Setting up and Running a Sharing Service: an Organisational Perspective

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Abstract. Enabled by web and mobile technologies, there has been an explosion of interest in the sharing economy and peer-to-peer exchange, with much high profile attention given to monetised exchanges such as in AirBnB and Uber. However there are also many other sharing initiatives, such as time banking, that focus on smaller, more local communities and do not involve monetisation of exchanges. While there is a growing body of literature elaborating participation and motivation in sharing services as well as analysing organisers' roles, little is discussed about the work involved in the day-to-day organisation and management of such services. In this paper we report on an interview study with ten participants discussing five different sharing systems from three different countries. A qualitative thematic analysis of the data points to significant on-going effort reported by all to establish, maintain and grow a service, not only focussing on its practical aspects but also on growing a community and building trust. How they engaged in this practical work though was not so much shaped by the service model (time banking, LETS and so on) but on a complex relationship between their funding model, the service goal and whether it was a top-down or bottom-up initiative. These findings have implications for the design of technical platforms to support services, not just in elaborating a range of possible tasks to be supported but also in where and how it needs to be tailorable to certain needs, how adaptive it is to different service models and how it facilitates monitoring and reporting duties for organisers.

Keywords: sharing service, exchange service, time banking

1 Introduction

Peer-to-peer exchange has existed throughout human history. Recently, with the rise of technological innovations and a growing public interest in alternative economies, technology-supported exchange platforms are thriving. Even though there are many well-known monetary platforms such as Uber (www.uber.com) and AirBnB (www.airbnb.com), many organisations focus on non-monetary services such as time banking. While there is an ever-growing body of work about sharing services, most of it looks at a specific type of sharing service and/or in a specific cultural context. Many authors have looked into sharing services from a members' and organisers' perspective and have given accounts of the roles involved and their responsibilities.

More recently, work has been done regarding the organisers' perspective and motivations that keep them working [1, 2], however, there is little detail on the more practical day to day work involved in setting up, running and maintaining a service. Furthermore, much of this work has taken place looking at a single service model and/or in similar contexts. We want to add to this understanding by looking more closely at the organisational work involved in facilitating a sharing service, as experienced across a range of different types of services and different organisational structures; and to also look at this in different contexts.

For this purpose, we first introduce the different exchange models we looked at in our field studies, describe important aspects of sharing services that are relevant for this paper and how these were addressed in literature in recent years. We then introduce our field studies and research approach. In presenting our findings, we explore the organisational tasks to administer both the back end and front end of a service, as well as mechanisms and strategies employed by the organisations in our field studies, giving an overview of key challenges of organising an exchange/sharing service. A key finding was that the differences between the services in terms of organisational concerns and effort was not so much based on their particular service model (e.g., time banking or not) but on other factors such as their available funding and resources and whether they were established as a top-down or a bottom-up organisation. Finally, we discuss the interrelation of different strategies, and highlight the importance of context and goals in the decision-making process. We conclude the paper with a list of design implications and suggestions on what to contemplate when designing a technical sharing service.

2   Related work

Sharing trends are a worldwide phenomenon and are currently subject to high attention, not only within the sharing community, but also within an international scientific community. There are different models of sharing. While some services, such as time banking or Local Exchange Trading Systems (LETS), are widely known, other models such as cohousing and neighbourhood peer-to-peer sharing networks are less often discussed in the peer-to-peer economy literature. Time banking is a sharing concept that enables participants to exchange services based on a time-based currency, often referred to as time credits [3–6]. Participants invest time helping others and can spend the same amount of time receiving services from other participants. LETS models of exchange are based on an alternative currency called LETS, which can be used in parallel to 'normal' currency. They are often used in local communities during times of recession [4, 7]. Cohousing initiatives [8] are intentional cooperative buildings or housing communities who co-own, plan and manage their buildings collaboratively, and share facilities as well as activities. Neighbourhood peer-to-peer sharing networks are local sharing communities where sharing takes place in the near vicinity of a sharer and favours are exchanged without the expectation of always getting something in return and without any 'valuation' through alternative currencies.

While there are different sharing systems, there are also different goals for creating a sharing service. Cahn [9] has reflected on the values and principles involved in this social economy [10] and summarised them as seeing humans as assets, redefining work, reciprocity and valuing social capital. These values have since been expanded, for example by Gregory [11] adding the goal to increase active citizenship and re-building a sense of community, and by Seyfang [12] to support sustainable consumption measures. Furthermore, sharing services have been researched as a means to facilitate social inclusion [7, 9, 13] and as a way to provide services in time of austerity [14].

A significant amount of work has looked at the sharing side of services, especially from a member's perspective [2, 10, 15–17], for example talking about motivations to join and continue using sharing services. Issues about sharing practices are also discussed, such as lack of trustworthiness [2], availability [3], not recognising skills to offer [18], the preference by members for giving rather than receiving [10, 18] or not wanting to ask others for help [19]. Researchers have also looked at the role of technology for sharing and exchanging, including standalone sharing systems e.g., for time banking [19] and more generic platforms such as Facebook appropriated for sharing [20]. However, while technology can act as an enabler if it is reliable [21, 22] it can also pose an issue for participants if they are not in the habit of using technology [23], or if they don't see the need for regularly recording their exchanges and hence disrupting the time tracking concept [24].

There is also some work on the organisational perspective. Voida et al. [25], Thoits & Hewitt [26] and Kane & Klasnja [27] for example, all talk about volunteering work and its beneficial impacts for those who volunteer; Seyfang [28], Bellotti et al. [21] and Gregory [3] and others discuss different roles of organisers in sharing organisations; Bellotti et al. [1] and Shih et al. [2] illustrate motivations that drive volunteers and organisers. While many of these have focussed on a single service, most commonly time banking, Light & Miskelly [29] evaluate the organisational needs across seven different types of sharing cases, but all within one local area.

Here we also focus on the organisational side of sharing services, building on and complementing this work. While there has been discussion about roles and motivations, there is less on the practical day-to-day work that is entailed in administering and managing sharing services, which we take up as focus in the interview studies to be reported here. Further, while there is some work looking across different types of services, there is an opportunity to do this beyond one local area, and so here we compare across different types of services in different countries and contexts to understand the similarities and differences and why these arise.

3   Interview Studies

To understand organisational and administrative issues on a more general level, we sought to talk with people who were involved in facilitating non-monetised sharing/exchange services. To this end, we recruited ten people from six organisations, covering five different types of exchange systems (time banking, alternative currencies, exchanging neighbourly help, neighbourhood centres, and

cohousing), four different types of technical platforms (and two not using any particular technical sharing platform) and three different European countries (Austria, Greece and the United Kingdom). Table 1 provides a short overview of our field study sites, presenting a selection of information relevant for the content of this paper. While these organisations were recruited opportunistically based on our networks, they represent different sharing models and are comparable since they are all connected with facilitating sharing, but are interestingly different as can be seen in Table 1. These differences will be discussed in more detail in Section 4.1. This allows us to step above any particular service model and context and to look more generally at the issues involved in running a sharing or exchange service.

Table 1. Overview of the services in our field studies, using anonymised IDs for each service.

ID	Exchange system	Funding	Staff	Country	Sharing Platform Technology	Existing since	Members
TG	timebank	private donations, raising money	volunteers (no pay)	GR	OSCurrency	2011	1000+
TE	timebank	local council grant	paid	UK	Echo (based on Cyclos)	2014	~210
NH	neighbour-hood help	project grant, co-operation with other organisations	paid (time limit)	AT	in-house	2014	750+
EC	alternative currency, timebank	membership fees	volunteers (partly paid with hours)	AT	Cyclos	1995	~220
NC	neighbour-hood centre	government funded	paid	AT	none	1997	n/a
CB	cohousing	community funded	inhabitants	AT	none	2009	80

"Timebank England" (TE) and "Timebank Greece" (TG) use different technical platforms to support reciprocal or network-based exchanges in a local community using time as a unit of currency. "Neighbourhood help" (NH) is based on a technical platform to enable local neighbourhood networks to ask for and receive help, organise shared events and share information about their local environment. The "exchange circle" (EC) uses a technical platform for exchanges that has elements of both time banking in that they use hours as a way to track the amount of work that has been done and alternative currency in that they created a tangible representation of these hours, can give hours away as a present and facilitate exchanges. Neighbourhood centre (NC) is a government funded organisation attached to a large housing complex with the aim to provide support for the local community and people living in its surroundings by promoting neighbourhood activities or workshops and offering counsel. They also see connecting people as part of their tasks and organise sharing

activities among the community members. Cohousing (CB) is a purpose-built shared house with about 80 inhabitants. The founders wanted to create a multicultural, intergenerational community that shares resources and promotes a more sustainable lifestyle.

In total we conducted seven in-depth, semi-structured interviews with ten participants, as introduced in Table 2. Participants included both active and former members of services who were key organisers, managers and volunteers. The data was collected in situ in the respective countries and, where possible, at the locations of the administrative centres. Each interview included one to four interviewees, lasted on average 1,5 hours, and was conducted by one or two researchers, in either English or the native language of the country, of which at least one co-author is fluent.

Table 2. Overview of the interviews and participants.

Interview ID	Interviewee/s (role)
TG.1	1 former volunteer (organiser/expert, mainly responsible for the time bank website)
TE.1	1 paid coordinator (service set up and general overview of the platform activities)
TE.2	1 paid coordinator, 3 volunteers (one of them a former LETS organiser)
NH.1	1 founder (media and online management, strategic overview)
EC.1	2 voluntary organisers (administration and organisation)
NC.1	1 paid social worker (organiser of sharing activities)
CB.1	1 founder (co-financer, co-planner, and co-organiser)

To gain insights into current practices and issues concerning the administration and management of exchange services, the questions probed on how they ran their service delivery, how they managed participant engagement, and what work was involved in doing this. While most services used some form of technical online platform to support their service and negotiate exchanges, we concentrate more on the broader service not just the platform.

The conversations were captured using written notes and audio recordings, which were subsequently transcribed and, where necessary, translated to English. Thereafter, we used an inductive approach of thematic analysis [30] to identify organisational issues and their implications. These issues were first extracted and then thematically clustered to gain an overview of their inter-relations. Henceforth, when we talk about specific platforms, we use the platform ID, e.g., TG, CB, NC and so on; when we quote from the interviews, we use the interview ID, e.g., TG.1, TE.2 and so on.

4 Findings

While our data is drawn from diverse types of services and in different countries,

there was a surprising overlap of shared experience. At a general level, all services went through similar phases with similar challenges: to set up, grow, and maintain the service. All entailed a significant amount of back end organisational work, both strategic and practical decision making and practical tasks, across all the phases. They all experienced common challenges in how to access the necessary resources, including funding, infrastructure and people to do this work. There were also common challenges in how to promote and grow the service, both at a philosophical level in terms of how to define and grow the community and its culture and in particular to establish trust, and also at a more practical level in terms of how to encourage people (both as potential volunteers and as members) to translate their stated support for this sort of community engagement to practical action.

However, how each of the organisations specifically experienced these challenges and how they addressed them varied considerably and this depended not so much on the particular model of sharing/exchange they embraced but on a complex interplay of other factors such as whether they received external funding or not, what the particular goals were, and whether the service was a top-down or a bottom-up initiative. This interplay between these factors determined for example, whether they had resources they could rely on or not, whether there were external constraints they had to operate against or report to, and how long a view they could take in their more strategic planning around the service.

In the following, we discuss our findings in more detail to draw out the particular types of work needed across the phases of a sharing/exchange service, and organise these around key themes of getting started, administering the service and promoting service engagement. The case-based examples we present throughout these discussions illustrate some of the specifics of the interplay of the three factors mentioned above in shaping how they approached a task or issue and we will return to these at the end to summarise.

4.1 Getting started

A key difference across the services was whether they started out in a top-down or bottom-up way or as part of a broader community initiative. We saw that certain goals were an important factor of setting up new sharing services. The services in our study were all founded to fulfil a certain need of a local community or organisation.

TE and NH were both *top-down* but in different ways. TE came about as response to a local council who offered a grant for social projects and called for solutions to mobilise community resources and help people meet each other's needs. TE therefore started off with funding to employ a full-time coordinator who was located at the local volunteer centre, which had applied for the grant. NH on the other hand could be described more as a social start-up, started by entrepreneurs who passionately believed in local community building and sharing. They developed a technical 'neighbourhood network' platform and had a strategic plan to roll out and promote their service one district at a time. While they aim eventually to have a commercially viable business across many districts and cities, the service itself is meant to be free to community members and instead local businesses and building owners are targeted for revenue flow. Not being tied to a particular district, they do not have local offices

in the districts and rely on local promotion for service uptake rather than the work of a particular local coordinator.

TG and EC on the other hand are examples of services that started in a much more *bottom-up* fashion. Both were initiated by grass-root communities, with the goal of benefitting from untapped resources to support and enrich their local community. TG was founded at the time of an economic crisis to connect locals in a dire situation, foster solidarity and facilitate the exchange of goods and services without the necessity of money (a pattern also noted by Gregory [14]). EC on the other hand was created to provide a sustainable alternative to the existing economy, add value to local communities and show people that their work is valued equally.

NC and CB differ from the above mentioned services in that they are not focussed solely on sharing, but have the goal to *integrate* sharing as part of their philosophy for their broader community-building initiatives. Both are tied much more explicitly to housing complexes, and try to add in, organise and promote sharing practices; to date neither have a specific technological back end for supporting sharing exchanges other than general mailing lists and community notice boards. NC is a local community centre that employs social workers and also recruits volunteers, and that is often approached with offers of goods to give away and share as well as requests from locals who are in need of certain support. CB is a cohousing project that was designed and built by its residents to cater for their wishes of leading a more sustainable life, closely connected with their immediate neighbourhood. The inhabitants of the cohousing complex were hand picked to create an international, intergenerational, diverse community. While NC has a top-down structure as a government funded institution, they hold regular meetings together with volunteers in a more bottom-up fashion. CB is a bottom-up organisation where all residents contributed in a participative design structure to the establishment and on-going management of their building. All inhabitants are organised in working groups to discuss and further develop different parts of their co-existence.

In summary, and interestingly, the actual underlying service exchange model was not such an influencing factor on the patterns of organisational work we saw across the sharing services.

Funding. It is not surprising then that *funding* was also one of the key differentiators among the services and had numerous implications. Most services used a mixture of funding opportunities, but over all, bottom-up services were largely self-funded [TG, EC, CB], whereas top-down services were often funded through (sometimes time-limited) government or local council grants [NH, TE, NC, CB].

In the self-funding model, members of the staff would often contribute personal money when required to [TG, CB] or money was raised through parties and events [TG, EC]. Some exchange services required their participants to pay a membership fee [EC], which was used for organisational purposes. This model depended on the participation of the service's own community, rather than on external funding sources. The contributions were monetary on a monthly or yearly basis, alternative currencies such as hours, or a combination of the two, as explained by one of our informants [EC] *"from the second year on, members also pay 'hours' for administrative work in addition to their membership fee"*.

Another way to acquire funds was to charge transaction fees for business participants, as was proposed by NH. These fees could be settled by the external

organisations that cooperated with the exchange service and strived to gain something by contributing, be it access to the participants or promoting their businesses to potential customers. Some services also received start-up funding from government [CB], local council [TE] or project grants [NH]. Some grants were often attached to terms and conditions on which they had to report on regularly, such as additional safeguarding strategies, security checks or insurance for exchange activities. Grant funding was especially attractive for start-up companies with limited options, but could tempt them to adapt their original goal to better fit the project's requirements and was sometimes seen critically [NH.1] *"grants help us now to start-up, but there are many projects that jump from grant to grant and that always adapt their projects a little. I think that is very dangerous since you lose sight of your focus because you only concentrate on getting the next grant"*. Needing to find such follow up funding was certainly an issue for [TE] who were only funded for a start-up phase. Light & Miskelly [29] similarly show that there is a *"trade-off between raising funds and having time for anything else, especially in a voluntary capacity"*.

4.2   The organisational team - tasks and roles

Regardless of how the services were initiated, once started, they needed people who could take on a wide range of tasks and activities to promote, run and grow the services. Literature points to the different types of roles organisers take on in sharing services, e.g., street ambassadors [11] or time brokers [28]. In our interviews we also saw a diverse representation of named roles, necessary to start-up, run and maintain a sharing service, for example community managers [TE, EC], moderators [TG, NH], brokers [TE] and ambassadors [EC, TE]. However, even though everyone seems to have a clear picture of the tasks within their respective service, they tended to use different terms and wording for similar roles, depending on the scope for people in paid or formalised positions or whether people were volunteers and/or took on more than one role within the organisation. Hence, we refrain from talking about the work in the context of specifically defined roles or individuals but rather discuss the key organisational tasks that needed to be done across all services from the organisers' perspective and how our informants dealt with accomplishing these tasks.

An often-observed phenomenon [TG, TE, NH, NC], especially in bottom-up services, was that of a *driving force* among the organising team, as also mentioned by Bellotti et al. [21]. This driving force was usually one person who kept a general overview of what needed to be done at any given time. They got things done, or, if they did not have the necessary expertise, knew whom to ask to do it. An interviewee described the importance of this person as follows [TG.1]: *"there was one person that did everything and she is a very dynamic, very giving person [...] she would make the phone calls, speak to the other people, get people involved, [...] she was really the engine of everything that happened"*.

Apart from someone keeping the general overview, there was usually a group of other *volunteers or employees* who kept the system up and running. This included a lot of work at the 'back end' administration of the system, such as setting up policies and procedures, administering the technology, looking for funding or maintaining the infrastructure. There were also many tasks more visible to the service's participants,

such as overseeing activities, communication and exchanges on the platforms; acting as proxies for more vulnerable people such as children, older adults, or people with disabilities who were interested in using a service but needed support doing so [TE]; or promoting the services and informing potential future participants about possible advantages of joining the service, which according to Bellotti et al. [21] is necessary to attract and keep participants. We discuss these in more detail in Section 4.4.

Who actually undertook these tasks in the organisations varied. In TE for example, a single person, the paid coordinator, took overall responsibility for doing most of these, co-opting volunteers as needed, while in EC the tasks were distributed across a number of volunteers. In NC, sharing was only one of many concerns the social worker had in her role and so she played more of an oversight and facilitating role, identifying opportunities and co-opting community members to help as needed.

Across the services, we saw *motivations* of the organisers similar to those reported in Bellotti et al. [1], i.e., "Society/Community/Utopia" reasons, to explain why the people were prepared to put such effort into providing sharing services. We also saw some other more specific and personal motivations, e.g., creating a thriving community of neighbours rather than convenient connections [NH.1]; overcoming personal loneliness [NC.1]; making changes following a change in life circumstances such as divorce or retirement [EC.1, TE.2]; or being personally challenged e.g., by dealing with technological challenges such as data analysis to refine the platform's strategies of informing participants [TE.1].

In recognising the importance of keeping people, especially volunteers, engaged, one organisation made a point of trying to find out details about their volunteers' personal goals in order to better cater to their needs and keep up their motivation. An interviewee [NC.1] explained this in an example, stating that they sought to understand their volunteers' motivations to find appropriate tasks for them to work at. Consequently, volunteers who joined to battle their own loneliness, for example, would be asked to do group activities rather than run errands.

The challenge of not keeping volunteers active and engaged was highlighted by one of the participants in TE.2 who had been a member of a LETS previously but it had to fold because they could not get enough volunteers to take on the administrative work to enable it to run.

4.3 Administering the service

Across all services it was evident that there was significant work involved in 'making a sharing service work' (to borrow from Bowers [31]), from the overall processes and policies to the day-to-day tasks in actually administering the service.

'Back office' work. Even though we recognised some major differences between bottom-up and top-down services, there were similarities in the administrative structures and rhythms of the organisations. The similarities could mostly be seen in regard to regular meetings and establishing some forms of community etiquette, while the differences were often grounded in reasons of accountability, such as the need for insurance for some externally funded services.

In most cases, no matter if top-down or bottom-up, the organising teams followed a schedule of *regular meetings* to discuss upcoming 'to-dos', strategies or just

reconnect. These meetings played an important role in letting the services run smoothly and addressing pressing matters. While regular meetings seemed to be of bigger importance to bottom-up services such as TG, where a team of volunteers had to collectively decide about strategies and goals, NC as a top-down organisation also employed this practice to connect with their volunteers regularly and discuss upcoming happenings.

EC was interesting in how they organised their meetings. While they evolved from a bottom-up initiative, their organisation turned out to be very structured in that volunteers worked fixed hours per month, part of it in exchange for service currency. They also manage their volunteers and members through two types of meetings. As described by the interviewee [EC.1], before each monthly meeting that was open for everyone, they would hold an administrative meeting for the core team *"we are meeting for about two hours before the general meeting to discuss what could be renewed [...] it's partly voluntary work, but half of that time is paid in 'hours'"*.

For many organisations there was also work involved in establishing and agreeing to a *working culture* within the administration team, pointing to the importance of trust and transparency of internal processes. We observed very different approaches of team culture and collaboration, often tied up with the structure of the services. Since most top-down service structures were integrated in bigger organisations, they often inherited clear organisational rules of how to work together [TE, NC], sometimes adapting them to more approachable guidelines [NC]. Bottom-up services on the other hand mostly built up their team cultures more organically, and decided on internal strategies to set guidelines. Some interviewees talked about how helpful it was to formulate rules [TG, CB] or recommend guidelines [NC] to fall back on when needed in order to successfully work together. The importance of this is illustrated by an interviewee [TG.1] who expressed his frustration with working in a bottom-up group without such agreed upon guidelines *"I didn't care if someone could vote at their first meeting or not, I just wanted it to be formalised [...] and I ended up feeling that this resulted in hurting the functioning of the group, because there was no transparency on who we were and what we were, what our purpose was"*. This became *"the straw that broke the camel's back"* for him and it resulted in him withdrawing from the platform. CB, on the other hand, undertook decision-making by small working groups, even though the decisions directly influenced the lives of all parties in the building. Hence, they deeply depended on a culture of trust between its organisers who in this case were also inhabitants of their cohousing complex.

While being part of a bigger organisational structure might mean lower overhead in negotiating own processes, it also came at a cost of greater administrative workload in terms of accountability and reporting tasks according to the conditions of accepting external funding. At a minimum, for example, TE's organisers often needed to report on budget matters, service use, e.g., number of exchanges, and so on, in great detail.

A particular 'hidden' administrative overhead for TE was related to *insurance*. It was required as a matter of its agreement with the local council, and as a condition for its funding, that insurance be provided to all participants undertaking activities within the context of the service. An implication of this is that *all* activities needed to be documented in advance on the digital platform in order to be covered by the insurance [TE]: *"So, if you are going to an exchange and […] you are not going to be able to do the exchange exactly [as agreed upon …] you need to update your request or your*

offer before you do that, so that it is covered on the insurance". The hidden work was in always having to monitor exchanges taking place and to convince people to put them into the system. This was difficult as participants sometimes found this onerous, as it did not reflect their daily practices and generated additional effort on their part, and they did not understand the implications for TE from the service side of supporting an exchange that wasn't insured. Other services too [TG, NH] struggled with getting people to document all their activities digitally, especially once the participants had built personal relationships with other participants. While this also raises the question about where the boundary lies between participating in an exchange platform and helping out a friend, it also points to the additional back end work required once a platform is part of the picture.

Additional administrative work was also created around organisations needing to be *accountable for the volunteers* in their service and many had some sort of quality assurance/vetting process in place. NC, for example, interviewed their potential volunteers before they could join. These interviews were a way for the organisation to get to know applicants, and also to find out about their goals and wishes and understand what kind of work they wanted to do. They organised supervisions, trainings and excursions for their volunteers, not just as a way of vetting but to keep them involved and motivated. These could be informative events, but were also intended to create a social team spirit and sense of community. For TE, vetting of their volunteers was of great importance because they were often asked to act as proxies for vulnerable members of the community and special safeguarding policies were in place. As TE.1 explained *"... obviously with vulnerable people you want to make sure it is safe"*.

As previously noted, there is also another tranche of back-office work around funding, not just the day-to-day management of budgets but also towards more strategic longer term survival, especially for more top-down services relying on external sponsorship and funding, e.g., needing to apply for new funding grants [e.g., TE] and so on. All of these types of activities entail additional back-office work as part of running and monitoring the service, being accountable, and being sustainable.

Managing the IT. While a key enabler for sharing services, IT does not run itself and also requires significant back end effort to run and maintain. What that effort entails is also tied in with what expertise is available and how IT systems are sourced.

In most of our field studies, technology platforms played a vital part in the organisation. Even EC, which was funded in 1995, switched from providing only printed hard copies of offers and requests, to incorporating an online presence as part of their service (the hard printed copies still exist though). The studied services had different strategies to deal with technology within their projects. While some developed their own platform [NH], others used customisable open source solutions [TG], and others outsourced the development or used existing solutions [TE, EC, NC]. Each approach led to different issues and advantages. NH, for example, had in-house computer expertise, giving them full control of their system so that they could adapt it based on their participants' feedback: *"We caught [a usability issue] at the beginning [… because] at a test shortly before going live, we found out that even though some people liked the feature, all were overburdened with it"*. TE used an existing generic sharing platform solution but had additional work to document and negotiate feature requests with the external developers (e.g., he asked for a bespoke

front end and additional functionality to support bespoke processes such as their vetting process and being able to set up different member groups with different permissions). This could be mutually beneficial work though because, as stated by TE.1: "*this is in their [software provider's] interest as they are developing the software for availability to all timebanks and thus are keen to put in the thinking/work now to make the software as bespoke as possible to any timebank.*" His next wish was for a mobile version of the platform to make it more accessible to people in a timely way compared to desktop-web-based solutions, advantages of which are also noted in Bellotti et al. [19].

Other services [TG, EC] did not have access to in-house or external expertise, both suffering from limited technical knowledge among the team. Relying on volunteers instead, they could not respond to bugs or feature requests in a timely or reliable fashion. TG.1, using an open-source sharing platform, illustrated this problem: "*[The platform] had a lot of bugs, a lot of missing functionality. I didn't have that much time [… and] just made a few small bug fixes. And people got kind of frustrated with the platform*". EC.1 were concerned too and connected the issue to generational age: "*Because we, the core, are […] too out-dated for things like that. And we would wish for more young people [...] I'll not interfere with that, with the homepage, and putting things online and all of that*".

In principle we know that good design of technical infrastructure can lead to a more systematic management of people and resources [29]; and that both easy communication and smoothness of coordination are crucial elements in the entire exchange process [16]. However, our cases suggest it is a particular challenge for non-monetary, bottom-up services to find reliable volunteers with the right expertise, or to be able to finance external experts, also mentioned by Lampinen et al. [16], and running good computer systems to support the exchange platform can greatly impact the members' as well as organisers' experience of using a service.

4.4 Promoting service engagement in the community

Apart from the practical back end management, a large part of organisers' efforts was directed towards growing community engagement with the service itself; here the issue of top-down versus bottom-up was less influencing and all cases had very similar needs for promoting the service, getting people to participate and catering to their members, especially with a concern for how to build trust within the community. Across our cases we saw a number of different strategies for how to promote community engagement, all with different resourcing implications.

A community is its people and for sharing services to work, there needs to be some critical mass of members (how many people comprise a 'critical mass' is relative for each group). Thus, a key focus of organisational effort across all services was set on how to *attract new participants* as both members and possible volunteers. Organisations had different active promotion strategies. Most commonly used were flyers [NC, TE], business cards [TE], media coverage [TG, TE, NH, EC], social media [CB, TE], events and word-of-mouth [TG, TE, NH, EC, NC], advertisements on public screens in subway stations [NH], as well as workshops [TE, EC]; all interviewees pointed to the considerable effort it took to decide on, design and

deploy/organise any strategy. TE for example, organised workshops and events, often in the context of other volunteer-based organisations, such as churches. Their strategy was to lower the barrier to join by letting people register in-situ at the workshop [TE.1]: *"you always intend to do things and the minute you walk out the door it's […] harder, so it's sensible trying get people to sign up at the initial meeting"*. However while the interviewee [TE.1] recognised the value of such events, he also noted: "*I wouldn't say that event organising is one of my biggest strengths. I can do it but it is not a biggest strength. So I would try to either have an employee or even identify a member, who could do that for me*".

The next critical challenge for most of the services was how to translate everyone's enthusiastic belief in this type of service as a 'good idea' [TE.1] into on-going *active participation* as a regular exchanger/sharer. Again a variety of strategies were used to both remind people about the service and to inform them e.g., about activities posted on the website, as well as about upcoming public meetings or events with other service participants [e.g., TE, EC]. Strategies included: sending out regular printed newsletters [EC] and emails listing offers and requests [TE]; sending out more general informative emails [TE, NH]; explicitly phoning potential exchange partners to inform them [EC]; and using physical notice boards in highly populated areas [NH, CB]. NH also had future plans to increase its reach into the neighbourhood by putting screens into houses and building blocks or using existing in-house TV channels as a way to reach all neighbours, especially those who might otherwise be overlooked [NH.1] *"... a neighbourhood consists of all inhabitants of a house […] we think that especially older adults could contribute a lot in a neighbourhood community"*.

We did not hear any one strategy being highlighted as most effective and it was often a case of trial and error, as well as access to the physical resources e.g., to print materials. One interviewee [TE.1] for example, talked about how he is continually evolving strategies to encourage awareness and active engagement. His emailing strategy is one example: he used to send out a lengthy, monthly email to members, but now sends out shorter emails more regularly, making sure to include only a single "call to action" and a related link. He also monitored the effectiveness of the emails using a marketing service, which enabled him to track how many emails were opened and links were clicked, and what sorts of content generated most interest. This again entails work, not just to promote, but also to monitor, review and adjust strategies.

Building trust. Another key challenge mentioned by all participants was how to build trust in the community and the system, also mentioned in [11]. Repeatedly, interviewees talked about the challenge of creating a trustworthy service in which participants feel secure. Being able to trust a community enough to communicate via an online platform was one thing, but inviting another person into your house for a service or exchange was a different matter [NC.1]: *"Only by following the rules will we succeed in creating a secure environment for everyone"*.

One way to build trust was through having visibly *rigorous processes*. We saw this already for vetting volunteers and some also had vetting processes for new members before they are able to engage in exchanges. As part of the registration process at TE for example, new participants had to give the names and contact details of two other people who had known them for more than six months. These people were then contacted by a member of the organisation and asked five standard questions about the participant. Additionally, new members had to undergo a 75-minute training

before their accounts were unlocked. Others, such as NH also verified their participants' identity, but took a more low key approach by sending a postcard with a code to the given address to unlock their account. That way they could at least be sure that the participant's contact data was correct. In these ways, both organisers and fellow members could be more confident in who they were dealing with.

Another way to build trust was through more *social strategies*, e.g., inviting new and potential members to meetings or social events [EC]. Face-to-face meetings were regarded as particularly important for creating a trusting environment [TE.2]: *"I think the opportunities to meet each other are useful. [...] People might prefer to exchange when they've seen someone face-to-face"*. An interviewee [EC.1] also addressed differences between city and countryside *"[Exchange culture] works better in the countryside than in [a city]. In the city it is harder, because people feel more insecure and are more withdrawn. [...] Some people don't even know their neighbours"*.

Other services depended on *community self-regulation* to create a trustworthy environment e.g., encouraging 'thank you' messages [TG, EC] or hand-picking participants [CB], while others formulated explicit member guidelines for community behaviour on the platforms and in service exchanges [NH, TE]. An intriguing insight was that even though some interviewees [NH, TE] had reservations about member verification during the sign-up process, and hence a delay for participants in being able to use the system, this seemed to be of low impact on the registration numbers.

Not only trust among members and towards organisers is important, but participants also need to *trust the technology* they are using. Something our interviewees mentioned concerning the technology platforms was the issue of how to ensure a person's privacy while still displaying expertise and possible exchanges online. In NH for example, participants have different "circles", and when posting something they have full control over who sees the post, e.g., only people who live in the same house, or everyone in their close vicinity. Also, when it comes to a person's profile, they could often manage exactly who sees which information. NC.1 mentioned that they sometimes received requests to directly manage personal data, leading to a different type of brokering role: *"sometimes, when someone asks us not to circulate their number, we collect the number of the other interested party and they [the provider] will get in touch later. That usually works well"*.

In summary, all of these approaches to building trust take organisational time, effort and resources. Thus, how to handle trust among participants was not only entangled with the ideological orientation of a service but also with funding, e.g., the formal processes as required by the funding body [TE] and having resources to do things [TG], as well as the people power to be employed towards this goal.

5 Discussion and Conclusion

The ideal of sharing services, and associated notions of community and sustainability and so on, is clearly tapping into something that people consider important, evidenced by the recent growth in such services. However, the reality of actually setting up and running a sharing service is not a trivial matter. While there is a growing body of literature reporting on sharing services, these are often focussed on

one type of platform or exchange model e.g., time banking. In this paper we have explored sharing services in six organisations, covering five different types of exchange systems, four different types of technical platforms (and two not using any technical platform) and three different European countries. Regardless of the type of service or general set up, the data here has shown it to be a complex and strategic undertaking, not just to set up but to run and grow the service.

What we see in particular is that the actual underlying service exchange model was not such an influencing factor on the patterns of organisational work across the sharing services. Rather it was whether services emerged top-down or bottom-up or as integrated within a broader service, the service goals, what funding they had and any reporting/accountability requirements that were entailed. For example, both TG and TE operate time-banking models of service exchange, supported by their different technical platforms, but the administrative context for their timebanking services is very different: TE was sponsored by a local council with a start up grant and had access to offices as part of the volunteer centre and a stable externally supported technical platform, whereas TG started as a self-funded grass-root movement in an economically challenged country, using public space or coffee places for their regular, open meetings, and relied on internal expertise to support an open source platform.

Despite this diversity, all services went through similar phases and there was a considerable shared experience of the common challenges around accessing the necessary resources and infrastructure, how to manage the myriad of daily administrative 'back-office' tasks, how to attract and keep members and volunteers and how to promote ongoing active engagement. We can characterise these activities across three time horizons: short-term (e.g., responding to requests, carrying out vetting activities), medium-term (e.g., developing organisational culture policies, monitoring of service engagement) and longer-term concerns (e.g., strategic development, future funding).

The findings also point to other complex inter-relations among these aspects and their implications for day-to-day decision making, particularly in relation to the implications of funding sources and entailed reporting and accountability requirements, e.g.: 'How will registration and verification processes impact the participant's motivation to sign up to a platform?', 'How much technological support is needed to track participants' activities and what are the resource implications?', and 'What are the implications of seeking or accepting funding from outside sources versus being self-reliant?' and so forth.

To illustrate this in more detail, one decision a service needs to make is whether it is free of charge for participants (as in most of our cases) or not (as in EC who charged membership fees). On the one hand, a decision to be free of charge could be perceived as an expression of social values and ideologies behind a service, valuing all participants equally and lowering barriers for people with lower income to join. This can also impact the motivation of organisational team members to engage, especially if they joined out of altruistic reasons. On the other hand, it can have practical implications, such as the need to search elsewhere for funding; a higher number of passive participants because they can just sign up to have a look without being sure they want to participate; and no or limited possibility to employ security checks because of the resources needed to handle this number, which may impact trust. This example shows the complexities entailed in every choice.

Summing up, there is significant ongoing organisational work to set up, run and maintain a service, but how this work happens arises out of situated negotiations in relation to specific contextual factors, such as: goals, funding, service model, start-up model, technology choice, and other available resources; and people are a critical key resource for this work. Here the rhetoric and idealised motivations and philosphies around sharing services meet the practical realities of the day-to-day work in constrained envionments required to run a service.

5.1 Implications for Design

Light & Miskelly [29] as well as Bellotti et al. [19] propose design implications based on their work on peer-to-peer sharing services. While Light & Miskelly analysed different service models, their proposition for technology to support sharing practices is more focussed on suggesting additional platforms to facilitate the organisational work and shifting to supporting shared spaces more than individualised exchanges. Bellotti et al. on the other hand propose very practical design implications, such as creating a more social environment and facilitating the recording process, but their recommendations are specific to time-banking.

During our work on five different sharing services and when seeing how they played out in different contexts we identified a list of opportunities for the design of technical platforms to support sharing more generally. Addressing those needs could result in technology that better caters to the needs of the organiser and volunteer team and facilitates their work on the services.

We saw that each organisation, even those that used the same type of service, e.g., time banking, had different needs depending on factors such as financing, organisational structure and so on. Also, most organisations we talked to grappled with the issue of not having enough technical expertise to easily customise their digital platforms. Hence, these organisations could be supported by creating sharing technology that is *modular and individually tailorable*. For example, platforms could offer ways to define different roles in the system, account for different skill sets and ideally have a diverse variety of exchange models to choose from, all of which a particular service could tailor to their context. Using a modular approach would minimise the techncial skills required compared to bespoke development.

As discussed previously, some services, especially when they were organised top-down and financed by an external funding source, had a need to regularly report on the project's status. To facilitate this task, sharing platforms could provide *ways for monitoring as well as reporting on activities* on the platform. Organisers could for example be supported by the platform through providing them with report templates, standard query sets, or dashboard views of service activities on the platform.

We live in a time, where a range of different devices is equipped with internet capability and people are no longer bound to a certain platform such as a desktop computer. The interviews showed that the organisations from our field studies also either planned to make use of different platforms in the future (e.g., creating a mobile app and putting up public screens in the neighbourhood to promote their service), or had already put this strategy into action (e.g., providing easily accessible material to put up on notice boards, link to and so on). Also literature talks about the use of

mobile devices for sharing services [21, 22]. Currently many of these cross-platform and cross-media initiatives take place independent to the sharing platform. There is an opportunity to re-think the technical support of services as running across a modular suite of media and platforms. Additionally, sharing platforms could offer *different interfaces to easily connect with other technological devices* such as public displays and screens. Such a *responsive design approach, catering for different devices* that link across different media and platforms, could help sharing platforms to be better embedded in physical as well as digital spaces, reach a more diverse set of participants and equip organisers and volunteers with better access to their service, also addressing issues of inclusion for those who are not so technically able.

Furthermore, since we saw similar challenges across different platforms, a meta-service, such as a *'sharing about sharing' platform* could support organisers to exchange their experiences and strategies to deal with issues, and would be well in line with the altrusitic philosophy of many organisers and services.

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