






Towards Design Recommendations for Social Engagement Platforms Supporting Volunteerism Targeting Older People in Local Communities

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Abstract. COVID-19 showed the need for community support networks to help vulnerable individuals that were forced to stay in their homes during extended periods. While the pandemic is slowly passing, there is still a need for this type of help, especially for elderly who nowadays want to live longer in their own home. Several social engagement platforms are already offering support for this type of services. However, some became rather inactive, while others are successful but not always in the context of offering help to vulnerable elderly. In this paper we present 16 design recommendations to consider when designing (or to improve) social engagement platforms focused on volunteerism for helping older people. These recommendations are based on the evaluation of 10 digital social engagement platforms that allow asking for assistance and/or volunteering to provide help.

Keywords: Social engagement · Volunteerism digital platforms · Design recommendations

1 Introduction

The COVID-19 pandemic that is now active for over two years (since emerging in early 2020) has revealed and worsened several societal issues. The quarantines and measures implemented by governments in order to combat the disease have been discussed in media and literature ever since, focusing in particular on adverse effects of isolation [2, 12, 13, 15]. These measures and “lockdowns” placed a number of vulnerable people—especially the elderly population—in a precarious situation. Being particularly vulnerable, the elderly were largely forced to stay at home and ordinary shopping trips turned into an ordeal. However, this situation did not go unnoticed and several existing digital social engagement (SE) platforms and local outreach programs attempted to provide assistance to this problem. SE platforms are intended to digitally support social

engagement. Social engagement itself can be seen as a broad definition for members of a community interacting with each other. Our definition for social engagement (SE) is “*social engagement is the commitment of a member to stay in the group and interact with other members*” and is based on a definition provided by Zhang et al. [17]. On an SE platform, the interaction between people is enabled digitally. SE platforms are in the right position to offer support for people willing to help each other.

Several SE platforms existed already for a while, including Nappi Naapuri (Finland), Nextdoor (USA), Nebenan (Germany), and Hoplr (Belgium). Additionally, Facebook recently launched their own Help Hub, and similar services, such as Commu (Finland) and Nachbarschaft (Germany), were established during the COVID-19 pandemic.

While most SE platforms are initially successful, after a while they disappear or become far less active. In addition, for the ones that have a good number of users, the type of help provided seems to be more focused on giving advice rather than on physically helping each other. The aim of our work was to investigate why this is the case and how we could improve the engagement and retention of users, especially in the context of helping each other with daily tasks. For this purpose, we investigated several SE platforms. Based on the findings, we formulate a number of design recommendations to improve user engagement and retention of SE platforms targeting volunteerism to help elderly people. The focus of the paper is on these recommendations.

The remainder of the paper is structured as follows. We start in Sect. 2 by presenting the methodology for deriving the recommendations, which is based on the evaluation of existing SE platforms. In Sect. 3 we present the different SE platforms selected for evaluation and provide some information about the evaluations. In Sect. 4 we introduce the design recommendations derived from our findings, and end by providing conclusions.

2 Methodology

We first describe how the existing SE platforms to be evaluated were identified and then present the different methods used to analyse them.

2.1 Finding and Selecting Social Engagement Platforms

Our focus in searching for SE platforms was on active platforms, meaning that platforms that were no longer active were ignored. The main method of discovering platforms was by a query on Google using the keywords: “neighborhood”, “community”, “social engagement”, “neighbor” and “local”. These were amended with additional help words, such as “app”, “application”, “technology” or “platform”. The discovered SE platforms were checked for their suitability using the following two criteria: whether (1) a user is able to ask for help and/or to respond to such a help request using the platform, and (2) whether this service is available for free.

2.2 Evaluations Methods

The SE platforms were evaluated by means of a hands-on evaluation, interviews, and user surveys. The purpose of the hands-on evaluation was to inspect which features a platform offers and how. For this, we used an existing design guideline list [10]. Interviews were conducted with platform representatives. The role of the interviews was to get an overview of the aims and goals of the platforms, potential design hurdles, and their opinions on the users and the field of digital volunteering. The interviews were carried out in a semi-structured manner where we started with a number of fixed questions but conversations were allowed to diverge from the original questions. User surveys were conducted on three SE platforms with the aim of seeing how actively users actually helped one another and getting other relevant user trends and opinions about the platforms' features.

After the initial check for suitability, requests for interviews were sent out to the platforms deemed suitable. We performed interviews with representatives of five SE platforms: Commu, Hoplr, ¿Tienes Sal?, Nappi Naapuri, and Solidare-it!. User surveys were conducted on three of these SE platforms, including Commu, Nappi Naapuri, and Hoplr. Note that the surveys were not identical, but adapted to the context of the platforms. However, all surveys were roughly of the same length and took around 20 min to fill in. The tool used for handling the surveys was Qualtrics¹. The complete survey and interview transcripts (questions and results) can be found online².

Some platforms also offer a mobile app for their service, and in the case of Commu, this is the only version they offer. In terms of our evaluation, findings about the applications are considered as a whole, unless specified otherwise. Note that we have anonymized the platforms when discussing individual findings derived either by means of an interview or by a user survey. This was done on the request of some of the platform representatives. When discussing a platform in this manner we use the following acronyms P1, P2, P3, P4, and P5³. However, findings that can be concluded from inspecting the platform are not anonymized.

Note that in this paper we do not discuss the different evaluations in great detail as the focus is on the recommendations. The findings which have contributed to the formulation of a recommendation are provided in a motivation preceding each recommendation. Details about the evaluations themselves can be found in [9]. Further, some figures about the participants in the user surveys are given in the next section.

3 Evaluated Social Engagement Platforms

A total of 10 SE platforms were discovered as illustrated in Table 1. A short description of each platform is given below. Note that we could not perform

¹ <https://www.qualtrics.com>.

² <https://doi.org/10.6084/m9.figshare.19165283>.

³ There is no correspondence with the platform sequence earlier in the text.

a full evaluation of all discovered platforms, as some were country locked and require a local address or phone number. Table 1 also mentions the types of investigation conducted for the individual platforms: Hands-on evaluation (H), interviewing a representative from the platform (I), and performing a survey with platform users (S).

Table 1. SE platforms discovered for our evaluation

Name	Type of platform	(H)ands-on (I)nterview (S)urvey
Allo Voisin	Web, mobile	H (partial evaluation)
Commu	Mobile	H, I, S
Facebook Community Help	Web, mobile	H
Help Your Neighbor	Web	H
Nappi Naapuri	Web	H, I, S
Nachbarschaft	Web	H
Nextdoor	Web, mobile	H (partial evaluation)
¿Tienes Sal?	Web, mobile	H, I
Hoplr	Web, mobile	H, I, S
Solidare-it!	Web	H, I

Allo Voisin⁴ is a French platform for provision of services and rental of equipment between neighbors. To register, users need to have a French phone number and address. Therefore, we were unable to create an account on the platform, but the platform allows viewing the main forum. It is unclear how large the number of Allo Voisin users is that use the platform for simply helping each other, as it is more driven towards small businesses and earning money on the side. However, as it can also be used for helping each other, we have included it in our list. In terms of functionality, the platform offers relatively simple messaging functionality of posting requests for specific tasks.

Commu⁵ is a Finnish startup, launched in May 2021. They are currently focusing on two cities in Finland—Tampere and Helsinki— but are aiming to expand. Unlike the other considered platforms, Commu only provides a mobile application. Commu does not have “closed neighborhood forums”, but allows making help and requests and offers on the go. Commu allowed users to ask for a small compensation for helping, intended for covering any costs, such as transportation costs. However, this feature has been removed.

Facebook⁶ with nearly two billion active users in 2021 needs little introduction. It is a web platform that has shaped how a group of people see and interact with each other, both in good and bad ways. A less well-known feature

⁴ <https://www.allovoisins.com>.

⁵ <https://commuapp.fi>.

⁶ <https://www.facebook.com>.

is Facebook’s “community help” that was quietly launched during the pandemic outbreak in 2020. It is unclear how Facebook intends to extend this service, but currently it provides simple help and offers request functionalities as a slightly modified version of the regular posting functionality.

Help Your Neighbor⁷ is an US-based website focusing on neighborhood-level community building and help finding services. It divides its communication platform into four tiers: individuals, groups, neighborhood, and city. The platform appears to have either very limited activity or has already become inactive. The level of activity remained unclear as Help Your Neighbor is up and running but we did not manage to find very active communities. The platform does require a US zip code as part of the registration process, but this is not checked in any way, as we easily managed to create an account on the platform.

Nachbarschaft⁸ is a German website launched during the COVID-19 outbreak as a service to offer help to people affected by the quarantine procedures. It is unclear how active the platform is, but it appears to have some level of activity and being under constant development. The service is limited to Germany.

Nappi Naapuri⁹ is a Finnish web platform that, like Commu, provides open access to users. The user must only provide an address, which dictates the general point of focus when logging in. Users may also give multiple addresses. The platform is still up and running, but currently not under active development apart from basic maintenance.

Nextdoor¹⁰ is a US-based service that has also entered the European market¹¹. The platform is currently active in 11 countries and is by far the most successful neighborhood application we have looked at.

¿**Tienes Sal?**¹² is a branch of a German-based company called *Nebenan* that is located in Spain. *Nebenan* has another branch in France under the name *Mesvoisins*. The service appears to be quite similar to that of Nextdoor with a relatively rigorous registration process where the location of a user is verified by letter, image of a document, or GPS location.

Hoplr¹³ is a Belgian-based platform that is rather similar to Nextdoor and *Nebenan*, also in how they verify their users’ domiciles upon registration. They currently advertise 500 000 registered users and are active in Belgium and the Netherlands.

Solidare-it!¹⁴ is a Belgian platform, currently mainly utilized by a volunteer organization located in Brussels as an internal database to keep track of their volunteers and people needing help. The platform was originally devised and is still partly marketed as a platform for looking for and offering help. Note that

⁷ <http://www.helpyourneighbor.com>.

⁸ <https://nachbarschaft.care>.

⁹ <https://www.nappinaapuri.fi>.

¹⁰ <https://nextdoor.nl>.

¹¹ <https://techcrunch.com/2017/02/05/streetlife-knocks-nextdoor/>.

¹² <https://tienes-sal.es>.

¹³ <https://www.hoplr.com>.

¹⁴ <https://solidare-it.org>.

the person interviewed was actually from the volunteer group being the main utilizer of the platform at this time.

Age distribution of participants

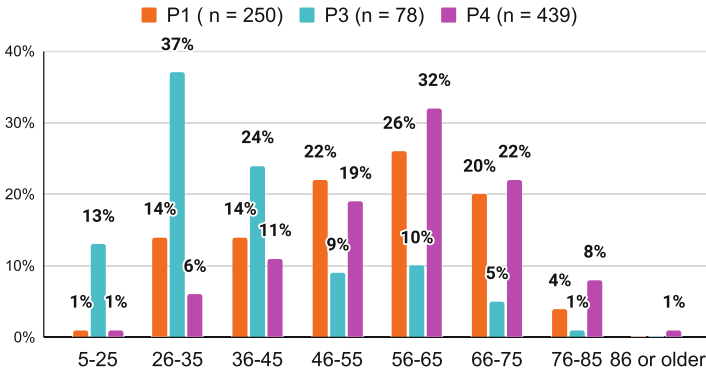


Fig. 1. Age distribution of user survey participants

The age distribution of the responses to our user surveys is shown in Fig. 1. However, it should be mentioned that the number of participants that completed the whole survey was substantially lower: P1 = 149, P3 = 56, P4 = 319.

Table 2. Results for platforms P1, P3 and P4 on whether users asked for or offered help, as well as some feature-specific questions for P4. Neighborhood care is a service where users can openly indicate their willingness to help other users with specific tasks

Platform	n	Question	Neither	Asked help	Offered help	Both
P1	247	Have you requested/offered help on X?	62%	10%	21%	7%
P3	59		63%	7%	12%	12%
			No	Yes		
P4	395	Have you filled in the “How can you help your neighbors?” part in your profile?	70%	30%	Yes, I have used it	
P4	371	Were you aware of the “Neighborhood care” feature?	47%	47%	6%	
			No	Yes	I have asked assistance, but not by using “help requests”	
P4	370	Have you posted a “Help request” message on P4?	78%	12%	10%	

Another relevant survey result we want to highlight is the number of participants that declared to have used their platform’s “Asking or Providing Help” functionality. The results are shown in Table 2 and indicate the relatively low level of actual usage of the provided help functionality.

4 Recommendations

In the following, we introduce and motivate our design recommendations.

R1: Points With Purpose

Gamification features, such as points, are known to have the potential for achieving a higher level of engagement. Points were utilized in a number of evaluated platforms, but based on our interviews, it often appears as a bit of an afterthought. Most commonly, points are given for posting requests or messages.

In terms of giving value to points (i.e., allow to do something with the points), P4 and P5 do attempt this, as P4 specifically states: “The score indicates a user’s ‘neighborliness’ and willingness to help”, but at least, currently, there is no scale attached to their scores, e.g., is “70” a high score?, nor a way of knowing how valuable individual actions are, in terms of points. P5 simply allows users to see a user’s previous activity.

However, on these types of platforms, where collective good is a key aspect, gamification might sometimes result in negative reactions. For example, leaderboards can in principle be effective but should be utilized with care. Some users in the surveys for instance mentioned that this would go against the altruistic spirit of the platform. Though gamification might not be intended directly for elderly users, there is some evidence that it can in fact also elicit positive outcomes in them [11], such as improved well-being, positive engagement, social interaction or improved condition. However, care is also needed in not making the gamification too difficult to learn for these people.

Recommendation: Our recommendation is to attach (more) clearly defined value to points. Combining points with clear rewards, rather than obscure levels of activity, can be efficient and is a rather common approach on commercial platforms and therefore well known by many users. Some users might not care about collecting points, but even if only a quarter of the users see this as added value, it can become a powerful new avenue for more engaged users.

R2: Show Activity

An active community can stimulate users to be active as well. In the context of helping each other, it could be useful to show how active the platform is in this respect. Currently, none of the platforms communicate about the status of help requests to users, nor utilize any clear methods of internal tracking of the status of help requests, i.e., whether they have been completed or are still active.

Users of P4 have a general level of understanding on how many of their local neighbors are on the platform, but this does not indicate how active they are. Most platforms show activities on an individual message level, but currently it is not easy for users to grasp the overall activity of their neighborhood. In the case of platforms where a geographical map is an integral part of the user interface, this is slightly different as the notifications are clearly visible on the map. But even this comes with its own challenges. An area with few users but a relatively high level of activity might appear quieter than in reality, and in areas with more notifications it might be difficult to ascertain how active the user base is in weekly or monthly terms. Also, such a map can easily clutter the user interface and be less usable on small screens.

Recommendation: Our recommendation is to provide an easy to understand overview of the activity in a user’s neighborhood. Depending on how this is done, it can also be utilized in a more meaningful manner. Simple statistics showing past actions by users can be enough, but if this is done graphically and in a playful way, such as by means of a simplified animated graphical representation of the nearby area that changes over time based on user activity, such an animation could be a reason for users to check in regularly, even when they might not have any direct request at that moment. This in turn would help the user to stay connected with the platform. Hoplr seems to be an interesting case in this respect, by showing its users the overall percentage of users who joined from the neighborhood and by providing numerous suggestions on how the user can try to get more people involved.

R3: Guiding Users

Appropriate guiding of users in how to perform tasks is essential for their independence, especially for elderly. The evaluated platforms attempt to instruct their users in how to succeed in tasks in different manners. For simple and more streamlined tasks, this is rather easy as they can simply label the required fields the user needs to fill in, or select the correct radio button. For less straightforward features, this might however not be sufficient. Hence, Hoplr does offer explanations for the different message types, and ¿Tienes Sal? explains the meaning of a “public post”. However, these instructive snippets were somewhat intermittent when comparing the platforms approaches. Hoplr, for instance provides suggestions for message content, whereas ¿Tienes Sal? does not. Both offer more detailed instructions on their respective help pages. It is likely safe to assume that the amount of information provided by both platforms is enough for most users. However, cases can be made for needing more detailed guidance. For instance, in the case of ¿Tienes Sal? when making a help request, it is not instantaneously clear which message type the user needs to select, as the help request type is under the “seek” message type, after which the “help & service” needs to be selected.

Recommendation: An unobtrusive guidance that clearly indicates fields that need to be filled in is already mostly used by all the platforms. Our recommen-

ation is to cover all aspects of a task, such as also uploading an image or file, and to provide a direct access to more information. Currently, this information can be found on the help page but such a help page usually needs to be accessed explicitly. Instead, providing a snippet of the help page where it is relevant, might be much more effective and less likely to cause the user to get lost.

R4: Onboarding

Onboarding is a well-known term within the human resources sector where it essentially means “bringing new staff up to speed”. Within the domain of UI design for digital technology, onboarding can be seen as a combination of guiding and other design elements, brought together in order to teach the user quickly how to use the application [5]. There are some indications on the importance of well-done onboarding to ensure that users stick with a platform [4] and on improving engagement [14]. The generational gap is also to be considered as more technically savvy users might be divided on the necessity for onboarding [8], but it can be effective in alleviating concerns that elderly users might have [16].

Out of the evaluated platforms, only Commu and Help Your Neighbor appear to provide a more hands-on onboarding session. Commu allows the user to create a dummy help request at the end of the account creation process in order to make the user familiar with this task. Help Your Neighbor highlights and explains all the buttons and most of the icons of each view when first accessing it, but we did not find a way to launch this again at a later stage. A grain of salt is to be added at this point as access to Nextdoor were done via third parties. However, no clear way of activating any onboard-like feature was discovered.

Recommendation: Our recommendation is to offer users a step-by-step onboarding approach. Such an approach has the potential of being a much more effective form of teaching and supporting a novice or elderly user over a large help page. As such an approach may irritate advanced users, the ability to turn it on/off with relative ease is highly recommended. Lastly, there should be an easy way to start the onboarding at will, as sometimes, web services run the onboarding segment only once when first accessing a site, but then hide it.

R5: Usability Guidelines

The importance of following usability guidelines when developing a user interface is well known. No major usability guideline violations were detected when evaluating the platforms, but some minor points of improvement were occasionally detected, such as a lack of confirmation or a summary before posting messages. When interviewing the representatives, for most parts no guidelines were used to ensure usability for elderly users, but despite this, no major issues were detected.

Recommendation: Applying existing usability guidelines when designing an SE platform can provide an important additional mean for ensuring that all usability aspects are covered.

R6: Handling User Feedback

Based on the interviews, feedback handling does appear to be generally functioning well on most of the evaluated platforms. For most parts, this appears to be done via direct emails and by phone. Some level of communication in terms of enhancing the service or informing about well-known bugs is done by emailing users. However, to our knowledge, none of the platforms has a built-in news page that covers bug fixes, or informs on what is currently being worked on. However, maintaining a page on upcoming updates and ensuring the content is clearly written requires quite some resources. Additionally, providing users individual feedback can become difficult when the user base grows. For instance, Commu's insider group can become difficult to control and monitor once the platform grows substantially. Further, it is important to ensure that feedback is not only received from a handful of more engaged members.

Recommendation: It is evident that users want to contact the platform for some of their issues. This is definitely a positive thing, since it may improve the platform. Our recommendation is to (1) provide easy means of giving feedback, (2) keeping track of it, and (3) showing this to users. One such example can be seen from the very successful Star Citizens project that has an open access roadmap¹⁵. This can also easily become resource heavy from the perspective of the platform, but in the beginning, step (3) can simply be acknowledging the receipt of the feedback. Showcasing that the platform is open for feedback and is actively working on it can not only help to improve usability, but also increase users' trust in the platform.

R7: Audio and Video Messages

Typing a message can become difficult for elderly. Typing text, in particular on smartphone devices, is tedious and error prone even for younger users. For elderly users, larger devices, such as tablets, laptops and desktop computers might mitigate this issue, but elderly can also develop writing problems. An alternative could be to allow them to record a message (audio or video). None of the evaluated platforms offers this functionality. The same applies to reading aloud messages, which could be useful for visually impaired users.

Recommendation: Our recommendation is to provide users additional forms of content creation, namely audio and video messages. Audio and video messages could be a potential way to make the request creation process easier for some of the elderly users. Furthermore, adding text-to-speech functionality can be very useful for reading out typed messages.

R8: Customization

Customization, where the power of choosing how elements might look or behave is given to the user, is an important tool in many digital applications. This

¹⁵ <https://robertspaceindustries.com/roadmap/progress-tracker/teams/>.

recommendation is mostly useful for the more feature rich platforms, like ¿Tienes Sal?, Hoplr, and Nextdoor that offer a myriad of options to their users. It is unclear how popular some of the added features on these platforms are, but in the case of P4 it appears from our user survey that at least older users might not use all of them. Nonetheless, access to these features does clutter the homepage and makes it more difficult for a user to find what he is looking for.

Recommendation: Our recommendation is to allow users to customize their main entry page. The customization does not need to be very complex and simply allowing a user to hide certain buttons might be enough. Ideally, the customization option could be coupled with the onboarding (R4), where users are shown all or most of the features and asked which ones they would like to keep or hide. Of course, by hiding features there is the risk that some features are used less. If many users are hiding a specific feature, it can be seen as an indicator that there is a need to improve the feature or consider removing it.

R9: Transparency (Trust and Security)

In our interview with P5, it became clear that some elderly users are starting to become more aware of data privacy and want to know how their data is protected and how it is used. All of the evaluated platforms are located within the EU and thus declare to follow the European GDPR (General Data Protection Regulation)¹⁶. GDPR lists a set of requirements aimed to protect users' rights in terms of data privacy. Because of this, the platforms do provide a generic data protection statement and Hoplr also mentions collaboration with ethical hackers, as well as providing some slightly more in-depth information on how data is used on their help page.

The raising awareness of users' need for data privacy could in part be due to a number of scandals reported about online social networking platforms, such as the Cambridge Analytica papers [3]. The COVID-19 situation also led to data privacy concerns with the release of contact tracing applications and the handling of a user's data [6].

Recommendation: A simple GDPR statement might not be enough to alleviate all concerns; instead *open and honest communication* on who is able to access or see the user's data is needed. Our recommendation is that platforms inform users clearly on how any information provided by the user is used by the platform. This could be coupled with recommendation (R3) Guiding or (R4) Onboarding, by integrating this information in the guidance or/and onboarding process.

R10: Support and Encourage Communication

The majority of the platforms leave it to the users on how to handle the interpersonal communication once somebody responded to a request. Usually, this follow-up is done by means of public or private chat messages. It is likely safe

¹⁶ <https://gdpr.eu/what-is-gdpr/>.

to assume that for the majority of users this is fine as chat was rarely brought up as a grievance in our surveys. However, adding explicit support for other common forms of communication, such as phone, email, and popular external communication services, could be useful especially for elderly users.

We also noted a rather low level of internal chat use on all three surveyed platforms (P1, P3 and P4). In the case of P1 and P3 both surveys had a nearly identical level of inactive users (who had not used the main feature of the platform) and therefore did not need the chat. In P4's case, the results did vary somewhat depending on whether the participant had offered or asked for help, but on most occasions around half of the participants responded negatively on using private messages. Similarly, more older users had used the feature distinctly less. Additionally, having a possibility of keeping a family member updated on the activities of an elderly user could be a beneficial feature in the context of social support and safety. Of course, this brings additional privacy concerns to the table, but this is a feature that could be activated separately as needed, it would not be needed by a large group of users.

Recommendation: We have several recommendations for communication that we have split into two distinct sub-facets: *supporting communication* and *encouraging communication*.

Our recommendations for supporting communication are to provide more familiar means of communication (email, phone) and to couple them with the recommendations (R3) Guiding and (R4) Onboarding, as it is equally important to make users aware of these possibilities. Coupling support for email and phone, in terms of technical challenge, would be rather small for the platforms.

Our recommendations for encouraging communication: (1) Sending an automatic message via the chat to introduce the users to this feature. (2) Akin to P3's onboarding upon account activation, suggest sending a greeting message to other users. (3) Allow certain people to keep track of activities of their family members; making family members aware of a user's activity in the platform (e.g., via email, or another messaging tool) could be meaningful and increase feeling of social support and safety in the elderly.

R11: Help Manuals

The platform should provide technical support to their users and overall all of the platforms do accomplish this. At least, in so much that they do provide instructions for users by means of separate information and help pages. What we can conclude from the interviews, is that for most parts, elderly users seem to rely on direct in person connections when they get stuck. How easy an online help service is for the elderly is unclear.

Recommendation: Our recommendation is providing a leaflet that contains clear instructions of all the core features and how to use them, as well as a brief explanation about the platform itself.

R12: User Roles

Recruiting users and giving them different roles, has been used by online forums and social networks to lessen the need for expensive personnel. In the case of larger social networks this is likely the only feasible way for them to work. Outside this, providing users a distinct role within the platform can in itself be a source to be more engaged with the platform and its community.

Currently, out of the evaluated platforms, Nextdoor, ¿Tienes Sal?, and Hoplr do utilize user roles: Moderators (Nextdoor), Super users (¿Tienes Sal?), Volunteers & City Representative (Hoplr). To our knowledge, Commu and Nappi Naapuri currently do not utilize any user roles.

Recommendation: Adding user roles can be useful to 1) have a better control over created content once the platform reaches a certain size, 2) keep certain users more engaged with the platform, and 3) activate otherwise potentially dormant users. Our recommendation is to investigate from what types of user roles a platform can take advantage of. For instance, Nappi Naapuri and Commu might benefit from local representatives that broadcast area-relevant information or requests. More closed neighborhood platforms might not benefit from high all powerful admins, but rather from users that check the content of notifications and can highlight them if necessary. For instance, ¿Tienes Sal? and Hoplr could benefit from roles like event organizer or users who indicate points of interest in the area, or adding a more dynamic discussion angle between a neighborhood and the local municipality.

R13: Safety Features

In terms of current safety features to protect users against misuse of trust when helping people, the platforms largely rely on providing guidelines, such as meet outside in a public area. No inbuilt features otherwise are provided. Reporting users directly to the service provider was the most common safety feature.

It appears that for most parts, the encounters that took place based on requests formulated in the evaluated platforms, have been without any major incidents so far. This could partly be due to the small size of the platform user base, lack of actively meeting other users, or simply not being reported. Security when meeting unknown people is an important factor for most users but even more for elderly who might feel vulnerable, especially if the helper is expected to visit their home.

Recommendation: In terms of safety features, the features that we recommend are simple and relatively easy to implement, however they would require more volunteers. One such feature could be to announce an upcoming meeting to a third party. This could even be coupled with (R10) Support & Encourage Communication where a selected family member or even simply the platform is informed about the upcoming meeting. If both users are aware of this, it could work in making participants feel safer. Another option could be to invite a third party to join the meeting, but this would require available volunteers willing to

join meetings and might require some calendar options to ensure that everyone is available.

Another safety feature would be to review encounters by attaching some form of feedback system for encounters. Also, some steps could be added to the help request flow, such as allowing both volunteer and requesting person to view more information on each other before sending a message.

Although being able to review encounters is a rather obvious recommendation, it however raises additional questions, for instance: Who may see those reviews?; How to avoid false bad reviews?; Should the review be anonymously?. Nonetheless, it could be a valuable avenue to help users assess for themselves whether meeting another user for the first time is a good idea, or not.

R14: Area of Visibility

This recommendation focuses on the platforms with closed neighborhoods (e.g., ¿Tienes Sal?, Hoplr, and Nextdoor). Tying the platform to a certain neighborhood can improve safety and security and should definitely be kept as such but it has the disadvantage that people outside the neighborhood cannot help, while a person from further away might be perfectly willing to help with a task, for instance because it is on his way to work. ¿Tienes Sal? already allows publishing notifications outside a users' own district to be seen in the neighboring ones.

Recommendation: Our recommendation is to allow some notifications, such as help requests, to be seen outside the user's neighborhood. Note that such a feature would require additional user instructions, i.e., to mark the message as visible outside the neighborhood, for instance by means of a color code.

R15: Provide Platform Activities

Especially P1 and P3 appeared to have a rather large number of dormant users. Reasons for these might vary. Generally, users can be grouped into four distinct categories 1) visitors, 2) passive members, 3) socializers, and 4) content generators [1]. In our interview, P3 stated that they had seen some success in re-activating users at least briefly with emails, but whether long-term engagement could be achieved was less certain.

Recommendation: Our recommendation is to provide simple, easy to do tasks or activities within the platform. Ideally, the user should be rewarded for performing the task or activity in some manner. Example tasks could be clearing old requests or reviewing new requests. Of course, giving users any rights over moderating messages is something to be considered carefully (as the interviews showed). This could be achieved by providing User Roles (R12) that might be useful for the platform's functioning and interesting enough for the user. Note that some of the user roles might not necessarily require social interaction, which could be attractive for some users. This type of engagement could turn dormant users into active ones, or keep some users who might otherwise not use the platform, suitably engaged.

R16: Registration

In the evaluated platform, creating an account (registration) varies in difficulty from simply typing some basic information to a multi-step verification process. This was clearly indicated as a stumbling stone for elderly users in our interviews with P2 and P4. The reason for having a registration feature is clear, as it aims to increase trust in the members within the community, as the user needs to give its details.

Recommendation: We have three intertwined recommendations for this purpose: Firstly, the registration process should be as easy as possible with very clear fields and ideally minimal input required.

Secondly, a two-step registration process could ease the likelihood for elderly and other users to join the platform by allowing access to basic functionalities without a location verification. To alleviate registered users' security concerns, content created by non-registered or verified users could be color coded or categorized separately. This opens up an avenue to possible problems, such as spamming or bots. It means that some features might need to be restricted for not fully registered users, but this is a matter of discovering the optimal balance.

Thirdly, circumventing the use of classic passwords could also be a strong booster for elderly users, either by using third party login services, such as Google's, by email, SMS authentication codes, or authentication services such as itsMe¹⁷ or bankingID¹⁸. It is important to consider the trade-off between safety and easiness, and there is plenty of evidence that traditional passwords might not be very safe, mainly because of the users themselves [7].

5 Conclusions

In this paper we have proposed 16 design recommendations for social engagement platforms. These recommendations are based on the results of evaluating several social engagement platforms. The platforms were evaluated thoroughly by means of a hands-on evaluation, interviewing representatives of some of the platforms, as well as user surveys. The goal of these recommendations is to make social engagement platforms more accessible to elderly users and to improve retention. Our recommendations are useful for existing social engagement platforms to improve their solutions as well as when developing new platforms. A limitation is that the recommendations have only been evaluated in a limited way, i.e., by asking the opinion of representatives of platforms and users. To evaluate our recommendations in detail, a long-term user study with a platform implementing the recommendations might form part of our future work.

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¹⁷ <https://www.itsme.be>.

¹⁸ <https://www.nordea.fi/en/personal/our-services/online-mobile-services/code-app.html>.

References

1. Akar, E., Mardikyan, S.: User roles and contribution patterns in online communities: a managerial perspective. *SAGE Open* **8**(3) (2018). <https://doi.org/10.1177/2158244018794773>
2. Baddeley, M.: Hoarding in the age of COVID-19. *J. Behav. Econ. Policy* **4**(1954), 69–75 (2020)
3. Cadwalladr, C., Graham-Harrison, E.: Revealed: 50 Million Facebook Profiles Harvested for Cambridge Analytica in Major Data Breach (2018). <https://www.theguardian.com/news/2018/mar/17/cambridge-analytica-facebook-influence-us-election>
4. Cascaes Cardoso, M.: The onboarding effect: leveraging user engagement and retention in crowdsourcing platforms. In: *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI 2017)*, Denver, USA, pp. 263–267 (2017). <https://doi.org/10.1145/3027063.3027128>
5. Cox, B.: The Power of Onboarding: Building Persuasive User Experiences for Companion Apps. *Expert View*, pp. 1–4 (2021). <https://www.ondrugdelivery.com/>
6. Fahey, R.A., Hino, A.: COVID-19, digital privacy, and the social limits on data-focused public health responses. *Int. J. Inf. Manag.* **55** (2020). <https://doi.org/10.1016/j.ijinfomgt.2020.102181>
7. Florencio, D., Herley, C.: A large-scale study of web password habits. In: *Proceedings of the 16th International Conference on World Wide Web (WWW 2007)*, Banff, Canada (2007). <https://doi.org/10.1145/1242572.1242661>
8. Froehlich, M., Kobiella, C., Schmidt, A., Alt, F.: Is it better with onboarding? Improving first-time cryptocurrency app experiences. In: *Proceeding of the International Conference on Designing Interactive Systems (DIS 2021)*, pp. 78–89. Online Event (2021). <https://doi.org/10.1145/3461778.3462047>
9. Lindberg, R.S.N.: Design recommendations for social engagement platforms: towards enhanced technology adoption for elderly people and long-term engagement. Ph.D. thesis, Vrije Universiteit Brussel, Brussels, Belgium (2022)
10. Lindberg, R.S.N., De Troyer, O.: Towards an up to date list of design guidelines for elderly users. In: *Proceedings of the 1st International Conference of the ACM Greek SIGCHI Chapter (CHI Greece 2021)*. Online (2021). <https://doi.org/10.1145/3489410.3489418>
11. Martinho, D., Carneiro, J., Corchado, J.M., Marreiros, G.: A systematic review of gamification techniques applied to elderly care. *Artif. Intell. Rev.* **53**(7), 4863–4901 (2020). <https://doi.org/10.1007/s10462-020-09809-6>
12. Nguyen, H., Nguyen, A.: Covid-19 misinformation and the social (media) amplification of risk: a Vietnamese perspective. *Media Commun.* **8**(2), 444–447 (2020). <https://doi.org/10.17645/mac.v8i2.3227>
13. Sauer, P.: Latvia is First Country to Reimpose Lockdown in Europe’s new Covid Wave (2021). <https://www.theguardian.com/world/2021/oct/20/latvia-enters-month-long-covid-lockdown-as-fourth-wave-breaks>
14. Strahm, B., Gray, C.M., Vorvoreanu, M.: Generating mobile application onboarding insights through minimalist instruction. In: *Proceedings of the International Conference on Designing Interactive Systems Conference (DIS 2018)*, Hong Kong, pp. 361–372 (2018). <https://doi.org/10.1145/3196709.3196727>
15. Villius Zetterholm, M., Lin, Y., Jokela, P.: Digital contact tracing applications during COVID-19: a scoping review about public acceptance. *Informatics* **8**(3), 48 (2021). <https://doi.org/10.3390/informatics8030048>

16. Volkman, T., Miller, I., Jochems, N.: Addressing fear and lack of knowledge of older adults regarding social network sites. In: Gao, Q., Zhou, J. (eds.) HCII 2020. LNCS, vol. 12209, pp. 114–130. Springer, Cham (2020). https://doi.org/10.1007/978-3-030-50232-4_9
17. Zhang, S., Jiang, H., Carroll, J.M.: Integrating online and offline community through Facebook. In: Proceedings of the International Conference on Collaboration Technologies and Systems (CTS 2011), pp. 569–578 (2011). <https://doi.org/10.1109/CTS.2011.5928738>