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Empowering community volunteers through matchmaking services

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Abstract

In Rotterdam, the participatory turn has spurred various bottom-up communities around public parks. These communities aim to take care of the parks in their neighbourhood and search for ways to demonstrate the societal value of their initiative. The current work explores how digital matchmaking services can strengthen community relationships. A research-through-design approach is applied to identify the main barriers hindering community participation. The final design Park Makers uses both Citizen-to-Activity matching and Citizen-to-Citizen matching as ways to engage citizens in the community. The corresponding research demonstrates that connecting park users (or better: future volunteers) with another citizen or activity matching their personal interest fosters community engagement. From this point of view, it might be interesting to focus further research on the potential value of other matchmaking principles, or even other services, for bottom-up citizen communities.

KEYWORDS: citizen participation, community engagement, public parks, service design, social cohesion

Introduction

Cities are facing a participatory turn. This shift is, on the one hand, driven by top-down voices, such as the promise of smart cities, the big society, and the corresponding decentralization of the social domain (Mulder, 2014). On the other hand, autonomy is a fundamental human need, emphasised, among others, in the self-determination theory (Deci & Ryan, 2000). The need for autonomy drives people to exercise responsibility and exercise control over their social and physical habitats. The participatory turn has spurred a demand for new forms of self-organizing governance. The Municipality of Rotterdam has embraced the “Right to Challenge” (Right to challenge, 2017), as part of their transformed governance structure aiming to enhance active participation. This (citizen participation) policy instrument has stimulated the upraise of several bottom-up initiatives around Rotterdam public parks – the “park communities”, aspiring to self-manage public parks in their neighbourhood.

In a preliminary inquiry into the park communities, we investigated the stakeholders of these communities and their relations among each other (Slingerland, 2018). This inquiry distinguished four stakeholder roles. *Park coordinators* are key-figures in the community, who have a large network and experience in setting up a citizen initiative. They keep an overview of the management of the park. *Board volunteers* are citizens who have taken formal responsibility to take care of the park. They facilitate and organise the several activities that take place and think about the future of the park. *Regular volunteers* are people, who live close to the park and/or visit the park for their (social) activities, and regularly contribute to volunteering tasks to maintain the park. *Park users* are citizens that occasionally visit the park. Figure 1 gives an impression of how these different groups interact within the park.



Figure 1: Park coordinators, board volunteers, regular volunteers and park users meet each other in their neighbourhood park.

We have observed a “participation divide” between park users and other, active park community members. At the moment, park users are marginally involved in organising or participating in the community activities. This is a problem for park communities, because involving more citizens in the initiative is an important factor for a community to become mature (Rowe & Frewer, 2000). Also, overcoming the participation divide can help with sustaining participants’ engagement after the initial start-up enthusiasm. Interestingly, park users are oftentimes open to participate more actively in the community, but are unaware of how to get involved. This lack of awareness is omnipresent, despite the efforts of park initiatives to attract new park users by actively organising various activities to recruit new volunteers. In response to this problem, we distinguish two different engagement strategies. One engagement strategy is based on *enhancing the activity* park users already do or intend to do in the park, such as strolling, doing sports or having a family picnic. The other engagement strategy is based on *providing added value* to park users in return for their participation, for instance learning a new skill or meeting interesting people.

Due to contemporary technology, meeting people is no more limited to the physical space, and instead often happens digitally (Hampton & Wellman, 2003). There are many best practices of using digital social services to foster building of friendships or relationships among people. In particular, digital matchmaking services that prompt people to contact each other based on their shared interests are increasingly popular (Flanagan, 2014). These services are a specific type of social media, on which people create a profile for themselves to find others (Golbeck, 2015, p.211). Although *matchmaking* is often associated with romantic relationships, one could consider applying same principles to other domains of life. These services use people’s characteristics, interests and motivations to propose potentially interesting people to contact.

The aim of the current work is to explore how service design in general, and design principles of digital matchmaking services in particular, can foster citizen engagement and strengthen community relationships. In the present work, we elaborate upon the design principals of digital matchmaking to engage park users in bottom-up communities.

Service design for community building

Traditionally, services are understood as experiences between provider and user, often designed with a co-creation approach. Researchers have shown the potential of service design to go beyond co-creating client satisfaction and economical value, by describing case studies on how service design redefines social interactions and creates new patterns among actors (Cipolla, Joly, Watanabe, Zanela, & Tavares, 2016). Understanding services as social relationships, opens up the potential for services to foster community building. Service design for social innovation allows designers to identify and use the current operational model of citizen initiatives to create new models by enabling new relationships (Joly, 2015). At the same time, governments increasingly acknowledge the potential of design to find innovative practices of governance and citizen services (Bailey & Lloyd, 2016; Deserti, Rizzo, & Cobanli, 2016).

Citizens are intrinsically motivated to engage with their neighbourhood (Juujärvi & Pessa, 2013; Mulder, 2015). Several digital platforms or applications are already available for citizens to meet people in their neighbourhoods. Nextdoor is a platform specifically designed for neighbourhoods (Masden, Grevet, Grinter, Gilbert, & Edwards, 2014), and provides a digital space for citizens to interact about their neighbourhood. Other services like Craigslist (Kroft & Pope, 2014) are not intended for establishing social connections, but are often used to get into contact with people inhabiting specific areas. Similarly, Airbnb, which is now mainly used for finding holiday accommodations, was started up as a platform for building friendships through sleepovers. At the same time, using generic social media platforms for establishing social connections in a neighbourhood is also common.

Involving citizens in bottom-up communities is not straightforward. Current community platforms do not address the diverse motivations of people to participate. Interestingly, other types of services, for instance in the world of online dating platforms, seem to have found the key to engaging and connecting people. These platforms are specialized in matching people based on personal dating profiles. For example, applications like Tinder illustrate how matching can be simple and quick, using a picture and some personal information. Although citizens are not necessarily looking to find a date in the community, becoming involved in a community has to do, as with dating, with connecting mutual interests. Therefore, a service that is based on matchmaking principles promises to stimulate bottom-up participation and to strengthen community relationships. In the remainder of this paper, we explore the matchmaking concept based on personal interest as a motivational strategy to engage newcomers in the community. The corresponding question is: how can matchmaking principles be used to develop a service that addresses the diverse interests of citizens and strengthens the community relationships at the same time?

Matchmaking and community services

Current matchmaking services connect one person with somebody else with matching interests (Figure 2). Using matchmaking principles in community building, however, implies that a huge variety of people can be connected to many other users, based on their preferences and personal profiles. It can be assumed that these principles are also a helpful strategy for lowering the threshold of participation by creating a tailored connection between each unique park user and the park community. In that way, the service would offer a tailored connection to the park community for each user, based on their personal profile.

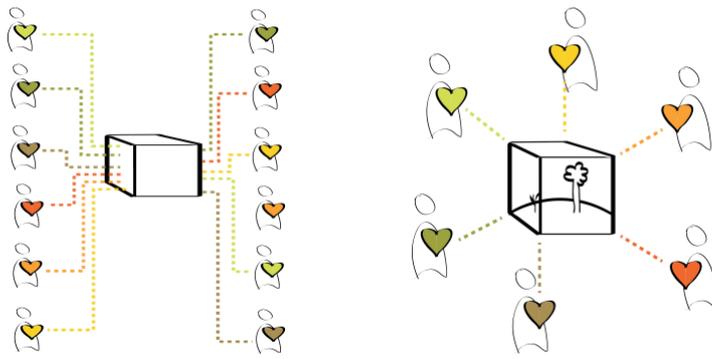


Figure 2: Current matchmaking services connect a huge variety of users based on personal profiles (left). The principles of matchmaking could be exploited to create a tailored connection between each user and the park community, based on the personal profile (right).

In keeping with the common distinctions between communities of interest and communities of practice, we refer to communities as “groups of people who share concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger, 2011). In similar vein, citizens can be matched to the park community on two levels: activity-based matching (Citizen-to-Activity) and interested-based matching (Citizen-to-Citizen), see Figure 3. Citizens can be matched to a certain practice, for example, organising an activity in the park aiming for neighbours to meet each other. Different types of citizens can participate in this practice based on their personal interests, for instance by cooking a meal for during the event or designing flyers for the promotion. Interest-based matching is then based on the personal interests of citizens, not being bound to a certain practice, creating a community of interest (Obst, Zinkiewicz, & Smith, 2002), for instance an interest in flora, and exploring this interest in the park with other citizens.

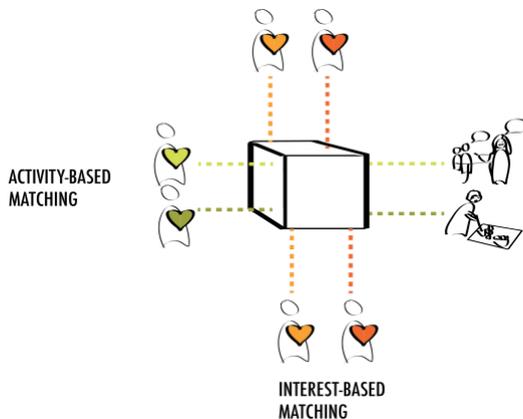


Figure 3: The platform offers matching on two levels: activity-based matching (Citizen-to-Activity) and interest-based matching (Citizen-to-Citizen).

Approach

A research-through-design approach (Stappers & Giaccardi, 2018) has been used to explore how matchmaking principles can be exploited to activate citizens and strengthen the community relationships. Specifically, such a constructive design research approach allows to discover the main problems of engaging citizens and strengthening community building, while designing. The presented study, therefore, not only delivers a service design, but also design guidelines for using matchmaking to enhance community participation. The design

goal guiding the service design process was to use a digital platform to persuade citizens to get involved in the park community. Accordingly, the research question of interest was: How can a service design make use of matchmaking principles to engage citizens and strengthen relationships in bottom-up initiatives?

The design process was led by the first author of this paper (as part of a graduation project), and was supervised by the second and third author. The double diamond model (Design Council, 2005; Buijs, 2012), alternating diverging and converging activities, and the 5 principles of service design (Stickdorn, 2011, p.34) guided the service design process. Various (service) design techniques (van Boeijen, Daalhuizen, & Zijlstra, 2013), such as how-to's (p.127), scamper (p.123), customer canvas (Stickdorn & Schneider, 2011, p.158) and service blueprint (2011, p.204) were applied in three iterations of diverging and converging and led to the design result. In a next step, the resulting service design was used to study the value in use to foster community participation. Figure 4 shows the research-through-design approach highlighting the two processes of *designing* and *researching* the service design.

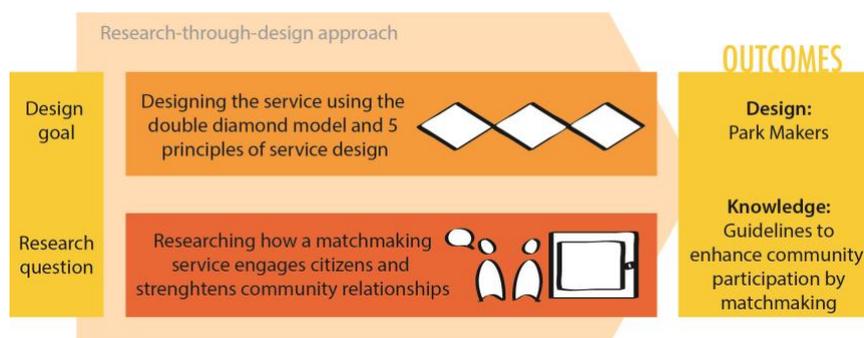


Figure 4: The research-through-design approach distinguishing the service design process and the corresponding research (the resulting outcomes are described in the results section).

Service design process

The research focused on two park communities in Rotterdam and interviews were both held with park visitors (the park users), and coordinators of the park. In total, 24 park users and 3 park coordinators participated in the process. The service has been developed in keeping with agreed upon service design principles and using several diverging and converging design techniques. In short, design requirements resulted from stakeholder interviews (*co-creative, holistic*); three diamond iterations were executed (*sequencing*); user scenarios were developed to experience the service from the user's perspective (*user-centred*) and ideas for physical artefacts to complement the service were generated (*evidencing*). The process of designing the service consisted of three iterations of diverging and converging, as illustrated in Table 1. First, the design goal was reformulated to several "how-to" questions, all addressing the design problem in a unique way to stimulate creativity and idea generation. The resulting large set of ideas that (partially) solve the design problem were then converged towards a simple service concept, and consequently detailed according the following 5 elements that followed from the context analysis:

- Role of the park community: What role does the park community take in the matching process and how is this facilitated in the platform.
- Role of the park user: What does the park user need to do in order to match with the park community and how is this facilitated in the platform.
- Become involved: The way the platform is making use of matchmaking to involve the park user in the community.
- Mutual exchange: What does the park user gain from participating and how is this facilitated in the platform.
- Different interests: The way the variety of interests of park users is addressed in the platform.

The scamper-technique (Van Boeijen et al., 2013, p.123) was used to diverge again. With this technique, the service design is confronted with provoking questions, to stimulate creativity and to find extra features for the design. To converge, the features, functions and flow of the service are brought together in one service design concept. A final iteration has been made using the customer canvas to identify various potential user scenarios (diverging) which have been converged towards one service blueprint, summarising the flow of the final service design.

Nature of the activity	Design technique	Envisioned outcome
Diverging	How-to's	A set of ideas
Converging	5 elements	Ideas detailed on the five elements
Diverging	Scamper	Extra features to be added to the design
Converging	Concept	A concept design
Diverging	Customer canvas	User scenarios for different types of users
Converging	Service blueprint	A detailed flowchart of flow of the service

Table 1: Three iterations of diverging and converging activities led to the final design.

Researching the value of the design

As part of the research-through-design process, the developed service design is a means to study the value in use. The service design concept was evaluated for its value for community participation, and citizen engagement in particular, and strengthening community relationships. To properly assess the value on the mutual relationships in the community, the service concept was evaluated with both park users and park coordinators.

Evaluation with park users. The digital service was evaluated with park users to find if it supports the engagement of citizens. One function of the service was selected to prototype for the research, based on its feasibility. The activity wall function was suitable to be prototyped in the timespan of the research and using the available resources.

To allocate participants for evaluation in context, citizens who visited one of the public parks were approached. Citizens (n=24, 10 citizens were male) filled in a questionnaire that asks about their personal interests, park visit frequency and involvement in the park. Five specific questions were asked to determine the involvement of the park user in the park community:

- 1) How often has the participant visited the park in the past week?
- 2) How involved does the participant feel in the park?
- 3) Did the participant talk about the park with others?
- 4) Has the participant considered to participate in one of the park activities?
- 5) Has the participant ever looked on the social media pages or website of the park?

The participants were divided in two groups. Group 1 only received a second questionnaire one week after they filled in the first one in the park. The second questionnaire contains the same questions as the first one, so that the answers can be compared to find involvement changes over time. Group 2 received an email with information about the park community and a selection of upcoming activities in the park that match the personal interests of the participant. An example of a selection of activities is illustrated in Figure 5. A couple of days later, group 2 received the second questionnaire and was asked to fill it in. The results of the first and second questionnaire were analysed and compared to understand how the service influences the involvement of citizens.

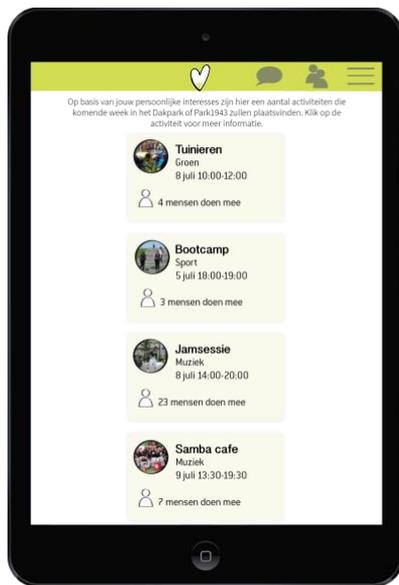


Figure 5: Upcoming park activities that match the personal interests of the participant were sent by email.

Evaluation with park coordinators. Since the park board has a different view on the park community, the platform was evaluated with them as well. Semi-structured interviews with three citizens (all female) that have a coordinating role in the park were held, aimed to find how the park board envisions the value of the design in their park. During the interview, the aim and the different functions of the service were explained using a storyboard and printed screens. The participants were asked to give their opinion about each function and the scenario of use. Finally, we discussed how they envisioned the service to be used in their park and how they would see their own role in the platform. These interviews were audio recorded and analysed using the recordings.

Results

The results of the performed research through design process are two-fold. They consist of a design output, and the knowledge generated in the process of designing.

Resulting design: Park Makers

The service design process led to the final design of Park Makers, a digital platform that on the one hand matches citizens based on their personal interest, and on the other hand matches park activities to the personal interest of citizens.

Matching citizens. The matching function allows park users to connect with other citizens. By creating a profile, citizens can match with other citizens based on their skills and personal interests. Based on the profile information of the park user, the platform suggests profiles of other citizens that have similar interests and skills.

The matching screen shows a quick version of each profile with the information necessary to decide whether to match or discard the profile (Figure 6). When a match is made, the park users can chat and set up a meeting in the park. A pop-up indicates that the user has a new match, and the user can immediately start a conversation with their newly made match.

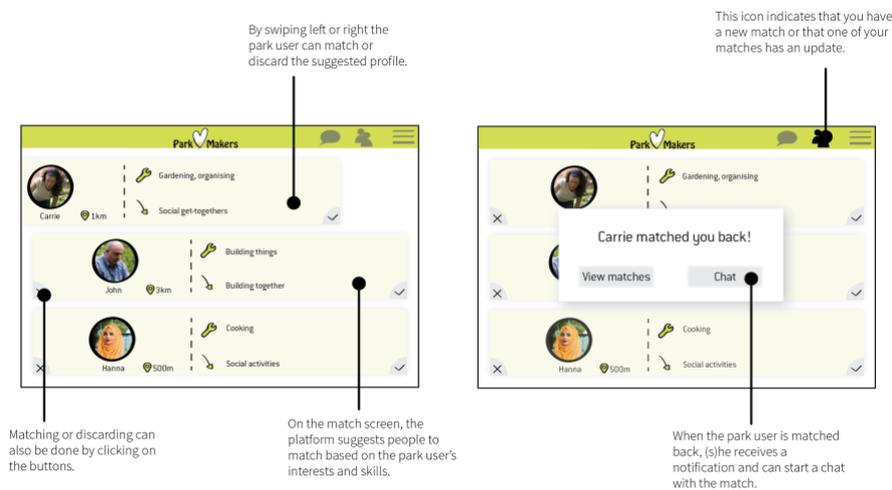


Figure 6: Based on the profile information, the platform suggests profiles of other citizens to match.

Matching activities. Using the activity wall, citizens can match activities they find appealing. On this wall, the platform shows upcoming activities in the park, see Figure 7. These activities can be organised by the park coordinators, but also by one of the park users. The activities are sorted based on the personal interests of the citizen, so that (s)he will see activities that match her own interest first. This type of matching is in keeping with the theory of communities of practice (Wenger, 2011).

The interface displays basic information for each activity, including the name, category, date and number of joiners. By clicking on the idea, the park user triggers the display of the detailed information of the activity and the prompt to participate in the activity. By opting in, the citizen establishes a match with the activity. The activity needs a predefined number matches in order to take place. Besides matching, the park user can ask questions to the activity organisers, or offer help in executing the activity.

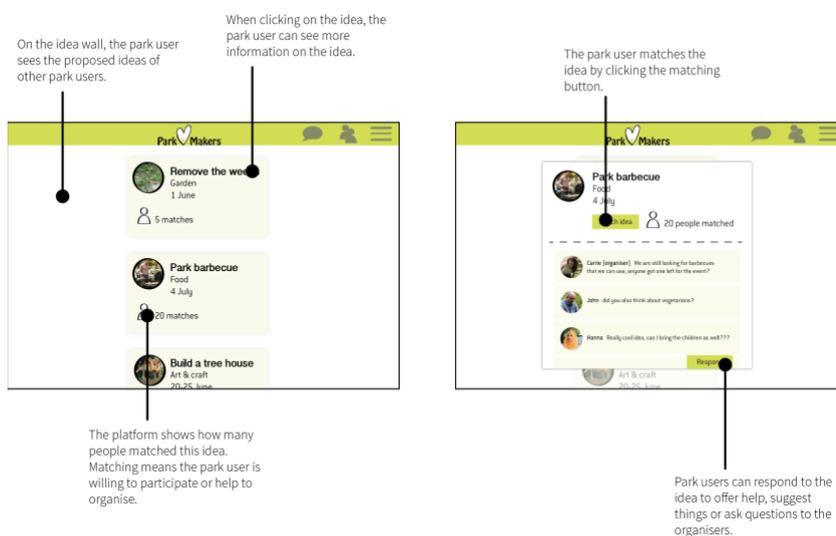


Figure 7: The designed platform shows upcoming park activities that match the interest of the citizen.

Research outcomes

The service design was evaluated with two stakeholder groups: park users and park coordinators. The evaluation provided insight in how the application of matchmaking in the service fosters community relationships and participation.

Evaluation with park users. In total 24 citizens participated in the research, which were divided in two groups of 12 participants. The first questionnaire provided insight into the personal interests of park users. Participants were able to choose interests from a list and could add more interests. Some interests were popular amongst participants (sports & moving [n=15], being outside [n=14], music [n=12], meeting people [n=10]), while others were mentioned less often (cooking [n=9], nature [n=8], gardening [n=3], crafting [n=2]).

Interestingly, these answers show that not many visitors have interest in gardening (n=3), whereas the main park activities are focused on gardening. Since park users are more interested in sports (n=15), social activities (n=10) and being outside (n=14), the park activities do currently not match the demand from the park visitors. The park community might therefore be better understood as networked publics (Mosconi, Korn, Reuter, Tolmie, Teli, & Pipek, 2017; De Lange & de Waal, 2013), in which activities and engagement are heterogeneous.

On the first questionnaire, 5 out of 24 park visitors indicated that there are not enough activities happening or that they do not know where they can find these activities. They would like to participate, but do not know where to start.

Participants in group 2 wrote on the survey that they liked the proposed park activities. However, they did not always match the schedule of the participants, but matched their personal interest. This shows that time is an important factor to participate, the activities should match the availability of the park user. The participants expressed to, in the future, participate in one of the activities and started to follow the social media pages of the parks, so that they would stay up-to-date.

Participants looked on the social media page or website of the park to see what else they can do and how they can participate. One participant expressed that still the barrier is too high to do something in the park, especially when you are just alone.

Evaluation with park coordinators. Four citizens with a coordinating role in the park were interviewed. The coordinators indicated that the matching function visualizes the different park users with their unique motivations and interests. The idea wall on the other hand creates an overview of the diverse activities taking place in the park. These two elements allow the separate groups of park users to obtain an understanding of each other's interests and to get offered personalised activities matching these interests. Likewise, these two functions provide the park board insight in the users of the park and their interests.

Many citizens living around the studied public parks live alone. Park coordinators pointed out that the matching function of Park Makers could help these citizens to meet new people that live on walking distance, in their neighbourhood. In fact, they might even have met when walking in the park. The platform that shows the profiles of the different park users and gives familiar strangers a name and face. The matching function can furthermore be used by families and youth, as suggested by the park coordinators. Hence, they are already using similar social media platforms and therefore easily adapt to this service.

Discussion

Our research indicated that by receiving personalized activity suggestions (via e-mail) users were triggered to find more information on the park's social media page or website. The platform therefore extended park community with a digital community layer. The matchmaking service platform not only stimulated community growth, but also created a digital representation of the community. However, citizens indicated a barrier to participate for reasons such as being alone. Matching other citizens could help to lower this threshold,

but there could be other factors contributing to the barrier which our research was not able to identify.

The evaluation results showed that especially the personalization of the activities worked well to trigger citizens to get involved. Park users only saw activities that match their interest and that results in them being more inclined to participate. The platform helped the park users to see that there are more activities possible than they initially expected (i.e. only gardening or cleaning up in the park). As a result, park users expressed interest in joining these activities. Tailoring promotion is therefore an important aspect for getting citizens involved.

The results showed increased digital activity among participants. Many participating citizens decided to follow the social media pages of the park communities, but their actual participation in the real-world activities of the communities was not observed. The platform so far has only been shown to lead to digital involvement and contributed to increased awareness among citizens about the communities activities. This might indicate that participation in the park itself is more complex for only triggering it with matchmaking. We might speculate that this process needs to take place in several steps. For instance, citizens first get involved in the digital community, viewing the various activities taking place and only after some time participate in one of the activities when it fits their agenda.

Time was found to be an important constraint for participation, as people are often already quite busy with their own lives. Further research could focus on how the next step towards physical participation can be reached, building on the digital platform. The park community could be considered as a hybrid community, in which online and offline activities alternate and support each other in strengthening the community relationships (Cabitza, Scramaglia, Cornetta, & Simone, 2016).

Further research

The work presented in this paper used matchmaking as an approach to get more citizens involved. The main issue for involving citizens, is that the trigger for each citizen to participate is unique. Besides matchmaking principles, as described in this paper, other approaches for offering a personalised trigger could come to the same, or a better, result. Park Makers used activity-based matching and interest-based matching to connect citizens to the community, but other matching variables can be explored. Such explorations may reveal that every citizen has a unique matching trigger. For instance, one citizen might be inclined to participate because of wanting to meet people with similar interests, while others are triggered by a specific skill they can learn from participation. Further exploration of these triggers and their combinations might lead to finding the “sweet spot” of motivating participation through a service.

A final aspect to discuss is the sustainability of the platform. In the beginning stage, the platform needs to attract enough users as the number of active users on Park Makers is vital to its success. Only a few citizens using the platform means not enough variety of profiles. The matching function might lose its attractiveness when the user has seen the profiles already or when there is no interesting profile to match. Then as well, the activity wall needs to contain a sufficient amount and mixture of ideas to keep the platform engaging. Hence, a successful implementation strategy is key to acquire a diverse group of active platform users. Involving local key-figures to promote the platform would help to ensure enough users on the platform. When the platform has been used for some time, it should stay engaging and interesting with enough new activities. Since the platform fosters community engagement and relationships, only starting up the platform could be enough to create a snowball effect of citizen involvement (Hepworth, Mulder, & Kleinsmann, 2016; Mosconi et al., 2017).

Conclusion

The aim of the research was to investigate how matchmaking practices can be applied in the context of heterogenous citizen communities in order to stimulate citizen engagement and to strengthen community relationships. The designed service platform helps individuals to find their place in the community, and contributes to a sense of identity by making use of matchmaking principles. The designed application provides its users with a quick overview of activities that are going on within a given community context and offers users a possibility to express interest in participating and in helping to organise these activities. Activity-based and interest-based matching couples citizens with other citizens and citizens with activities in the park community. The service design and its evaluation show that matchmaking principles applied in a service, and perhaps service design in general, can be of value to engage citizens and strengthen the relationships within bottom-up communities.

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