately, there has been a symbolic shift in how waste is perceived. It has been recoded and revalued (Evans 2014), and is now seen not as something to be buried in the dump, but as an operand resource that communicates considerable meaning about the morals of those who help recast it for other actors in the ecosystem.

Symbols

The enthusiastic drive by supermarkets and manufacturers, operating in the FareShare ecosystem, to use significant operant resources to transform the operand resource of food waste (a natural and visible by-product of inefficiency in their everyday operations), is partly driven by the symbolism of such effort. SDL theorists recognize the importance of symbols as regulators of behavior in ecosystems and mechanisms for value cocreation (Flint 2006; Vargo and Akaka 2012; Akaka et al. 2014). Flint (2006, p. 352) makes clear that "…anything can be considered a symbol, for example, a piece of clothing, a word, a possession, a gesture." Being attentive to the symbols in the FareShare ecosystem reveals quite a few. For instance, when describing FareShare's mission, rather than adopting dispassionate industry terminology such as the notion of capturing food, the Regional

Manager's preference was to talk about 'rescuing' food. When asked to explain the appeal of her vocabulary, she said:

> It's a little bit more emotive, and if you're talking about it in the sense of promoting it to people, 'Can you come and help us?' It's got a bit more of a tug to it, in terms of, 'Come and help us to rescue something,' because actually it's a bit of a crime. On this site here, there are over 4,000 tonnes of fruit and veg that goes to composting, pig feed, etc. So in terms of the waste, or the food hierarchy, obviously we should be, a bit like reduce, reuse, recycle, we should be trying to feed people first, and that's why the food's been produced in the first place. Feed people first, and then animals, and then anaerobic digestion for energy.

A FareShare executive used even more evocative and heroic language:

> And then you've got all of the supermarkets who, because of all of the media pressure, have really latched onto the fact that they need to be doing the right thing with the bins at the back of their stores. So, there's a food waste war going on at the moment, where every supermarket is trying to find charities to chuck their produce at, to be able to demonstrate that actually they're not wasting food.

The symbolic importance of this seemingly throwaway remark about the existence of a "food waste war" should not be underestimated. This military trope is likely to help muster troops, discipline the volunteers, recruit allies, and make the worker 'heroes' against waste march in step. In the manner that war has always been seen as a catalyst of technological innovation (Vernardakis 2016), the use of the war metaphor might even be instrumental in instigating certain innovations in respect of food waste management. "Symbols", as Feldmann (2016, p. 68) writes can "…unite a people in a community in which differences are plenty… [it] can break through to help unite a group and drive the association of those who share similar values." As such, they constitute the glue that binds an ecosystem together.

As a consequence of our analysis, we derive the following Actor Institutions Matrix that

illustrates and classifies the above discussed institutional dimensions (norms, rules, practices, meanings and symbols) in accordance with the each of the main actors: FareShare central, FareShare regional, member charities, and surplus food sources (See Table 1).

INSERT TABLE 1 HERE

DISCUSSION

In the spirit of the expanded societal role envisaged for service research (see Gummesson 2006; Lusch and Vargo 2015) we studied, with a focus on institutional arrangements, a service ecosystem representing major activities related to the reduction of food wastage and food poverty in the UK. It addresses the call for more relevant service research on customer well-being (Anderson and Ostrom 2015) and evidence-based research (Vargo and Lusch 2017), and makes a contribution at the intersection of service innovation, TSR and service design. One of the main features of the ecosystem perspective is the recognition of three different levels: macro, meso and micro (Akaka and Vargo 2015; Fisk et al. 2016; Witell et al. 2015) and, in understanding *societal* service innovation, it is important to consider the complementarities and tensions within and between the levels.

We have identified evidence that challenging and changing the institutional boundaries has resulted in innovations that support the overall aim of reducing food wastage. For example, dispelling the commonly accepted norm that waste reduction initiatives are irrelevant for some companies has directly and indirectly resulted in collaborative efforts to redirect surplus food from landfill to citizens in need. The changes in practices at *Retailer X's* distribution centers, whereby they treat FareShare regional centers as if they were one of their stores, has streamlined the delivery of supermarket surplus food to FareShare, and hence to the member charities. The present practice, whereby food is sent to FareShare only from retailer distribution centers is also being challenged

(Fox 2016). Closer scrutiny of Table 1 will offer many potential 'what if?' scenarios where institutions can be questioned and challenged.

We have also found evidence that there were conflicting norms within levels. For example, the Fareshare view that all fresh waste food can be used conflicts with the micro level norm that at the final service encounter food has to be easily prepared, and preparable. This has led to innovations such as developing cooking lessons and the development of charities that will provide food kitchens in large housing estates.

Service innovation also occurs between levels. Theoretically, different systems levels are distinguished by different emergent properties (Boulding 1956); these systems then nest into hierarchies, with each level having higher levels of complexity. Using complexity and emergent properties as our guide we identify: the macro level as governments making regulatory and policy decision; meso level interactions are the food wastage ecosystem represented in Figure 1; and the micro level is the service encounter between citizens in their daily interactions with private and public sector service providers such as food retailers, benefit agencies, and voluntary organizations

Our findings indicate that, as the meso level becomes more heavily constrained, the opportunities for innovation occur between different levels. The FoodCloud app is an example of a micro level innovation that is directly linking *local* supermarkets and food producers with local charities (Fox 2016). In this configuration, FareShare's role, as a facilitating intermediary, is to identify and screen suitable charities that then link directly with the local provider. A related innovation is to identify car drivers who are routinely driving between the location of food producers and charities. Recruiting these drivers as volunteers reduces the need for warehouse space and makes for a more responsive system. Simultaneously, FareShare is also working at the macro systems level, to change Government taxation policy to incentivize surplus food donations to be directed towards feeding people, as an alternative to anaerobic digestion (a process that breaks down organic material to produce biogas that can be used as a fuel). Innovations at the policy level

could include regulations that supermarkets must redistribute a much greater percentage of their food waste. For example, in France, companies can offset charitable donations against tax, up to a maximum of 5%. In one fell swoop, this would reframe the entire ecosystem and have a positive knock-on effect on the ability of the actors operating at both meso and micro level to provide a much-improved service.

Finally, innovations within and between the levels have implications for mechanisms of control. Currently, different organizations set different institutional arrangements. For example, enforcing government regulations on food safety are the responsibility of the food retailers and manufacturers and, as a consequence, they dominate rule setting. The norms around re-use of food have been established and promulgated by FareShare who also mediate between the practices of the retailers and charities. The shared meaning of feeding the hungry is strongly emphasized by the charities and results in life-style changes such as the Deptford Drug Project. Future innovations span the whole meso level system. For example, the mechanism of control is becoming less direct as FareShare changes its role to be more of a franchiser or platform broker, reducing food waste through advice where possible and, where this is too challenging, by directly linking providers and charities.

These examples of interactions within the service ecosystem both within and across levels strongly support the underpinning force of service. Service goes beyond the primary aim of feeding needy citizens with food that would otherwise be wasted. For example, supermarket maintenance employees improve the physical facilities of the charity locations. Supermarkets supply charities with cooking implements. Drug and prostitution counseling takes place in buildings where 'good food' is available. Retailers and FareShare jointly prepare volunteer briefing packs. These instances seem low-key, but are examples of integrating and using resources in innovative ways (Aal et al. 2016).

In designing service ecosystems, the Actor Institutions Matrix (AIM) offers a common reference point for a productive discussion. The ecology of any service system is characterized by

players that are co-operating, but also evolving and competing. Guaranteeing collective commitment to resolve and improve the design of the overall ecosystem is thus extremely difficult. Even while Eggers and Macmillian (2013, p. 3) proclaim that, "…governments have a desperate need for an alternative to a traditional top-down service model", it is unclear, given their political agenda, that they would alter their stance towards players located further down what we could call the Austerity-Driven Service Ecosystem.

Finally, the approach adopted in this research would seem to be applicable to service ecosystem-based studies of service innovation more generally. In an attempt to operationalize this approach, we make the following recommendations for researchers studying, and managers aiming to innovate within, service ecosystems.

1. *Clearly specify the service concept (Patricio et al. 2011) and why it is important*. Because ecosystems can be boundless, there needs to be a guiding principle for the study in order to justify the boundaries imposed. For example, food wastage represents service inefficiencies. In periods of government austerity measures, reduction in food wastage can reduce food poverty for many citizens and households.
2. *Determine a central actor for the study*. Even with a clear focus, a service ecosystem can look very different depending on the centrality perspective taken. For example, the service ecosystem described above, from the perspective of one of the supermarket retailers or of one of the member charities which serve rescued food, would vary considerably from that shown in Figure 1. The choice of central actor is subjective, but is guided by prior knowledge and research into the practices already evident concerning the service concept.
3. *Identify key actors and interactions*. There will be a website trail, starting with that of the central actor, which will provide a starting point. However, depth interviews with key informants from the central actor are necessary to achieve a visual representation of the service ecosystem, as demonstrated in Figure 1. This may require several iterations.

4. *Seek stories from key actors about what they do, why they do what they do, and their current frustrations*. The aim of interviews with key actors is to encourage them to reveal, in their own words, the institutions and institutional arrangements which govern their activities. Asking them to relate what they actually do, supplemented by examples, can, with careful and encouraging prompting, lead to stories/anecdotes which demonstrate the 'rules of the game' in the service ecosystem.
5. *Complete an Actor Institutions Matrix (AIM) as a representation of the current service system design*. AIM can represent a framework for service system design which acknowledges the requirement for a multi-level approach. It provides an accessible summary of the interdependent assemblages of institutions (Vargo and Lusch 2016).
6. *Identify how challenges to institutions have already resulted in innovation.* Working on the premise that service innovations can result from challenges, changes and developments to the institutions, some reflection on what has already been done is instructive, especially with respect to what seem to have been simple changes but with huge effects. For example, the food retailer agreed to put one extra line in their practices and processes for dealing with surplus food: deliver surplus food to FareShare. Such an action draws attention to the norms, rules, practices, meanings and symbols of other key actors.
7. *Identify potential for further challenges to institutions which may lead to further innovations.* This will require further discussions with representatives of the key actors. The AIM document becomes the central reference point for identifying potential service innovations.
8. *Revise the AIM to provide a future service system design that addresses better the main service concept.* The service concept in stage 1 is revisited. Following stage 7, the AIM can be redesigned by the key actors to include potential innovations that explicitly address the service concept. For example, working together to reduce food wastage and food poverty.

These recommendations represents a method of moving "…beyond dyadic business-to-consumer interactions to embrace networks of interacting customer, businesses, citizens and

governments" which is necessary in emerging service research (Barile et al. 2016, p. 653). It has the potential to support TSR service delivery efforts in a sustainable manner. The service concept above – reduction in food wastage inefficiencies can reduce citizens' food poverty and improve well-being – fits well with the TSR aim to improve consumer and societal welfare through service. The process is one that encourages collaborative research, which, according to Anderson and Ostrom (2015) is a precursor to the development of solutions which have a greater probability of being implemented and having an impact. In order to make an impact, we would need to take our findings back to the key actors in the ecosystem, via the AIM, and have them collectively contemplate their capacity to develop and extend innovative solutions. At FareShare central, a respondent acknowledged that the biggest frustration was

> actually getting to the stage where the food industry has a mature conversation with itself and says 'Look there is all of this surplus food. We do need to be doing the right thing. Come on guys, let's do it'.

However, these recommendations clearly need testing with replications in other service ecosystem contexts. It could provide ammunition for service researchers to convince powerful policy-makers of the efficacy of an ecosystems approach, and its role in promoting innovation at every level within that system. We would argue that it is time to be more ambitious and to expand the reach and impact of service research to the policy level.

CONCLUSION

We wholeheartedly agree with Kotler and Lee's (2009, p. 37) social marketing treatise, which offers solutions that could help alleviate world poverty, and notes: "The problem clearly is not a dearth of poverty initiatives but a lack of coordinated and collaborative programs." Similarly, we would argue that ignoring the gestalt of a service ecosystem in respect of opportunities for innovation could potentially lead to myopia on the part of individual actors within the system. Adopting a service ecosystems perspective allows the micro, meso and macro levels within an

ecosystem to inform, co-ordinate and collaborate with one another. This view is being advocated at the conceptual level with the latest thinking on SDL, transformative research and service innovation and design.

We consider that our investigation of a service ecosystem provides support for this view. By adopting a focus on societal service innovation, in the situation whereby food wastage and food security issues have become more prominent through the introduction of governmental austerity measures, we have taken ideas from the conceptualizations on SDL, TSR, service innovation and design to analyze activities in an important service ecosystem. In particular, we have explored, in detail, the institutions and institutional arrangements which underpin the service ecosystem activities and internal interactions. In turn, this approach has confirmed the claim by Vargo and Lusch (2016) that challenges to - and developments of - the institutions in question can lead to innovation.

We would suggest that there are three contributions emerging from this research. First, although institutions are grouped together in the latest developments of SDL, for any detailed study it is necessary to clarify the distinctions between norms, rules, meanings, symbols and practices. This in turn helps with understanding the application of institutional theory within each of the ecosystem levels (macro, meso and micro). This is addressed in the 'Findings' section of this paper. Additionally, we have developed two further contributions that will help future ecosystem scholars. The Actor Institutions Matrix is put forward as a fruitful outcome of the analysis of the institutions. Not only does it give a clear focus for a thematic analysis, it also has great potential as an aid to practitioners and service system designers. We have also developed a series of recommendations for operationalizing service ecosystem studies (as outlined in the previous section), which we believe has general application.

However, we do recognize a potential limitation in our approach; namely, the scope of the chosen service ecosystem. Whatever boundaries are placed on the service ecosystem, there are counter arguments that would advocate the inclusion of other actors, and their associated co-

creation and resource-integration activities, which may further inform the subtleties of the institutions in question. Even within a system addressing food wastage and surplus, there are many actors and perspectives that have not been explicitly covered in our investigation. For example, food wastage occurs at other stages in the food chain, and there are other community-led activities which also exist. Austerity measures also highlight homelessness, which is a related theme when dealing with citizens falling below the level of consumption adequacy. To move from service ecosystem conceptualizations to *studies of service ecosystems* with a view to identifying potential service innovations at the macro, meso and micro levels, will require a guiding classification system for determining the scope of the ecosystems, as well as the centrality. We suggest that this is a priority for future research.

In terms of other future research directions, there is still considerable scope to address a current question which challenges SDL scholars, i.e. how can the institutional perspective can be used to study service innovation (Vargo and Lusch 2017), and to further explore the interdependence between the micro, meso and macro levels (Beirão, Patrício and Fisk, 2016). To explore how institutional theory can provide insights into the complementarities and tensions within and between levels, a fruitful approach would be to draw on established systems concepts of purposes and viewpoints, boundaries and hierarchies and mechanisms of control (Vargo and Akaka 2012; Maull, Geraldi and Johnston 2012).

Additionally, Melkas and Harmaakorpi (2012, p. 4) argue that "…it is necessary to build bridges between analyses at different levels – meso-level decision-makers, for instance, should look up (to macro-level policy), look down (to micro-level policy), and all around (to impacts of the policy on the rest of the meso-level)." There is considerable scope for replication studies that can add further insights on this bridging role. Since austerity measures were introduced in 2007-08, most developed nations have been faced with similar issues of poverty, hunger and food wastage. By championing a services ecosystems perspective, and adopting multi-level approaches to service

design with regard to societal issues, we strongly believe service researchers can fulfil this bridging role.

Figure 1 UK Food Wastage Ecosystem from the perspective of FareShare as Central Actor

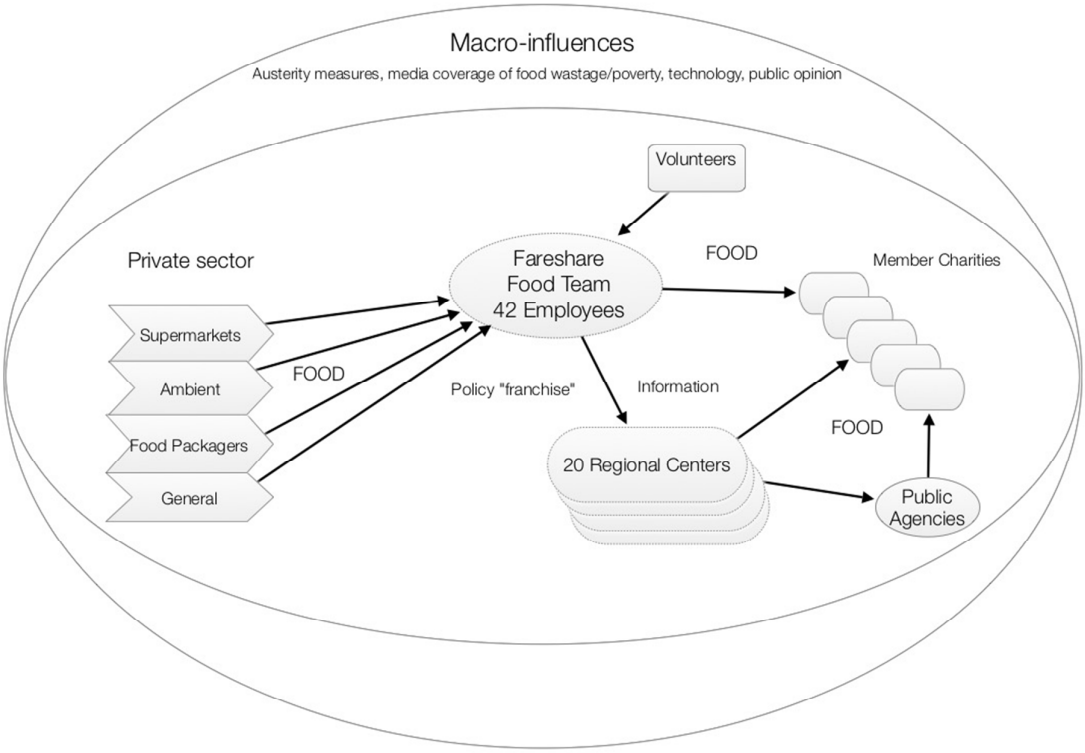

Table 1 Actor Institutions Matrix

	Institutions					
		Norms	**Rules**	**Practices**	**Meanings**	**Symbols**
Actors	**FareShare Central**	Food efficiency framework that turns surplus food into social good.	Comply with food 'use by' dates and food handling regulations.	Food team approach people within the food industry to develop relationships. Introductions are more successful if made through an actor with influence and power.	No good food should be wasted.	Metaphor of a food waste war. Volunteers regarded as 'food heroes'.
	FareShare Regional	Food offered to charities should be fresh, healthy and edible.	Operate according to policies and procedures set by FareShare UK.	Take responsibility for managing donated food according to FareShare policies and procedures. Like to make full use of locational advantages. Dependence on volunteers.	Feed people first.	Preference for 'food rescue' as opposed to 'food capture'.
	Member Charities	Food should be easy to prepare, both for the charities and the recipients of meals prepared by them.	Complete application forms on facilities, food distribution and food safety.	Pay FareShare a nominal amount for food. Different charities operate with different belief systems.	Positive service actions which result from supply of food to those in need.	The quality of the food e.g. top of the range cheeses and meat in unblemished packaging.
	Surplus Food Sources	Wastage is an integral component of growing, processing, storing, selling and consuming food. Waste reduction initiatives will ultimately be costly and of little benefit to the company concerned. There is no waste.	Government legislation on food hygiene standards. Financial penalties that supermarkets impose on suppliers for failing to fully meet an order.	Can treat FareShare Regional Centers as shops. Retailers send surplus food from their distribution centers to FareShare. Currently incentivized (through tax breaks) to send surplus food to anaerobic digesters.	Workers energized by the opportunity to cut waste. Pride in charity recruitment.	Food waste is a visible by-product of inefficiency in their everyday operations.

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