



The Design Journal An International Journal for All Aspects of Design

ISSN: 1460-6925 (Print) 1756-3062 (Online) Journal homepage: https://www.tandfonline.com/loi/rfdj20

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To cite this article: Emily Ballantyne-Brodie & Dr Ida Telalbasic (2017) Designing local food systems in everyday life through service design strategies, The Design Journal, 20:sup1, S3079-S3095, DOI: <u>10.1080/14606925.2017.1352816</u>

To link to this article: https://doi.org/10.1080/14606925.2017.1352816

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12th EAD Conference Sapienza University of Rome 12-14 April 2017



doi: 10.1080/14606925.2017.1352816

Designing local food systems in everyday life through service design strategies.

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Abstract: The paper's practical objective is to provide those developing communityscale food systems with an implementable model. Its theoretical objective is to examine the ways to effectively design post-capitalist models for food systems. In providing a testable model for food systems design, the paper advances concept formation in the field. The case study approach recognizes that local food systems design cannot depend on abstract, formalized models due to the specificity of each project. The crucial role for designers include the involvement of end-users in everyday life in the research process, experimentation in everyday life, building relationships, as well as prototyping, policy making and implementation of services to be delivered by public agencies. People-led food systems can engage agencies and citizens in a co-production process whereby users design and implement their own service program that can be enabled by public agencies. Design-led food strategies illustrate an approach to create eco-acupuncture points that will ultimately start to change the dominant industrial agriculture system into a new social and economic paradigm.

Keywords: Design-led food strategy; everyday life politics; service design; scaling social innovation; localisation.

1. Introduction

When designing for new food systems, it is the design-led approach in everyday life that may serve as radical innovation for ventures in local food systems. The focus from user-centred approaches to design-driven innovation is what could radically innovate what food systems mean. Design in itself is a continuous circle of iterating and experimenting on practice while consistently and responsibly reflecting on these results in the context of its culture. Framing design for social change is part of that process and this is where design needs to adopt the right services, products, programs and organisational models as a way of working. Design needs to respond to the constant balance between the interactions of supply and demand and integrate the network partnerships through

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already existing channels into the scaling process. This can be done by facilitating connections between potential network actors, providing the right design tools, storytelling and offering support through facilitation for the implementation.

Literature review: design for social change and food systems

A growing segment of design literature concerns the impact of design on the world and the scope for design to solve social and ecological problems (Papanek, 1984; Simon, 1982; Manzini, 2015; Irwin, 2015). There is criticism that even when design for change is the objective, the actions of designers may reinforce the status quo (Vodeb, 2015; Fry, 2009). A proposition of this paper is that the most important initiatives for change come from outside professional design in the form of civic engagement, social movements and community-based projects aimed at improving processes and outcomes within everyday life. The design for social change literature includes varied criticisms of design, discussing different ways in which design is reinventing itself in both professional and non-professional contexts (Manzini, 2015; Irwin, 2015).

Victor Papanek (1984) was among the first theorists to challenge the social and environmental impact of design, arguing for designers to be aware of their responsibility in the world. Papanek's Design for the Real World: Human Ecology and Social Change identified multiple roles for the designer, including a multidisciplinary facilitator with social agency to propose design solutions in harmony with nature. More recently the political ethical dimensions of design are being discussed and debated (Dilnot, 2009; Fry, 2009). These authors state that the ethical foundation of design is not only about relationships between design, clients and stakeholders but it is about understanding sustainment that forms part of all practices (Dilnot, 2009; Fry, 2009). The expansive discussion of design for social change incorporates a strong criticism of professional designers and their tendency to see themselves as expert problem-solvers who enter a situation and intervene (Brown, 2009, Manzini, 2015; Jégou, 2008; Fry, 2009). Although various design for change initiatives are acknowledged as having an impact (Meroni, 2007; Manzini, 2015; Brown, 2009; Mulgan, 2007), there is also research showing this work being restricted by the institutions in which they are embedded (Fry, 2009; Irwin, 2015). The design for social change literature frames the designer as a facilitator, working with people to empower them to develop solutions relevant to local contexts (Jégou, 2008; Brown, 2009). This literature stresses design's scope to develop systems and services, highlighting the need for collaborative approaches. However, caution is given when designers are engaged by third parties to undertake social intervention. Projects appear to be poorly sustained due to a lack of involvement from local communities (Fry, 2009; Mulgan, 2010).

Service design was the first field to become strongly involved in theorising design for social change. The service design literature was initially focused on improving the commercial performance of service providers by achieving better outcomes for consumers, but more recently sections of the service design literature have struggled with the paradigm of commercially oriented design (Irwin, 2015; Secomandi, 2011 and Tether, 2008). In developing a strong focus on the quality of user experience within service delivery, applying systems thinking to achieve this (Kimbell, 2009), the service design field proposed a strong human-centred approach to designing that included the development of new visions and designs created by users themselves (Manzini et al., 2014; Akama, 2009). Another alignment to social change projects is that service design projects require 'specialist generalists' with a wide range of expertise to achieve outcomes (Koskinen, 2011; Akama, 2009). Agile and lateral thinking skills are required in service design to create impact and these skills have been demonstrated in case study work by Jégou & Manzini (2008), Meroni (2007), Kimbell (2009) and Akama (2009). There are significant challenges for service design to be effective in creating social changes and one of the major challenges is long-term viability of these projects. Typically, designers have control in the design and implementation of projects (Akama, 2009).

The service design literature includes the application of design for change approaches to the development of local food systems (Vodeb, 2015; Meroni, 2007; Fry, 2009). A range of case studies is reported of the involvement of design practitioner, design academics and design students in food projects aiming to create social change. The most significant of these is the article of Baek et al. (2014) on initiatives in peri-urban agricultural land around Milan, which reports on a collaboration between farmers and design students to allow members of the public to experience local farms during holidays. This project was part of the wider 'Nutrire Milano' (*Feeding Milan*) project, which aims to preserve and develop the array of food production around Milan by approaching it as a potentially integrated system through service design thinking. In a related project, design students from Politecnico di Milano co-designed a community garden with the university community and surrounding residents called 'Coltivando' (Manzini, 2015; Meroni et al., 2013; Ballantyne-Brodie et al., 2013). Both projects were conceived through a co-design process and implemented collaboratively with multiple stakeholders.

The literature in design for social change lacks discussion and empirical research into the constraints of institutional frameworks to achieve lasting impacts through individual projects. The bureaucratic frameworks in many established institutions is seen as a constraint that prevents designers from effective implementation, either because their visions are restrained, or their scenarios are tested but not followed through on to implementation (Manzini and Staszowski, 2013). The established processes in bureaucracy result in governing bodies that stop thinking laterally and seeking an alternative and creative approach, hence why Holmes (2007) suggests extra-disciplinary approach to practices and disciplines. The emerging design research is pointing to ways in which political and ethical matters can be brought to a central focus in design. Design as everyday life politics opens up a new opportunity for design to become embedded in social movements and everyday life projects such as permaculture, slow food and transition towns (Holmgren, 2002; Petrini, 2013; Hopkins, 2008). Designers in everyday life can begin to shape a new politic around local action with a simultaneous holistic view that their action is linked to the betterment of social and ecological systems.

1.2 Service Design Strategies

As already highlighted, it is apparent that the design role acquires systems thinking, human-centred approach, long-term viability and to cut across different disciplines in order to create impact. Design is becoming "a more important part of strategic and multidisciplinary innovation" (Kuure et al., 2014). The buzzword 'design thinking' (Martin, 2009 and Brown, 2009) introduces the concept of design being a thinking form and "an approach and a series of tools serving changes in different systems, including economic, social and environmental systems" (Zurlo and Cautela, 2014). Sennett (2008) explains that if we shift our thinking from *why things are not working right now* towards *how they might work better tomorrow*, it is possible to truly engage with the constraints of a problem.

Design strategies consider the creation of possibilities that have not existed before but become a platform to "inform design of revised or totally new alternatives" (Boyer, Cook, and Steinberg, 2011, p.33). Service design strategies are a way to accomplish set objectives and find ways towards the realisation of those aims. The designer's role in this respect is not a "question of thinking or doing, but what to think about and how to do" (Boyer et al., 2011, p.29). These approaches reflect the potential of service design strategies to envision products and services whose success today may be the norm of tomorrow. Product-Service-System (PSS) design integrates products, services and communication strategies into a complex network that includes users, stakeholders, organisations, etc. Meroni (2008) provides a few definitions on Strategic Design that are relevant for the discourse, such as:

- Product Service Systems where innovation is focused on an integrated PSS strategy oriented to produce solutions;
- Problem setting (what) and problem solving (how)
- Social innovation driven by bottom-up behavioural changes
- Co-designing in a collaborative way with different stakeholders
- Building capacities through empowering people and creating a platform of tools and knowledge.

The main difference between strategy in business and strategy in design is the kind of tools applied, although the goal is the same. Design strategy is a design activity related to the generation and development of value within product-service-systems, using design tools such as customer journeys, context mapping, ethnography, etc. On the other hand, business strategies rely of data such as graphs, statistics, annual reports, etc., in order to make the right decision analytically (Mazo, 2016). The design role is to shape meaningful interactions between all actors involved in a PSS and these interactions concern the creation of new business models, and improving existing or proposing entirely new innovation service systems (Telalbasic, 2016). Design strategy includes the understanding of socio-economic transformations and aims to develop sustainable product-service-systems that respond to the present generation of products and services, as well as visions of future PSSs.

2. Case Studies: Design-Led Food Projects

The following two case studies come from Australia and one of the authors of this paper was intensively involved in setting up the collaborations with relevant partners and implementing a unique design process with diverse communities. The purpose of the case studies was to achieve three major objectives; firstly, to demonstrate the power of co-design and visualising when developing local food projects; secondly, understand how designers can create real impact and move beyond visualisations towards action to create social change (Radical Designing) and thirdly explore how these case studies can be scaled in particular ways in other contexts.

2.1 'Shepparton Food Hub'

Shepparton in Regional Victoria, Australia is a place facing serious economic issues due to cheap importing of fruit that does not support local growing. The local government engaged researcher and designer (author 1) with her design colleagues to create a community garden in February 2014. The designers decided to redirect the brief given by the local government in order to create a vision that would develop a Food Hub to educate and deliver local food to the community in the Goulburn Valley. In this way, the 'Shepparton Food Hub' (Ballantyne-Brodie et al., 2015) was conceived to act as an aggregate and middleman in the region's food system, at a time when the multinational company Coca Cola was refusing to buy local farmers' produce for the SPC Peach Can factory. The designers extensively engaged the community and major stakeholders including farmers, councillors, council workers, health bodies, state government and food experts in a fresh food vision for the region. The design process included storytelling, convivial lunches, co-design workshops and prototyping (Figure 1). This project in 2014 led to several outcomes including: co-design of business model, governance model, co-design of an education program, co-design of master plan for the 'Shepparton Food Hub'.



Figure 1. 'Shepparton Food Hub' design process, Regional Victoria, Australia

Then from 2014, there was a two-year waiting period for the local government to invest in further development of the project. Throughout this two-year period (2014-2016), author 1 continued to run workshops, convivial lunches and carry out storytelling with the local media. In mid 2016, the local council approached Emily to conduct some trials and experiments for the food hub project. The data from the evaluative research, undertaken about the project in 2015, indicated that in order for change to happen, experimentation and trials need to take place. These 'experiments' would create a space and opportunity for new learnings and patterns to emerge in the food system. In late 2016, the 'Food Box' trials began at the 'Shepparton Food Hub' site. A network of local farmers provided

produce, local volunteers packed the boxes and community members bought the boxes (Figure 2). The experiment has been extended during 2017, to further develop the food box and a related educational program on growing, cooking, eating and enjoying local food in the Goulburn Valley.

To conclude, there was a three-year long design process that involved extensive engagement with the community and local government, co-design, storytelling about the new model, planning, feasibility study, autonomous experimentation and engagement from the designer, and testing of projects on site. The project is still only in its early stage, however there is a growing woven tapestry of relationships, projects and learning that has developed from this project. It took persistence and agency from the designer to continue the work to where it is today. The project is an evolving system of actions set up in Shepparton to design local food systems. Many questions still remain open relating to the long-term viability of the business model and the governance framework.



Figure 2. 'Shepparton Food Hub' experimentation project, Regional Victoria, Australia

2.2 'Dandenong' Food Strategy

The development of a design-led food strategy for the City of Greater Dandenong in Metropolitan Melbourne, Australia took place in 2014 and author 1 was involved in co-design activities with the city and the community. The local food strategy was designed to advance the policy and practice of the local and regional food system. This additionally expanded the opportunity to food processors,

retailers (and subsequently their supply chains) and offered affordability and access to healthy food for the local community. The food strategy aimed to take a systemic perspective on how to improve local food systems by addressing the following aspects: improving the local economy, food security, local food manufacturing, land use planning, local community experiences, local supply chain opportunities, use of recycled water, healthy options for residents, landfill waste reduction and food welfare.

Similar to the 'Shepparton Food Hub' feasibly study there was an engagement process with the community, co-design of project ideas to further local food systems and experimentation of some of the co-designed ideas. The City Council embraced the project over a 12-month period and invested in projects to develop prototypes of best practice local food design (Figure 3). Long-term prospects for further implementation have been left to designers and community members to initiate. The local government's role is potentially respond with leadership and support if any entrepreneurial actions take place in the community. This project is work in progress and requires local leaders to step up and take action on local projects in order to create changes in the food system of the city.



Figure 3. 'Dandenong' food strategy design process, Metropolitan Melbourne, Australia

3. Scaling Social Innovations

3.1 Social Innovation

If today's role of design is more and more concerned about how to scale-up solutions in everyday life i.e. services, social innovations or PSSs that bring about social change, there is an immediate need of understanding how co-designed solutions can firstly, be sustainable and secondly, how these solutions can be replicable in other contexts on various scales. It is important to first identify what we mean by social innovation, especially if it comes to mean "alternatives to established solutions" (Godin, 2012, p.6). Social innovation can be defined as "new ideas that work in meeting social needs" or, more specifically, "innovative activities and services that are motivated by the goal of meeting a social need and that are predominantly developed and diffused through organizations whose primary purposes are social" (Mulgan et al., 2007, p.8). Jégou and Manzini (2008) term social innovation as the way in which individuals or communities bring about changes in societies by acting to solve problems in unique ways and generating new opportunities. According to the authors, "innovations are driven more by changes in behaviour than by changes in technology or the market and they typically emerge from bottom-up rather top-down processes" (p.29).

3.2 Scaling Methods

In a paper by Dees et al. (2004, p.28), three distinct strategies for spreading social innovations are outlined: *dissemination, affiliation* and *branching*. Dissemination is about "providing information, and sometimes technical assistance to others looking to bring an innovation to their community". Affiliation is about creating formal relationships with specific agreements to create an identifiable network. Branching is "the creation of local sites through one large organization, much like company-owned stores in the business world". These complex artefacts envision social interactions and behaviours that are site-specific and include cultural perspectives in their core creation processes. Heterogeneity of users, such as ethnicity, age, gender, social status are all relevant differences amongst users who have a personal standing point towards a certain innovation and thus act as multiple actors in the development of a solution. Sometimes, the social innovations can be too context specific to have the potential to be scaled-up and this can be a limitation for diffusion.

Scale can be achieved when ideas are diffused, adapted or replicated (Gabriel, 2014). The need for scaling a social innovation arises from the understanding of what benefit this particular solution can bring and to how many people. This generates the need to respond by thinking more broadly, adopting more widely a new set of principles and designing a replicative intervention in new areas. Scale is also a form of iteration where features can be built or added on an existing social innovation and therefore target a different population, need or social problem. This can result in innovative interventions in the system that can regulate change in diverse parts of the supply chain or develop alternative innovations that address the same social issues (Gabriel, 2014).

In relation to the theme of this paper, there is a need for new service models and enterprises to develop in order to enhance local food production and to facilitate linkages between local food producers and consumers (Meroni, 2007). Early approaches to address this issue are very much 'alternative' responses and have included community gardens and farmers' markets. Many of these

projects are only adopted by specific subsets of the population but sound business models to scale sustainable local food systems are yet to be significantly developed (Ims et al., 2014). Ims et al. (2014) suggests that collaborative models can be a strong alternative to the still prevailing mainstream models. Scaling of social innovation and incubation through design has a major role for the local food movement to occur. Systemic change can be intentionally designed by connecting the crucial nodes in existing food system networks and this is the role of strategic design.

3.3 Replication of 'Coltivando'

In 2012, field research in Milan, Italy led to the development of an urban agriculture project at Politecnico di Milano called 'Coltivando' (Ballantyne-Brodie, 2013). 'Coltivando' is an example of a successful scaling model as it applied service design strategies in the creation of a PSS that includes multiple stakeholders, such as citizens, designers, policy makers, institutions, etc. 'Coltivando' was developed using service design and co-design approach with the neighbourhood and students from the university (Figure 4). This project has been successfully implemented within the university garden area and students, facilitated by design professors who applied service design methodology to create, envision, prototype and test an implementable model. Knowledge sharing took place through co-design and service design techniques that were utilized; namely, a co-design workshop that articulated the community vision for the convivial garden project.

Strategically, 'Coltivando' is described as a platform for social innovation and its complementary program "Il sabato della Bovisa" (Bovisa Social Saturday) is a system of actions to open up the campus gates to the neighbourhood (Meroni et al., 2013). It is expanding to Tongji University in Shanghai, China where the design school is replicating this same model in the Chinese context. 'Coltivando' shows that a community garden is a way to respond to sustainability problems in everyday life (Meroni, 2007). This project continues to be an exemplar project for other community gardens around the world. The learnings and initial findings were written in a research paper for a Swedish design conference (Ballantyne-Brodie et al., 2013).



Figure 4. 'Coltivando' system of actions, Milan, Italy

4. Designers experimenting in everyday life

Designers have particular skills to empower local governments and communities to become enablers of innovation, entrepreneurship and resilience across local food systems (Manzini and Staszowski, 2013; Jegou and Manzini, 2008). In both the cases of City of Greater 'Dandenong' Food Strategy and 'Shepparton Food Hub', there was a significant opportunity for designers to push beyond the traditional didactic policy documents or two-dimensional branding output. Designers saw a unique opportunity to develop a co-design platform that encompassed experimentation, action, learning and collaboration. Through co-design and experimentation methodology, designers enabled and taught people how to carry on the work themselves. This process involved looking for entrepreneurs and giving them a shared purpose and creating a new narrative and highly participatory approach where all answers come from the major stakeholders and citizens engaged. As a result, new business opportunities emerged through the process. The designer's aim was to enable local communities to deliver value by developing progressive visions for economic and social innovation to take place in the production, processing, distribution, consumption and celebration of Dandenong's food. The aim of the case studies was to unlock a new way of thinking within the 'Dandenong' and 'Shepparton' food systems, and encourage self-organizing platforms for on-going collaboration for food growers, manufacturers, distributors, traders, local government and consumers.

The case studies show three main strategies that emerge for the designers' role in this context. Firstly, the involvement of end-users in the research process, as well as prototyping, policy making and implementation of services to be delivered by public agencies. Strategic designers are "capable of contributing over the duration of a change process, providing regular feedback to identify, test, rework and deliver durable solutions. (Boyer et al., 2011, p.48). Additionally, strategic design is grounded "through its focus on generating plausible prototypes of new approaches, systems and services" (Boyer et al., 2011, p.138), to offer an alternative to the established decision-making processes. The second strategy shows how people-led services can engage agencies and citizens in a co-production process whereby users design and implement their own service programs that are enabled by public agencies. The local food case studies illustrate an approach in terms of scaling food projects that can be achieved through strategic interventions in a local system to create acupuncture points that will ultimately start to change the dominant industrial agriculture system. The third strategy emphasises the 'weaving' together of stories, dialogue, conversations, new understandings, skills and convivial moments to create new localised social and economic systems.

Small	Open
 Place-based small scale projects Value culture and ethics of places 'Small is beautiful' - E. F. Schumacher 	 Distributed network of people and communities creating a new collaborative and open economy Sharing ideas through networks on place-based appraoches
Local	Connected
 Local Place-based appraoch Local solutions to suit needs of local people Local people implement and solve problems Searching for local traditions 	Connected to internet and technology that brings us together to share remotley Develop socio-technical solutions

Figure 5. 'SLOC' scenario (Manzini, 2011)

Weaving is the relational interaction that needs to occur between designers, local government workers and citizens (all humans in places) to design new culture and related infrastructure. Manzini's (2010) 'SLOC' model (Figure 5) elaborates on the idea of a small, local, open and connected scenario. In this case, social innovation cases are place-based small projects, distributed networks and local solutions that suit the needs of local people and where socio-technical solutions are brought together through internet and technology. This scenario re-engages action in everyday life by creating a culture beyond the industrial paradigm. However, while 'connected' refers to the technological connectedness, author 1 proposes an adapted model (Figure 6) where 'woven' implies a more human relational manner. This relational fashion weaves the citizens, designers and local government to design a new culture that is slow, local, open and woven into the specificities of those contexts.

Small

- Place-based small scale projects

- Value culture and ethics of places

- 'Small is beautiful' - E. F. Schumacher

Open

- Distributed network of people and communities creating a new collaborative and open economy

- Sharing ideas through networks on place-based appraoches

Local

- Place-based appraoch

-Local solutions to suit needs of local people

- Local people implement and solve problems

- Searching for local traditions

Woven

- SLOC emphasises technological 'Connections'. Weaving recognises the relational interactions diverse stakeholders in a community have to develop localised social and economic systems. Development of new local models needs people to engage in conviviality, dialogue, conversations, reskilling, networking and sharing.

SLOC Scenario by Ezio Manzni and adapted to SLOW by Emily Ballantyne-Brodie

Figure 6. 'SLOC' scenario (Manzini, 2010) adapted to 'SLOW' model by Emily Ballantyne-Brodie

Therefore, the future liveability and sustainability of the cases will be determined by the effectiveness of relational interactions and collaboration between government, business and the broader community to articulate and realise shared value (Manzini and Staszowski, 2013; Botero, 2009). In order for these places to be liveable communities they will need to ensure that all user groups are empowered to co-design a shared vision where economic and social development is mutually beneficial. If these places strategize and articulate shared visions for the future they will be well placed to enact laws and policies that can unlock participatory solutions (Mulgan, 2010). It is

clear that for designers involved in these case studies, they must to continue to experiment and have agile institutions to support this innovation. Local governments involved in these case studies must develop a culture of experimenting and prototyping, and invest more of their budgets towards design-led strategies that emphasise experimentation and local community participation.

5. Conclusion

We have looked at different case studies that illustrate bottom-up management in terms of initiating, testing, implementing and sustaining local food systems. All cases demonstrate collaborative approaches in developing service systems where the designer's role is determined as a facilitator to empower citizens and institutions in the creation of food services. Empowered citizens ultimately define new cultural meanings that lead to policy redesign and new ways to govern locally. The cases of 'Shepparton', 'Dandenong' and 'Coltivando' show product-service-systems that contain an integrated strategy of actions for meaningful local food systems. Communities can take over their local food systems through simple design strategies and interrelated actions. The model creates a platform for building capacities through empowering local people to take an active part in setting up food systems. A culture of experimentation in everyday life has been initiated in these communitybased projects where users have designed their own food program in guidance from design methods and approaches. The learnings that have emerged from the case study analysis show how design has a key role in facilitating connections between potential network actors and offering support for implementation. What remains the major question is how can the challenges of scaling social innovation be overcome through design facilitation, bearing in mind the context specificities. If community-based projects such as these can be sustainable and potentially scaled, how can the design discipline ensure that the process remains local and open enough for the weaving of relationships to take place?

In order to propose an implementable model, it is important to highlight the need for applying both analytical (business-oriented) and intuitive (design-oriented) skills in scaling service systems. Both approaches comprise of the role of shaping meaningful interactions between all actors involved in food service systems, since they aim to improve the existing service delivery or innovate new systems that respond to end user's needs. We have looked at how institutions can be responsive to enable service design strategies for food systems in everyday life by experimentation of a new design process and the implementation of co-designed projects. There is evidence emerging from these case studies showing that institutions are changing their approach in relation to citizens and the citizens are also changing their approach to how they are interacting with the local institutions. This is where the possibility to adapt to socio-economic transformations is key, as it guides the business design process of local food systems to generate sustainable and scalable models. We have seen users design their own local food programs by applying design-led food strategies. Service design and strategic design have applied agile and lateral thinking by experimenting with co-design and prototyping methods and tools. A key to the success of these projects for designers is the weaving together of formal relationships, between policy makers, food providers, citizens and designers to strategically change the dominant industrial agriculture system as a new economic paradigm.

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Acknowledgements: Emily would like to acknowledge her PhD supervisors Oliver Vodeb and Carolyn Barnes for their ongoing support with food systems design research. She would also like to acknowledge the vibrant conversations she has with Daryl Taylor to develop ideas and knowledge.