

Everyday Favors: A Case Study of a Local Online Gift Exchange System

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ABSTRACT

This paper focuses on online gift exchange in a setting where online and offline interactions are tightly intertwined and most of the exchanges require face-to-face interaction to be completed. We present a local online gift exchange system, Kassi, and a seven-month case study of its use. Based on survey material and logs of system usage, we analyze users' motivations to contribute to the system and the community. While most users held favorable attitudes towards the system, many reasons for not using the service were found. We set our findings into perspective by discussing different ways of defining participation, measuring use, and qualifying different types of contributions. We argue that when users try to fit a system into their everyday lives, designers should consider supporting such efforts—even if user behavior does not match expectations. Designers who encourage emergent and unanticipated behaviors can enhance users' sense of participation and encourage the leap from intention to realized action.

Categories and Subject Descriptors

H.5.m. Information Interfaces and Presentation: Miscellaneous.

General Terms

Human Factors

Keywords

Computer-mediated Communication, online community, social exchange, gift economies

1. INTRODUCTION

We all have skills and possessions that others need but do not have. At the same time, we often lack items or skills ourselves, and seek others who can help. Even from a close friend, but perhaps especially from a stranger, it does not always come

naturally to ask for a favor. Often there is a gap between what any one individual has or can do and what he is willing to ask for from others. In this paper we present a system intended to help fill that gap through local online gift exchange - Kassi. We discuss how Kassi operates, how it facilitates interpersonal exchange of goods and services, and how it can enhance a local community.

Many of the most popular online systems for exchanging goods and services such as Ebay¹ and Craigslist² involve direct reciprocity or negotiation between two parties. In the simplest cases, one person places a description of an item online and another person contacts the seller or places a bid. Services such as ELance³ and RentACoder⁴ allow those who need a service to solicit bids for the work and coordinate its completion. The primary value of these systems is to facilitate convenient access to goods and services that can be bought in an open market.

Other online services, however, are oriented towards indirect economic transactions rather than direct negotiation. In such systems, users offer available goods and services and are then matched with an appropriate recipient. Because exchanges involve no negotiation, recipients are not expected to return favors directly or to provide any payment. Instead, these systems rely on a generalized system of exchange and reciprocity in which people contribute to a community from which they might later benefit. Freecycle⁵, for example, is an online system that allows users to give away unneeded items but explicitly forbids negotiation, payment, or other forms of direct exchange. Similarly, NetCycler⁶ matches providers with recipients as a way of facilitating environmentally friendly practices of recycling and reuse.

Kassi is also an online gift exchange system that was designed to support the generalized exchange of goods and services in geographically local contexts. Kassi is focused on the exchange of everyday favors such as borrowing items, sharing information, and helping other local community members in the course of daily life. The system does not encourage haggling over prices, nor is there functionality for bidding on goods or services. As with the other online services reviewed above, Kassi is a service for linking those who can give something with those who are in need.

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¹ <http://www.ebay.com>

² <http://craigslist.org>

³ <http://elance.com>

⁴ <http://rentacoder.com>

⁵ <http://www.freecycle.org>

⁶ <http://www.netcyclcr.fi/>

Behind the relatively simple idea of using web technologies to facilitate gift exchange lies a much more complex set of behavioral and motivational issues which we explore in this paper. First, we review related literature on the forms of social exchange, online and offline interaction, as well as motivations to contribute in online exchange systems. Second, we describe and present the Kassi system along with a case study of its use in Finland between September 2009 and March 2010. Finally, we describe and explore what our case study can reveal about individual motivations to contribute to a local online gift exchange system and, more broadly, to online gift economies on the Internet. We contextualize our findings by discussing different ways of measuring use as well as looking critically into diverse ways to participate and contribute. We argue that online systems that promote indirect gift exchange can be self-sustaining, but success largely depends on building a critical mass of initial contributors and making active and passive behaviors visible to all users. Furthermore, we argue that designers must support users in their efforts to ascertain how to fit the system to their everyday lives, enhance their sense of participation and encourage the leap from intention to direct engagement.

2. RELATED LITERATURE

Developments in information technology facilitate the creation of online systems that allow individuals to effortlessly exchange digital information, material goods and services. In the following sections we review three major areas that are central to our presentation of the Kassi gift exchange system: forms of social exchange, online and offline interactions, and motivations to contribute to online exchange systems.

2.1 Forms of Social Exchange

Social exchange is an elementary part of human interaction [4,5,18,15] in which individuals transfer valued resources or carry out mutually rewarding actions. The three major types of social exchange in theory and research include negotiated, reciprocal and generalized exchange [10]. Negotiated exchange occurs when two individuals bargain and discuss the terms of an agreement before exchanging goods or services [11,22]. For example, buyers and sellers who barter after connecting through Internet classified advertisements like Craigslist.org engage in online negotiated exchange [37]. In contrast, reciprocal exchange does not involve any explicit agreement between parties, but the exchange of goods and services still takes place directly between two individuals [27,28]. For example, a reciprocal exchange occurs when an individual borrows something from another person and then returns the favor to the same person at a later time. Reciprocal and negotiated exchanges are both examples of direct exchange since resources, favors, or services are exchanged exclusively between the members of a dyad [15].

Generalized exchange is the third major type of exchange, and it differs from negotiated and reciprocal exchange because, *“the reward that an actor receives... (is) usually not directly contingent on the resources provided by that actor”* [38]. There are no direct agreements or negotiations in generalized exchange. Individuals provide resources of some form to an actor or group, and the recipient(s) may or may not provide resources to others in the future. Generalized exchange is often used interchangeably with terms such as gift economies, gift exchange, and generalized reciprocity [14]. We prefer the more precise designation of

generalized exchange since it describes the form of interaction found in gift economies.

One type of generalized exchange occurs when individuals contribute goods and services towards a collective effort, which is then redistributed as a reward to the entire community. Ekeh [14] calls this type of exchange *“group-generalized exchange”* since the group acts as the indirect third party between individual contributors and recipients. The problem of maintaining a clean kitchen in a shared house is an example of group-generalized exchange since each person may or may not clean, but everyone benefits from the pooled efforts of those who do [38]. In online environments, pooled contributions of information often take the form of group-generalized exchange [7]. These information pools [8,9] include peer-to-peer file sharing networks, open-source software projects, multimedia contribution sites, public online forums and blogs.

Finally, a different type of generalized exchange occurs when individuals give to one person but the recipient gives to someone else, continuing ad infinitum in a large chain or network of unilateral gift-giving. In these network-generalized exchanges [38,14], a gift received does not imply an expectation of reciprocity with the same person in the future. Anthropologists and sociologists have observed stable systems of network-generalized exchange, such as the exchange of symbolic crafts [25]. Other examples of network-generalized exchange include helping stranded motorists [38] and emailing jokes between friends [6]. The Freecycle online gift exchange system is also an example of network-generalized exchange on the Internet [37], as is the Kassi system that we present in this paper.

2.2 Online and Offline Interaction

Open exchange on the Internet has long been touted as a way to reduce costs and improve efficiency compared to offline interactions. Yet, empirical work indicates that simply migrating exchanges and transactions from offline environments onto the Internet is a deceptively complex problem. For example, in the early 1990's successful offline business-to-business exchanges that once depended on negotiation, cooperation and reciprocity were replaced with optimized online matching systems that ultimately undermined crucial interpersonal outcomes such as trust [19]. According to Kollock and Braziel [19], the mistake was not in the assumption that online exchange could be more efficient than existing systems. Instead, the problem was that the shift to optimized online exchange lost much of the vibrancy and context of human-to-human interaction in favor of impersonal algorithmic matching. The purpose of human interaction and exchange is not always about efficiency.

The earliest theories of online interaction posited that interactions in lean media (e.g., online chat, text-based forums) were too distant and uncertain for substantial relationship formation to occur compared to richer media (face-to-face interactions). Some researchers expected the lack of social cues [33] and the absence of social presence [32] in online environments to diminish the exchange of salient social information. Further empirical work demonstrates that online exchanges can be just as fruitful and rewarding as offline interactions [36]. In fact, the dearth of social cues in online interactions may actually assist the formation of interpersonal relationships in some circumstances [29]. In contexts where interactions begin online and then move offline, the initial online interactions can boost affinity for others

precisely because individuals “fill in the gaps” from limited cues with a positive bias [35].

2.3 Motivations to Share in Online Exchange Systems

Both types of generalized exchange presented above involve a social dilemma where all participants have an individual interest not to contribute, while receiving gifts and contributions from others [38]. The provision of online generalized exchange is deceptively complex: individuals contribute time and effort for the explicit benefit of others, but also for numerous reasons that serve their own interests. Thus, a critical concern for all systems of online or offline generalized exchange is how to motivate individuals to overcome their own rational self-interest in favor of supporting the shared, collective effort.

Our understanding of how individuals become active participants in online generalized exchange is often hindered by the tendency to oversimplify what it means to contribute. The simplest distinction is often made between contributors and non-contributors, where the former is inclusive of either all types of contributions or a subset of highly visible contributions. Non-contributors, also called free-riders, tend to be those who benefit without contributing in clear and obvious ways [38]. However, such oversimplifications are misleading for at least two reasons. First, a simple dichotomy fails to account contributions that are individually small but significant in aggregate. Researchers have long noted that a minority is responsible for the majority of contributions online, while most people do little or nothing [16]. For example, in his examination of contribution behavior on Wikipedia, Swartz [34] finds that relatively few individuals contribute the largest edits to articles, but a much larger group of people add new content in much smaller quantities. Thus, the way in which we measure contribution behavior is critical for evaluating the success or failure of online systems.

In addition to the problem of miscounting smaller contributions, the simple dichotomy of contributor versus non-contributor ignores the role that passive behaviors such as lurking [30] and reading [2] perform in the acquisition of knowledge about an online system. Using a survey analysis of online bulletin board communities, Preece et al. [30:221] demonstrate that “*many lurkers are not selfish free-riders*” despite their lack of contribution behaviors. The reasons that lurkers give for non-contribution include a lack of need since others may have already posted relevant information, a stated desire to continue learning about the group before posting, and shyness about posting publicly [30]. The critical point is that a sizable number of individuals participate *invisibly*, leading to erroneous conclusions about a system’s success or failure.

Many lurkers (7.8%) in Preece et al.’s [30] study were unable to contribute simply because they did not know how to post to the group. Antin and Cheshire [2] argue that this type of incomplete information is likely the norm rather than the exception in complex systems of online sharing and exchange. Far from being self-interested free-riding, lurking and reading in online exchange systems such as forums, bulletin boards, and collective efforts like Wikipedia constitute a form of legitimate peripheral participation (LPP). Lave and Wenger [21] define LPP as a genre of community participation in which newcomers undertake simple tasks and interactions that facilitate acquiring knowledge and experience about the community’s practices. Viewing listings on

Craigslist before posting, browsing and buying on Ebay before selling and reading Wikipedia entries before editing text are all types of essential community involvement when viewed as forms of LPP. Thus, the gap between intention and observed behavior in online generalized information sharing cannot be explained solely by self-interest to free ride on the work of others or a lack of proper motivation. Invisible participants are essential to the success of most online exchange systems because they provide an audience to current contributors while they learn the skills necessary to become potential contributors in the future [2].

Finally, another key avenue of research for examining motivations to contribute in generalized exchange concerns the motivations of people who collaborate over the Internet and contribute to Free/Open Source software (F/OSS) projects. These projects involve individual contributions from different people with various skills for the purpose of creating shared, functioning software products. Some extremely complex software products including the Linux operating system, the Firefox browser, and the OpenOffice productivity suite are developed and shared through the combined efforts of relatively few, unpaid contributors. Much of the early research about motivations to participate in F/OSS predicted that, in lieu of direct monetary compensation, other extrinsic benefits such as career advancement and job opportunities could largely explain individual efforts. However, as Lakhani and Wolf [20] demonstrate in a survey of over 600 software developers, creativity and other types of enjoyment-based intrinsic motivations are the strongest and most pervasive motivations among F/OSS contributors. Bitzer et al. [3] argue a similar point by categorizing three key intrinsic motives among developers of F/OSS: 1) personal need of a particular software solution 2) fun and creativity of play, and 3) the desire to give a present to the programmer community (gift benefit). When the three intrinsic motives act simultaneously for contributors over an extended period of time, contribution behaviors are rational and rewarding [3]. As a kind of generalized exchange, F/OSS projects demonstrate the power of intrinsic motivations in the provision of valuable, shared outcomes on the Internet.

3. INTRODUCTION OF KASSI

The purpose of the Kassi web service is to help students in the course of their everyday studies and other activities by enabling borrowing, buying, selling, and giving away items as well as giving and receiving favors in the form of services and assistance. Users can help each other in any way they see fit – by sharing information, using their special skills, or by participating in time-consuming tasks. Exchanges taking place on Kassi typically help solve problems that people do not face everyday. For instance, the service may be helpful when changing apartments or acquiring books and materials for a course that is about to begin. The service was designed with the campus setting in mind, as a part of a research project that develops new social media services and studies their use. The development of Kassi began in summer 2008 and the open beta version was released in fall 2009.

Kassi combines features supporting communication, social networking, and online collaboration. When it comes to human interaction with technology, there is always a social dimension

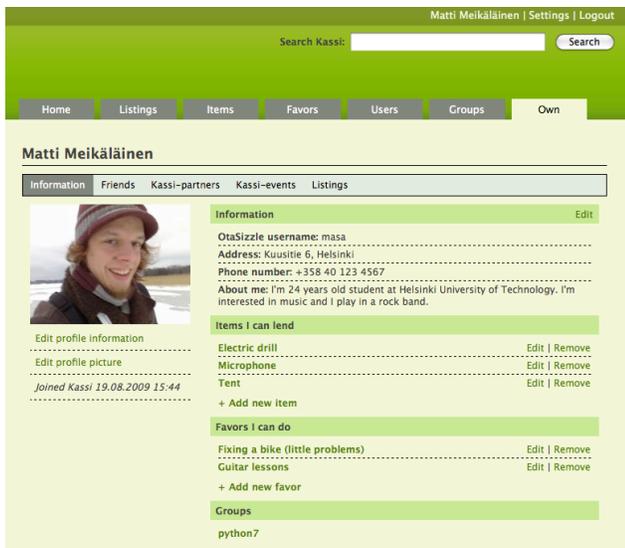


Figure 1. An example of a user profile.

[23]. This is especially noteworthy because Kassi focuses on interactions that span the online-offline dichotomy. As a result, Kassi provides an opportunity to examine behaviors and actions that occur at the intersection of the digital and the physical interaction. Physical location matters in Kassi, since few gift exchanges can be fully completed online. A face-to-face encounter is often necessary to complete an exchange.

The basic service consists of user profiles and listings. *Profile offerings* are items and favors users make available for others to browse and ask for (see Figure 1). Users are free to add as many favors, services and items as they like. Once added, these items and favors can be searched and browsed by other users. When a user finds an item she would like to borrow, she can make a query to borrow the item for a specific time by completing a simple form. The owner of the item either confirms the reservation or rejects it. If the owner confirms a reservation (e.g., agreeing to lend an item for the requested time), the two then proceed to discuss logistics, for instance, via online messaging or telephone.

Kassi also features *listings* which are similar to classified ads seeking particular goods or services. Example listings include requests for a favor, advertisements for furniture on sale, or carpooling proposals (see Figure 2). Listings are primarily used when a user is looking for something that is not yet listed as a profile offering or when the user has a highly specific need or offer in mind. Currently, listings are organized in categories (Marketplace, Carpooling, etc).

Users can communicate with each other either by sending private messages or by commenting publicly on a listing. An *exchange* takes place when an item or favor is successfully shared between two users. In order for an exchange to be visible on Kassi, a user must formally close a listing or accept a request for a profile offering. If users do not complete this formal process, the activity will not be recorded as a completed exchange in the system. As we discuss in our research findings below, this ostensibly minor design decision has significant repercussions for user perception and behavior.

4. RESEARCH MATERIAL

Kassi was released publicly in September of 2009 and advertised to students at a multidisciplinary university in the Helsinki metropolitan area. Within the first week, the service had 150 users. Over the course of the study period the user base grew by more than 900% to a total of 1398 users in March of 2010.

Our study is based user activity logs and a two-wave survey in which Kassi users answered a variety of detailed questions concerning their use of the service. Our user population consisted primarily of students (late teens and early twenties) of business, technology, arts, and design from the Helsinki metropolitan area. Most participants learned of the service as freshmen in introductory lectures at the university.

4.1 Survey Material

The first survey responses were collected in September of 2009 via an email sent to all registered users (N=72 valid responses). Participation in the survey was voluntary and there were no monetary incentives. The second wave took place in March 2010 (N=84). Although every attempt was made to survey the same participants in each wave, only twelve of the respondents took both surveys.

The surveys consisted of both open-ended and structured questions. Responses to open-ended survey questions represent a key source of research material. All respondents were asked to describe their latest visit to Kassi as well as to explain what had brought them to the service on their latest visit and what they had done in the service at that time. Users were also asked whether they had added profile offerings or not, and to describe these offerings. Furthermore, users were asked to explain their reasons for use or non-use: Frequent users were asked for their reasons for using or having used Kassi, while infrequent users were asked why they had not used Kassi more as well as what would increase their use of the service. We analyzed the open-ended responses by clustering response items based on similar concepts and ideas. The responses from the first and the second wave of the survey were initially analyzed in parallel (presented below in a combined form in section 5.4).

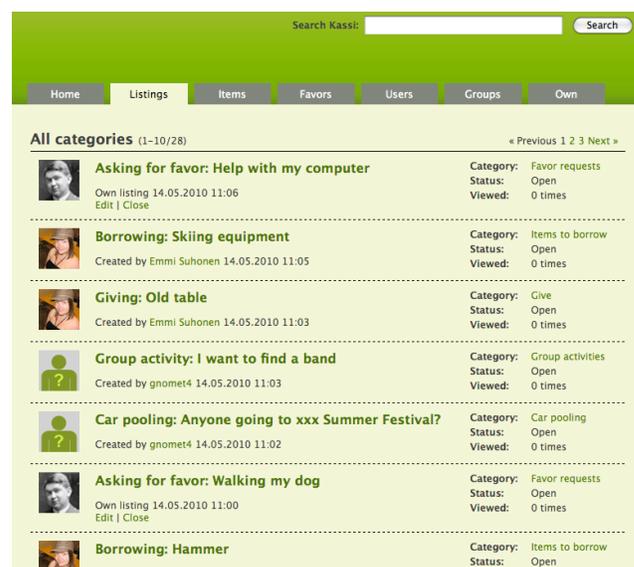


Figure 2. An example of a listings view.

Finally, the survey included Likert-style response questions to assess specific attitudes about the service. For example, participants were asked to rate statements about the usefulness of the service, ideologies of sharing, as well as reasons to use a service like Kassi. These questions are presented in more detail in section 5.3. For the present study, our analysis of quantified response questions are presented to focus on the two ends of the participatory spectrum: frequent and infrequent users.

4.2 Usage Logs

Kassi is clearly identified as a research system when new users join the service. With user consent, all interactions with the site are logged in a database for research purposes, including all traffic between the users' browsers and the service.

In addition to the service-specific logging, we used Google Analytics for lightweight monitoring such as number of daily visits on the site and sources of traffic. In this paper, logged data is used primarily to describe the overall growth and usage of the service such as number of different user activities recorded in the database. Importantly, activity logs provide behavioral evidence of activity which complements and verifies self-reports collected via surveys.

5. FINDINGS

5.1 Usage Patterns

During the study period, there were an average of 122 visits and 68 unique visitors to the site each day. However, an average of 20 users logged in to a Kassi account per day. While a significant amount of content is accessible without logging in to Kassi, it is impossible to tell how much browsing occurred prior to login. Also, it is reasonable to assume that some users leave Kassi open in their browser for extended periods of time. As a result, separate login counts are not a fully reliable and accurate measure of system activity.

Participants were categorized to *frequent* and *infrequent* users based on their self-reported usage history. Those who reported having used Kassi eight times or more by the time of the surveys were categorized as frequent users. Users who reported three or fewer interactions with the service were categorized as infrequent users. While rough, this division allowed for an examination of differences between users who engaged with the service to varying degrees.

We recorded a total of 894 user activities during the study period. These activities fall into three distinct categories: posting listings, adding profile offerings, and completing exchanges. Table 1 illustrates the frequency of user activities by content type. The percentages illustrate the relative frequency of items and favors in each activity category. The majority of activity – 64% of profile offerings and 79% of listings – concerned tangible items rather than favors. Some of the user activities were not clearly related to either items or favors. Examples of such activities (presented as "Other" in table 1) include posting a listing as a call to join a band that is being formed via Kassi and sharing information on lost & found items. Listings were the most common user activity type, followed by profile offerings. The logs also included 104 completed exchanges of items and favors. Fifty-six of the exchanges were based on listings and 48 originated from profile offerings.

User Activity	Favor	Item	Other
Posting a listing (N=459)	38 (8%)	362 (79%)	59 (13%)
Adding a profile offering (N=330)	120 (36%)	210 (64%)	N/A
Completing an exchange (N=104)	34 (32%)	68 (65%)	3 (3%)
Total (N=894)	192 (22%)	640 (72%)	62 (7%)

Table 1. Different Types of User Activities in the Service.

5.2 Visible and Invisible User Activities

Kassi's activity logs can reveal only exchanges which users complete by closing a listing or accepting a query about a profile offering. Survey results suggest that many exchanges were initiated as a result of interactions within the Kassi system (i.e., prior listings, messages between prior exchange partners, etc) but were not officially recorded as new exchanges by Kassi. We call these interactions *invisible exchanges* because they were facilitated by Kassi, but left no traces in the activity logs. An exchange may be agreed upon by sending messages on Kassi, but unless a user returns to the system to mark the exchange as completed, the system will have no knowledge of the completed arrangement. Furthermore, our survey responses indicate that some users take advantage of information they find on the site but do not use Kassi's internal tools to initiate and/or facilitate exchanges. For example, a user may see an interesting listing on the site and simply telephone the person who posted the listing directly.

Combining survey waves, respondents reported participating in 61 exchanges. To map invisible exchanges, we asked users in the second survey whether they had made exchanges as a result of interactions on Kassi without officially recording the exchange in the system. The survey revealed twenty-six cases of invisible exchange. Eight of these interactions were initiated via Kassi, but were not marked as completed. The remaining eighteen exchanges were completed without using Kassi to record an open exchange or to conduct coordinating communications. Even for a small survey sample, these findings indicate that a significant portion of exchanges initiated within Kassi are not visible as completed interactions, and just as many or more interactions take place entirely outside of Kassi.

5.3 Attitudes Towards Kassi

Overall, respondents considered the service useful in a campus setting (see Table 2). However, fewer respondents agreed that Kassi was useful for them personally. Those who used Kassi more often also reported finding the service more useful. 56% of frequent users reported finding Kassi personally useful, compared to only 18% of infrequent users. 79% of frequent and only 37% of infrequent users agreed that the values of the service corresponded to their own set of values. The majority of all respondents wished that the service had more users.

Statement	All (N=84)	Frequent (N=19)	Infrequent (N=28)
Kassi is a useful service in a campus setting.	88%	95%	82%
Kassi is a useful service for me personally.	39%	56%	18%
I use Kassi when I do not have anything else to do.	26%	68%	11%
I browse Kassi for no specific reason, "just for fun".	52%	95%	36%
Kassi's set of values corresponds to mine.	56%	79%	37%
If I add a listing to Kassi, I believe that I will get an answer relatively quickly.	36%	59%	29%
I wish Kassi had more users.	87%	100%	82%
I think Kassi is easy to use.	71%	84%	61%
I think it is easy to find things that I need in Kassi.	57%	74%	48%

Table 2. Percentages of Respondents agreeing to Statements concerning the Service (in the second wave of the survey).

Frequent users stated that they used the service when they had nothing else to do or "just for fun" much more often than infrequent users. Frequent and infrequent users reported different expectations concerning the service and its use. 59% of frequent users expected receiving a quick response after posting a listing to Kassi compared to only 29% of infrequent users. The majority of users agreed that the service was easy to use and considered finding things that they needed easy. However, frequent users were more likely to agree in both cases.

5.4 Reasons to Use Kassi

Articulating particular reasons to use the service seemed to be hard for survey respondents. Most respondents stated they came to Kassi for no specific reason or just for fun. Interest in the contents of the service or in the service itself was also mentioned frequently. Users wanted to find out what others were doing or simply what the service was like. Specific needs were rarely mentioned as a reason to visit the site.

Some users were attracted by the local nature of the service and by the communal helping ideology that the service was seen to represent. The responses below illustrate how the locality of the service appeared to lower the risk and uncertainty barriers for completing exchanges:

"It is easy that everyone is nearby: there are problems concerning neither trust, nor delivery."

"Especially the fact that the other person has on both occasions been someone from my campus has made it easy and in a way it has felt like I would have known the person much better than I did."

Additional reasons for using Kassi were revealed when frequent users were asked to share their reasons for adding profile offerings. Table 3 described a variety of reasons.

Reason	Number of Instances (N=21)
It is nice to help	10
Reciprocity	5
Likes to do things added	3
Tried just for fun	2
Came up with something good	1

Table 3. Users' Reasons to Add Profile Offerings (along with the number of instances of each reason)

The most frequently mentioned reason for adding a profile offering was the perception that it is nice to help others:

"I think it just is nice if I can help someone, or do something useful."

"I wanted to be friendly."

Reciprocity between the user and the community was another common theme in reasons to add profile offerings. Many stated that in order to ask for something in the service they wanted to offer or give something to the community, too:

"I thought that I should be available, I might need a favor of some sort sometime myself, too."

"It would feel unfair to be just moaning for favors without offering anything."

For some, the will to help others was related to the ease of offering items via Kassi. Others found the meaningfulness of offering something more central:

"I have no problem in lending my items to others as long as I get them back after use. I do not use everything all the time myself."

"If I can make life easier for someone living in my neighborhood by lending an item, I see no reason for not doing so."

Many said that they offered items to borrow because of the effortlessness of doing so. The most common reason for adding favors as profile offerings was that the respondents liked the activity they offered to do for others. As one user explained, "I like teaching, it would be nice to help if there's someone needing help."

Finally, other users described favors that clearly served their own intrinsic desires as well as the needs of others. For example, one user did not have a dog herself but enjoyed taking walks by the seaside. Hence, she proposed a mutually beneficial offer to help dog owners living on the same campus by walking their dogs.

5.5 Users' Reasons not to Use Kassi

Infrequent users had less trouble stating their reasons for not using Kassi than frequent users had explaining their reasons for using the service. Competition with other services and the perceived low value of using the service were general reasons for not using the service.

Many respondents complained about a lack of users and content in the service:

"I only just started. I will use the service more if it proves to be functional, that is if the number of users and events increases."

"Use would increase if the user base of Kassi would grow a little, since at the moment Kassi is from time to time very unchanging and silent."

These responses formed the biggest single cluster of reasons discouraging Kassi use. This finding is not very surprising as critical mass [26] is a common hurdle for sustained information system usage. Furthermore, it is noteworthy that during the study period the service was in a phase of quick growth. Especially by the time of the first survey, the established user and activity base was relatively small.

Many survey respondents stated that they had no need or no time to use the service. These responses may reflect a low expectation of the value the service has to offer or a difficulty in figuring out how one could benefit from using the service. While the statement of a lack of time or need could be interpreted as a deficiency of interest in the service, most of the responses did not challenge the service concept. As shown above, respondents held generally favorable attitudes towards the service even if they did not find a perpetual use for it. Some respondents did not consider the added value of the system a sufficient tradeoff for the time investment.

The existence of alternative solutions for doing things that Kassi facilitates was mentioned as another reason for not using the service. Some users felt that they had more efficient ways of achieving their goals than using Kassi. For instance, some perceived no need for a separate service for exchanging favors and goods, as they considered it to be more convenient to simply call a friend or ask for something in a profile update in Facebook.

Additional reasons for non-use were revealed when survey respondents provided reasons for not adding profile offerings (see Table 4). We classified responses into seven categories. These categories were further organized into two classes: reasons related to the service and reasons the users attributed to themselves.

Reasons related to users include the difficulty of determining what items and/or favors to add as profile offerings, the feeling of having nothing to offer, the difficulty of completing exchanges offline, or a feeling that it would not be worth the effort. Physical distance from other users was also seen to make it difficult to participate:

"I live far away and own hardly anything. Maybe I could go through my things."

"I don't live yet on the campus, so I can't really lend things properly."

Many respondents were not aware of the possibility to add offerings to their profile. A number of others had doubts about the trustworthiness and effectiveness of the service. Not being sure of whether adding a profile offering was safe or would pay off, some

individuals refrained from completing their profile with profile offerings:

"Quickly, I did not figure out anything suitable. I'm not quite sure how much I want to tell about myself (or my possessions) in public."

Finally, many respondents said that they were still in a process of learning the service. Participants expressed both a lack of confidence in having something worthy of sharing, and uncertainty about the appropriateness of items or favors they might have to offer:

"I don't know what favor I could make... if I knew, I'd be sure to add it."

"I haven't yet had the time to analyze what to lend."

"I don't have time or energy to do favors. I can't even come up with what I could do."

"Nothing occurred to me and it would feel somehow embarrassing to add a "skill" as a favor. Maybe if I'd come up with a good service that I could offer publicly without feeling awkward."

As Kassi is a new service, it is natural that some uncertainty about it would exist. However, it is notable that participants' uncertainty was primarily focused on their own capabilities and the norms of other users in the system rather than the technical aspects or usability of Kassi.

Reasons related to user	Number of instances (N=181)
Difficulty of figuring out what items and favors to list.	71
Nothing to offer (no items or skills).	42
Difficulty of completing the exchanges offline and not worth it.	19
Doesn't live close enough.	11
Reasons related to service	
Not interested in the service.	26
Uncertainty of the service.	5
Not knowing this is possible.	7

Table 4. Frequency of reasons not to add profile offerings (coded from open-ended text responses).

6. DISCUSSION

Overall, survey respondents considered Kassi useful and appreciated the concept of the service. Only a few respondents reported technical difficulties as reasons for non-use. Instead, users' reasons for not using Kassi were mostly related to difficulties in making decisions about what they could offer to others and appropriate norms for the service. Respondents expressed ambiguity about how the system should be used, what it is suitable for, and how using it would fit into their everyday lives.

This user study suggests that a lack of information about norms and appropriate behaviors can introduce a great deal of uncertainty, and that uncertainty can be a strong barrier to

participation. A formidable challenge in using an online local gift exchange system is that it requires different kinds of cultural and conceptual understanding compared to many other online services. The biggest questions do not necessarily concern technology, but the creation of shared norms, meaning, and purpose. Some users in our study chose to act while others withdrew from making profile offerings and listings. One user said that she added a profile offering because she worked at coming up with an idea of what to offer, while others added profile offerings with little consideration simply as a way to “test the waters”. Other users had no profile offerings due to difficulties in figuring out what to offer and a feeling of not having anything worthwhile to offer.

Kassi and similar services can present a double-edged sword for users. On the one hand, Kassi makes generalized exchange and reciprocity efficient in large groups. A service with a strong connection to geographic location has the potential to foster a

sense of community within a local environment, such as a university in our case study. However, the fact that the service is computer-mediated can make it difficult for users to infer norms and codes of conduct from contextual cues, personal relationships, or situational context. In order to participate, users need to grasp, at least to some degree, what a system is about in order to root it in existing social practices if and when they exist.

In social systems of exchange, learning about norms, expectations, and acceptable patterns of behavior is equally—if not more important—than learning the mechanics of the service. For many Kassi users, the significant barriers to use were not in understanding the workings of the system, but rather what the social implications of their actions would be for themselves and others. This greater uncertainty also comes with added risk in a system that spans online and offline: a social blunder online can lead to consequences offline, and vice versa.

The importance of social norms and patterns of behavior is underscored by the relative prevalence of item-related activities compared to favor-related activities. As prior research shows, exchanging a tangible item in an online forum is different than exchanging a favor [13]. For example, when individuals buy and sell goods online, they tend to be concerned with the competence of the seller so that they are assured of receiving the promised item. However, individuals tend to value the motivation of service providers because services and skills imply ongoing, relational interactions [13].

Another explanation for the observed discrepancy between the frequencies of tangible goods exchange compared to favors is that it may be easier to assign implicit or explicit value to certain types of exchanges. Many goods have a known market value, whereas many types of favors have no basis for a value comparison. Furthermore, assigning value to special skills requires an individual not only to advertise that skill, but to publicly state the value of that skill and then risk failing to meet others’ expectations when performing it. Physical goods do not usually carry such costs to one’s identity and self-worth.

The concept of operational information has been used to refer to information about the products of collective action, the processes through which those products emerge and change, and the other people who participate in and benefit from the collective effort [1,2]. This study emphasizes that it is different to have information of how a system works than to know how to apply

that knowledge in concrete social situations. Information about norms and patterns of behavior are central to reducing uncertainty and promoting participation. It is not enough to understand how the system works in general, but how it will work in the socio-cultural setting in which individuals interact with one another.

6.1 Participation and Use

This study also illustrates that estimating the success of Kassi simply by counting visits per day or visible exchanges in the logs would be misleading. As the survey revealed, there were many invisible exchanges that stemmed from interactions within Kassi but were not recorded in the logs. The relatively large number of invisible exchanges might be due to the geographically local nature of the online community, that is, a college campus. When many of the users know each other in offline settings, it is often more convenient to contact those people directly outside of Kassi.

Given that some users reported not using the service because of the perception of overall inactivity, invisible exchanges and other activities that are not recorded or made obvious to users can impair system growth. Passive behaviors such as lurking and site browsing are critical activities for successful growth. These passive activities are important means by which users learn about a new system and gain entrée in its community [21], yet they are shrouded by traditional, explicit metrics of participation such as new listings, messages and other highly visible contribution behaviors. As long as viewing and reading activities remain hidden, they cannot be legitimized and advertised as evidence of multiple modes of participation. Indeed, providing evidence of participation can be a key enabler for newcomers. Experimental evidence suggests that those who cannot observe cooperative activities on a system contribute significantly less than those who can observe such behaviors [7]. In the case of Kassi, this also extends to the offline world. Because users are in the same geographic location, potential users can observe exchanges and learn about them by hearing of others’ experiences.

Participation is a multifaceted concept, and defining who is a “user” is no simple task. A user’s understanding of whether she is a user may not necessarily match with the designers’ definition. For instance, a user who logs onto the site only once, adds a few profile offerings, and then forgets about the service may not consider herself a user. To the system designers and operators, she is an essential type of user: her offerings remain available as an example for others and she may be drawn back to the service by a request from another user at a later time. Her activities are important for creating a sense of activity even if she is no longer views herself as an effective user.

One of the common features of generalized information exchange systems on the Internet is that, “*individuals often only see cooperative behavior; they do not see non-contributions*” [6:25]. In the physical world, an individual who walks into a store and browses but does not buy is observable as a patron, but not a customer. Just as foot traffic is important for attracting consumers and building appeal in a brick and mortar store, reading and lurking are critical for establishing an audience for potential contributors in online systems [2]. The existence of such a “black market” is an important finding, since it means that Kassi is ultimately fulfilling the mission of facilitating exchanges to a larger degree than the user logs alone would suggest.

6.2 Implications for Design and Conclusion

The findings and implications of our study are important to researchers, practitioners and users alike. One of the clearest findings from our user study is that individuals tend to favor the exchange of tangible goods rather than services, at least during the early growth period of Kassi. Lending and exchanging goods with known value is arguably a more certain and less risky way to gain experience before committing to services and favors. The decision to lend an item has a clear risk (the value of the item) and a clear source of uncertainty (whether the individual will return the item as promised). However, favors and services create additional risks and uncertainties, such as incomplete agreements, discrepancies between stated and actual skill of the provider, longer-term obligations and damage or misappropriation of goods that are peripherally related to the service or favor. In the presence of uncertainty, individuals tend to take very small risks at first and then slowly increase risk-taking behavior only after successful interactions with others [12]. Given more time and user activity, we might expect individuals to escalate from low-value goods exchange to higher-value goods and services.

Following prior empirical research [2, 30], we believe that passive behaviors such as browsing and lurking are some of the most important activities in an online system. Our user responses indicate that users want to know the value of their activities, even if their contributions might seem small compared to others. A clear implication for design is to identify and uncover ways to enhance users' sense of participation at all levels of effort. For instance, designers can show participants the value of their multifaceted contributions and provide examples of actions and behaviors that others have undertaken. As earlier experimental work shows, simple notifications that remind users that their activity is valuable and important can have a relatively strong impact on future contribution behavior [24]. Just as it is important to welcome patrons to a new store regardless of their reticence about making a purchase, it is crucial to inform lurkers that their presence is noticed and valued by the community.

The perception of activity is important for building a sense of social presence in an online system [24]. Our research of Kassi users indicates that perceptions of activity and social presence may be crucial when browsing a site that does not have a high volume of new content. We suggest that lurking and other passive activities might be observable through prominent displays of site usage (e.g., number of recent visitors, current page views, etc). Viewing aggregate participation of many different types can address many challenging problems related to risk and uncertainty for users, while maintaining benefits that attract lurking in the first place, such as anonymity. When users can see what others collectively have done and what they are currently doing, it sends a simple message that behavior is noticed and valued. In addition, information about site activity reduces uncertainty by providing some assurance that the service is functional.

Finally, many of our survey respondents mentioned the importance of reciprocity—stressing that they did not want to ask for something without offering something to the community in return. This feeling is likely to be highlighted in a service such as Kassi where the online user community overlaps with a bounded geographic space. The norm of reciprocity is a critical part of interpersonal interaction and social exchange [17]. One of the most important findings from prior studies is that generalized exchanges can engender solidarity within a community [4, 14,

25]. Generalized reciprocity begins at the dyad, but the value of sharing gifts and favors in a community extends to the entire collective. Indeed, the greatest benefits of a system like Kassi may exist in emergent community effects such as solidarity, trust and mutual cooperation.

Empirical research on online social exchange and participation is essential if we hope to understand the political, social and economic changes that we have observed since the advent of the Internet [31]. Our study highlights the importance of examining the ecosystem of activities, which surround an online social system, especially when the system explicitly spans the online-offline dichotomy. In addition, our research implies that any assessment of value-laden metrics such as 'success' or 'failure' must look beyond the most convenient and highly discernible contributions and consider the aggregate value of invisible and visible use.

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