Challenges in Designing and Scaling-up Community Services

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Abstract

This paper is based on two EU funded projects: one recently completed, Life 2.0 and an on-going project, MyNeighborhood (MyN). The former was aimed at creating location based and socially networked services to support elderly people independent life. The latter is developing a platform to activate hidden or latent resources in neighbourhoods. Both the projects are based on the activities in four pilot locations. They are an application of service design to the public sector that provide interesting insights about designing and scaling up highly localised and personalised services and platforms of services. Both projects are highly related to a real life context for senior people (Life 2.0) and people with brain injury and their assistants (MyN). Several analogies could be found, between the existing generation of social networking platforms and the services proposed in these projects, however several important differences can also be found, that challenge the way those platforms should be designed and scaled up in different contexts. Being at a more advanced stage, the Life 2.0 project obviously provided more insights, whereas MyN gives an opportunity to verify the hypotheses coming from Life 2.0. This paper analyses the lesson learned from the work undertaken so far and proposes criteria and hypotheses for the diffusion of this kind of services.

KEYWORDS: Community services, scaling-up, service design

Introduction

Social and health services in the public sector are undergoing a deep review in the way existing and emerging needs should be addressed. The unbalance between active and passive population, caused by broad socio-economic phenomena, is imposing a new approach to public services. Furthermore information and knowledge are raising people expectations for a greater control and far more choices in their life. The traditional universal approach to public services revealed its own limits, both in terms of efficiency and equity. One of the main focuses of the new approach is on personalisation. The new services will need to focus more on personal needs, by empowering citizens to shape the services around them ("Building on progress: Public services. HM Government Policy Review," 2007).

One of the most critical areas for government and public institutions is the assistance to senior and disabled people. A proportionally larger number of elderly people is going to

require a bigger amount of resources, but the present economic crisis, summed up to the factors mentioned above is urging governments to consider a new approach to welfare states. (Esping-Andersen, 1996, 2002). A new approach to public intervention in this area focuses on the activation of the residual capabilities of this population within close communities of friends and neighbourhoods.

This methodological approach has been used in the Life 2.0 and MyN projects to develop online platforms to support social interaction, thus facilitating the exchange of knowledge and favours, supporting the organisation of individual and group initiatives and even individual entrepreneurship. The experience arising from those projects however, suggests an interesting challenge that possibly concerns several other local service solutions based on based on participation and value co-creations

The economic sustainability of such localised services requires a new approach to scalability, so that the knowledge and resources used in an individual instance of the service can also be replicated in other contexts or for other communities. The need for personalisation and the strong link to the local context makes the common idea of a wild fire diffusion of the service totally inadequate. One can no longer expect those services to increase the number of users from a small community to millions of users, as it happened for other social networking applications, which were geographically independent. The considerations about the possible scalability of such service suggest interesting insights on alternative scalability strategies.

The Life 2.0 project

The Life 2.0 project is a EU-funded project that is part of a portfolio of initiatives to promote Smart Cities. The project started in 2010, with a consortium including universities, companies and public administrations, with the purpose of generating a platform of location based and social networking services that could support elderly people between 65 and 75 years old in maintaining a good level of independence in their daily life.

Life 2.0 has been taken up in four different pilots in Aalborg (Denmark), Joensuu (Finland), Barcelona (Spain) and Milano (Italy). In each of those locations a group of 30 to 40 elderly people has been involved in the co-development and testing of a platform of online services.

Life stories suggested by elderly people inspired some concepts that were tested by the same people and developed into an online tool. Elderly people continuously provided feedback and suggestions about new services or new ways of organising the platform. This co-creation process reinforced users' sense of ownership, besides creating strong social and human links.

In two cases (Aalborg and Barcelona) the project has been associated to an existing community: a training centre in Aalborg and association of volunteers in Barcelona. In those cases, the use of the platform reinforced pre-existing social links, by adding a new information layer. In Joensuu and Milano, people did not have any previous aggregation point, therefore a community has been "created" around the local library, with the help of existing organisations operating in the area. The platform was therefore used to create social aggregation that was reinforced by periodic personal meetings.

What is Life 2.0?

The Life 2.0 platform is the playground for a series of activities and exchanges of knowledge, information and help between elderly, local associations/organisations, and local businesses. The platform includes three main components:

» Announcements: here people can offer or request help to others. The nature of such help is usually very different: it could range from real help to solve IT problems to the proposal to walk together to the church or the supermarket and so forth.
» Events: here local organisations (the local church, activity centres, associations and clubs) can post announcements of initiatives and events in the neighbourhood
» Marketplace: here local businesses can post ads or even services, such as special menu of the day, special offer of the week, to elderly people in the area.

The access to the platform is strictly regulated in each location, by a local Community Provider that only accepts users if they are personally or directly known, to trust in the community. The administrator can be a person from an activity centre of an association.

Some organisations are posting relevant events and some businesses (e.g. local foot massage, local supermarket or a national producer of aids products) are posting ads (but not yet personalized offerings) on the platform.

Characteristics of the Life 2.0 system

The main feature of the project is the strong link between online presence and direct and personal contact between the users. The Life 2.0 platform has never been proposed as an alternative to personal contact. Users were well aware of the existence of social networking platforms, such as Facebook, and in a few cases they also had a profile in some social networks. However users considered those platforms quite impersonal unsafe and irrelevant, because they are open, they refer to very broad contexts, beyond the geographically perceivable limits of their everyday life, and because those networks link unknown or unfamiliar people.

Life 2.0 services help people organising a walk to the local supermarket, solving practical problems, organising parties and supporting seniors in many other practical functions. This means that the platform is complementary, rather than alternative to real life. The platform makes the condition possible, for an augmented neighbourhood, in which the increased knowledge about what is going on in the area is giving more opportunities to solve practical problems, and to reinforce social cohesion.

User requirement for strong mechanisms of trust, and consequently the presence of a community administrator is at the same time a positive and negative feature of the system. Indeed it encourages elderly peoples' participation, but, at the same time it limits the number of members of a community to the number of people that are personally known by the administrator. This feature has been critical when shaping the scalability and business model.
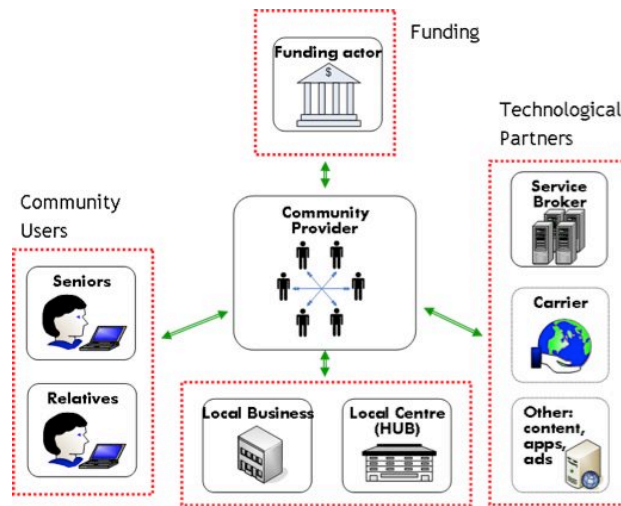
Figure 1 the Life 2.0 ecosystem (Source Life 2.0)

The Life 2.0 ecosystem

The Life 2.0 business model is based on a modular structure (Figure 1).

The modularisation is based on capabilities, knowledge and skills. Each module describes an actor type in the system and its role. Each actor contributes to the system with knowledge of different nature and by adding different value (Table 1). Here below the modules and their characteristics are described.

Actor	Type of knowledge	Value added
User	Personal/tacit	Attention / content
Community provider	Social/aggregative	Aggregation
Hub/association	Content related	Events / content
Technical broker	Technical	Technical solutions
Local businesses	Service/market related	Personal/locally relevant market offers / money
Funder	Connective	Trust/financial support

Table 1. Life 2.0 roles, knowledge and value added

Users are typically elderly people living in the area, but this category of user(s) can also include relatives (children, grandchildren) or friends, of elderly people. Users are not supposed to pay to access the platform, but of course they should pay for accessing the services offered on the platform by local business (e.g. restaurant, training, etc). Elderly people provide personal, un-codified knowledge, concerning social links, events, initiatives and geographically located information. The relevance of this knowledge is often local, that means that the value they can add to the platform is also strongly related to their location.

The **community providers** are organisations (e.g. seniors' associations, local interest groups) or public entities (such local municipalities), that aggregate a number of senior citizens, thus becoming the tangible reference for the users of the Life 2.0 platform. Community providers

usually have a physical location, where events or gathering are organised. They are the gatekeeper to the platform, as they moderate, promote and ensure trust among the users. They have the critical social knowledge that would allow the network to be formed and to grow. The personnel in this organisation, has personal and direct knowledge of all the members of the network and can moderate and encourage the participation in the activities on the platform. They provide value by aggregating people. Without this activity, the mere existence of an IT platform for exchanging information would not have too many chances of success amongst elderly people.

Event Organisers, or **Hubs** are the organisations around which the local everyday life of elderly people is usually based. Hubs include local associations, training centres, sport clubs and churches. Most of the hubs are not supposed to pay to access the platform. Likewise community providers, hubs aggregate people. They have a good social understanding of the local area and interpret their need for entertaining, spiritual, sport or social activities. Their knowledge is usually highly localised, although some events may have a wider relevance and connect different communities. They add real value by providing content on public events or initiatives for a larger number of users.

Local businesses included in the platform are usually small commercial activities that users already know personally, such as foot massage, local supermarket or restaurants. Online services offered by those businesses can supplement personal services. However some of those businesses may have wider target group and therefore be interested in participating in a system that is broader than a single community. Local businesses provide content to the platform in form of codified knowledge, technical skills and specialized services to elderly people. They add value to the platform in form of real personalised services for citizens, ads and access fees.

Technical brokers are the actors that will install the platform at the local level and ensure a constant technical support to community providers. In some instances technical brokers may be the *owners* of the platform and promote it to local communities. They have the technical knowledge needed to run the platform. This knowledge is complementary to the social knowledge provided by community providers. Alongside technical support, they may add value by developing new applications for the platform.

Due to the initial installation costs, and constant personnel costs, the Life 2.0 platform may need to be supported by a **funding organization**, that could either be a public or private institution. In some instances this role could be covered by public administrations, which often have the knowledge and skills to set up new communities. Furthermore their back up to a community provider may ensure trust among the users.

My Neighbourhood

The MyNproject started in January 2013 as an initiative of a consortium of 19 partners, funded by the EU ICT-PSP funding scheme. The aim of the project is to generate a platform of services to support social innovation and aggregation initiatives in local areas. Likewise Life 2.0, MyN is being currently developed in living labs, with a strong collaboration of users in the process of co-creation of solutions. The Living Labs focus on specific aspects of neighbourhood life. This section will focus on the Danish Living Lab, because of its analogies with the Life 2.0 project. The user group involved in this Living Lab includes citizens living in a municipal centre that supports people recovering from brain injuries. They are able to live almost independently, but they need assistance in some daily functions and,

above all, they need constant social contacts, which include a small help in some everyday situation. Some of them, for example may need help expressing him/her-selves, or need support when shopping.

The project team worked on several scenarios to make sure that knowledge and resources available in the neighbourhood could be used to improve the quality of social aspects in the life of those citizens, without using professional resources (social assistants or occupational therapists), which could be instead used to support functional needs. The scenarios are now generating indications for a technical platform that should support the aggregation of social resources around those people, such as neighbours, volunteers, relatives of other citizens with similar problems and students.

Service Ideas

Together with the stakeholder groups, the design team identified a number of possible services. The most relevant are:

» Social visit
» Companion friend
» Voluntary bus service
» Cultural/Shopping assistant

The scenario (below) illustrates one of the service ideas.

Scenario: Social visit service

The idea in this scenario is that volunteers or students[1] visit citizens with disabilities in their home for social interaction and informal caregiving (e.g. for playing cards, ICT training, discussing interests, going for a walk). The service also gives free time to the spouse of the disable citizen.

Both the disabled citizen and volunteer can register via an online platform. The citizen (or a community staff acting on their behalf) can define his or her own needs while the volunteer can define what type of help she/he can offer. A coordinator meets both parties, to get a better understanding of them and their needs.

The coordinator meets the volunteer and matches up volunteers and citizens, organising and mediating a first meeting with the disabled.

Citizens, voluntaries and gatekeepers

The configuration of the MyNeighborhood service in Denmark is based on some key assumptions:

1. The main actors in the platform are people with some sort of disability (sometimes invisible, like aphasia). Even though they are mostly independent in their daily life, their disability puts them in the weak position of asking for help to people (voluntary, students) they do not know.

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[1] The students involved in this project come from occupational therapy or similar studies. Their participation in the platform can be recorded and give credits as learning activity.

2. Voluntary associations already exist and are well organised in Denmark, but the condition for them to cooperate with professional workers in this field is that they do not provide help that could jeopardise professional workers' jobs and would not guarantee the same professional quality.

3. Even though volunteers are covering non-professional aspects of citizens' life, professional workers have daily and institutional contacts with the citizens and can guarantee that the resources are appropriately used. They can therefore work as gatekeeper(s) for the system to build mutual trust between citizens and the voluntary resources.

Discussion

The projects presented in this paper are part of a new generation of services based on highly localised social networks. The most diffuse social networks (Facebook, Twitter, for example) are geographically independent. They have been developed to link people regardless their geographical location. Participants in existing networks were linked by logical links. Only some recent initiatives (e.g. www.socialstreet.it) are turning those applications into a platform to interact at the local level. Another shared characteristic of the projects mentioned is the very personal, almost intimate, dimension of the links they create, which requires special conditions that address trust and privacy issues.

The empirical work in the living labs emphasised that the acceptance of those initiatives depends on two factors: **relevance** and **trust.** Such factors heavily influence scale-up strategies. The considerations in the following sections are based on empirical observation. In many cases what has been observed confirms the theoretical frames in which relevance and trust in online environments have been studied; however in the economy of this paper such frames will not be thoroughly discussed.

Relevance

The platforms presented in this paper are addressing aspects of social life in local areas. They do not (necessarily) include functional content that would force users to use the platform. Alternatively, the social content created in the platform is not meant to replace, but rather complement the daily life of the participants. For those reasons, it is critical that the content proposed be valuable and relevant for the members.

In this platform as in any online environments an enormous amount of information available is not necessarily absorbed and used in everyday life. The information is indeed filtered by users' attention. The LIFE 2.0 platform can also be viewed as the marketplace in which information-based service offers will meet users' attention. Relevance will be the main catalyst for user attention. As for many other online platforms, attention is the internal currency in the exchange of information (Davenport & Beck, 2001).

Not only will the services need to have high and personal relevance for users, but also the platform itself. This is the reason why the content of the platform cannot just have a functional and commercial character (e.g. services to elderly people); but it has to include content related to seniors' social life, that cannot be easily quantified in economic terms. In essence, the elderly will pay particular attention to what is relevant for their everyday life. Of course their direct participation to the definition of the content (in form of calls for participation, recommendations, help offering and even service offering to their neighbours) will increase the attention resources spent on the platform. This participation also depends

on the possibility to link online contents to the real life. Elderly people's chances to be directly involved in each activity will be a filter for the offerings on the LIFE 2.0 platform. At the same time the content they generate will widen the window of attention for other services offered in the platform.

Relevance is also critical to the MyN platform, in relation to the way the profile of disabled citizens matches the competences and the interest of voluntaries, and vice versa. Geographical contiguity is crucial to determine relevance on this platform, because of the possibility that online contact could eventuate in an offline meeting.

To summarise, the need for the platform to include relevant content refers to the life context of the participants. In order to be successful and to attract a reasonable number of users, the platform has to ensure a strong link to a specific physical environment.

Trust

Trust is linked to the number of users connected to the platform, their social proximity, personal acquaintance and geographical location. The literature on trust in online environment is quite large and focused on different aspects, from knowledge sharing (Hsu, Ju, Yen, & Chang, 2007) to empathy (Jinjuan Fenga, &, & Preecea, 2004) and to overlaps between online and offline networks in emerging adults (Subrahmanyam, Reich, Waechter, & Espinoza, 2008), however the specific case of trust-building for elderly or disabled people (or for groups that have been often excluded from online services) has hardly been considered. Strategies to build trust through reputation and rating system, very common in other social networks, are not always possible in local and personal networks. When asked about their opinion about rating mutual help or social meetings, members expressed their fear to judge or be judged by people they know very well. Different mechanisms must be used, thus ensuring trust in the platform.

Given the strong link of the platform to the local context, trust can be achieved by making sure that the online presence is parallel and overlapping with the real interaction between people in a particular neighborhood. Trust is also ensured by the presence of an administrator, or a centre, where the participants are known and can be identified by a person. This person is also mediating between users, in order to avoid personal or direct conflict(s).

This means that the expansion of the model cannot be wide and seamless, but has to progress by "circles" or communities (Figure 2). Each community will guarantee trustworthy interaction to its users. When the online community becomes larger than the number of people the administrator knows personally, no new users can be added, unless another community or another "centre" is set up, with a new community provider. Of course there could be some overlapping between two different communities, but the participation of a user to more than one community has to be mediated by the administrator(s).

Both the parameters illustrated above, relevance and trust, suggest that the strategies to scale up highly localised and personalised service platforms cannot be based on a *wild fire* expansion. It is not the number of users that should expand to scale-up the platform, but the number of communities.
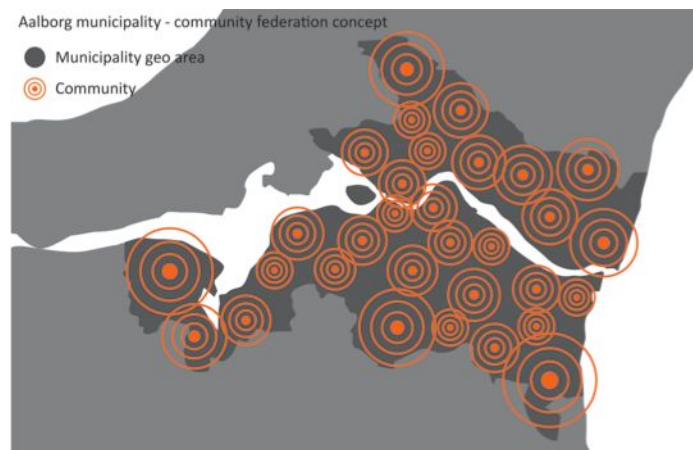
Figure 2. Diffusion model for Life 2.0 for the Aalborg Pilot

Discussion: scale-up models

The findings of the Life 2.0 project, which has been developed up to a pre-production phase, offer interesting insights that can also be extended MyN and other platforms.

The description of the ecosystem and its actors clearly shows a direct and tight link between the online and the offline community. In this *hybrid* social network logical, geographical and personal relationships are equally relevant. Each instance of the platform is anchored to a real context, because the information it includes is also local and very personal to its users. However, not all the actors are necessarily focusing on the same geographical context. Local businesses or hubs, for instance, may find a single community too limited and would not consider accessing to the platform, unless they have access to multiple communities. The setting of municipal services supporting both the Life 2.0 and MyN platform also refer to wider contexts. The need for relevance and trust however, would make a wild fire development of the platform unthinkable. The local community cannot exceed the number of people the administrator knows personally. Citizens explicitly declared that the advantage of this platform, with respect to other open social networking applications, is the fact that its access is limited and controlled.

Unlike other online social networking applications, those platforms can only expand if new ecosystems are replicated in different local context(s). The community provider is the catalyst and the gatekeeper for each ecosystem. Local business, or technical providers may take part to more than one community, as they need to reach larger group of users. Those actors are still working to scale up their services, whereas other actors are working to *defend the borders* of the community. The two logics however, are not competing, it is argued that they are complementary: a strong community, with a strong participation, will increase users' attention, and therefore give more value to each post, or paid service offered by the business companies in the platform. Alternatively, technical providers, local administrations or local businesses taking part to a community could act as *bridge users* of the platform, linking different communities.

The question of new models for scaling up similar cases for social innovation is quite new to established literature. Many authors have focused on social networks' potential to generate social innovation (Leadbeater, 2008; Tapscott & Williams, 2006), but they did not propose any broad reflection on a model to scale up innovation generated by social networks. They assume that the diffusion of new applications will follow a logic of wild fire expansion. Relevance and trust have been considered also critical for the diffusion of social networks,

however the link to the geographical location has never been considered as a binding condition for scaling up, but rather an outcome of a specific approach to the use of such applications.

The question of scalability has been analysed from a technical perspective, Pujol et al. (Pujol, Siganos, Rodriguez, & Erramilli, 2009), for instance, focus on strategies that replicate *bridge users* to scale up fully distributed systems. Although this approach focuses on the technical organisation of online social networks, without any reference to the social characteristics of its users, the exploration of the parallel development of scaling up strategies for fully distributed ICT systems and *hybrid* social networks, such as Life 2.0 or MyN, could provide interesting insight.

Conclusion

The dynamic proposed by the projects presented in this paper and their model of expansion is challenging the existing scale-up logic.

The existing model is based on the most known examples of diffusion of applications, such as Facebook, or Twitter. Those applications are relying on logical links between participants, but are basically geographically independent, although the geographical proximity of the participants was an obvious reason for establishing new friendships on those networks.

The model proposed in this paper instead, is deeply rooted in a particular geographical context. The social links often exist before the creation of the application and the application is usually *augmenting* the existing links, adding a new layer of information. The two fundamental parameters for the creation of such network do not hinder scaling up, but impose a new mechanism of expansion.

Scaling up those platforms is not an obvious exercise, because it requires that the ecosystem be appropriately structured that clearly defines roles and competences of each actor. Of course the projects presented represent a limited range of cases, but the conditions they refer to is common to many other cases in which services, especially public services, are designed for specific local contexts. The time is coming for a radical rethinking the way public and private services to those citizens should be planned, and the projects presented in this paper proposes some critical reflections on how this can be done.

Acknowledgements

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