

Infrastructuring the Solidarity Economy: Unpacking Strategies and Tactics in Designing Social Innovation

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ABSTRACT

Solidarity organizations in Europe are committed to building a more socially just society through a better configuration of democracy, politics and economy. In this paper, we describe our efforts to contribute to the socio-political designed innovation of solidarity movements through the establishment of a research lab embedded in, and operating within, the solidarity economy. We describe three cases that span the polarities of everyday and expert design, and contribute to the scaling out of social innovations. We use these cases to exemplify the strategies and tactics that emerge from the ongoing negotiation of ‘infrastructuring’ work with solidarity organizations. Finally, we discuss how guerilla infrastructuring, designing coalitions, and spanning design polarities can contribute to HCI and design for social innovation more generally.

Author Keywords

Solidarity economy; social movements; social innovation;

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous;

INTRODUCTION

For the last 10 years Europe has been struggling with the consequences of a financial crisis that had a profound impact on its EU member countries and citizens; this has put to the test the very basic values and existence of the European Union as a whole. This ongoing neoliberal crisis has the most devastating effects on local communities of the more economically vulnerable countries of Southern Europe. More specifically in countries such as Greece, the implementation of austerity politics resulted in demonstrations and the occupation of public spaces that

proved to be the first step in the creation of around 250 solidarity movements (SMs) and various other social economy organizations [28,35]. These structures, operating as a movement of disparate local neighborhood assemblies, act as a buffer mechanism in the face of a collapsing welfare system, but also exemplify an alternative way of living and doing through horizontal participation, solidarity, self-organization and cooperation. Previous accounts [44] report on the work of SMs and how their practices, their coordination tactics and synergies, and their relation with the public and private sector exemplifies the formation of an alternative human economy: a Solidarity Economy (SE) that attempts to look for new frontiers between the economy and politics [16,26]. This earlier work provided implications for designing for contestation and transformation towards the creation of a form of HCI research that stands in solidarity with such human economies.

Inspired by the work of SMs, we sought to resource a HCI research initiative in Athens (i.e. OpenLab:Athens) that aims to engage as an additional actor in the collective infrastructuring of the SE and contribute to the extension and reproduction of the socio-political innovations of SMs through technology. In this paper, we combine Manzini’s conceptualization of designing social innovation [30] and de Certeau’s distinction between strategies and tactics [8] in order to contribute an analytical tool which we use to surface the social, material and political conditions and to design for the complexities of infrastructuring social innovation through HCI. The application of this approach in the efforts of SMs and OpenLab:Athens to design social innovation revealed the complexities and political tensions arising from participating in such movements as technology designers and active agents within such practices.

More specifically in this paper we contribute: i) an account of the strategies and tactics of SMs as products of their negotiations with local actors and institutions for infrastructuring social innovation; ii) an understanding of these negotiations, and the means through which these are achieved, as a precondition for designing social innovation between actors with various design capacities; iii) a description of the tactics we employed to infrastructure OpenLab:Athens through the creation of research



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coalitions; and iv) an account of our negotiations with other actors of the SE and our own supporting research institutions in the creation of common tactics and visions for the SE. We reflect on these accounts and provide guidance on the strategies and tactics that HCI can employ to support social innovation, including spanning design polarities, building design coalitions and guerrilla infrastructuring.

HCI AND INFRASTRUCTURING

The conceptualisation of ‘infrastructure’ was first developed by Star and Ruhleder [38,39]. In challenging the common perception of technologies as artefacts, they introduced the notion of a contextualised and sustained relation shaped by conditions associated with the dimensions of embeddedness, transparency, reach, scope, membership and conventions of practice [38,39]. This conceptualisation was informed by a long tradition of socio-technical understandings of infrastructure in large systems and constituted an interpretation of infrastructure as relational, practical and situated: “*as a relationship between humans’ organised ways of doing and the technologies that enable and support these methods*” [21].

Neumann and Star coined the notion of information infrastructure in participatory design (PD) as the substance rather than substrate of information systems [33] in an attempt to make visible what remains unnoticed and in the background [21,37]. This requires “going backstage”, investigating infrastructures “in the making”, and practicing “infrastructural inversion”. Karasti et al. explored the notion of ‘infrastructuring’ as an attempt to underline the processual, ongoing quality of infrastructuring activities and as a result the extended periods during which infrastructuring unfolds [19]. They highlight how infrastructuring emerges as a way of advancing community interests through integrating it with ongoing activities embedded in these communities for extended periods [23,24]. Similarly, Pipek and Wulf [34] suggest that the main concern for infrastructuring work should be on the designed artefacts’ situated and contextual socio-political parameters instead of the artefact itself.

The notion of information infrastructures and infrastructuring has also been applied to local communities [12] in work that echoes the values of Scandinavian PD by focusing on democratic ideals and heterogeneous means of citizens’ socio-political participation [5,6]. Le Dantec et al. articulate the difference between PD for useful systems, and PD as infrastructuring, as the difference between a multi-stakeholder response to known issues, and federating individuals in the discovery of unknown issues [9]. Drawing on Dewey, they suggest that constituting a public involves the articulation of the attachments of a particular group and that infrastructuring should therefore entail the provision of the means for discovering and expressing those attachments to convey the consequences of an issue and to enrol others in a cause.

Of particular relevance to our work, is design research for social innovation [3,18] and the work of the Malmö Living Labs [5,6]. Influenced by Mouffe’s view of democracy as founded upon radical pluralism, contestation and agonistic public spaces [31,32], Björgvinsson et al., set out to create the conditions that may enable the reinvigoration of democracy through infrastructuring work with marginalized social movements [13,19]. Here, infrastructuring is construed as a long-term platform for social innovation. Through three embedded living labs in Malmö, relationships and engagements are developed with local communities in ongoing processes of alignment across a range of contexts.

Overall, HCI researchers who have advocated for infrastructuring as a mode to support both PD and democratic practices, including the formation of publics, have only recently begun to uncover the complexities of both the political processes at play, and the relationship between HCI researchers and the communities and social movements with which they work. In this paper, we build on this body of work [5,6,9] by surfacing the social, material and political conditions and complexities in democratising and supporting social innovation through HCI design. To achieve this, we use Manzini’s discourse on design in social innovation [30] as an analytical tool to shed light on the already existing socio-political innovation of SMs in Greece and the means through which our participation in such contexts further infrastructures the SE. In order to report the complexities involved in such a process, we use and extend de Certeau’s distinction between strategies and tactics [8]. De Certeau instead of understanding tactics as simply the means through which strategies are enacted, he interprets them as the product of the negotiation of diverse strategies of various actors. As a result in this work, by combining Manzini’s concepts of designed social innovation and the understanding of tactics as negotiated strategies, we surface the complexities involved in SMs’ attempts to create and extend the SE. This includes our own contributions towards a digitally supported reproduction of SE practices and the negotiations and entanglements that this involved.

THE SOLIDARITY ECONOMY AS SOCIAL INNOVATION

One of the countries most affected by the financial crisis and austerity politics in southern Europe, is Greece, for which the implementation of extraordinary austerity measures resulted in massive demonstrations that were the first steps towards the creation and spreading of the Greek SMs in their current form [44]. Following these events, these self-organization practices were disseminated to neighborhoods of Athens and beyond. Local assemblies created alternative economic practices including consumer co-operatives, ethical banking, exchange networks and many others [7]. As reported in previous work, the socio-political role of SMs is twofold [1,36]: firstly, they operate as a buffer mechanism in the face of collapsing welfare and public services; and secondly, and most importantly, they

exemplify physical spaces where practical alternatives to austerity can emerge and be contested and re-worked through experimentations with alternative forms of economy through solidarity, participation and self-organization [1,2]. Solidarity as a counter-austerity practice strives to empower the disempowered through the forging of new social relations and bonds between people within and across solidarity structures.

The SE is understood in various ways by its extremely diverse actors. As reported in previous work [44], SMs operate as informal social networks and self-help groups with no formal organisational structure or official authority. Due to SMs' plurality of political orientations and diversity of actual practices, no definitive classification can be created. Nonetheless, SMs share a set of values that distinguish them from the practices of the dominant economy: they build economic relations based on cooperation and collaboration rather than competition; they are based on mutuality and reciprocity; they operate through practices of direct democracy and horizontal participation rather than hierarchical management; and they encourage pluralism and diversity. As a result, SMs, as part of wider European and international SE networks of similar initiatives and movements, exemplify an ongoing struggle towards the creation of a more socially just society through the experimentation with radical forms of democracy, economy and civic participation.

For us, the work of SMs exemplifies a remarkable instantiation of designed social innovation that has emerged in response to exceptional circumstances. One way that we can characterize the social innovation found in the SE is to use Manzini's discourse on design in social innovation [30]. Manzini's argument is that innovation is already routinely happening in the form of grassroots responses to the challenging social problems communities face. He proposes a design mode map that consists of two dimensions: '*actors and competence*' and '*motivations and expectations*'. The former dimension is defined by the poles of 'expert design', understood as the professional practice of design from experts, and of 'diffuse design', as people's natural design capacities. On the other hand, the latter dimension is defined by the two poles of design as 'problem solving' and design as 'sense-making'. Manzini argues that the cross-product of these dimensions characterizes a set of design modes by which design capacity is put into action for social innovation. By interpreting the work of SMs as already designed and ongoing social innovation, we reflect on the design modes through which such innovations are manifested, the various design roles that members of SMs had to undertake to put their design capacity to action and the frictions and complexities of doing so.

INFRASTRUCTURING SOCIAL INNOVATION: THE OPENLAB:ATHENS

In this section, we describe the strategies and tactics used in the establishment of OpenLab:Athens (OLA), an embedded

research lab in Athens, that sought to explore how we can connect into the network of SMs and become additional actors in the infrastructuring of the existing SE.

Our understanding of *strategies* and *tactics* builds on the conceptualization of de Certeau who interprets *strategies* as expressions of power in their attempt to shape courses of action. *Tactics* on the other hand, are the means for circumventing or negotiating these changes towards individuals' own objectives and goals (also used in the context of construction of publics [11]). We argue that our engagement with SMs in Athens is a continuous process of re-negotiation of both our strategies for infrastructuring (as institutions, digital technology designers and through the technologies we build [20]) and solidarity structures' strategies which relate to their own objectives [8]. As a result, through OLA's operation in the SE we employ a series of tactics, which are products of our ongoing and everyday negotiations with SMs as to the way technology might infrastructure possible SE futures and directions. As we will see, this required a reconfiguration of ourselves as researchers, designers and research institutions across design modalities—from expert designers to diffuse designers and from sense-making actors to developers.

This reconfiguration started with the resourcing and funding of OLA. Even though the broader research initiative was funded by a national funding agency (EPSRC), the contribution of resources to OLA by the collaborating institutions was largely opportunistic, in that OLA was not a formal component of any funded research project (i.e. not a component of a research proposal's work plan). Even though we, as research institutions, operate in a much better resourced context, we saw this as an opportunity to mirror the practices of SMs by infrastructuring the SE through the creative use of existing resources. In a sense, how we set out to engage in infrastructuring a common project across universities and research disciplines by "*creating socio-technical resources that intentionally enable adoption and appropriation beyond the initial scope of the design*" [5,9].

While OLA is the result of coordinated action by a group of research institutions that came to an agreement about what to do and how to do it [30], the process of coming to this agreement required considerable effort. We began this process in 2016 by formulating our infrastructuring strategies. We began by contacting UK and EU researchers and research institutions that we have successfully collaborated in the past, researchers active in the area of civic technologies [43], and local Greek universities. This initial call for participation was an attempt to create design coalitions [30], identify partners and build upon shared values and converging interests. This outreach, resulted in the creation of a collective of researchers from research institutions in the UK, Germany, Belgium and Greece. The tactics that these research institutions employed to support OLA included: lending some of the academics' and

researchers' time to help us collect, analyze data and write reports and papers; lending research assistants' and software developers' time to build and maintain IT systems for SMs; donating unused or to be recycled IT equipment; aligning ongoing projects to meet some of the SMs' needs and goals; providing financial support for the running costs of OLA; and putting us in touch with students interested in undertaking their dissertations or internships in this context.

Using the resources from this coalition of research institutions, we established our presence in Athens by temporarily renting desk space at a co-working hub in central Athens that was managed by a third sector organization; an NGO that was part of a global network of incubation hubs. We used the space as a base to store our IT equipment, as an office for working with collaborating universities, as an incubator for our networking with the local third sector economy, and as a co-working office space for researchers and developers based at, or visiting, OLA. As all our design actions were undertaken in the spaces where solidarity structures are based, the co-working office space has been used primarily by the researchers and developers working on various OLA tasks such as a development-sprint, and as a hot-desking space for various visiting researchers, interns and PhD students.

OpenLab: Athens strategies

We established OpenLab: Athens as 'design experts' interested in both understanding the social innovation enacted by SMs (i.e. sense-making) and supporting it through technology (i.e. problem solving). In doing so, we developed and employed the following *strategies*, as ways through which we could shape and support courses of action in the SE:

- i) we sought to build long-term relations with actors of the SE and to develop trust and build rapport [10] by being transparent about our strategies and their underlining values;
- ii) we sought to be actors in co-constructing SE's common strategies through our technology interventions and participation;
- iii) we sought to create socio-material relations through the design and development of digital tools that enable further collaborations and synergies across SMs and between SE organizations and external institutions;
- iv) we sought to co-design and develop digital tools that will create attachments through the facilitation of mundane everyday activities of SMs;
- vi) we sought to document and archive SMs activities and self-organisation practices in forms that would allow various actors to reproduce them in other spaces;
- v) we sought to extend the values of the SE into the mainstream economy and society through embedding them in systems of wider use.

Conventional and negotiated tactics

Our initial work with solidarity movements (see [44]) was our attempt to introduce OLA as an initiative for infrastructuring the SE to some of its main actors, while also gaining a better understanding of the social innovations that this context manifests. To achieve that, we engaged with 13 solidarity structures: three solidarity clinics and pharmacies; one soup kitchen network; two 'without middlemen' grocery cooperatives; two self-managed factories; two self-organised refugee camps; one time-bank network; one solidarity school; and one communication hub for the SE. Our tactics to engage with each of the movements entailed: initial meetings; targeted follow-up discussions; participation in assemblies; IT support meetings; and participating in the groups' events. This initial work contributed in being perceived as a possible resource for, and actor operating in, the SE. These tactics, widely used in Participatory Action Research work [17], responded to the particularities of the context of SMs and self-organisation practices.

Following this initial work, the tactics for participating in the everyday operations and formation of the SE included: (i) discussing the findings of this initial research with two SMs; (ii) being an active member of several solidarity structures, including teaching English as a second language at one of the biggest informal solidarity schools, supporting the IT infrastructure and data collection of an informal social clinic and pharmacy, building a logistics database for an immigrants and refugees school, and developing a geo-mapping app through the App Movement platform [14]; (iii) participating in the self-governance of these organisations through taking part in their public assemblies; (iv) partaking in strategic meetings for the formation of strategic structures to support the solidarity economy; (v) volunteering to support the organisation of a congress for the EU Network for the SE including soliciting presentations by academics from collaborating institutions; (vi) providing IT equipment such as used laptops, routers and antennas to groups that needed them; (vii) configuring and installing open source software to cover the needs of solidarity schools; and (viii) designing and developing a distributed communication system for sharing the costs of text messaging.

In the next section, we unpick three cases to exemplify how these *tactics*, rather than being strategized as ways of exercising institutional power [8] (through our participation and from our interest in the design of technology for the SE), are products of the negotiation of our own strategies and those of SMs (and other institutions) towards the creation of common visions, objectives and goals for the SE.

INFRASTRUCTURING STRATEGIES AND TACTICS

Case 1: Negotiated tactics in diffused design

In this section, we unravel the ways SMs span the polarities of expert and diffuse design, and problem solving and sense

making for collective infrastructuring a time bank network. We also reflect on the design modes that we had to accommodate to participate in such context and the tactics that we employed to do so.

The time-bank movement ‘Babylon’ was created in 2003¹, from a group of citizens around a locality in Athens. Babylon began as a meeting between people with the desire to discuss their socio-political and financial concerns and the goal of coming up with collective alternative solutions for their local area. Important movements of the group in the past years included the actions related to the non-privatization of the City’s sea front, the establishment of a school for immigrants and refugees, amongst others. From 2006 until today, Babylon, is housed in a public building that was initially ‘occupied’ but was then leased for free to the movement by the local municipality. In order to materialise their collective understanding of the problems that they were facing and the political reasons which caused them to create practical alternatives, they infrastructured the group’s activities through a “*time and solidarity bank*”. People, that want to take part in the exchange of services, register their time and skills at the time bank, which allows tracking of the services provided and balancing of the ‘give-and-take’ of members.

In this regard, the strategy of the group, through a process of face-to-face exchanges of services, is to create alternative ways of ‘doing’ through establishing meaningful social relations. Responding to the needs of the community for tuition in addition to the public education offer, a significant activity that arose from the time bank was Babylon’s solidarity school. This was a result of the number of people with teaching skills registering with the time bank, but also and more importantly, it was a product of everyday negotiations between local residents, members of Babylon and local government. The residents of the area accept its operation through the shaping of the tactics by which Babylon addresses their immediate educational needs, while the local government tolerates the occupation of a public building to avoid additional tension. The group co-develops its strategies and negotiates its tactics through the involvement of parents, teachers and students in the self-organisation and governance of both the solidarity school and Babylon more generally. These are also expressed in various events of cultural and social significance that are organised by the group as a contribution back to the local community. The members of the time bank and the solidarity school have a range of backgrounds and education levels, and the public assemblies at which decisions are being made blur the boundaries between experts and non-experts, problem solvers and thinkers. A typical public assembly would include people responsible for technical issues, teachers, students, important figures in social movement struggles,

and passers-by; all of whom engage in decision making from the strategic to mundane.

Babylon was one of the first SMs that we contacted in Athens as a result of being introduced to them by a smaller movement. As part of our initial work, the first author conducted interviews with members of the SM while explaining the goals of OLA. Our initial participation tactics included participating in weekly decision-making assemblies and suggesting possible ways that digital technology can support and extend the group’s practices. After our initial engagements with the group, our attempts to approach the group as expert designers result in a number of conflicts between the group’s conventional infrastructuring strategies and the OLA’s technology-oriented ones. Being aware of the ideological and cultural background of SMs, this scepticism arises from SMs reluctance to work closely with most institutions (research or third sector). For example, as a network of large EU research institutions we represented the current intellectual status quo and are perceived as exercising hegemonic power (either through disseminated ideas or digital systems) within society; a state that SMs struggle to change. As a result, our participation in the group’s assemblies constituted a process of scrutinising our research strategies and vision, while also negotiating the tactics through which technology could play a role in infrastructuring the SE.

Following these initial activities, that developed our understanding of how the group operates, we proposed to support the group by designing systems for the management and registration of the time bank services and for the sharing of educational materials. However, there was resistance on the part of the members of the group to our offer to intervene. Indeed, this tactic is typical for SMs which tend to support their own infrastructuring frameworks and only adapt them when a possible synergy does not interfere with the existing participatory configurations and decision-making processes. These spaces of participation are contested between members of the group and are under constant negotiation. Instead, the members of Babylon suggested that we register to the time bank and support the group in ways that are already in place, such as the teaching of English as a second language to a classroom of children and supporting the self-assessment processes of the solidarity school (an assessment process put in place by the SM to get feedback from students, parents and teachers about the quality of lessons and infrastructure). In this regard, taking into account the everyday design capacities that members of Babylon are asked to put in action, their resistance to being involved in an infrastructuring activity driven by OLA is their attempt to negotiate the means through which technology intervenes in this space; an attempt to keep the movement’s independent and autonomous character which has been challenged and negotiated when it interacts with other actors of the SE [44]. For us, in order to engage with the group in infrastructuring activities, we had to configure

¹ Names of all individuals and SMs are aliases.

our tactics and span the polarities of design from recommending systems as design experts to engaging in the group's already existing design modalities.

In undertaking these roles, the first author himself developed a more elaborate understanding of the infrastructure of the SM; the educational material and quality of teaching; the assembly as a tool for decision-making; and the local social impact of the structure. As part of our attempts to explore the role of digital technology in these self-organised processes, we negotiated the use of both electronic and paper-based questionnaires. As a teacher of the solidarity school, the first author taught a class of six students for two hours a week. While doing so, we identified the problem of distributing educational material and we configured an already available open source system as a temporary solution for material distribution. Operating on limited resources ourselves, this open source solution, was our attempt to put our own technical capacities into immediate action, and through doing so, open up spaces for negotiating the role of technology.

However, these expert contributions created tensions between members responsible for the group's IT infrastructure. For example, the bespoke digital system used for keeping track of the services delivered, is developed and maintained by some members of the group. Our participation, and our "expert" suggestions for possible alternatives, were perceived as undermining their own contributions to the structure. In other words, our involvement in infrastructuring the SE as "experts" involved claiming a part of the already actioned design capacities. As a result, we must negotiate our tactics and strategies by continuously changing roles that span the polarities between sense-making, finding solutions, giving expert opinions and exploring temporary creative fixes.

Case 2: Negotiated tactics in expert design

In this section, we unpick the difficulties of responding to the needs of SMs as expert designers and technologists, and the negotiated tactics between OLA and our collaborating institutions in order to be responsive to the infrastructuring needs of the SE. After establishing OLA in Athens, the cases below exemplify instances where members of SMs approached us directly for technical support.

Re-configuring existing systems

The Open School for All (OS4A) is a formally constituted (as a non-for-profit) structure which aims to educate adult migrants that do not have a (refugee) status that allows them to join public or third sector education programs. OS4A responds to the educational needs of adult migrants through a partnership with the local municipality. The municipality gives them access to one of the area's vacant public school buildings, which the group uses as a resource centre and a base for its administration, as well as allowing them to teach in the school's classrooms during the weekends. Formally constituting the group was a

prerequisite for them to issue formal certificates of attendance to students that can be used as proof of residence.

After having established our presence in the SE, the first author was approached by the coordinator of OS4A. The group had a number of ongoing logistical challenges including the registration of people at the school, the allocation of volunteers to classes, and publishing certificates of attendance. We attended a series of meetings with the members of the group at the school where the group operates and examined the existing system for undertaking these tasks. The group members expressed concern about the use of a web-based system (accessible from outside of the group's Wi-Fi network) as they are worried that it could be exploited by members of fascist groups that had previously attacked them. We suggested to either engage in design activities to come up with options for the group's digital infrastructure, or to research existing systems that we can reconfigure to match the most immediate needs. In order to find resources for undertaking design activities, we had to build a case for support for our home (research) institutions which justified the project in terms of their (technical and/or conceptual) interests. Taking into account the difficulties of negotiating the resourcing of such a project with our institutions, while also being responsive to the time-sensitive problems faced by the solidarity structure, we agreed to re-purpose an existing system that could at some later time be extended.

We used and configured an open source class management system² which seemed modular enough for further future development. The system was installed on a used and refurbished laptop that was donated to us by one of our supporting institutions, and this was configured to be accessible only to the two local computers. Through a series of meetings, phone calls and texts we trained the group's volunteers in using the system while also reflecting on possible future designs. In order to resource the technical support and further development of the system, we enabled our collaboration with a local Greek university. In this case, our attempts to be responsive to the infrastructuring needs of OS4A revealed the compromises and negotiations that we needed to make with our own institutions in order to take part in such an economy of practices. Taking SMs as an example, we realise how in some cases the tactics to infrastructure the SE come in conflict with, and are subject to, a constant negotiation with the strategies and goals of the research institutions and funding bodies that support us.

Localising existing platforms

Similarly to the technical needs of OS4A, we were approached by Giorgos, the person that brought the "caffè sospeso" concept to Greece. Caffè Sospeso, meaning "pending coffee", is a cup of coffee paid for in advance as an act of solidarity. Caffè Sospeso started as a practice in

² <https://github.com/gunet/openeclass>

the working class cafes of Naples where someone would order a *sospeso*, that is, purchase one coffee by paying the price of two. Giorgos brought the idea to Greece by putting chalkboards in cafes and restaurants to promote the idea and to list the products (beyond simply coffee) that are ‘on hold’. Due to his outreach activities, theatrical performances, and short films etc. the idea spread to cafes, restaurants, pharmacies and recently private clinics.

We had a series of meetings with Giorgos to talk through possibilities for a system of mapping the businesses that are part of this network and its possible design. Giorgos wanted people to be able to leave stories of how *Caffè Sospeso* impacted their lives as shop owners and as beneficiaries, and to be able to see the closest shops that are part of the network, the types of products currently on hold, and to post pictures and videos. We investigated the ways through which we can draw resources to put together such an application, which ranged from applying for local funding to using our personal and institutional connections to resource the project. Through discussions with one of our supporting research institutions we managed to align the deployment of an ongoing digital participatory mapping platform with the context and needs of *Caffè Sospeso*. This platform [14] allows the design and automatic generation of map-based applications for a specific cause. The platform’s modularity and localization features allowed it to be configured for the Greek language and for some of the movement’s needs. Our collaboration with a local university allowed us to find Greek speaking students to work on translating the required English content.

In the case of *Caffè Sospeso*, we see how OLA, had to create alignments with ongoing research projects through the negotiation of institutional strategies. This required taking into account the trade-offs that we needed to make to develop such a system, managing Giorgos’ expectations and aligning them with what is plausible. The tactic that we employed to negotiate such alignment included the creation of added value both for the ongoing research project, as an opportunity to localize a platform (now perceived as a valuable exercise in itself) and extend its use, and for the *Caffè Sospeso* network, by the development of an app for the mapping of shops in the network.

Developing bespoke systems

One of the common issues of SMs is the cost of their communications. Email, social media and instant messaging apps are used between some of their members, however the main means of communication is through phone calls and text messages. After realizing the burden that communication costs put on SMs, as well as their unrealized potential for extending decision-making spaces, we sought to explore how OLA can play a role in designing more accessible and affordable communication platforms.

We experimented with various cloud communication services for voice and text messaging as well as already existing platforms that allow the sending of bulk SMS

messages to multiple numbers with a lower (compared to consumer SIM cards) cost. Due to the technical difficulties in programmatically sending SMS messages to Greek phone numbers, we began to look for alternative ways of delivering SMS messages through the use of unused SMS allowances in prepaid monthly packages. Such an approach also aligns with the SE’s current practices of sharing unused resources and creating common resources through collective action. ‘IrisMSG’, the project that was born from this process is an Android application that allows the sharing of SMS costs through a network of SMS donors. Smartphone users can look for organizations registered on the system and donate a fixed number of SMS messages per month. When a message needs to be sent from a coordinator to multiple subscribers the SMS is delivered through donor phones, effectively distributing the cost of the message between the donors. We managed to gain support for the development of this platform by persuading our research institutions of its potential as a technological innovation. After doing so, in order to build the app in a timely manner, four researchers (with technical skills) travelled to Athens and participated in an intense week-long development-sprint resulting in the first beta version of the platform.

Such a platform is an example of how technological innovation can play a key role in infrastructuring the SE by opening up participation, allowing the sharing of additional resources, and extending self-organization practices. In the case of the ‘IrisMSG’ system, our participation as expert designers in the SE contributed to a configuration of technology and resources that mirrors the creative ways SMs seek to design an alternative economy. It is an example of expert design that embeds SMs’ designed innovation (i.e. diffused design) and the tactics through which such a system materialized.

Case 3: Scaling out

Here we reflect on OLA’s and other organizations’ efforts to create a ‘scaling out effect’: the creation of horizontal synergies that lead to the replication of the most promising practices and configurations in other contexts [30]. The cases reported in this section illustrate our participation in attempts to create spaces for the negotiation of common strategies of actors active in SE and common tactics for the further infrastructuring of the SE.

The Lab for the Commons (TLC)

TLC is an organization formed by a collective of social and solidarity organizations that brings together scholars, activists, artists and cultural producers with the aim of a post-capitalist society starting from the valorization and coordination of already existing practices of ‘commoning’, solidarity and self-management. The main goal of TLC is to bring international scholars, activists and ‘experts’ (i.e. lawyers, economists, policy-makers and cultural producers) together with grassroots social movements and activist groups to facilitate their collaboration on various urban

research-interventions through a long-term, participatory methodology. Key members in the establishment of TLC are people active in solidarity movements such as coordinators of SMs, academics active in the area of ‘commoning’ both from Greece and internationally, and former members of support organizations for SMs and organizations that resource the SE.

Our participation in TLC began in initial exploratory meetings with people and movements active in the SE. Initially we had our reservations, as from previous work we understood the difficulties and risks of creating such spaces that act as intermediaries or umbrella organizations [44]. However, acknowledging the need for a self-organized approach to such initiatives we decided to participate. As expected, discussions with SMs for their participation in the initiative proved to be difficult as they had to be convinced of the purpose and value of activities of such a common space. As reported in [44], SMs perceive such overarching initiatives as an overgeneralisation of the possibilities of synergy and a threat to their autonomy. Through negotiations, it was decided that projects that would require a collective participation through TLC included the documentation, archiving and narration of histories of popular struggles and of key political artistic solidarity movements; the mapping of existing practices of the SE; the development of new institutional and legal frameworks for sustainable and self-organised production and distribution; and the setting up of art residencies, exhibitions and a ‘free school’ that will bring together international curators and the activist community in Athens. As a first step to further these common strategies, three workshops were organised that began to unpick the meaning of, and the practical steps for documenting, archiving, mapping and creating educational physical spaces for the SE. These workshops revealed the diversity of opinions for the material form and practical significance of these projects, while also illustrating the possible threat of undermining spaces of solidarity and common struggles through practices of ‘fencing’ that attempt to restrict the always becoming nature of the SE.

Nonetheless, these initial meetings have already materialised design coalitions between actors of the SE for the further negotiation of such common projects. We actively participate in the creation of TLC as we see it a collective endeavor to construct physical spaces and common projects for contesting, negotiating and materializing shared tactics, the complexities of which we unpicked in previous cases. An endeavor that attempts to bring together expert and everyday designers, problem-solvers and sense-makers to create a space in which the various contested strategies of the diverse set of actors in the SE can be negotiated for the co-construction of shared visions.

The Social Solidarity Economy Congress

Sectoral coordination meetings in the SE (e.g. coordination committee for social clinics) have traditionally been spaces designated to allow for the exchange of know-how and resources between SMs. Communication across sectoral boundaries to strategically reflect on the future of the SE has been attempted through the organization of festivals and congresses. Here we reflect on our participation in the Fourth European Social Solidarity Congress in Greece, in our attempt to further our design coalitions between our own collaborating institutions and SE organisations.

The congress is a crowdfunded, self-organised meeting between activists, members of national solidarity networks, cooperatives and researchers across Europe. This year, with a call “*the universe is made of stories, not of atoms*” the aim of the congress was to develop coalitions across geographical boundaries, disciplines and sectors to create a common vision for the SE through the sharing of stories, practices and know-how. The program of the congress consisted of six thematic zones: cooperativism; responsible consumption and production; social integration; social innovation and the role of digital tools for the SE; digital, natural, urban and cultural commons; and public policies for the SE.

For us, such a congress was an opportunity to bring together some of our collaborating researchers with people and ideas from the SE and as a result enable further design coalitions between people that normally operate in different design modes. We had to negotiate with our own institutions the participation of digital civics researchers, that resulted in inviting and funding three speakers from our UK-based institution to contribute to panel discussions about the relation of research with the SE and the role of digital tools in its practices. Through the presentations that our collaborating researchers gave at the congress and the discussions that these initiated, we drew interest to some of the methodologies and technical platforms that we have developed in the field of digital civics and created links between contexts of the SE and research in HCI.

Our participation in the organisation and running of the congress revealed the importance of these events in the establishing of relations between actors of the SE, but also the complexities of organising, running and participating in such a self-organised event. The diversity of people participating and the openness of participation to anyone active in SE complicated the practicalities of organising the congress and made negotiating a plurality of shared visions and tactics harder. Nevertheless, the congress allowed people from different sectors and schools of thought to come together and engage in discussions about the future of the SE. It allowed the collection of successes and failures, stories and practices, necessary for strategizing further scaling out activities. It confirmed our understanding of the diversity of political opinions, practices and visions, which even though necessary for the construction of an economy

of pluralism, requires the creation of common grounds of negotiation and contestation.

STRATEGIES AND TACTICS IN SOCIAL INNOVATION

Drawing from these selected cases, for our discussion, we reflect on the strategies and tactics that HCI research could employ to support social innovation more widely.

Engaging in guerilla infrastructuring

Korn and Volda reflect on design strategies for the creation of ‘friction’ in infrastructuring civic engagement in everyday life [27]. They identify design strategies for infrastructuring civic engagement through interventions that create alternatives, make gaps visible, and trace data for critique, and through these support the achievement of more active citizenship.

In our context, we reflect on the strategies through which the already existing “civic engagement” of SMs and the existing designed social innovation of the SE can be infrastructured through HCI work. For us, the work of SMs exemplifies a different way of building an alternative future, one that is based on the creative use of existing scarce resources for building the foundations of an alternative way of doing and living. Paradoxically, such alternative futures, driven by a multifaceted crisis, have to be resourced by the existing economic realities, infrastructures and institutions. Through our work with Babylon, and the active participation in the group’s decision-making practices, we recognised the negotiations involved in expanding the movement to the local economy while creatively using the available scarce resources that do not contradict the group’s strategies and values. These are ways through which critical sense, creativity and practical sense can be integrated, for the infrastructuring of structures of peer support and resistance.

The work of OLA is our attempt to mirror such practices and configurations. The collective (and restricted) resourcing of the OLA initiative and our attempts to create design alliances with external institutions, required the negotiation of collaborating institutions’ strategies for the materialization of such research projects. For the cases in which we were seen as an actor, able to technologically infrastructure the SE, we ourselves had to struggle to operate through the creative practice of using the tools that were available in our immediate reach and technical capacity. This required compromises from all the involved parties: ourselves, collaborating institutions, and SMs. In order to co-design digital tools with SMs, our tactics involved the usage of available open source systems and the configuration of existing participatory civic platforms [14,42] for building the foundations for digitally infrastructuring the SE. Such actions rather than being orchestrated by any of the involved parties, exemplify outcomes of our constant interrogation of the role of HCI in the SE and the product of negotiated strategies between ourselves as technology designers and actors we worked with.

We believe that these insights (i.e. the collective resourcing of OLA and the tactics for technologically supporting the SE) are implications for the infrastructuring of alternative economies and more generally spaces of designed social innovation through creatively using resources from, and resourcefully negotiating synergies with, the mainstream economy and centers of power. We call this ‘guerilla infrastructuring’ as it is a form of irregular, opportunistic, adaptable, responsive and decentralized strategy of infrastructuring social innovations and reform that stand in contrast to existing power and economic configurations. For SMs, the resources used for such infrastructuring are inevitably products of systems of production and distribution that these structures aim to reform and as a result they need to be attentive to not putting current coalitions and infrastructures at risk.

Building design coalitions

Manzini refers to design coalitions as the coordinated action of a group of social actors who come to an agreement about what to do and how to do it. The emergence of such design coalitions are arguably themselves the result of design that seeks to identify the actors needed to collectively build a set of shared values and interests [30]. For the context of the SE, in this paper we have revealed the complexities of creating design coalitions, even between actors and organizations with seemingly similar visions and values. Such complexities are further multiplied by initiatives that act as intermediaries or umbrella organizations and as a result, willingly or not, exercise power over social movements [44].

By examining and reflecting on our own participation within the SE, we unraveled the complications of cooperation and coordination in an economy shaped by the negotiation of the plurality of the strategies and tactics of its diverse actors. We underline the negotiations necessary to create such design coalitions and the various levels through which these negotiations manifest within a landscape of competing interests: from SMs to local municipalities and residents, from SMs to OLA, from OLA to our UK-institution and collaborating research institutions and from these institutions to their own funding bodies. In line with [30], we argue that despite the complexity of such negotiations, designing coalitions is one of the most important aspects of what design for social innovation should do. This is also supported by the designed social innovation of SMs, which is a result of the design coalition of everyday ‘diffuse designers’ in creatively infrastructuring structures of resistance and support.

At this point we need to inquire as to HCI’s role in supporting the creation of such coalitions for designing or infrastructuring already existing social innovation. From the perspective of ‘expert design’, we call HCI researchers to engage in creating design coalitions based on common visions across research institutions and outside the narrow boundaries of research projects and timeframes [4–6,22,25].

The case of OLA, and the ways we resourced such an initiative through our research coalitions, exemplify the creative ways through which HCI can be reconfigured to play a more important role in enabling and infrastructuring existing social innovation. The importance of being responsive to the needs of SMs while operating within an economy of scarce resources also made us reflect on the role of HCI as a ‘middle-man’ (quite ironically) that connects the dots of existing disparate radical alternatives that share common values. For example, how can we bring together the work of Open Source movements with the work of SMs to both infrastructure the SE and to further solidify and extend it. Of paramount importance to this discussion and future work are recent calls for infrastructuring the ‘commons’ [31,40,41] that aim to build the required infrastructures for a postcapitalist commons-oriented society [15].

From the perspective of ‘diffuse design’, in our cases, we reflected on the ways through which we can engage in the creation of horizontal spaces for the negotiation of shared strategies and tactics across organizations operating within the SE. We argue that in addition to infrastructuring individual instances of social innovation, we should also focus on the creation of horizontal synergies for the replication of designed social innovation in other contexts. Work that we ourselves began to explore through our participation in TLC and in solidarity festivals and congresses. In other words, we stress the importance of designing for the scaling-out [30] of such designed social innovations rather than infrastructuring their scaling-up.

Spanning design polarities

Further to designing coalitions in our own fields of work—as in expert design or diffuse design—SMs exemplify the ways through which the designing of social innovation comes as the result of spanning Manzini’s polarities of expert and diffuse design, problem solving and sense making [30]. The work of SMs and the coordination of the SE towards common directions would have not been possible without the flexibility of its actors in this design space. In our context, this is demonstrated through the participation of people with no particular role in any of SMs’ activities, from mundane decision making to strategic discussion, and their further ‘expert’ participation as e.g. teachers in schools and doctors in clinics. However, the elasticity through which actors of the SE appropriate different design roles is extremely challenging. It is the product of a negotiation of each actor’s personal strategies of participation (e.g. political aspirations, social solidarity contributions, self-help etc.) with the strategies of already existing members and SMs for the further infrastructuring of the SE. Nonetheless, such practices underline the need for blurring the boundaries between expert and everyday designers, sense-makers and practitioners, when what matters is our collective creative mobilization towards common visions.

Similarly with other actors, our experiences in operating in such a context were defined by our efforts to make our infrastructuring strategies clear while negotiating the tactics through which technology could play a more prominent role in the SE. For these negotiations to flourish (in developing common infrastructuring strategies), we were required to constantly shift our design roles ourselves to comprehend the designed socio-political innovation; the ways through which actors action their design capacities for its infrastructuring; and engage in designing technology that mirrors and supports such configurations. In other words, spaces of designed social innovation are spaces in which designers of various competences creatively action their collective design capacities. The diversity and expertise of these capacities is as significant as their effective integration for serving a common vision and the means through which such vision can be realized [29].

Through the design of ‘IrisMSG’, we exemplified how our participation in such spaces as designers with a particular expertise in creatively configuring technology, resulted in a technological innovation that mirrors the characteristics and values of the already designed social innovation. Such an approach signifies a means to technological innovation through the mirroring of already designed social innovation, contrasted to participatory methods that aim to create spaces for co-designing systems and services through the convergence of opinions, values and needs. The resulting systems of such an approach have the capacity to extend socially constructed innovations into wider society and as a result contribute to their scaling-out.

CONCLUSION

In this work, we conceptualized SMs as spaces of designed social innovation in which designers of various competences creatively action their collective design capacities. Crucially, we emphasized the necessary negotiations of diverse strategies for the creation of common tactics that allow such innovations to materialize. Through OLA, we reported on our own negotiations for engaging in technologically infrastructuring such alternative political and economic realities. In the discussion of this paper we call researchers to mirror the innovation of SMs and creatively action our own design capacities by engaging in guerilla infrastructuring, creating design coalitions and spanning design polarities, for an HCI concerned with radically alternative, more socially just societies and economies.

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